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CLINICAL DECISION MAKING OF RURAL NOVICE NURSES

by

Teresa J. Seright

Bachelor of Science in Nursing, Minot State University, 2002

Master of Science, University of North Dakota, 2006

A Dissertation

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Doctor of Philosophy

Grand Forks, North Dakota

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This dissertation, submitted by Teresa J. Seright in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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This dissertation meets the standards for appearance, conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

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Dean of the Graduate School

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ABSTRACT

The purpose of this study was to develop substantive theory regarding decision making by the novice nurse in a rural hospital setting. Interviews were guided by the following research questions: What cues were used by novice rural registered nurses in order to make clinical decisions? What were the sources of feedback which influenced subsequent decision making for processing of cues?

Theory development was based on an in-depth investigation of 12 novice nurses practicing in rural critical access hospitals in a North Central State. This study consisted of face to face interviews with 12 registered nurses, nine of whom were observed during their work day. Eleven of the 12 participants were interviewed a second time, during which they reviewed their transcripts and the emerging themes and categories as a method of member checking. Directors of nursing from the research sites and rural hospitals not involved in the study, experienced researchers, and nurse educators facilitated triangulation of the findings.

This study revealed novice nurses were able to identify varying cues for decision making, including patient vital signs and patient assessments. These cues were often compared to the nurses' previous encounters with the patients through the health care system or through contact in the community. Familiarity with a diagnosis, such as chest pain, was explained by participants as knowledge they had gained during formal education and in patient encounters within their first year of practice. Where cues were

more subtle, participants turned to coworkers to confirm or deny their hunches and to help them decide on actions. They did not, as has been suggested in the literature, turn back to textbooks or linear decision making models to help them analyze the situations.

Recommendations were made for nurse educators, who have been tasked with facilitating critical thinking in all nursing students in the preparation of the graduate generalist practitioner. Researchers have been provided suggestions for future exploration of decision making processes in rural nursing. Those who practice rural nursing in either leadership or supportive work roles were given recommendations related to mentoring the new nurse while fostering decision making skills.

CHAPTER I

INTRODUCTION

Recent renewed attention in the United States around the topic of health care reform, along with continuously rising healthcare costs, created a real need to ground clinical decision-making in critical examination of available resources and information. Juxtaposed to this issue, and yet inextricably related, was an emphasis on evidenced-based practice (EBP). Evidence-based decision making related to clinical decision making, with an integration of clinical expertise, credible research into practice, and awareness of patient preferences, toward the most effective care decisions for the patient (Ritter, 2001; Rycroft-Malone et al., 2004; Sackett, Rosenberg, Gray, Haynes, & Richardson, 2007; Sigma Theta Tau International, 2008). The simple premise of these campaigns was toward the provision of quality care for all persons across our nation. This implied that the patient admitted to the hospital, with a diagnosis of pneumonia, for example, should have received comparable care, whether this admission occurred in a metropolitan or in a rural hospital.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Centers for Medicare & Medicaid Services (CMS) aligned to develop Hospital Quality Measures in their condition-specific performance measure sets. The current Hospital Quality Measures were included in the Joint Commission's *ORYX® Core Measures* (Joint Commission, 2010) on heart attack, heart failure, pneumonia, and

surgical infection prevention. These core measures were an integral piece to healthcare reform, wherein the expectation was parity in access and care.

Recent research suggested rural residents experienced disparity in health care for a variety of reasons, including distance from definitive treatment (National Rural Health Association [NRHA], 2005a). Rural residents experienced a higher mortality rate 30 days post myocardial infarction, than did their urban counterparts (Baldwin et al., 2004). Because nurses were often the first to triage and begin treatment, especially in rural areas, an understanding of how they came to make decisions in patient care was important. When new graduates were recruited to rural hospitals, they did not always have the peer support for decision making due to relatively small staff as compared to urban centers (Molinari, Monserud, & Hudzinski, 2008). Rural hospitals had less ancillary staff, thus the registered nurse was also often performing a variety of tasks and procedures (Ericksen, 2006). There was a paucity of research related to how novice nurses experience clinical decision making in the day to day care of clients in rural hospital settings.

Background of the Study

Rural Nursing

As a newly graduated registered nurse (RN), my first assignment was in a rural hospital. I was 20 years old—assigned to the night shift with either a licensed practical nurse (LPN) or an unlicensed assistive personnel (UAP) such as a nursing assistant or a paramedic. The small hospital offered acute care beds, an assisted care facility, an emergency room, and an intensive care unit containing two beds. I can vividly recall a panicked call to the physician one night, when I received a patient with chest pain. I had

applied oxygen and the bedside electrodes for the heart monitor and recognized the rhythm on the screen to be something “not right”. This was what I knew, or rather, what I did not know. Beyond that assessment, I froze in terms of what should be done next. The patient was seen shortly by the physician, who patiently worked with me to choose appropriate medications (waiting while I fumbled with starting an intravenous line). Today, I would have handled the patient much differently. As I reflected, I believed that perhaps even within a year after that incident, upon receiving advanced cardiac life support (ACLS) training, I certainly would have been more confident. At the time, I recalled feeling very alone and very unsure, even with the doctor’s speedy arrival. Later on in my career, as an assistant professor of nursing, I began to hear from RN graduates who returned to their rural communities to work. Their stories were intriguing to me, as they recounted their transitions into rural nursing. Most of the nurses cited a supportive workplace as key to a sense of security once orientation was over. Still, they also expressed anxiety and fear related to making the right choice for patients. In some cases, these new RN graduates were the only RN on a shift, with other LPNs and non-licensed staff.

Rural nurses must be expert generalists. They have faced limited professional education and continuing education opportunities, but must know how to interface services between hospital and community based-services and must be comfortable navigating rural social structures (NRHA, 2005b, p. 1). The national nursing shortage has impacted rural areas especially, where it has been difficult to recruit and retain qualified registered nurses (NRHA, 2005b). While rural health care settings shared similar struggles as urban health care settings with regard to an aging nurse workforce and

nursing shortages (NRHA, 2005b), these settings faced specific trials due to their rural situations (McCoy, 2009; NRHA, 2005b). Rural populations tended to be poorer, had relatively more elderly and children, and a greater proportion of under and un-insured (NRHA). Approximately 25% of the population lived in rural areas (NRHA, 2005a), yet only ten percent of the nation's physicians chose rural settings for practice. Federal and state reimbursements to rural facilities have not been equitable, despite the fact that rural health care facilities were a veritable safety net for their clients (NRHA, 2005a), which compounded recruitment and retention strategies of all healthcare workers in these settings.

Nurses have made up the largest number of direct providers—making decisions, and coordinating care of the patient in rural and urban acute care hospital settings. Their decision making was impacted by a variety of factors: clinical expertise; standards from professional organizations, governmental mandates, and accrediting bodies; patient preferences, and the healthcare setting in which the nurse practiced (Tanner, 2006).

Educational Preparation and Clinical Decision Making

Passing the National Council Licensure Examination-Registered Nurse (NCLEX-RN®) upon graduation from an accredited program of nursing indicated entry-level competence for beginning nursing practice (National Council of State Boards of Nursing [NCSBN], 2008). Although this criteria gave a legal definition of minimal competence to enter practice, new graduates were generally faced with a limited ability to meet the entry-level expectations for safe practice (del Bueno, 2001, 2005; Li & Kenward, 2006). With the increasing awareness in our nation of the need to change health care delivery systems (Finkelman & Kenner, 2009) accrediting bodies for

professional programs of nursing, such as American Association of Colleges of Nursing ([AACN], 2008), and the National League for Nursing ([NLN], 2005) have called for reforms in nursing education. These organizations emphasized the need to foster critical thinking in nursing students. Scheffer and Rubenfield (2000) developed a consensus statement from a panel of 55 experts from nine countries in order to define critical thinking in nursing education:

Critical thinking in nursing is an essential component of professional accountability and quality nursing care. Critical thinkers in nursing exhibit these habits of mind: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection. Critical thinkers in nursing practice possess the cognitive skills of analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting and transforming knowledge. (p. 357)

Where educators once lamented the education-practice gap, they were now faced with the reality of a practice-education gap (Benner, Sutphen, Leonard, & Day, 2010) wherein the nursing practice changes out-paced the corresponding changes made to nursing curriculum. Benner et al. (2010) pointed to the need for nurse educators to facilitate skilled decision-making through coaching students in prioritizing and developing strong rationale in their clinical decision making. Nursing educators were encouraged to develop a science of nursing education which documented the effectiveness and meaningfulness of current teaching practices (NLN, 2005). The teacher-centered classroom no longer served nursing students who needed to develop higher order thinking skills in order to recognize how systems respond to specific health problems within a variety of healthcare arenas.

The nursing education literature revealed patient outcomes were improved by nurses' supported critical thinking and decision making (Aiken, Clarke, Sloane, Lake, &

Cheney, 2008; AACN, 2008; Levin & Feldman, 2006; Vollers, Hill, Roberts, Dambaugh, & Brenner, 2009); thus, the impetus to facilitate and improve critical thinking was always an aim of the nursing curriculum (Benner et al., 2010; Billings & Halstead, 2009; Keating, 2005; Levin & Feldman, 2006). Despite this call for reform, nursing curriculum continued to focus on content rather than important concepts which are actually used in real nursing practice (Benner et al., 2010). Studies by Giddens (2007) and Secrest, Norwood, and Dumont (2005) supported this proposition as they revealed nurses in practice used only a fraction of the 120 health assessment techniques taught in typical health assessment courses.

What of the settings for these educational activities? Nursing students typically attended programs of study in urban settings; consequently, this was also where their clinical experiences have occurred. In urban settings students may have been exposed to electronic charting, high-tech diagnostic equipment, bedside monitoring, and point of care testing devices. This technology was not always available in rural settings. For nursing students who stayed within urban settings for their employment, there was an obvious advantage to having a familiarity with the surroundings from educational experiences there. Many urban centers also provided for mentoring or residency programs wherein the new graduate is paired with an experienced nurse for up to a year. These residencies promoted competence, critical thinking, organizational skills, time management skills, and autonomy (Molinari et al., 2008). Staffing situations in a rural health care setting, however, may not have allowed for such an extensive orientation period.

Decision Making Models

The ability to make decisions was underscored in definitions of EBP (Polit & Beck, 2006; Ritter, 2001; Rycroft-Malone et al., 2004; Sackett et al., 2000; & Sigma Theta Tau International, 2008). Through three decades of research on the topic of critical thinking and clinical judgment, Tanner (2006) found that the traditional nursing model used in nursing education did not account for the complexity of clinical judgment used by beginning and experienced nurses (p. 204). Nursing educators were faced with the fact that graduate nurses were entering complex and often highly technical health care environments, wherein they were required to problem solve and make decisions. Therefore, they not only needed a strong knowledge background, they were also required to integrate available evidence, clinical judgment, and patient preferences as they planned, implemented, and evaluated patient care outcomes (AACN, 2008, p. 16).

A variety of research related to decision models can be found in the literature (Anderson & Wilson, 2008; Choate, Barbetti, & Currey, 2008; Rashotte & Carnevale, 2004; Tanner, 2006; Thompson & Dowding, 2002). Some models sought to describe how decisions should be made in a very prescriptive way. Other models described normative procedures for how decisions were made. Descriptive models, on the other hand, explained how decisions were made, as viewed through a phenomenological lens. An example of this model would be the Naturalistic Decision Making model (Zsombok & Klein, 2009).

The Naturalistic Decision Making (NDM) model served as a descriptive framework for perspective on the complexities related to clinical decision-making. The focus in NDM was on how people used their knowledge and experience to assess

complex and uncertain conditions, taking appropriate action. There were four themes identified in NDM: (a) task and setting involved ill-structured problems set in dynamic and changing environments, often in high-stakes situations; (b) the focus was on situation awareness, diagnosis, and strategies toward decision making, rather than the moment at hand; (c) subjects were experienced; (d) the purpose was to describe, not prescribe strategies used by persons in realistic settings (Zsombok & Klein, 2009, p. 30).

In this particular research, the theme of task pertained to the multitude of tasks, or rather decisions around tasks, in which registered nurses engaged in a rural hospital, ranging in difficulty from the very simple, to the very complex. When decisions have been studied in their natural environments, the decisions were considered situated; those that could not have been separated from impinging environmental and social factors. Of particular interest in the healthcare setting was the fact that part of the complexity surrounding decision making lay in the context. That context was ever changing, with the patient, their family, the history of pre-existing illness (including mental illness) the team working with the patient, and the healthcare setting. Therefore, cookie cutter templates for decision making have not been so easily adaptable. Healthcare decision making was also described as unique in that decisions were often high-stakes and time-pressured, with major personal consequences to both practitioner and patient (Zsombok & Klein, 2009). As rural nurses were presented with challenging patient situations they have been required to engage in problem solving using a generalist thinking system—anticipating what symptoms meant to several systems and age groups (Molinari et al., 2008). For example, the registered nurse may have served as the respiratory therapist, lab technician, ward clerk, and social service reference on his or her shift. Indeed, the nurses who

practiced in rural hospital settings were required to perform in a number of clinical specialty areas with skill and expertise (McCoy, 2009; Nayda & Cheri, 2008). In some instances, these nurses practiced without on-site medical staff, wherein they initially managed emergencies until medical staff and reinforcements arrive (Hegney & McCarthy, 2000). For this reason, it was imperative to explore the variability in how rural nurses made decisions related to their environment.

Novice Nurses

Critical thinking, which informs clinical judgment and ultimately clinical decision making, has been considered an important skill of graduates of accredited programs of nursing. Newer nurses typically have not had confidence in their decision making skills (Duchscher, 2001; Ferguson & Day, 2007). Instead, new nurses tended to defer to more experienced nurses or referred to policy and procedure manuals when faced with clinical decisions (Ferguson, & Day, 2004). The ability to make such decisions was augmented by expertise (ANA, 2004; Polit & Beck 2006; Sackett, Rosenberg, Gray, Haynes, & Richardson, 2007; Sigma Theta Tau International, 2008). However, the rural hospital setting often required that the nurse be proficient in a variety of specialties with only sporadic opportunities for exposure to these specialized patient situations (Squires, 2002; Nayda & Cheri, 2008; Keahey, 2008). Ferguson and Day (2004) suggested, “until new nurses are able to identify patient values in the context of practice and to use their clinical judgment, they are unable to fully implement evidence-based practice” (p. 491). While nurse educators have been charged with providing a rich clinical and classroom experience in order to facilitate students’ clinical reasoning skills, research has indicated

the newly graduated novice nurse was in need of a great deal of support—especially within the first year—in order to feel confident in decision making (Duchscher, 2008a).

Benner's seminal work (1984) was supported by others (Duchscher, 2001, 2003, 2008 a,b; Dyess & Sherman, 2009) in describing the struggles new graduates experienced as they transition into their roles as registered nurses. The literature revealed accounts of newly graduated nurses and seasoned nurses leaving the profession for reasons including oppression, horizontal violence, stress, and anxiety (Baltimore, 2006; Boswell, Lowry, & Wilhoit, 2004; Duchscher, 2001). Benner (1984) described theoretical staging of acquisition of clinical competence, which acknowledged novice nurses did not have a clear understanding of the new situations in which they were expected to perform. This was supported by Duchscher (2008b) who described a process of becoming in three stages, spanning 12 months (p. 444). Duchscher based her transitional theory on the work of Kramer (1974), Benner (1984), and Kelly (1998), along with her own work with new graduates (2001; 2003; 2008 a,b). Duchscher's work centered on the role adaptation of new graduates in urban hospital settings. Typically, by 12 months post-orientation, new graduates were at a point of knowing, wherein they felt comfortable with their roles, responsibilities and routines, even to the point of feeling confident in their ability to answer questions and assist others (Duchscher, 2008b, p. 447). For this particular study, participants who had completed orientation, but who had not yet reached their two-year anniversary of employment, were interviewed.

The process of utilization of evidence-based practice (EBP) was based on decision making. It was comprised of that which "...involves making clinical decisions on the best available evidence, with an emphasis on evidence from disciplined research"

(Polit & Beck, 2006, p. 499). The American Nurses Association [ANA] further described the use of EBP as “a process founded on the collection, interpretation, and integration of valid, important, and applicable patient-reported, clinician-observed and research-derived evidence. The best available evidence, moderated by patient circumstances and preferences, is applied to improve the quality of clinical judgments” (ANA, 2004, p.17). Accrediting agencies and professional organizations for nurse educators emphasized the importance of fostering critical thinking within the nursing curriculum, yet most new graduates were, at a minimum, in need of a great deal of social support and orientation in order to begin to feel confident in decision making. An important component of decision making was clinical expertise (ANA, 2004; Polit & Beck, 2006; & Sackett et al., 2007) Therefore, the novice nurse in particular, faced unique challenges related to care decisions in rural settings, where the presenting problems are varied across a number of specialty areas, and across the lifespan.

Purpose of the Study

The purpose of this study was to explore the decision making experiences of the rural novice registered nurse, thereby generating conceptual development toward a theory relating to the complexities of decision making in a rural hospital setting. Thematic analysis and conceptual development toward substantive theory of clinical decision making in a rural acute care setting were developed from in-depth interviews of 12 novice nurses located at nine critical access hospitals within a North Central state. This knowledge was important for both educators of registered nurses and staff development personnel who seek to recruit and retain registered nurses in their rural hospitals.

Research Questions

The research questions for this study were derived from the Naturalistic Decision Making model. The Naturalistic Decision Making (NDM) framework allows for exploration of the participants' experiences, rather than prescribing a model for decision-making. Therefore, it was very appropriate for use in qualitative research. This researcher was particularly interested in support for decision making, in terms of cues, of which the participant may or may not have been consciously aware. The research interview process was guided by two questions:

1. What cues are used by novice rural registered nurses in order to make clinical decisions?
2. What are the sources of feedback which influence subsequent decision making for processing of cues for these novice nurses?

Significance of the Study

The ability to think critically (thereby making sound decisions toward the improved health and well being of the client) has been considered an essential skill of the professional nurse. How decisions are made should be a cause for concern for health care providers as well as health care consumers. Across all disciplines in health care, there has been a call to reform education toward the delivery of evidenced-based care—that is using the best available evidence, with consideration for one's own expertise, available resources, and the client's preferences, to inform clinical decisions. While rural nurses attended the same types of nursing programs as their urban counterparts, their orientation and work experiences often differed in terms of available resources and social support. Yet, even as novice nurses, they must be able to function, to make decisions as they

interpret patient problems, and act upon them. The processes by which professional nurses come to clinical decisions should be a common practice question—regardless of the patient outcome. Because nurses in rural settings were often the first to assess and interpret the patient’s clinical presentations, an understanding of how they experienced decision making was important in terms of educational preparation, resource allocation to rural areas, institutional cultures, and patient outcomes. This research revealed the unique transitional needs, as well as potential teaching and learning strategies to enhance clinical decision making in nurses practicing in rural settings.

Scope of the Study

This study, grounded in the data gathered from 12 novice nurses, focused on cue utilization toward clinical decision making within the context of rural critical access hospitals (Figure 1).

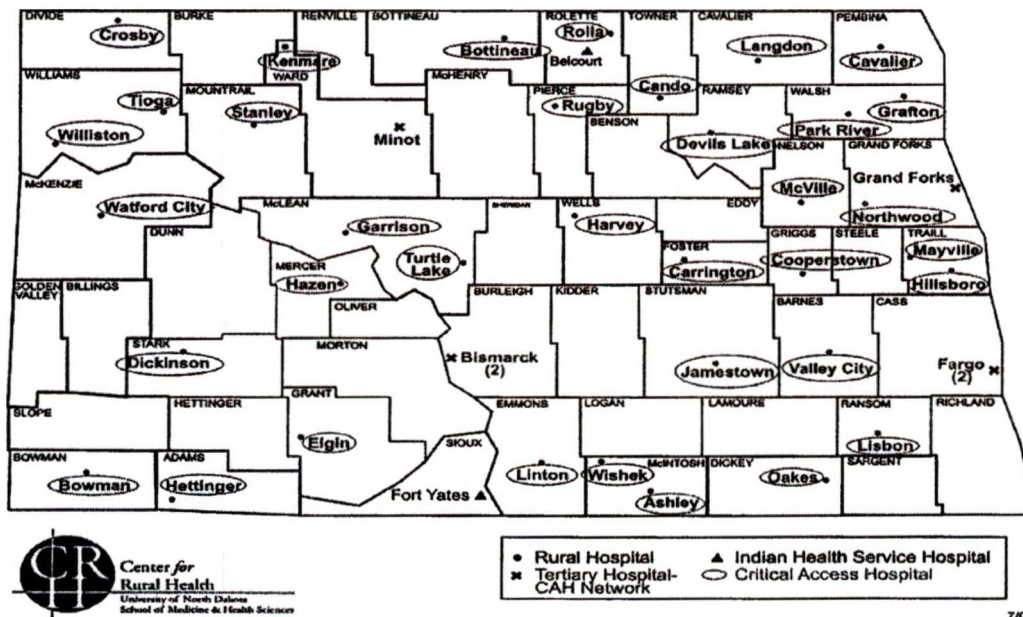


Figure 1. Hospitals and critical access hospitals in North Dakota (Center for Rural Health, 2009).

Definition of Terms

The following terms were used in this study:

Clinical Decision-Making: Decision-making in this study related to clinical decisions made by nurses in the course of patient care. Research indicated nurses use past experiences in their decision-making process by comparing the current situation to previously experienced situations held in their memory (Benner, Tanner, & Chelsa, 2009; Cioffi, 2001). Where decision-making involved complexity, studies have shown decision-making strategies were used that were dependent on experiences (Cioffi & Markham, 1997; Cioffi, 2001). Decision making differed from critical thinking, in that there was an emphasis on action.

Critical Access Hospital: A Critical Access Hospital (CAH) was a hospital certified to receive cost-based reimbursement from Medicare. The reimbursement that CAHs received was intended to improve their financial performance and thereby reduce hospital closures (Rural Assistance Center, 2009). According to the North Dakota State Rural Hospital Flexibility Program (North Dakota Department of Health, [NDDOH], 2008), a rural hospital may be designated as a CAH if the hospital is: a) more than 35 miles from any other CAH or hospital, b) more than 15 miles from another hospital or CAH in mountainous terrain or in areas with only secondary roads, or c) a designated a necessary provider under criteria published in the state CAH plan. In addition, the CAH must offer 24 hour emergency care, and provide no more than 25 beds for acute care, may not keep inpatients longer than 96 hours, unless inclement weather or emergencies (NDOH).

Cue: A pattern recognized by an individual which aided in decision making. Pattern, or cue recognition explained, in part, the ability of persons to make decisions without conducting deliberate analysis (Klein, 2003).

Novice Nurse: An RN who completed orientation and practiced no more than two years post-orientation was considered novice for this research. This definition took into account Duchscher's (2008b) descriptions of novice nurses, who were just beginning to feel comfortable in the role of nurse at 12 months post orientation.

Rural: For the purposes of this study, rural was defined as an area existing outside of urban areas, urban clusters, and metropolitan statistical area (MSA). The U.S. Department of Agriculture ([USDA], 2008) used data from the U.S. Census to formulate this definition.

Rural Nurse: A rural nurse was defined in this study as an individual, male or female, who possess a registered nursing license (RN). The nurse may have graduated from an Associate Degree program (AD) or a baccalaureate (BSN) program. This individual was practicing in a rural area hospital as defined under the USDA definitions for rural areas.

Unlicensed Assistive Personnel (UAP): Persons who may or may have been certified, such as nursing assistants, paramedics, and emergency medical technicians, but who are not licensed by the state.

Assumptions

As with any study, there were an expected number of assumptions. For this research, it was important to have an understanding of the unique role of the rural nurse. Although the researcher was a nurse with 24 years experience, she has practiced only

briefly as a rural nurse. Research about rural nursing by a nurse not experienced in that role considered these assumptions.

1. Due to the nature of qualitative research, and despite best efforts through bracketing and journaling, researcher assumptions may have influenced either research outcomes and/ or participant responses.
2. Novice rural nurses did indeed participate in complex clinical decision making.
3. The experiences and realities of a given phenomenon were best understood and related by those persons experiencing them.
4. Novice nurses were able to identify organizational and educational supports for decision making.

Delimitations

Delimitations defined the parameters of the investigation. This research was carried out in rural hospital settings with novice nurses. The following delimitations were important to the design, execution, and analysis of this research.

1. Parameters for novice nurse were defined by Duchscher (2008b) for this study, to be nurses who were one-two years post-orientation.
2. Researcher experience in the field of nursing may or may not have impacted theoretical sampling and, therefore, theoretical saturation.
3. The research took place in one North Central state within nine rural critical access hospital settings.

4. The research was designed to explore experiences of novice nurses, with no more than one to two years experience post-orientation. Twelve participants were available for this study within this geographical area.
5. The research took place over a period of five months.
6. The Health Insurance Portability and Accountability Act (HIPPA) existed to protect patient information. Observations in hospital settings included patient observations unless patients refused under HIPPA.

Theoretical/Conceptual Framework

The framework for this study stemmed from the limited scope of research needed to understand clinical decision making in situations where rural nurses, who were often the first to triage and treat patients in rural settings, were called upon to draw from experiences, when indeed, experience may have been lacking. The underlying assumptions guiding this study were derived from Duchscher's (2008b) stages of new nursing graduate professional role transition. The Naturalistic Decision Making model, with an emphasis on task, person, and environment (Zsombok & Klein, 2009), provided the conceptual framework for the research questions.

Organization of the Remainder of the Study

The remainder of this dissertation was organized into four chapters. In Chapter II, I described an overview and analysis of current literature related to models for decision making, graduate nurse transition models, educational and organizational influences, and rural health care challenges in terms of recruitment and retention of new graduates. The use of grounded theory as a research method for exploring how novice nurses experienced decision making in rural hospital settings was explained in Chapter III. The

narrative accounting of findings with analysis was provided in Chapter IV. Chapter V contained my research findings and conclusions along with recommendations for researchers, nurses in practice, and nurse educators.

CHAPTER II

LITERATURE REVIEW

As a part of this qualitative research design, I informed myself through review of the extant literature. I remained aware, however, that this research was not a linear process. Throughout the ongoing analysis of data, the literature served to produce sensitizing concepts and as a source for developing categories and properties. According to Creswell (2007) literature review has its place in the qualitative research design as it “can provide the rationale for the problem and position one’s study within the ongoing literature on the topic” (p. 102). In Chapter II the normative, descriptive, and prescriptive models of decision making were explained as they related to nursing research. The impact of organizational, educational, and experiential influences on nurse decision making was explored, as were the issues concerning health care delivery in a rural setting.

Clinical Decision Making

All nurses make decisions. There is a professional expectation of nurses to use the best available evidence in their clinical decision making, which has of late been succinctly described as evidence-based practice. The idea that nurses were indeed decision makers who must support what they do with rationale is not new. The American Nurses Association (ANA, 2004) code for nurses mandated that nurses keep current in research in order to make decisions with and for clients. Decision making in nursing has

been studied in a myriad of ways including as it related to critical thinking (del Beuno, 2005); judgment (McCarthy, 2003; Tanner, 2006); ethics (Greipp, 1992); and levels of expertise (Benner, 1984; Cioffi, 2001; del Beuno, 2005).

Models of Decision Making

Within the literature there were numerous models available to guide the process of clinical decision making. These models were most commonly aligned within three categories: normative, descriptive, and prescriptive (Thompson & Dowding, 2002). Normative models were based on positivist statistical approaches, mainly concerned with outcomes, but not necessarily concerned with the process of decision making. Prescriptive models were aligned with the cognitive processes of problem solving, while descriptive models illuminated how decisions are made from either a naturalistic or interpretive perspective (Thompson & Dowding, 2002).

Normative Models

Because clinical decision making was considered both complex and contextual (Thompson, 1999; Zsombok & Klein, 2009), the normative model focused upon outcomes, in particular, may have impeded discovery of phenomena in the processes associated with decision making for both practice and education. In a study conducted by Thompson et al. (2007), nurses were presented with case scenarios containing patient assessments, history, and vital signs. The nurses were asked to make decisions, under time constraints, related to observed risks for cardiac events. Even with suggested protocols in place for the scenarios, the nurses varied considerably in their risk assessment (Thompson et al., 2007, p. 601). This study revealed intuitive unaided decision making, in the assessment of risk, was not as accurate as supported decision

making. However, the researchers failed to account for the differences amongst these nurses, other than to show a correlation between critical care experience and assessment of risk. In another study conducted by Choate et al. (2009), decisions to wean and decannulate tracheostomies were driven by nurse judgments due to the lack of available protocols that would support their decision making. The Australian nurses' decisions, which were based on their assessments of clients' risk of respiratory compromise, resulted in outcomes comparable to the published data on decannulation failure (Choate et al., 2009, p. 12). The researchers evaluated patient charts for indicators, such as head injury, which correlated with a higher decannulation failure rate; however, they did not report possible reasons for failures in nurses' clinical judgment and decision making. For example, it was not clear why the nurses did not take into account the fact that head injured clients are at high risk for respiratory compromise.

Prescriptive Models

Prescriptive models took normative approaches a step further in seeking to improve judgment and decision making by examining how individuals make their decisions (Thompson & Dowding, 2002). Decision analysis models (Rashotte & Carnevale, 2004), cognitive continuum theories (Standing, 2008), and statistical decision making (Tanner, 2006) were examples of such models. The basic tenet of these prescriptive models were in line with the knowledge management view of decision making in that they were associated with accuracy, precision, sensitivity, positive predictive value, and likelihood ratio (Rashotte & Carnevale, 2004, p. 163.) This recipe ready line of thinking was enticing in an age where evidence based practice was an expectation. Anderson and Wilson (2008) studied clinical decision support systems

(CDSSs), an area of expanding research. O'Neill, Dluhy, and Chin (2005) sought to analyze how a CDSS such as the Nurse Computer Decision Support (N-CODES) system would support decision making in novice nurses based on two models developed by the researchers. The Clinical Decision Making Model ([CDMM] O'Neill et al., 2005) and the Novice Clinical Reasoning Model ([NCRM] O'Neill Dluhy, Hansen, & Ryan, 2006) were used to examine clinical decision making by nurses. All nurses (experienced and novice) were able to identify the worsening condition of a patient in the scenarios presented to them. This was attributed in part to clinician regret. Clinician regret was defined as the tendency to recognize and remember worst case scenarios in order to avoid a sense of regret in neglecting patient symptoms (O'Neill et al., 2006, p. 33). Novice nurses differed from experienced nurses in their ability to hone in on pertinent cues and make decisions quickly. The N-CODES system was tested for satisfaction (Chin, Sosa, & O'Neill, 2006) and usability with nurses in an acute care setting. The participants, whose experience ranged was from 2-25 years, were asked to navigate the handheld CDSS device while solving patient problems. The participants were overwhelmingly satisfied with the N-CODES system. Unfortunately, this research did not reveal impact on decision making in real patient situations.

Studies of the use of prescriptive models for decision making were often relegated to laboratory-type settings using case scenarios and simulation (Tanner, 2006). However, Frantz, Gardner, Specht and McIntire (2001) related success with a decision protocol in the treatment of pressure ulcers. This longitudinal study revealed organizational support, along with improved patient outcomes, as key to the sustained use of the decision protocol. Literature review revealed more anecdotal suggestions, than research findings.

Perhaps this was due to findings which indicated there were still flaws in the process of decision making in real-world settings, even when the clinician was able to support his or her decisions with decision trees, and CDSSs (Rashotte & Carnevale, 2004; Spring, 2008; Zsombok & Klein, 2009).

Descriptive Models

Information processing theory was described as an influential descriptive model of decision making in both medicine and nursing (Rashotte & Carnevale, 2004; Zsombok & Klein, 2009). The nursing process (ANA, 2004), and cognitive continuum (Bond & Cooper, 2006), were two of the many descriptive models. This hypothetico-deductive method of decision making varied amongst models, but generally included: (a) gathering information and organizing cues into patterns; (b) formulating an initial hypothesis; (c) interpreting cues and confirming or refuting hypothesis; and (d) making judgments which were supported by the best available evidence (Thompson, 1999, p. 1223). Offredy (1998) revealed the importance of pattern recognition in her study of nurse practitioners. She continued her research (Offredy, 2002) using information processing theory to frame a study comparing problem solving and decision making between general practice physicians and nurse practitioners. Hypothesis evaluation was found to be the critical component in the decision making process (Offredy, 2002, p. 538). There were notable differences between the general practice physicians (GPs) and the nurse practitioners (NPs) in this study with respect to the number of cues required to arrive at a decision. The author speculated that the NPs used more cues and took longer to arrive at decisions related to their novice position as compared to the more experienced GPs. She suggested that the GPs were able to chunk information more efficiently and were able to recognize

patterns more quickly than their NP counterparts. Overall, the study revealed more similarities than differences between the two disciplines as they used think aloud techniques to reveal their cognitive processes in problem solving and decision making during scenarios (Offredy, 2002).

In nursing, the terms clinical decision making, critical thinking, clinical problem solving, and nursing process were used interchangeably (Benner, Tanner, & Chelsa, 2009). The literature from decision theory related that decision making was a very analytical process, stemming from its roots in 18th century Bayesian philosophy (Earman, 1992). Traditional decision theory tended to ignore the individual's state, as well as the context of decision making. The terminology in many of the studies cited in this literature review related to normative and prescriptive models which gave credence to the idea that decisions were made in a very orderly analytical manner; thus, if the right patterns were recognized, or if the right formula was followed, then decisions would be sound. However, several studies have revealed decision making to be less than an orderly process, as humanistic and intuitive factors played a role in this process as well (Benner & Tanner, 1987; Benner et al., 2009; and Cioffi, 2001). For example, Tanner (2006) analyzed nearly 200 studies on clinical decision making. She concluded that the nursing process fell short in explaining the processes of decision making used by nurses, because it did not account for context and complexity in clinical situations.

Cognitive continuum theory (CCT) comes from the science of psychology, in which the focus was on judgment (assessing alternatives), and decision making (choosing between alternatives). Cognitive continuum theory was supported by research focusing on both analytical/rational (cognitive) and intuitive/experiential (context) metatheories

associated with judgment and decision making (Hammond, 2000). Hammond has proposed a continuum of different ways of thinking, running from purely analytic to purely intuitive. Offredy, Kendall, and Goodman (2008) used CCT in their research with 25 nurse prescribers using case study scenarios to analyze their modes of inquiry in coming to decisions about prescribing. While all 25 participants rated themselves as knowledgeable in their field, only a small majority were able to arrive at correct prescribing decisions in the scenarios.

Novice to Expert Decision Making

del Beuno (2005) contended there was little difference between expert and novice nurses, with respect to knowledge content. In her research, she sought to understand why new nurses were able to do well academically, even passing the requisite licensing exam. The differences, according to her, and others (Benner, 1984; Benner & Tanner, 1987; Benner, Tanner, & Chelsa, 2009; Cioffi, 2001; Duchscher, 2003; Dyess, & Sherman, 2009) were related to the ability of experts to accurately recognize patient problems and to subsequently choose correct interventions.

Research by Benner has most notably been associated with the concept of intuition as a unique characteristic of the experienced decision maker. "Conscious, rational calculation is typically required of the new graduate, where experience is absent, and the nurse is left to 'figure it out' " (Benner et al., 2009, p. 210). In her first novice to expert study, Benner (1984) conducted paired interviews with newly graduated nurses and their preceptors. In addition, she interviewed experienced nurses and senior nursing students in order to further describe performance at various levels of experience, highlighting intuitive thinking as a hallmark of the experienced practitioner. This model

has served as a framework for research conducted by Benner and associates over nearly three decades (Benner et al., 2009).

Schön (1983) studied the role of intuition and reflection in medicine, arguing that professionals struggle with utilizing only research based knowledge, as it is generated in context-free situations and does not account for what practitioners bring to the decision making task in terms of experience. Both Schön and Benner strongly posited differences between experienced practitioners and novice practitioners related to their use of intuitive judgment rather than solely on analytical principles.

Freshwater, Taylor, and Sherwood (2009) contended experience did not just happen due to thought. One must think about the action, think about the thinking, and think about this action later (after further experience). These researchers carried out a qualitative case study with novice nurses to explore the use of reflection and narrative as a clinical learning intervention to improve critical thinking. Although this study did not evaluate decision making, per se, it did reveal improved confidence and an increasing awareness and appreciation for context as it impacts decision making in patient care.

Rashotte and Carnevale (2004) used Bunge's epistemological framework for decision making (based on scientific realism) as they analyzed the literature for decision making model appropriateness for medicine and nursing. These authors noted that both the positivistic and the humanistic models of decision making fell short in explaining the complexities involved in clinical decisions. Naturalistic Decision Making (NDM) provides a framework for studying the complexities of decision making in context (Zsombok & Klein, 2009).

Naturalistic Decision Making ✓

Use of NDM as a theoretical framework allows for discovery of phenomena related to how decisions are made by real people in real settings. Such studies have served to enrich the literature on decision making, subsequently allowing for further tests of the kind of decision-making that occurs in practice. Since the introduction of NDM in 1989 (Zsombok & Klein, 2009, p. 4) new models and theories have developed from NDM. These included Recognition/Metacognition, Recognition-Primed Decision Making (RPD), Situation Awareness (SA), and Recognition Primed Decision Making as Schemata Driven Mental Modeling (Zsombok & Klein, 2009, p. 7-8). The NDM model has been used to frame research and to design decision-aids across disciplines ranging from the armed forces, medicine and nursing, aviation, and business and industry. Currey and Botti (2003) suggested NDM was an ideal framework for research into the complex tasks involved in clinical decision making. Naturalistic decision making emphasized factors that affect the decision maker, namely knowledge and experience, complexity of the task at hand, and environmental factors. Bond and Cooper (2006) used RPD as a model to systematically review literature related to ophthalmic incidents. The authors claimed RPD describes the decision process of experts in emergency situation, thereby creating a foundation for emergency decision making (Bond & Cooper, 2006, p. 1023).

There was scant literature available on the use of NDM in nursing research, using the key phrases “naturalistic decision making”, “recognition primed decision making”, and “nursing”. The attributes of this descriptive inquiry may offer richer perspectives in decision making related to the links between task, person, and environment. The reality in healthcare is that of a complex, often time-constrained, situation. The interplay of task

complexity, personal characteristics and environment, therefore, cannot be dismissed when seeking to understand decision making. Situation awareness was of particular interest, as it has been posited that novice nurses do not have the breadth of experience with which to draw upon and facilitate recognition of important cues (Benner et al., 2009; del Beuno, 2005; Offredy et al., 2008). Most descriptive studies of decision making acknowledged the importance of cue recognition and or situation awareness (Benner et al., 2009; Oliver, 2007). In addition, environment was acknowledged as a factor impacting decision making (Benner et al., 2009; Oliver, 2007; Zsombok & Klein, 2009). Because nurse decision making has not specifically been explored in rural settings, information as to how this organizational and environmental influence might impact decision making was of use from both a practice and an educational perspective.

Organizational Influences ✓

Evidence has supported the relationship between organizational structure and process as it impacted nurse decision making (Krairiksh & Anthony, 2001; Lipshitz & Popper, 2002; Marchionni & Ritchie, 2008). This should matter to consumers, educators, and policy makers for health care. The International Council of Nurses (ICN), along with the Florence Nightingale International Foundation (FNIF), conducted research around the world—talking with nurses, patients, administrators, health care leaders, and physicians about the nursing shortage (ICN, 2006). There were several reports related to this project, but the report, *The Global Nursing Shortage: Priority Areas for Intervention* (2006) highlighted organizational impact specifically, relating the workplace to be just as influential as salary, in terms of nurses' decisions to stay or leave. Nursing leadership and organizational performance were also addressed. In as much as nurse experience and skill

counted toward appropriate clinical decisions for clients, organizational support and reinforcement were important as well. Patient lives have depended on organizational environments which were supportive of nurses as decision makers, provided for professional development and recognition of excellence, fostered excellent communication amongst providers, and provided for appropriate staffing ratios (Aiken et al., 2008; Vollers et al., 2009). This was an important finding as Benner et al. (2009) noted clinical decisions made by nurses must be clearly articulated and supported by evidence (e.g., assessment findings) in order to garner appropriate physician intervention.

An organizational culture was defined as one that “serves as a social control mechanism that sets expectations about appropriate attitudes and behaviors of group members, thus guiding and constraining their behaviors” (Sleutal, 2000, p. 55). Structure-process-outcomes models, such as the Nursing Role Effectiveness Model (NREM) (Irvine, Sidani, & McGillis-Hall, 1998), highlighted the nursing practice in relationship to the roles nurses assume in health care, linking patient and system outcomes to those role functions (Irvine-Doran, Sidani, Keatings, & Doidge, 2002). In their research related to healthy work environments, Kramer and Schmalenberg (2008) found several key points related to evidence of such an environment, including: the work environment of nurses must be improved in order for patients to receive safe care and in order for nurses to stay in the profession; productivity and specifically, the ability to deliver quality patient care, were strongly correlated to job satisfaction. Their research, which was published as an eight article series over several volumes in *Critical Care Nurse*, contributed a wealth of information related to nurse-physician relationships, nurse manager support, clinically competent peers, and structures and practices to support education in the work place. As

the literature continued to reveal nurses' feelings of dissatisfaction related to factors including anxiety and stress, disempowerment, and horizontal violence (Baltimore, 2006; Olender-Russo, 2009; Simons, 2008; Duchscher, 2001), it was vital that organizational structure was examined in relation to decision making in nursing. Further, if having the right things (structure) was related to the nurses' skill, experience, and knowledge (Irvine, Sidani, & McGillis-Hall, 1998), then each of these components should have been developed during pre-licensure education of the nurse. "The socialization of new nursing graduates into the dynamic culture of today's hospital creates significant challenges not only for nurses, but also for institutions of higher education, healthcare administrators, and policy makers across the country" (Duchscher & Myrick, 2008, p. 192).

Educational Influences ✓

Hersh and Morrow (2005) argued meaningful education had the power "to enrich and deepen the life experience, to open new vistas for consideration, and to develop critical thinking as a habit of mind" (p. 197). In other words, we (educators) have had a responsibility to help our students think about bigger-picture issues—not just about the content of the discipline in which they have studied. We have to help students think about the context in which they will practice. The nursing curriculum has played a part in how nurses acquire skill in making decisions. Decision making began with the educational process (Baxter & Boblin, 2008; Baxter & Rideout, 2006).

Simulation has been used widely as an innovative and interactive method to increase students' decision-making skills in replicated real-life experiences. Research was being conducted regarding the effect of simulation and the development of critical thinking and clinical judgment. Lasater and Nielsen (2009) found simulation helpful to

students' interpretation and response to patient findings within the clinical preparation dyad and triad concept-based learning activities; however, knowing how to respond to simulated patient situations was more difficult for respondents (p. 445). Tanner (2006) suggested the use of the Clinical Judgment Model as a guide for debriefing after simulation activities. She asserted that the model helped students recognize failures in their thinking, and notice factors in the situation that may have contributed to that failure. For example, the students identified what caused them to lose focus on clinical reasoning, thereby impacting decision making during the simulation (Tanner, 2006, p. 209). Although simulators provide a variety of opportunities for hands on learning, they do not replace working with real patients and interacting with colleagues (Childs & Sepples, 2006).

Clinical experiences in healthcare agencies provided interaction with real patients and staff. Thoughtful clinical learning activities must still be constructed, however, in order to facilitate learning and critical thinking. A number of nursing education experts have authored resources which provided suggestions for a variety of purposeful activities designed to engage students in analysis and problem solving as they reviewed real patient lab values, medications, and physical assessments (Billings & Halstead, 2009; Caputi & Englemann, 2005; Levin & Feldman, 2006; Schultz, 2009). Rather than memorizing lab values, for example, the student nurse learned how to manage the whole patient with a particular lab value variance. There have been studies surrounding teaching and learning strategies and the facilitation of critical thinking and clinical decision making (Platzer, Blake, & Ashford, 2000; Wade, 1999). One of the disadvantages of clinical experience on an agency site, such as a hospital surgical floor, was related to the fact that not all

students are able to experience the same learning situations. For example, having the experience of observing and assisting in the resolve of patient respiratory distress, thereby avoiding the condition of patient respiratory arrest, would be an excellent teaching and learning moment. For obvious reasons, not all students would be able to engage in this activity, yet will most likely encounter such a situation in their career.

Thompson et al. (2007) suggested nursing educators focus more on the quality of nurses' clinical experience as well as the quantity when designing learning activities toward the development of judgment and decision making when their research revealed judgment and decision making was largely inaccurate in identifying clients at risk for a cardiac event. Baxter and Boblin (2008) studied how decision making developed in nursing students over their years of Bachelor of Science in Nursing (BSN) education. Students identified five key kinds of decisions related to assessment, intervention, resource, communication, and action. Their study revealed students are making decisions (and sometimes choosing not to make decisions) in their clinical rotations. The authors suggested that nursing faculty carefully evaluate their curricula to facilitate decision making and to ascertain whether students are encouraged and supported in decision making in their clinical settings (p. 348). The latter point was particularly interesting, as some authors reported a lack of mentoring and support for nursing students in their clinical rotations, leading to a decreased sense of competence and confidence (Levett-Jones & Lathlean, 2009; Pollard, 2008).

Other research indicated students viewed faculty as mentors—especially in clinical settings—and that faculty teaching style and behaviors have a direct, sometimes negative, impact on students' learning (Cook, 2005; Saarikoski, Warne, Kaila, &

Leino-Kilpi, 2009). It was no wonder, that new nurses entering their work settings felt frustrated with themselves for “not knowing” and identified themselves as weak in their need to depend upon other, more experienced staff (Duchscher, 2001).

New Graduates and Transition

A landmark work related to transition of new graduates was produced by Dr. Patricia Benner. Benner (1984) introduced the concept that expertise in nursing developed over time, as nurses engaged in more experiences and education. Her work over the last two decades has furthered her premise that nurses can and do acquire skills—knowing how—without necessarily understanding the theory behind practice. Benner’s eventual novice to expert model was framed by the Dreyfus model, originally proposed by Stuart and Hubert Dreyfus in the 1970s (Benner et al., 2009). The Dreyfus model was based on experiential learning and situated performance. Clinical judgment was defined as a key indicator of nurses’ development of expertise (Benner et al., 2009). These researchers noted how the Dreyfus model informed their understanding of clinical judgment as, “...the deliberate, conscious, decision-making characteristic of competent performance....” (Benner et al., 2009, p. 2000).

Benner (1984) was noted for seminal research related to novice nurses; her work uncovered differences between the five levels of transition toward expert performance (Benner et al., 2009). Duchscher (2008a) extended this work, focusing her research on the time spent in transition of the contemporary new graduate into his or her professional role. She endorsed the concept of an approximation of time spent in each phase of transition. Her research trajectory spanned ten years of study on new graduate nurse transition, culminating in the development of *Transition Shock* theory (Duchscher,

2008a). Duchscher's Transition Shock theory extended and supported work by Kramer (1974) who studied transition of new graduates later coined the term "reality shock" as she described reasons new nurses were leaving the profession (Kramer, 1974). Duchscher (2008a,b) related the stark contrast between the performance expectations of the familiar academic setting and the professional practice setting. The Transition Shock theory depicted the initial three to four months post workplace orientation of the new graduate as a stage of "doing" (Duchscher, 2008b). Duchscher posited this was not a linear process, acknowledging the time line may vary for new graduates. She did provide a more succinct definition of time lines for transition of the graduate nurse (Duchscher, 2008b) as compared to Benner et al. (2009). The second stage of role transition, "being", which occurred approximately four to five months post orientation, revealed the new graduate experienced rapid advancement in thinking, knowledge level, and competency (Duchscher, 2008b, p. 445) The final stage of role transition, "knowing", was delineated by a relatively stable level of comfort and confidence in their skill level, roles, and routines (Duchscher, 2008b, p. 447).

Schoessler and Waldo (2006) used Bridges (1980) Transition Management Model as a framework for the Developmental Transitional Model of Newly Graduated Nurses. Bridges, who was a world renowned authority on managing change in the work place (Management Consulting News, 2003), explained key components of his model:

Transition has three phases: an Ending, a disorienting sort of "nowhere" that I call The Neutral Zone, and a new Beginning. If people don't deal with each of these phases, the change will be just a rearrangement of the furniture. And then we say, "It didn't work". (p. 1)

Schoessler and Waldo confirmed the model, noting similar stages of transition as defined by Duchscher (2008b).

Dyess and Sherman (2009) studied novice nurses who participated in a transition program. Their study continues to confirm what others have noted in the literature for years—work place bullying is alive and well (Griffin, 2004; Longo & Sherman, 2007; McKenna, Smith, Poole, & Coverdale, 2003). The authors from these research studies suggested empowering both students and new nurses with ways of responding through educational and role play sessions, curricular infusion of response methods, and even using cue cards with rehearsed responses for specific situations of bullying. If clinical experiences demoralized and oppressed student nurses, it was likely to impact role transition as they graduated and move into practicing nurses (Duchscher, 2008a). This researcher has emphasized “the critical importance of bridging undergraduate curricula with escalating workplace expectations” (Duchscher, 2008a, p. 1).

Björkström, Athlin, and Johansson (2008) found that, although novice nurses in their study saw themselves well equipped regarding traditional components of nursing competence, their self-judgment decreased in components related to the new demands of a professional nurse, including knowledge mastery and contributing to research. This quantitative longitudinal study began with nursing students entering the three-year academic nursing program at a Swedish university. The Nurse Self-Description Form was used at the beginning of the education program, just before graduation and at three to five years after graduation.

Casey, Fink, Krugman, and Propst (2004) used the Casey-Fink Graduate Nurse Experience Survey in a quantitative study of over a three-year period, involving more

than 250 nurses. Six themes were identified across all years of the study. Lack of confidence in skill performance, deficits in critical thinking and clinical knowledge were reported most frequently and most intensely (Casey et al., 2004, p. 307).

There was an abundance of suggestions in the literature for both educational and organizational settings to facilitate the transition and professional development of the new graduate (Casey, et al, 2004; Dyess & Sherman, 2009; Goodwin-Esola, Deely, & Powell, 2009; Winfield, Melo, & Myrick, 2009). A unique collaborative effort has been underway in Florida, among the Christine E. Lynn College of Nursing at Florida Atlantic University (FAU), Blue Cross and Blue Shield of Florida, Palm Healthcare Foundation, and Allegany Franciscan Ministries. These entities worked together in the development of the National Novice Leadership Institute (NNLI), which required a time and financial investment from each program partner. Novice nurses have benefited from the institute through a variety of opportunities to learn important leadership content, discuss their experiences, role play crucial conversations and interact with nursing leaders (Dyess & Sherman, 2009). Among the topics for the 20 educational sessions for novice nurses were clinical and shared decision making and knowledge of evidence and research (Dyess & Shermann, 2009).

Rural Nursing

Nursing practice in rural communities has been associated with an ever present scarcity of human and financial resources (Bushy, 2004). Nationwide, nurses and professional organizations for nurses have voiced concern over the nursing shortage. The Health Resources and Services Administration projected that nursing schools would need increase the number of graduates by 90% in order to meet the demand for more than one

million new nurses in 2020 (U.S. Department of Health and Human Services, 2002). Two major demographic factors are impacting the nurse shortage: the overall growth of the U.S. population that has outpaced the growth of registered nurses and the aging of the population (U.S. Department of Health and Human Services, 2002). Both have resulted in an increased need for healthcare. Some suggested this was not merely cyclical, as shortages have been in the past (Upenieks & Abelew, 2003). Although the nursing shortage was a national issue, rural facilities took longer than urban facilities to fill their nursing vacancies when they are able to recruit nurses (MacPhee & Scott, 2002). Fifty two percent of frontier counties had an RN shortage (Frontier Education Center, 2004), and critical access hospitals reported the number one problem was hiring and retaining nurses (Hagopian, Johnson, Fordyce, Blades, & Hart, 2003). Because rural areas have, in many cases, a compromised base scale for resources, nurse positions are often funded only at a part-time level while they are expected to serve an entire county (Frontier Education Center, 2004). The lack of resources affected the availability of support staff, supplies and equipment, and services offered. This lack of resources also impacted the ability to provide professional development and educational opportunities for rural nurses (Molinari et al., 2008).

Nurse Decision Making in Rural Settings

There was an increased focus on the integration of Evidence Based Practice (EBP) into the continuing education of registered nurses within their work settings (Thomson, Angus, & Scott, 2000; Krugman, 2003; Soukup, & McCLeish, 2008). Decision making was at the crux of EBP, as nurses make decisions to engage in EBP perhaps consciously and unconsciously, depending on their level of expertise.

Professional accrediting and licensure organizations overseeing the quality of the educational preparation of registered nurses contended integration of EBP into the nursing curriculum was an imperative to safe practice in today's healthcare settings (Li & Kenword, 2006; Schultz, 2009). There were a number of studies, however, which indicated a variety of barriers to, and therefore underuse of, EBP by direct care nurses. Some obstacles were associated with institutional barriers, where there were budgetary constraints, a perceived lack of value at the administrative levels for the use of EBP, and a lack of institutional support for nurses to use decision making skills in choosing and applying evidence-based practice (Pravikoff, Tanner, & Pierce, 2005; McCloskey, 2008). Thompson, McCaughan, Cullum, Sheldon, and Raynor (2005) asserted evidenced-based practice was directly connected to decision-making abilities, which are impacted by the context of the situation. Nurse respondents in their study relied on experiential knowledge for clinical judgments in care situations.

Nurses practicing in rural settings experienced many of the same barriers to the use of EBP as their urban counterparts (Olade, 2004). There were unique situational factors in a rural setting which made decision making and the use of EBP a further challenge, however. McCoy (2009) suggested many rural nurses did not have senior nurses as role models who were experienced in research utilization. This modeling and mentoring relationship was considered integral to both recruiting and retaining rural nurses. Rural nurses frequently practiced without the peer-support their urban counterparts experienced (Molinari, et al., 2008). Other factors, such as limited orientation time, along with contrasts between educational preparation in a more high-tech urban setting, and the reality of less technology at the bedside in a rural setting, combined to impact

decision making and the use of EBP in rural settings (McCoy, 2009). Although several nursing journals and EBP Web sites disseminated their findings to health care professionals all over the world, it cannot be assumed that the rural health care setting had access to that technology. No amount of access to information or institutional support is helpful in the absence of the ability to think critically in order to make decisions that would positively affect patient outcomes, however (del Beuno, 2005).

New Graduate Recruitment and Retention in Rural Areas

Keahy (2008) reported standard orientation and residency programs in rural areas did not begin to meet the needs of new graduates. She expressed dismay over her observations that novice nurses, who failed to complete their rural hospital orientation, felt failure in their very first career experience, causing some of them to leave nursing (p. 16). Lea and Cruickshank (2005) indicated previous connection with a rural area and positive experiences with nurses in the rural health care facility during undergraduate preparation were significant factors influencing the graduate nurses' decision to pursue a rural graduate nurse position. Molinari et al. (2008) reported a collaborative effort between expert rural nurses and university based nursing programs to develop a standardized curriculum using monthly seminars for preceptors and mentors, along with information supports for novice nurses. The Rural Nurse Internship lasted one year and both participants and stakeholders reported satisfaction. Most importantly, the hospitals in the project met retention goals for new graduates (Molinari et al., p. 46). Retention was a salient goal, as it was an imperative that new graduates be given the time needed to build confidence in their skills and decision making (Benner et al, 2009; Duchscher, 2008, a,b).

Summary

I have presented a literature review which highlighted a number of studies related to decision making models, novice nurses, and transition in Chapter II. The literature revealed clinical decision making models used in nursing have utilized mainly descriptive models. Many of the studies were conducted using simulations and/or paper scenarios in order to observe the processes of decision making. Zsombok and Klein's (2009) Naturalistic Decision Making (NDM) model was not found to have been used extensively in nursing, but would provide for an opportunity to analyze how novice nurses experience decision making in real life settings, as opposed to simulated situations. The processes and the outcomes may be observed using this framework. The NDM model emphasized the impact of context and situated decision making and can be used to structure questions for nurse and other stakeholder participants, such as administrators and co-workers. In addition, the organizational setting has been cited as an influence in nursing judgment and decision making. Therefore, a model focused on context was an imperative for this research design.

Transition of new graduates was a heavily researched topic. However, Duchscher (2008a; 2008b) brought additional evidence to be considered in her Transition Shock theory. She gave voice, and therefore, credence to new graduates for more than a decade as she wrote extensively about new graduate experiences. Because her research focused on new graduates, and the first two years of practice in particular, Duchscher's (2008a, 2008b) work provided a guideline for timeframes by which novice nurses may be more confident in their decision making. Rural nursing has been defined as a unique and challenging situation for reasons related to resources, setting, and population. There have

been no studies related to novice nurse decision making as it occurs in rural healthcare settings. In Chapter III description of the methodology for this research was provided.

CHAPTER III

METHODOLOGY

Qualitative Research

The purpose of this study was to develop theory from the study of decision making of rural novice registered nurses in critical access hospitals. Presented in this chapter was a rationale for the use of qualitative research. The design of this study, including participant selection, data collection and analysis, ethical considerations, and bias and reflexivity were described.

Qualitative research has purposely sought meaning-making of complex problems. Creswell (2007) related: “we want to empower individuals to share their stories, hear their voices and minimize the power relationships that often exist between researcher and the participants in the study” (p. 40). Where quantitative research emphasized control by the researcher of place and subject, qualitative research emphasized relativity to place, context, and perception, where a phenomenon naturally occurs. It was not predictable, because situations were not to be controlled, and actions that occur were unanticipated. Researchers “study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 1994, p. 2). The investigator and the object of investigation were linked. Therefore, how each (researcher and subject) viewed and understood the world was a central part of how

each came to understand themselves, others, and the world. Truth, according to this ontology, has not been grounded in objective reality.

Qualitative researchers have approached investigation into problems and questions from a particular paradigm which most closely represents their beliefs about the nature of reality, knowledge, values, and the language and processes of research (Creswell, 2007). Creswell suggested the perspective from which qualitative research was designed could be interpretivist (constructivist), post-positivist, advocacy/participatory, and pragmatist. These differed in respect to philosophical assumptions about the world and knowledge. This study most closely aligned with the constructivist perspective as the categories and themes emerged from the participants' stories.

Betraux (as cited in Seidman, 2006) succinctly and firmly defended the qualitative epistemology, stating, "Given a chance to talk freely, people appear to know a lot about what is going on" (p. 8). According to this world view, humans were not able to separate from what they knew. When one considered construction of knowledge—what people believe they know—the importance of scaffolding could not be underestimated. The cognitive theory of knowledge construction focused on the functions and inter-relations of working memory and long term memory (Bruning, Shraw, Norby, & Ronning, 2004). Meaning was first assigned to new information in the capacity-limited working memory. As this meaning was encoded into long term memory, it was assigned a slot within particular schemata.

This research fit with the constructivist or interpretivist paradigm described by Glesne (2006) as one that:

..maintains that human beings construct their perceptions of the world, that no one perception is “right” or more “real” than another, and that these realities must be seen as wholes rather than divided into discrete variables that are analyzed separately. (p.7)

Findings were not confirmed by a statistical test of a proposition through survey, rather they were confirmed through dialogue and negotiation between the researcher and the participant in a collaborative, “I-thou” relationship (Seidman, 2006, pp. 95-111). The researcher became an insider (Creswell, 2007). Through this process, an informed understanding of the social situation at hand was had by this researcher, and it was my hope, by the participants.

In contrast to quantitative research, where the goal was for validity through proven objectivity and applied generalization, interpretive approaches relied heavily on naturalistic methods which placed value on rapport, reflexivity, and trustworthiness (Glesne, 2006). The fact that all researchers bring values to the study was acknowledged within the rhetoric of the qualitative research and the researcher was very much a member of as well as a researcher for, the study (Creswell, 2007, p. 18-19). This method of research was inductive and therefore placed no prior expectations on the outcomes, as theory emerged from the analysis of the data.

Research Design

This study was designed to reveal how novice nurses experienced clinical decision making in a rural hospital setting, using the principles of naturalistic inquiry, through a grounded theory research design. The result of this process was thematic

analysis and conceptual development toward a theory about a specific phenomenon—clinical decision making, and a specific set of persons—novice nurses. Substantive theory is a low-level theory which can be applied to a specific situation in a particular time. It “evolves from the study of phenomenon situated in one particular context” (Creswell, 2007, p. 240). The phenomenon of clinical decision making, in the context of rural critical access hospitals, was investigated through novice nurse participant interviews, observations, and document analysis, when available.

In part, due to the early work of Glaser and Strauss with patients, nursing researchers have embraced the grounded strategy method as a valid, defensible data collection and analysis method. It was the second most popular qualitative research method in nursing (Schreiber & Stern, 2001). The grounded theory technique emerged during the 1960’s while Glaser and Strauss studied the experiences surrounding patients who die in hospitals. The two researchers studied the interactions between social psychological, and social structural processes in the context of organizations (Schreiber & Stern, 2001). Grounded theory ideally assessed responses grounded in the data generated from interviews, field notes, and observations to discover social behavior patterns of the participants, and in so doing, generated a general explanation (theory) of a process, action or interaction (Creswell, 2007). Because grounded theory was designed to reveal the human characteristics of change in response to various circumstances, it was useful to nurse educators, administrators, and direct care nurses when new perspective illuminated opportunities for intervention in areas where there has previously been sparse research. In the instance of this study, clinical decision making in novice rural nurses had not been studied.

Strauss and Corbin (1998) proposed a very systematic approach in the analytical procedures, in which the researcher seeks to explain process, action or interaction on a topic. In this case, the topic was clinical decision making. Their methods have been avoided by some who use grounded theory methods because they are too positivistic (Creswell, 2007). However, the systematic approach of Strauss and Corbin (1998) has been described as well-suited to individuals who are learning about and applying grounded theory research (Creswell, 2007, p. 66). This rationale applied to the study at hand, in that the researcher was new to grounded theory methodology.

Strauss and Corbin's (1998) approach, described in their book, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, involve three types of coding: open, axial, and selective. The researchers defined open coding as the "analytical process through which concepts are identified and their properties and dimensions are discovered in the data" (p. 101). Although codes and categories were selected based on my interpretation of the data (as the researcher), the codes and categories were allowed to flow from the data. Axial coding was the next step and involved putting the data back together in new ways after open coding. This process serves to show relation amongst the categories and is termed "axial" because the coding occurs around the axis of a category which links all other categories (Strauss and Corbin, 1998, p. 123). Selective coding was the last coding process in grounded theory methodology. This involved the selection of a core category of data that accounts for most of the variation of the central phenomenon and around which all other categories are integrated. "A central category may evolve out of the list of existing categories" (Strauss & Corbin, 1998, p. 146). Conversely, the authors conceded that the researcher

may choose a term which pulls the categories together. Corbin and Strauss (2008) suggested researchers may stop the grounded theory procedures after axial coding as this would be useful for thematic analysis and concept development toward generation of theory (p. 263) or the researcher may continue to theoretical integration.

Participant Selection

Theoretical sampling was a method of choosing participants who have experienced, or are experiencing a particular phenomenon (Strauss & Corbin, 1998). It was imperative that the sample size be large enough to generate an amount of in depth data which revealed patterns, concepts, categories, properties, and dimensions of the given phenomena (Cresswell, 2007; Strauss & Corbin, 1998). Theoretical sampling served to narrow the sample size, in that the greater amount of useable data that can be collected from a participant, the fewer participants were required (Morse, 2000). Strauss and Corbin (1998) related that sampling occurred during the coding processes (p. 73) and continued until the point of saturation (p. 214).

This study consisted of face to face recorded interviews with 12 registered nurses. The recorded interviews were transcribed by me within less than 24 hours of departure from the site. The interviews lasted anywhere from 40 to 60 minutes. I was able to observe nine of the participants, during which time I continued to ask questions, which were transcribed immediately after my departure from the site. I visited 11 of the 12 participants a second time and recorded our conversations as I presented the emerging categories and themes to them in a concept map as a method of member checking. Ten of the 12 member checking visits were conducted face to face during the months of May and June, 2010. One of the 12 visits was conducted over the phone after the participant

received and reviewed the coding map and axial coding paradigm. I was unable to visit with the twelfth participant due to a health issue however, I did send her a concept map of the emerging categories and themes and asked that she contact me for questions, which she did not. The registered nurses in this study also had access to me by means of phone and email, in the event they had questions or concerns, which none of the participants did during this study.

My expertise was related to my work experience as a registered nurse, rather than my experience as a researcher. My 24 years of practice have included: direct patient care in acute medical surgical and critical care (sixteen years), supervision and management in critical care (four years), and work as a nurse educator in a baccalaureate program of nursing, teaching clinical and didactic medical surgical nursing (four years). Six of the 24 years of nursing experience were spent in rural hospital and rural nursing home settings. In addition, I have held multiple certifications, including national certification in critical care (CCRN), advanced cardiac life support (ACLS) instructor, basic life support (BLS) instructor, trauma nurse core certification (TNCC), flight medical crew certification, and pediatric advanced life support (PALS).

Typically the focus in NDM study was on the proficient decision maker who used past experience in the decision making process, however even among experts, there were individual differences in the way decisions were made. For this research, the persons of interest were novice registered nurses who had completed orientation and had up to two years experience. Duchscher's (2008b) descriptions of novice nurses, who were just beginning to feel comfortable in the role of nurse at 12 months post orientation, provided a parameter for this study. By Duchscher's (2008b) definition, these nurses were at a

point of feeling confident in their ability to answer questions and assist others.

Participants who had less than two years experience, were registered nurses, and had worked at no other healthcare facility as a licensed nurse were sought for the study.

Theoretical sampling has been described as a form of purposeful sampling, however, when one uses theoretical sampling one never knows where this might lead in terms of numbers of participants (Corbin & Strauss, 2008, p. 146). The rationale for choosing novice nurses in rural settings related to the gap in the literature surrounding clinical decision making in rural areas, and in novice nurses in particular. These participants were chosen purposely because of the unique experiences of their situations. There has been an ongoing national nursing shortage and rural areas have been struck especially hard by this shortage. Staff matrices in rural hospitals have been designed to account for safe nurse to patient ratios, just as they were in urban centers; however, the overall numbers of nursing and ancillary staff has been much smaller in rural hospitals than in urban centers. Therefore, the organizational supports, in terms of staff numbers, for novice nurses was different than that of their urban counterparts, especially in evening, night, and weekend hours.

Research indicated nurses use past experiences in their decision-making process by comparing the current situation to previously experienced situations held in their memory (Benner & Wurbel, 1982; Benner & Tanner, 1987, Cioffi, 2001). The fact that, by virtue of the staffing, the novice nurses in these rural hospitals took on leadership positions early in their careers put them in a different position than their urban counterparts. It was of interest to me, as a professional nurse educator, how these nurses executed decision making in the context of a rural hospital.

Due to the smaller numbers of staff, the sample size for this research was restricted by virtue of the purposeful sampling. Participants in this study practiced in counties where the population distribution was between one percent and two percent of the states' residents (Figure 2). It was therefore estimated that a sample size of 8-12 participants would be utilized. The directors of nursing within 16 critical access hospitals in this state indicated they had participants who would fit the parameters of my study.

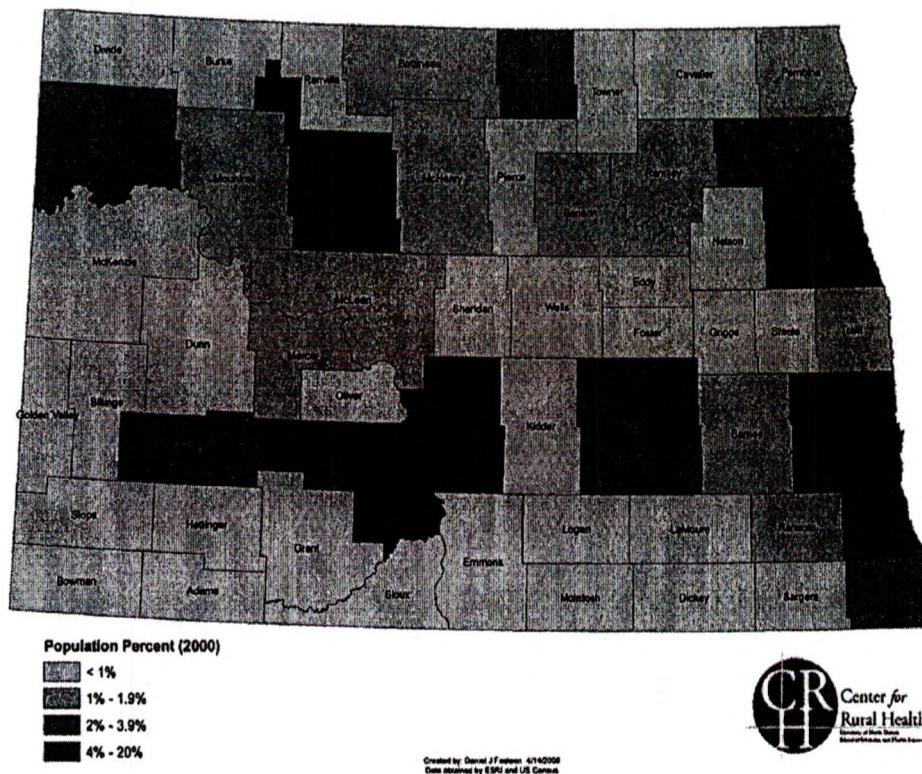


Figure 2. North Dakota's population distribution by county (Center for Rural Health, 2008).

I began the study in March of 2010, engaging in open coding as I continued to interview, as suggested by Corbin and Strauss (2008).

By the time I had interviewed eight of the participants, I noted repeated codes which related to four categories, the most prominent of which was centered on the social influences on these nurses' decision making. I continued with four more participants, looking for negative cases, and observing the fact that no new data seemed to emerge regarding the categories revealed during the process. I logged my activities via a participant coding matrix (Table 1).

Table 1. Participant Coding Matrix.

Participant Name	Hospital Code	Initial Face to Face Interviews	Participant Pseudonym	Follow up Interviews
Confidential	04	4/20/10	Grace	6/01/10
Confidential	04	4/20/10	Arial	Unable
Confidential	05	3/30/10	Celeste	6/14/10
Confidential	06	3/24/10	Jewel	6/14/10
Confidential	07	4/19/10	Ally	6/01/10
Confidential	07	4/20/10	Lailah	6/01/10
Confidential	08	4/07/10	Isabel	6/09/10
Confidential	10	4/07/10	Hannah	6/08/10
Confidential	14	4/14/10	Eve	6/10/10
Confidential	15	4/14/10	Meesha	6/14/10
Confidential	16	4/07/10	Sarah	6/09/10
Confidential	16	4/06/10	Sophia	6/09/10

In order to achieve theoretical saturation, the researcher must constantly compare data to emerging categories (Creswell, 2007), realizing the need to expand on either interviews or interviewees until no new data emerges.

Strauss and Corbin (1998) described theoretical saturation as occurring when:

(a) no new or relevant data seem to emerge regarding a category, (b) the category is well developed in terms of its properties and dimensions demonstrating variation, and (c) the relationships among categories are well established and validated. (p. 212)

As I proceeded through the interview process and the analytical process of constant comparison, I believed I was reaching theoretical saturation in the study; therefore, after the twelfth interview, I concluded the process of seeking out new interviewees. I remained in contact with all of the 12 participants by phone and email, and visited all but two of them again face to face as a method of member-checking.

Setting

Using the USDA (2008) and U.S. Census Bureau (2002) definitions for rural (i.e., an area outside of an urban area and an urban cluster area) there were three cities considered to be urban, and 12 cities identified as urban clusters in this state. The hospitals in this study exist outside of these cities in towns ranging in population from 2,000 to 10,000 persons. This state was geographically large, but the population was dispersed and sparse in some counties (Figure 2).

The hospitals where these participants worked were located within counties containing anywhere from 1-2 % of the state's distributed population. The hospitals were a distance from 25-200 miles from larger hospitals which existed in either urban cluster areas or urban areas. This state has a total of 38 rural hospitals (Figure 1) as designated

by the Center for Rural Health (2009). Thirty six of the thirty eight hospitals were deemed critical access hospitals (CAH) (Center for Rural Health, 2009), meaning the hospital was certified to receive cost-based reimbursement from Medicare. The reimbursement that CAHs received was intended to improve their financial performance and thereby reduce hospital closures (Rural Assistance Center, 2009). Critical Access Hospitals must be located in a rural area and be either a distance of 35 miles from another hospital, or 15 miles from another hospital in mountainous terrain or areas with only secondary roads (Rural Assistance Center). All of the hospitals in this study were designated as critical access.

Instrumentation

The researcher was the primary instrument for data collection in this qualitative research design. Qualitative research design was characterized as flexible and emerging. The interpretive approaches in this study relied heavily on naturalistic methods such as interviewing, observation, and document analysis, when documents were available.

Data Collection

Data collection forms and units of analysis may vary in qualitative research with the approach used. Regardless of the approach, data collection involved more than just observation or just an interview. Emphasis was on rich data collection. Some ways of capturing this data were through observation, in-depth interviews, and collection of documents, Creswell (2007) described five approaches (i.e., narrative, phenomenological, grounded theory, ethnographic, and case study) employing specifics related to numbers of participants and forms of data collection (p.78-79). For example, a narrative project involved a collection of interviews and documents, such as journals, from one or more

individuals; while a case study involved studying an event, a program or an activity and collecting multiple sources of data including interviews, artifacts, observations, and documents (Creswell, 2007, p. 79). In this grounded theory research design, primary data was collected through interviews, (supported through field notes and audio tape of these interviews), observation of participants in their work settings, and interviews of others pertinent to this research, (e.g., directors of nursing from the rural hospitals involved in the research site, as well as those not involved in the research sites). Additional data, in the form of documents, included hospital policies related to services offered, as well as journals from three of the 12 participants.

Negotiating Entry

The directors of nursing of these facilities played a role in my introduction to the participants. It was they who conveyed my search for research participants to these registered nurses. Once I received names from the directors of nursing, I made phone and email contact with the nurses, explaining the nature of my study, my own background as a nurse, and my particular interest in them. After the participants agreed upon meeting dates and times, I contacted them by phone to confirm their availability, always stressing that I did not want to place pressure on them, or impede their work during my visit. Upon meeting the nurses face to face, I introduced myself, thanked them for this opportunity to spend time with them, and engaged in informal conversation, often during a tour of their facilities or nurses' stations, before beginning any interview. The fact that all 12 participants agreed to follow-up interviews and returned phone calls readily speaks to their willingness to engage with me as a researcher. Four participants emailed me to

answer follow-up questions. One participant was unable to meet due to a health issue, but did speak with me on the phone.

As I conducted this research, I struggled at times with feeling a nuisance to my participants. The fact that they lived, in some instances, greater than 500 miles from my home on a round trip called for careful planning. I could not afford (in terms of time nor money) to travel that distance only to find they were no longer available. This necessitated phone calls and emails to confirm our plans. While all participants were responsive and obliged the process I knew I was somewhat of an intrusion into their personal time and space.

Interviews

Although there were two primary research questions explored by this study, a number of additional questions and opportunities for conversation revealed important data that illuminated those questions. Maxwell (2005) pointed out that the questions used during the interview process will not necessarily resemble the actual research questions as, "...the two are distinct and separate parts of your design" (p. 92). Open-ended questions provided a means to answering the research questions. While an unstructured approach was conducive to exploring phenomena, it may lead to volumes of overwhelming data. For this reason, Maxwell (2005) and Creswell (2007) suggested a semi-structured approach to manage data and analysis more efficiently. It was anticipated that questions would flow from the context of the interview. Research questions utilized during the interview process included, but were not limited to:

1. If you were asked to describe the most important part of your job, what would you say?

2. What do you feel has been the greatest factor in helping you transition into your role as a rural nurse?
3. What do you feel has been the biggest obstacle to your transition into your role as a rural nurse?
4. What types of decisions do you find you most frequently make in your practice setting?
5. Can you tell me about a time when you made a decision recently wherein you felt sure of your rationale for your decision?
6. Can you tell me about a time when you made a decision recently wherein you felt unsure about the rationale for your decision?
7. Tell me about your best day to date in this career.
8. Tell me about your most challenging day to date.
9. In your nursing education, what stands out in your memory as the most helpful to you in planning, implementing and evaluating the care you give?
10. Tell me about your “aahhaa” moments to date.
11. In a typical day, how often are you confronted with aspects of patient care/procedures with which you do not have prior knowledge?
12. In a typical day, how often are you confronted with aspects of patient care/procedures with which you do have prior knowledge?
13. What would you say has been your most important resource for confirming or denying choices you make in patient care?

Questions flowed from the conversations, and I asked follow up questions as I coded the incoming transcribed data by phone or email and in our second face-to-face

meeting. Initial interviews lasted from 30-60 minutes and were recorded. Transcription was completed immediately by the researcher in order to facilitate immersion in the data and as a means of immediately engaging in open coding. These interviews most often took place at participants' workplaces as a matter of convenience and by their choice; however, I always offered to conduct the interview elsewhere, if that was preferred. The interviews were conducted in a private area of the hospital in a location of the participants' choosing. On one occasion a participant requested we meet in the back room of a local restaurant. Where clarification and follow up questions were needed, conversations took place over the phone and by email. The phone conversations were recorded and transcribed by me. The emails were printed and became part of the documents for analysis. Follow up interviews took place within two months after initial interviews and were also recorded. During these interviews, participants were asked for their feedback on the developed categories and themes from their stories.

Observations

Immersion in data, through observation, was an important aspect of this qualitative research, as it provided for an increased familiarity with the organizational infrastructure, as well as a means of deepening understanding of what the participants said in response to interview questions. Both Maxwell (2005) and Creswell (2007) emphasized involvement, through observations, and repeated interactions as a means to ensure data collected is both saturated and verifiable. Observation served to triangulate data, but was not considered a method of merely combining different types of data. Instead, it was considered a method for relating information gained during interviews, with the aim of gathering rich data (Glesne, 2006, p. 36).

Each participant was, therefore, asked to be observed during their shifts for a period of 1-2 hours. Nine of the 12 participants agreed to this. Three participants expressed concern regarding being observed during work and were respectfully not pressed to oblige because I was entering their work space. As a registered nurse, I knew the weight of being observed while working. I kept this forefront in my mind and conducted myself with the intent to display respect and appreciation for the opportunity to be with these nurses in their work setting. The work of a nurse is very public. Patients watch you. Patient's families watch you. Nurse managers, and supervisors watch you. Student nurses watch you. Physicians watch you. Perhaps this fact made the observations natural to these participants. However, it was somewhat surprising, even to someone like me who has been observed in my own work places for more than 24 years, that neither the participants nor their co-workers seemed uncomfortable with my presence. I was, for the most part, greeted warmly and included in conversations. I felt as though I was in a student nurse role myself, tagging along with the nurse, who would be showing me the ropes.

Documents

Participants were asked to make journal entries either during or after their shift related to their experiences with decision making during that shift and were encouraged to write freely about any decision making experience they deemed important to them. I chose not to prescribe a format for the journal entries, as the goal was to observe for patterns and themes amongst the participants' perceptions; I did suggest general topics, if they encountered trouble starting the journaling. It was anticipated that the journal entries would add to the depth and diversity of data collected and further serve to triangulate

findings as theory emerged. Participants were provided with journal notebooks and pre-paid return envelopes, and were asked to make three entries. Despite requests by email as a follow-up, only three participants returned their journals. The journals that were received were analyzed and coded, just as the interview transcripts were, following the principles of in-vivo coding suggested by Corbin and Strauss (2008). In-vivo coding consists of “using the actual words of the research participants” during open coding (Corbin & Strauss, 2008, p. 65).

Methods of Data Analysis

The data analysis addressed my research questions: (a) What cues are used by novice rural registered nurses in order to make clinical decisions? and (b) What are the sources of feedback which influence subsequent decision making for processing of cues for these novice nurses? As I began open coding, I constantly asked myself what Corbin and Strauss (2008) describe as sensitizing questions (p. 72) such as, “What is happening here?”, “What is this referring to from the participants’ perspective?”, and “How does this relate to the research questions? ”

Coding was central to the process of data analysis in this grounded theory research. Therefore, it was imperative that the processes for coding be planned in advance. Data transcription facilitated familiarity with the data, and provided a basis for assignment of codes, as well as an opportunity to immediately immerse myself in the data. Strauss and Corbin (1998) suggested detailed procedures for analysis which consist of three phases of coding and which I have depicted conceptually (Figure 3).

The first phase, open coding, involved the process of constant comparison to look for instances that would support assignment of data to categories as they emerged. In this

phase, data were organized into logical categories which were supported by the process of in-vivo coding. Later, I applied shorter phrases or words that would succinctly describe the in-vivo codes and utilized these in the open coding map, which can be seen in Chapter IV (Figure 5). This phase was also supported through the use of memos as I began reading field notes and listening to audio tapes.

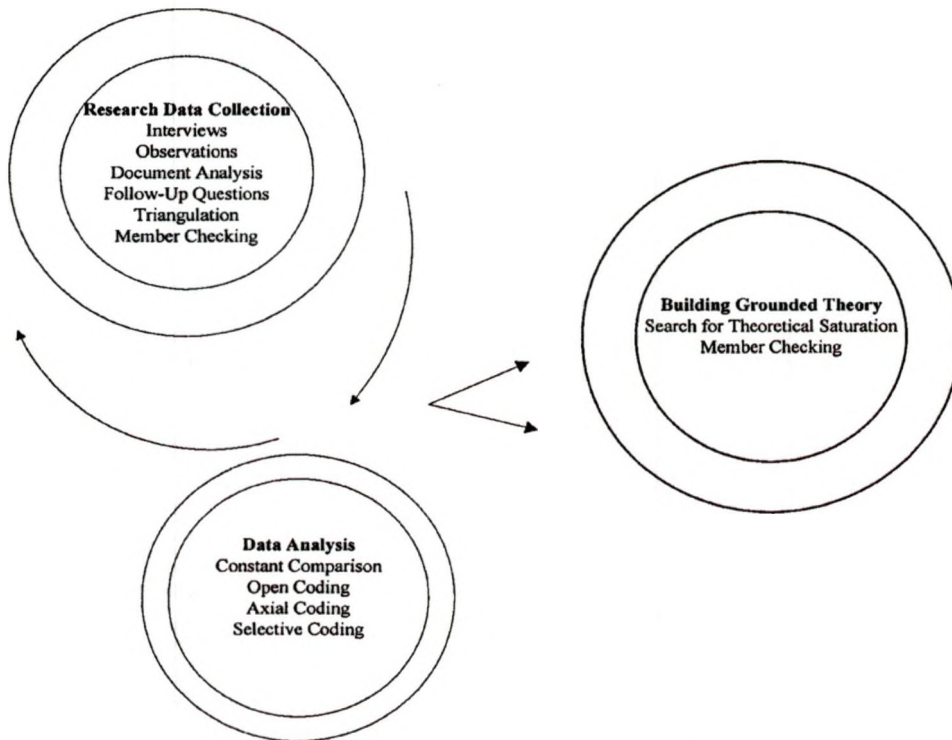


Figure 3. Model of data analysis in grounded theory development for this study.

I took the suggestion of Maxwell (2005) to anticipate broad categories, as a type of topical bin, keeping in mind as I engaged in coding while interviewing, that these categories should not attempt to ascertain what would be said. Rather, they were to serve as a means of organizing data into bins, which were re-visited frequently and revised

during analysis. For example, I initially had a category related to medications because participants brought up the differences between urban centers, with pharmacists on staff, and their rural hospital, wherein they often mixed and dispensed their own medications for patients. This category was later melded into the category of versatility, which came to encompass the wide variety of patient acuity, census, and varying amenities available at the rural critical access hospitals. Reformulating these categories through axial coding, provided for a means of inter-connecting the categories in phase two of analysis, while phase three involved building a story that connected the categories through selective coding (Creswell, p. 60). It was important for me to spend time with the data concurrently (Figure 3), rather than attempting to come back to the data as a whole. This contributed to my understanding the data within context which became crucial in making connections between the categories via the axial coding paradigm (Figure 4).

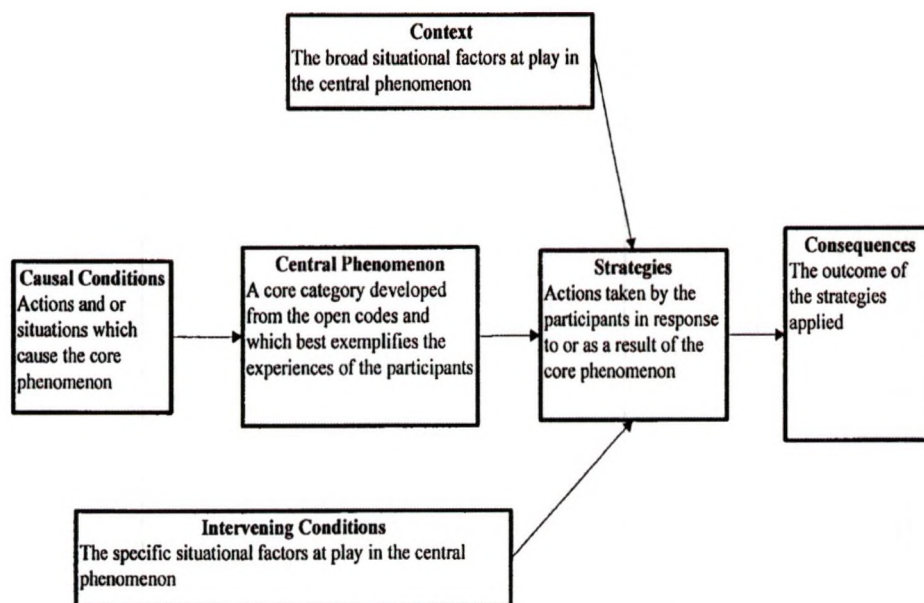


Figure 4. Model for developing an axial coding paradigm.

These connections helped to build propositions toward theory, a primary goal of the analysis (Creswell, 2007; Maxwell, 2005; Corbin & Strauss, 2008). In this study, data analysis as described by Creswell (p. 67) and Strauss and Corbin (1998) were used:

(a) organizational coding in order to develop broad categories, (b) axial coding, using in-vivo codes in order to develop a sense of concepts and beliefs from the participants as they developed from the data organization; and (c) selective coding which represented my concepts as derived from the axial coding and open coding; telling the story of connections between categories. The result of this process was thematic analysis, and conceptual development toward a substantive theory of decision making in rural nursing

Validity and Reliability

Qualitative research has employed a variety of approaches throughout the process which require the researcher to take nothing for granted. Powdermaker (1966) provided several examples of this in her re-telling of her research. The title of her book, *Stranger and Friend* indicated she embraced the idea that one needs to approach research as a stranger who seeks to know through understanding those that are actually experiencing the phenomenon. How does this approach contribute to validity?

The theoretical perspective from cognitive psychology held that learning was a construction of meaning derived from what learners already know, the information that they encounter, and what they do as they learn (Bruning, Shraw, Norby, & Ronning, 2004, p. 6). If, as researchers, we want to make the claim that our research participants contributed to knowledge in a specific discipline, we have to acknowledge that the participants' perception and construction of experiences was valid for them in that particular moment and in that particular setting (Creswell, 2005, p. 252; Lincoln & Guba,

1994, p. 381; Maxwell, 2005, pp. 110-112; & Seidman, 2006, pp. 24-26). All interpretations in this study were based in a particular moment. That is, they were located in a particular context—the rural critical access hospital—or situation and time—novice nurses with less than two years experience—and were, therefore, open to re-interpretation and negotiation through conversation.

The interview was a joint product of negotiated discourse between the interviewer and interviewee. One means of ensuring that the story truly belonged to the participants was to perform member-checking. Without the subjects' analysis of the process and product of the research, perceptions would have been largely subjective and of the researcher's making. The patterns, themes, and ultimately, assertions that emerged were the result of a certain verisimilitude and universality of the findings for these particular nurses which not only satisfied the requisite for validity in research, but which also appealed to humanness (Lincoln & Guba, 1994). I found participants to be interested and engaged in the findings, as I discussed both the process of open coding and construction of the categories and eventually the axial coding paradigm. They offered agreement with the central phenomenon and connections made to other categories. I emphasized my sincere wish to hear their analysis, leaving the visual presentations of the research in their possessions and requesting that they call or email to further conversations. No further input was received from the participants after the last member-checking interviews.

Creswell (2007) described triangulation as a process for corroborating evidence in order to shed light on themes and perspectives of the study (p. 208) by using more than one source of data to confirm the authenticity (p. 45). The sources employed to facilitate saturation of data and to search for both confirming and negating cases in this study

included peer review by a trusted nurse colleague experienced in qualitative research, my advisor, and a dissertation committee member experienced in grounded theory. These persons served as external checks on the process of this research.

The participants were the anchor in this process, as this research was founded on their experiences; their feedback from member-checking interviews served as another part of the triangulation process. In addition, the process of interview, observation, and journal documents, when available, provided for comparison.

As I observed the RNs in their natural settings, interactions with patients, co-workers, physicians, and other staff were recorded. These observations became part of the coded data and served to support emerging categories and themes. This study included 12 participants over a four month period of time, from March, 2010 through June, 2010. While there appeared to be no further emerging categories, which indicated saturation (Corbin & Strauss, 2008, p. 143), it was possible that another investigator might find further data toward building theory.

Those who recruited and trained nurses in rural settings were consulted to verify congruency between my interpretation of findings and their experiences with decision making in rural settings. In order to protect the identity and professional integrity of participants, these consults occurred with professional nurse colleagues from rural hospitals involved in the study as well as those that who were not. Pseudonyms were used for both the hospitals and for the participants.

Ethical Considerations

There were philosophical, ethical, and political concerns to be considered which impacted the role of the researcher and participants in this relationship. Some of these

concerns were related to the paradigm from which the researcher was working, the interpretive framework chosen and emerging categories, all of which shaped the study (Creswell, 2007). Although expertise in the area of research may have facilitated interviews and therefore theoretical saturation, I was aware that I must address biases that I might bring to the process. I did this, in part, by journaling in the margins about my feelings during interviews, later reflecting on how those feelings might impact coding. I was aware that I needed to remove myself from the role of nurse and become the researcher. I was tested in that capacity during a few of my observations wherein I wanted to step in, or perhaps guide the novice nurse in some aspect of care, but did not. Maxwell (2005) cautions, that while this is a reciprocal research relationship, even under the best design, there is still an intrusion into the participant's life. I kept this foremost in my mind, as I was very cognizant of the fact that I was entering their workplace, in all but one case, and that reputations are at stake when someone watches your work. I made that explicit in my consent form, which I pointed out to the participants in the hope of alleviating the fear of being critiqued. It was ethically imperative that I not only understand my goals (reasons) behind this research method, but that I systematically monitor my subjectivity and biases (Maxwell, 2005). After one interview, I left feeling especially frustrated. Initially, I thought I was frustrated with the nurse. I put great effort into understanding why I was feeling this way and discussed my attitude with a professional colleague and my advisor, both of whom are experienced in qualitative research. This helped me understand my real frustration, which was actually related to the experiences of that novice nurse endured, not the individual herself.

I filed a human subjects' review form with the Institutional Review Board (IRB) at both my university of employment, and at the university where my program of study took place. Approval was received March 5, 2010, after submission of letters of participation from the directors of nursing of the facilities to be included in the study. Prior to beginning any interview or observations, I reviewed the consent form with the participants and offered the opportunity for questions. I emphasized that at any time, they may choose to withdraw their participation from the study.

Confidentiality

In my role as a registered nurse, I abided by the American Nurses Association Scope and Standards of Practice (ANA, 2004). Standard 12 (ANA, p. 39) mandated the registered nurse preserve and protect patient autonomy, dignity, and rights, maintaining patient confidentiality within legal and regulatory parameters. I have abided by this standard, placing the welfare of the patients and the integrity of the health systems in which they are being treated in the forefront. I offered to sign HIPPA confidentiality forms at every facility I visited; however, only three facilities provided these for me. No medical record data was taken from these facilities. Observed interactions within the workplace have been protected by use of pseudonyms for both participants and sites.

My observations were restricted to their workplace and in the event they wished not to be observed, I respected their wishes. Data were handled only by my advisor or me. All recorded data was transcribed by me and those documents were kept on my computer under password protection. Recordings copied to disk were kept in a locked file box in my office. Consent forms were kept in a separate locked file box in my office. These consent forms will be shredded after three years.

Bias and Reflexivity

Before any interviewing or observations took place, I considered it imperative to be proactive and honest in combating potential bias. Both journaling and writing my proposal helped me identify the reasons this research was important as a means of acknowledging the biases. Although my experiences as a nurse were important for understanding, bracketing (Glesne, 2006; Creswell, 2007), or separating my own experiences and stories from those of the participants was something I practiced with intention. For me, journaling prior to and during the research was an important endeavor to control for bias since I am an experienced registered nurse, and I have practiced in rural facilities. My journaling was not extensive, but I did keep notes, sometimes within the transcripts and sometimes in a separate notebook as a means of recording my thoughts. I used open-ended questions during the interview and restrained myself from offering my opinions during interview and observations about how I believed they were experiencing the phenomenon in that moment.

Reflexivity, or reactivity, was defined as the unavoidable situation occurring during the interview process in which the participant is influenced by the very nature of the interview questions (Maxwell, 2005, p. 109). As with adjusting for bias, avoidance of leading questions can help to minimize this issue. While the act of being observed may have also influenced participants, the researcher offered reassurances prior to the study related to this. For example, in this study, it was important for both ethical reasons, and for reasons relating to bias and reflexivity, that I reassured participants and facilities that my aim was not to critique the participants' nursing practice. My aim was to gain a better understanding of the processes involved in their decision making. It is possible that even

with these reassurances, participants still felt nervous about being watched and asked about decision making. I believe the numbers of participants who allowed observations, points to the possibility that this was not completely foreign or uncomfortable to them. As nurses, we are watched by the public, by other nurses, and by nursing students. We orient new employees in a shadowing situation, as well. Also, patient care requires that the nurse place full attention on the patient. That is, it would be fairly difficult to fake actions and conversations which are occurring with real patients who are acutely ill, merely for the benefit of an observer.

Transcribing and reflecting on a continuum throughout this research was an important means of self-monitoring for both biased and reflexive behaviors on my part as the researcher. In addition, a trusted colleague (an expert nurse and nurse educator) and my advisor, (an expert educator and experienced researcher) were consulted as this research progressed.

Summary

In Chapter III, I described the process of theory development for this study, which was based on the in-depth interviews of 12 novice registered nurses in a rural critical access hospital. Multiple sources of data were used, including interviews, observations, and participant journals. My interest was related to the cues used in decision making and the sources of feedback that influence future decision making. In this chapter, I detailed the research design, including the processes of consideration of ethics, negotiating entry, confidentiality, participant selection, data collection and analysis, and validity. In Chapter IV, I have described the context and content of the study, explicating emerging categories

and presenting propositions toward substantive theory of novice nurse decision making in a rural critical access hospital.

CHAPTER IV

DISCUSSION OF CATEGORIES, THEMES, AND THEORETICAL PROPOSITIONS WITH RESPECT TO THE LITERATURE

The purpose of my research was to investigate the cues that were used by novice nurses as they made clinical decisions, and the sources of feedback which might influence future decision making. The result of this process was development of substantive theory about a specific phenomenon—clinical decision making, and a specific set of persons—novice nurses. Chapter IV contains my descriptions of the study in terms of context. Descriptions of the participants and their workplaces, as well as personal quotes of the participants were provided. The categories and themes which emerged were explained through direct quotes from participants, notes from observations, and description of triangulation activities. The discussion under each category connected the findings to the extant literature.

Theory development emerged from the analysis of observations and interviews of 12 registered nurses who had been in practice less than two years. Participant selection was guided by Duchscher's (2008b) descriptions of novice nurses, who were just beginning to feel comfortable in the role of nurse at 12 months post-orientation and were, according to her research, at a point of knowing. Thus, they had enough confidence in their abilities that they were able to answer questions and assist others (Duchscher, 2008b, p. 447).

The Naturalistic Decision Making (NDM) model provided a descriptive framework for perspective on the complexities related to clinical decision-making. This framework, which placed emphasis on task, person, and environment, allowed for exploration of the participants' experiences, rather than prescribing a model for decision-making. The analysis was grounded in the data from 12 novice nurses (persons) and focused on cue acquisition for decision making (task) in the context of rural critical access hospitals (environment). I developed an axial coding paradigm model (Figure 6) to conceptualize the central phenomenon. From the axial coding, I explained the emerging theory of the clinical decision making of rural novice nurses.

Description of Settings

The study was conducted at nine different sites (Table 1). Nine of the 12 participants consented to observations during their work day. With the exception of one participant, the interviews took place at the participants' place of employment in a private room, chosen by the participant at a time that was convenient for each person. One participant interview took place at a coffee shop per her request. All interviews were recorded and transcribed by me within 24 hours of occurrence. Notes were taken during observations and were transcribed within 24 hours of occurrence. I requested HIPPA forms at all sites, but was not consistently provided with these forms by participants or directors of nursing. Provision of participant and patient privacy was implemented through use of pseudonyms for all parties, including the participant, the patient, and the hospital. No medical record data were extracted.

A Critical Access Hospital (CAH) is a hospital that is certified to receive cost-based reimbursement from Medicare (Rural Assistance Center, 2009). In North Dakota,

the hospital must provide 24 hour emergency care, provide no more than 25 beds for acute care, and be located more than 35 miles away from other CAHs or hospitals in a larger city (North Dakota Department of Health, 2008). In the case of two of the sites, the CAHs were as many as 150 miles from a tertiary care center.

At each of the hospitals in this study, participants, and several of the directors of nursing, described the aim to expand services. For example, many of the sites were adding a general surgeon from a larger tertiary hospital to perform same day procedures such as laparoscopic surgeries and colonoscopies. This was a fiscally sound initiative as reimbursement for same day procedures provides extra revenue to these CAHs, yet allowed them to stay within their guidelines for CAH status, because the patients were discharged within the same day of service unless there are complications. In addition, this offered a service to the community members, who would otherwise need to travel—sometimes up to two hours—to a larger facility. The hospitals also provided services to walk-in patients for everything from chemotherapy infusion to long-term antibiotic infusions, dressing changes, implanted port access with flushes, and chemotherapy pump changes.

Typically, the CAHs I visited did not engage in labor and delivery services. There was one hospital that provided this service. That hospital (hospital 07) was 158 miles from the nearest facility in the state that could provide for labor and delivery. This does not mean, however, that deliveries did not take place at these hospitals. Emergency deliveries can and do arrive at the doors of the CAHs, as two of the respondents attested. Babies will arrive when babies are ready, despite careful travel plans to a larger facility made by parents and their healthcare providers. Aside from the obvious variety and

potential acuity of the presenting emergency room patients, the fact that obstetrical patients also presented, underscored the need to be ready for anything and everything, which was unique to the rural facilities.

Emergency room services were provided at all of the CAH sites, 24 hours a day and seven days per week. The emergency rooms of these rural hospitals were typically not covered by staff dedicated only to the emergency room. With the exception of one hospital (hospital 06), there was a registered nurse designated for the emergency room, should any patients arrive, who also took care of patients on the floor. Neither physicians nor advanced practice nurses were on site at these facilities on a 24-hour basis. During the week days, they may be with clients either in the hospital or in the often adjoining clinic. In the evening and night hours, and on the weekends, they were available on-call. All of the CAHs I visited provided public notice of this fact, which contained information that emergency treatment would be rendered by the staff present until a physician arrived.

The CAH hospitals employing the participants of this study were designated by the state of North Dakota as either Level IV or Level V Trauma Centers. There were five level designations (North Dakota Department of Health [NDDOH], 2010), with Levels I through III being the most advanced and requiring certification from the American College of Surgeons Committee on Trauma (ACS-COT). Level IV and Level V designated hospitals receive verification from the state, but did not go through the certification process with ACS-COT. North Dakota Century Code 33-38-01-13 (NDDOH, 2010) provided standards which must be met by the Level IV and V trauma centers. These standards included a provision that the physician must be current in advanced trauma life support certification, be available and within 20 minutes of the

facility, and must have experience in resuscitation and care of the trauma patient. The facilities with this trauma designation were also required to conform to the requisites for resuscitation and life support equipment for all ages of patients. While the state century code was clear about physician roles, it did not specify nursing roles. The reality, in the rural CAHs I visited, was that the nurses were the first to see and treat the trauma patients until the physician arrived. The North Dakota state guidelines for CAH Level IV and V designations suggested the nursing personnel have special capability in trauma care. This was listed as desirable, but not essential, criteria for state trauma verification (NDDOH, 2010). The directors of nursing I visited with at these hospitals chose to have their nursing staff certified in trauma nurse core curriculum (TNCC) despite this.

One hospital provided a designated nurse for the emergency room during the day shift, who was not engaged in other direct patient care, but who might be involved in the admission of same day surgical clients. This was during the Monday through Friday work week. During the evening and night shifts and during the weekends, the pattern of staffing the emergency room with nurses who were simultaneously staffing the acute care beds was common practice at all sites.

Critical care was provided by all CAHs in the study, usually with a one or two bed unit, which consisted of a cardiac monitor and emergency drug supplies. Most participants described their critical care units as a point of stabilization for patients before sending them to a larger facility for definitive care, such as an angiogram. Hospital 07 had staff on call in the event a patient was admitted to the critical care unit. Otherwise, the registered nurse working the shift became the critical care nurse in addition to caring

for other patients on the floor, until extra help could be called to assist with the increased staffing needs.

The CAH hospitals in this study provided diagnostic and ancillary services, including respiratory therapy, radiology, laboratory, physical therapy, and pharmacy. The levels of diagnostic services depended on the size of the facility. For example, most had a computed tomography scanner (CT) but were not equipped with a magnetic resonance imaging (MRI) machine. For some facilities, that service was provided by a traveling MRI machine, which was scheduled on specific days of the week. The ancillary and diagnostic services were staffed during the day shifts, and perhaps into the part of the evening hours, leaving the registered nurses to either call in staff for these services or to perform the services themselves after those regular work hours. For example, respiratory therapy, such as nebulizer treatments, was carried out by the registered nurses when respiratory therapy personnel were not working.

It was common to hear participants relate that in the evening and night hours, as well as on the weekends, they were required to mix their own medications and dispense their own medications. Hospital 10 was affiliated with a larger center approximately 113 miles away, which provided tele-pharmacy services during hours outside of the normal operating hours for the pharmacy. This involved scanning orders to the tertiary pharmacy site. In addition, at this site only an experienced registered nurse, in the charge role, had access to dispense medication from the pharmacy area. At the other CAH sites, both the registered nurses and the licensed practical nurses mixed and dispensed meds within their scope of practice and, according to participants, within their facility policy guidelines. At some facilities, high alert medications, such as heparin and potassium (Institute for

Health Improvement [IHI], 2007), were added to intravenous solutions by the nurses. The IHI focused on four categories of medications when referencing high alert medications: anticoagulants, narcotics and opiates, insulin, and sedatives. These medications represent areas of most significant potential harm to clients. The most common types of harm associated with these medications include hypotension, bleeding, hypoglycemia, delirium, lethargy, and bradycardia (IHI, 2007). Some facilities had premixed bags or vials of these solutions. When the facilities were staffed with one or two nurses on night shifts, (one of whom is a registered nurse, but the other of whom may be a licensed practical nurse, or perhaps an unlicensed assistive person) there was a reduced ability to confer with another knowledgeable person about the accuracy of the medication being administered. This situation was described by a majority of respondents, and was cited as an issue of which they were keenly aware, and therefore took extra precautions, including calling the pharmacist on call, using drug books as reference, and double checking themselves when a co-worker was not available to double check.

In terms of technology (e.g., equipment for monitoring patients and electronic medical records) there was variation among facilities. None had completely transitioned to an electronic medical record, although many were using some form of electronic medical record, usually for placing orders to lab and radiology. There were no barcode scanners for medication administration, but some facilities had electronic access to an outside facility and all had a pharmacist on call, as well as access to emergency drugs. All of the facilities had cardiac monitors, oxygen saturation probes, crash carts with pacing paddles, and electronic thermometers. A few facilities rented equipment, which is common in all hospital settings for equipment that is not used routinely. According to

participants, this included items such as negative pressure wound equipment, or specialized beds for specific clients. Some hospitals employed the use of portable home heart monitors as a part of their expanding services and performed stress tests using monitoring equipment, such as electrocardiogram and oxygen saturation monitoring, during these tests. Several participants initiated conversation about the transition they experienced in technology from their sites for clinical training and their current places of practice. None of the participants indicated they felt their patients lacked in terms of quality of care, but they did say it took them, as new nurses, time to adjust to the variances in available technology.

Description of Participants

Participants in this study were all RNs with less than two years experience post-orientation to their CAH places of employment. All but one of the participants graduated from a baccalaureate program of nursing. One was a graduate of an associate degree program. Participants had worked at the CAH upon graduation and had no previous work experience as a licensed professional at another facility prior to working at the CAH. Advanced certifications were held by all participants and included: advanced cardiac life support (ACLS); pediatric advanced life support (PALS); and trauma nurse core certification (TNCC).

Ally-Hospital 07

I arrived at hospital 07 during the evening shift. I entered through the main entrance, which was newly remodeled. It was identified as the clinic. A woman in scrubs stopped to ask if I needed help and escorted me to another floor where I was introduced

to Ally. The nurses' station Ally was standing in was also being remodeled. I noted signage indicating directions to the ER, labor and delivery, and critical care beds.

I explained the aim of my study to Ally and I also explained how I had been conducting interviews. She was done with the major assessments and medication passes for her evening shift but decided there was still time for observations during her shift, which did not end for another two hours. Ally stated that she preferred to interview first. I reviewed the consent form with her which she signed, retaining a copy. We conducted the interview in a private conference room, chosen by Ally. Prior to our interview, the director of nursing greeted me briefly, explaining her need to leave to prepare for a meeting. The interview with Ally lasted 30 minutes and was recorded.

Ally graduated from her baccalaureate program of nursing in the spring of 2008. She explained that she received a scholarship, which funded her entire education, provided she agreed to work in an area of need. She had identified hospital 07 as her planned site of employment, which was not her hometown, due to marriage to a rancher from this area. For her internship, Ally spent the entire time at this CAH. Ally, who was in her 20s, was dressed in pastel colored scrubs. Her posture was relaxed during the interview, but not to the point of disengagement. She answered questions while making eye contact. She seemed unsure of herself at the beginning of our conversation; for example, she ended many of her answers with an uplifted "I guess?" as if to ask a question. Sometimes she would ask, "Is that right?" This improved after I reassured her that there was no "right" or "wrong" answers, as this was to be her story.

Arial-Hospital 04

Arial graduated from her baccalaureate program of nursing in 2008. I met Arial in the lobby of hospital 04 during the latter part of the evening shift. The hospital lobby was small and when I rounded the corner, I was immediately in front of the nurses' station, which was divided into two areas. One area was for the nurses and staff of the acute care side of the CAH. The other area was for the nurse and staff of the extended care side. There were double doors separating the acute care from the extended care wings of the hospital. The acute care side of the hospital had a small emergency room, several acute care rooms, and a two-bed critical care unit.

When I met her and introduced myself, her first statement was, "There's nothing for you to see, because I'm done with most of my work, so we can just do the interview." I was not able to do any direct observations of this nurse.

While the recorder was off, we made small talk. I began by asking how she liked working at hospital 04, to which she responded, "Well, I am stuck here." Arial, who was in her 20s, was obviously pregnant. She related she was excited for the birth of her baby. She was dressed in scrubs, with her hair up in a pony tail. Arial led me to a private conference room, where she reviewed and signed the consent, keeping a copy for herself. She made eye contact during the 40 minute recorded interview and expanded on her experiences easily. We sat across from each other in the conference room. Arial's posture was relaxed and she told me it felt good to sit down: "I'm tired so much now." Her pregnancy came up repeatedly as part of the reason she no longer works primarily on the acute side of the hospital—that and the fact that the patient acuity, staffing, and emergency room were causes of a great deal of anxiety for her.

Arial explained that she envisioned herself at a larger facility: "I always pictured myself working in a bigger hospital where you always have your set area." Her husband was a farmer in this community, however, which is nearly 100 miles from the nearest urban hospital. She was from a rural community in another area of the state.

She did not have an internship at this hospital, nor did she have an internship in a medical surgical area of the urban hospital where she had her clinical and education. Rather, she chose the neonatal intensive care unit, "because I love babies." Arial was the charge nurse that night, as she always is on the extended care side of the hospital. She told me she was also the charge nurse on the acute care side, when she worked in that area.

Celeste-Hospital 05

I arrived at hospital 06 at 7:00 a.m. The exterior of the hospital was clean and the entrance was modern. The hospital was located 50 miles from the nearest tertiary hospital. Another tertiary center was located 75 miles away. I found my way to the nurses' station, which was clearly marked. I introduced myself, explaining that I was there to shadow a nurse named Celeste. Celeste had traded shifts with another nurse and had failed to let me know. The other nurses invited me to stay for report, however. I did so, and then visited with the nurses. One person was a new RN graduate and offered to be interviewed, but had been a licensed practical nurse (LPN) for six years, so I declined. The acute care wing had seven patients. The ER had been steady during the night, with a three year old who had fractured his arm, among the patients. The nurses helped me locate Celeste's schedule. When I called Celeste to see if she could still interview, she apologized for the change and offered to meet me in a coffee shop.

The coffee shop manager seated us in the back, “where it is quieter for you ladies.” We reviewed the consent together, which she signed, retaining a copy for herself. Celeste was a 2009 graduate from an Associate Degree (AD) program of nursing. “I guess how it started was I worked as CNA [certified nursing assistant] for 6 years and I loved my job. I had a lot of peers who would tell me—you need to go on for your RN. I went to [an AD program]. I started in the LPN program and I wanted to go on and continue to be an RN, but it was challenging. I guess I based it on my entry level test. I thought if I didn’t pass that, then I would just stop at the LPN, but I passed and I figured if I could do the 11-month LPN, then I could go another nine months for the RN.” Celeste was in her mid 30s and was married with school-age children.

Celeste made eye contact and had a pleasant look on her face as we visited. Our interview lasted 50 minutes, during which time she expanded on her experiences, often with enthusiasm, and sometimes with emotion, as she related to her first year as a registered nurse. Celeste described how much she enjoyed living in the rural community. She explained she was thankful she could work there, instead of commuting as she did during school. “During my first year of school I traveled 87 miles one-way. Once I was accepted to the RN program, my trip was cut in half. I even spent the first summer two hours away in the dorm.”

Eve-Hospital 14

The day shift staff was at the nurses’ station, waiting for the night nurses to come out of report when I arrived at hospital 14. They greeted me as I introduced myself, telling me Eve would be out shortly. I visited with an RN who told me she has worked there many years. She offered that an appealing part of her job was working 12-hour

shifts, which allowed her time off between shifts. The nurses' station was cluttered. The furniture was old, but clean. There was a chart cart at the station, indicating this was not a paperless system. There was a radio system, which alerted the nurses to emergency calls, along with a call light and speaker system for the patient rooms. The doctors' schedules were hanging at the station. I walked around the hospital for a few minutes, locating the emergency room (ER) and a poster which served to notify the public of the fact there were not providers on site 24 hours a day, but that they would arrive within 15 minutes, and that the patient would receive care from trained nurses and staff until that arrival. This notice was posted at all of the hospitals I visited. The location varied, but was usually at the nurses' station or near their ER rooms.

When Eve emerged from report, we greeted each other. I reminded her of the aim of my study. I explained the consent form, which she dated, initialed and signed, keeping her own copy. Eve was a 2008 graduate of a baccalaureate program of nursing. She was in her 20s and had been working at this hospital since graduation, explaining that she was from a neighboring rural community and that travel to a bigger hospital was not appealing. Eve related she was nervous about being shadowed. She was still willing to let me observe and interview her. She was calm and made eye contact during the interview and observations which subsequently took place as Eve was working the night shift at hospital 14 and lasted approximately two hours.

Within approximately 15 minutes, a call was received at the front desk. A local woman, known to the nurses, was at a bar with her friend. She developed left sided weakness and chest pain, according to the caller, and was being brought in by pickup truck to the ambulance bay. The events that unfolded within this incident were, Eve

would later relate, an illustration of some of her most common challenges related to decision making at this hospital.

The first portion of the interview was not recorded due to the emergency room patient, which took up much of my visit. I took notes as the situation permitted and immediately transcribed those notes after leaving the hospital. I was able to ask questions of Eve during the event. After the immediate needs of the patient were met, Eve asked if we could finish the interview questions over the phone, as she still had work to do and was concerned about completing her work through the rest of the shift. These follow-up questions lasted 42 minutes and were recorded and transcribed by me. Eve conversed with me about her thoughts as I accompanied her to the radiology department with the patient and on errands to retrieve medical records and call the physician.

The census was not high during my visit, according to Eve. There were six patients. Eve was working with another RN and the CNA was there until 10:00 pm. The woman Eve was working with was an RN named Oprah (pseudonym). She looked 20-25 years older than Eve. Oprah told Eve, "You're in charge tonight." Eve turned to me, stating, "I always let whomever I work with decide. She always says I'm in charge. I guess, okay, whatever."

Grace-Hospital 04

I entered hospital 04 at 08:10 a.m. and found my way to the nurses' station. Grace greeted me. She led us down a hall to a conference room. "We'll go in here where it is private." I explained my study and asked her to review and sign the consent form, which she did, retaining her copy. We planned for the interview first, which lasted 60 minutes, and was then followed by observations, which lasted one hour. Hospital 04 was detailed

under my descriptions for Arial. The interviews for these two participants took place on the same day, but on different shifts.

Grace was a 2008 graduate of a baccalaureate program of nursing. After graduation, while awaiting her work permit, which would allow her to take her board exam, she worked at hospital 04 as a nursing assistant. She explained, "I did that to kind of get my feet in the door and kind of learn how things were and just kind of the flow of things." Her husband was employed at this hospital in another department, which was how she came to live and work in this community. "I was offered a job [at the larger hospital approximately 100 miles away]." Grace stated that when the opportunity came up at this facility for her husband, they decided to try it. "I remember I told my mom, 'well mom, I guess I'm going to move to [hospital number four]' and she couldn't believe it."

Grace acknowledged that initially this was not where she envisioned herself after graduation, but that she enjoys it now. She stated, "This is a small town, in the middle of nowhere, but it's wonderful. It's wonderful and I've learned a ton. You have to learn fast because you don't get in a lot of things and the things you get in, you get infrequently."

She seemed enthusiastic during her interview. Grace told me she had just been promoted to a leadership position over the extended care side of the hospital and now works on the acute care side only on an as-needed-basis. "I supervise and make sure cares are being done. I'm the wound care nurse and I make sure things are being done up to our policies and that every week that wound is getting better or we need to be trying something different." Grace's supervisory duties included delegation of the work to unlicensed assistive personnel and collaboration with the charge nurses.

After we were done with the recorded interview, we continued to talk as Grace showed me a new physical therapy aide they were trying with a patient. The items were called carrots, she explained, as she described the patient's contractures in her hands. The contractures had caused ulcers to form in the palms of the hand. "These seem to be helping to prevent her nails from digging in and causing sores." The CNA assisted in repositioning the patient. Grace undressed and measured the wound. She and the CNA discussed the progress of healing. Grace explained that they were using a different dressing now and the wound was improving. We exited the room and entered the nurses' station. An RN who looked 15-20 years older than Grace updated her on a recent family issue with a newly admitted resident. There was much discussion between the two on services that might help this family. During the recorded interview and observations, Grace emphasized the relationship with her co-workers, which she described as both integral to facilitating her decision making, but challenging to establish, as a young novice nurse who was not originally from the community.

Hannah-Hospital 10

Hospital 10 was a newly built CAH and was well designed. There was local art work and tributes to the sisters, doctors, and nurses who went before. The colors (I was told later) represented animals and plants native to this area of the state. The staff were friendly, as they greeted me before I got the chance to greet them, asking if I was Teresa. The director of nursing appeared long enough for an introduction. She left after introducing me to Hannah, who was in report. I was invited to listen to the last part of report with her by the charge nurse. I notice that Hannah took copious notes, which she had color coded with a highlighter. She poured over the medication record, apologizing

to me for the fact that she must do this. I reassured her that this is her job and I did not wish to alter or impose. She asked the nurse leaving her shift for updates on very specific pieces of patient information. Hannah talked briefly with the charge nurse and decided that she wanted to be interviewed first, then shadowed during her shift. I explained my aim in this study and, after reviewing the consent form she signed and kept her copy. Our recorded interview lasted 35 minutes. I observed her for a two-hour period as she performed initial assessments and passed medications to the patients she would be caring for over the next 12 hours.

Hannah began working at hospital 10 after her graduation in 2009 from a baccalaureate program of nursing. This nurse, who was in her 20s, related that her interest in nursing was personal, “My grandmother had cancer about eight years ago, and I saw how the hospice nurses cared for her. That sort of drew me to it. My sister actually is a nurse too.” She was originally from this community, which has raised money, “since I was in high school” to build this hospital. The hospital was 113 miles from the nearest tertiary hospital. “I did my internship here, so I was able to spend a full summer, just following the other leaders and learning how they do things.” Hannah credited that experience with her self-described relative comfort. She was quick to explain that she was not completely confident and that the nature of patient census and acuity at this CAH played a part in her blossoming confidence, along with the help of co-workers.

On the floor I’m pretty confident. I work the night shift—a lot. Right now there are six patients on the floor. At 11’oclock it will be just me and the charge nurse. If she gets stuck in the ER, I’ll have all the patients. I mean, this happens on days too, but there are more nurses around then. I’ve taken care of a lot of patients in a short amount of time. On nights we have a lot of good role models—nurses who’ve been here a long time, so they’ll sit down when we have down-time and

share stories of things we don't see much. If something is going on in ER, they'll have me come back and help them.

Isabel-Hospital 08

I entered hospital 08 through the ER entrance as was instructed at the front of the facility for night shift hours. It was completely dark at 4:45 a.m. The hospital looked drab in this dark lighting. There was a great deal of clutter at the desk. Isabel was not at the desk—no one was there. There was activity in a room down the hall. When Isabel emerged, she apologized, “I had an admit.” I reassured her that the job was her priority—not me. After introductions and small talk, I explained the aim of my study and asked for her consent. She initialed and signed the consent form, reviewing it and keeping a copy. Isabel had not planned for me to observe her, citing as a reason, “There’s nothing to see tonight, because the patients are all sleeping.” She introduced me to the paramedic when he arrived at the desk. She was working the night shift with him. She explained that she worked nights with either a paramedic or an unlicensed assistive person—sometimes another nurse, but not very often. Isabel told me the average census was five patients at their facility. She stated that the ER was “not that busy at night.” Isabel took me on a tour of the hospital and I noted the patient rooms and the ER bays were orderly and clean.

We entered a private conference room she had chosen for our conversation. The interview lasted 40 minutes and was recorded. Isabel did not seem especially engaged during the first part of our interview. She kept her arms folded, initially, but relaxed her posture and released her arms about half way into our time together. Initially, she did not make eye contact with me when we conversed, but this improved. I wondered later if her behavior was related to some of the issues she recounted with a nursing instructor in her

program of study. She explained during the course of the interview that she has reflected back on those educational experiences a great deal, noting that she now understands the rationale behind the instructor's expectations. "I always make sure I know why—mostly 'cuz of that teacher who made sure you knew why you were doing stuff. She kind of scared me—well not scared me—but I always call someone and see what they would do."

Isabel, who was in her 20s and pregnant with her first baby, cited her reason for working at hospital 08 as related to being married to a rancher from the area. She was from a neighboring rural community. She was a 2009 graduate from a baccalaureate program of nursing and told me nursing was not her first career choice. "I wasn't sure what I wanted to do, but I started [pre nursing courses] and I really liked the program, so I transferred to [a smaller university] to finish."

Isabel described her workplace as a supportive work environment which she greatly appreciated. She has the option of driving less than an hour to an urban center to work, and in fact was offered a job there upon graduation. This was not appealing to her, however she stated: "I don't think I'd ever leave a place where everyone gets along so well and works together so well."

Jewel-Hospital 06

I entered hospital 06 at midway through Jewel's 12-hour day shift. The hospital was under construction, and there were signs at the entrance apologizing for the mess. There were also signs on the door to direct patients to the appropriate clinics with hours. I introduced myself to the receptionist and asked for the director of nursing, who appeared within minutes. She was young and very warm and welcoming, with a nice smile. After I

signed the HIPPA form she produced, she took me to the nurses' station. While we awaited Jewel's arrival, I ask the director about orientation for new graduates: "No nights until fully oriented with support to nights and ER. We make that a priority. Prior to my coming, one new graduate told me she had a two-week orientation. She is now one of my nurses who made the most errors in medications. I am putting her through more orientation as a result." She went on to tell me that she loved her job here. "I am working with [a university] to start an LPN satellite program here. One of my employees mentioned in her evaluation that that was a goal and I went for it. I want us to grow our own and I want to do whatever I can to help my employees meet their professional goals." The director left me to observe and interview Jewel, stating that if I was in need of anything to just ask.

Jewel, who was in her 30s, was a 2009 graduate of a baccalaureate program of nursing and without prompting, acknowledged her late entrance into the profession. "My mom said I should have been a nurse a long time ago when I was in high school, and I said, 'eww, I don't want to be a nurse'. But now I love it...so, things change. When asked why she became a nurse, she stated, "I suppose it started in 2004. My mother-in-law was diagnosed with cancer, and I helped take care of her. I didn't go back and start in school until 2006. It just kind of worked on me."

Before the interview and observation process began, I reviewed the consent form with Jewel. I explained my plans for interview and observations. She signed her consent form and kept her copy. Our recorded interview lasted 40 minutes, while the observations lasted 90 minutes. We began by answering a call light. The patient was a swing bed patient. As we walked the hallway, Jewel reminded me what swing bed means: "They are

in transition, not well enough to go home, but not ill enough to be in acute care. Today I have two swing bed patients and one acute care. It is a slow day, but I've kept busy." She explained that the average census is about eight patients per day. "They are doing more surgeries because we have a new surgeon." They also have an ER, acute care, and emergency labor and delivery services. The 12-hour day shifts are staffed with a total of three nurses (two on the floor and one in the ER). Jewel told me that there was also a nurse on call most nights, although the ER did not have a dedicated nurse during that time. She smiled readily and appeared relaxed during both the interview and the observations. After observations, we conducted the interview in a private room Jewel had chosen near the nurses' station. She asked the charge nurse to notify her of any patient needs. Jewel gave specific examples during the interview to illustrate her role. She seemed to truly enjoy her professional experiences, although she acknowledged she was not completely comfortable yet. "I am a 'what-if' kind of person. I'll turn to the nurse and say, 'what if *this* happens?' and they'll say, 'well this is what we're going to do', and then I feel better if I have a plan of action."

Lailah-Hospital 07

I arrived in time to listen to report at hospital 07. There were 12 patients on the floor. The patients included: an individual with exacerbation of chronic obstructive pulmonary disease; a 14 month old with pneumonia and retractions and fever; an elderly woman with a gastrointestinal bleed of unknown etiology—later identified as a mesenteric arterial venous malformation; a middle aged man with a myocardial infarction; and an elderly man with metastatic prostate cancer. There were no labor and delivery patients and no patients in the critical bed or the ER. This variety of patients was

common to the CAH. Lailah explained that there were nurses on call for the labor and delivery, ER, and critical care admissions, should their help and expertise be needed.

Lailah, a nurse in her 20s, graduated from a baccalaureate program of nursing in 2008. She began her career at this hospital, spending her first year here, briefly transferring to another facility in a large city with her husband, and then returning here. Lailah and her husband were both from farming families in the area. She was dressed in the uniform of the profession—scrubs. Lailah and I discussed plans for the interview. I ask her to read the consent form. She signed and kept her copy. I explained to her that her job was her priority, and that if we could not fit the interview in during her work time, we could do it later. Lailah stated that she had some four o'clock medications and assessments to first, and that we could interview after this. She had four patients, one of whom has just finished a blood transfusion and was down in radiology. A nurse who was leaving his shift reported blood pressure variations, to Lailah for the patient receiving blood. He stated that at the larger facility where he worked prior to coming to hospital 07, the variations would have constituted a reaction, but there were not parameters here. Lailah questioned him a about the patient's general appearance, which he reported as stable. I spent an hour and half observing Lailah, before we proceed to interview in a room she had chosen—a report room that was private and just off the nurses' station.

Lailah appeared comfortable during the 30 minute recorded interview. She explained to me that she had purposely chose nursing as a career. "When I graduated, I knew I was going to go into something with medicine and I was a bio-chemistry major. I was going to do to medical school, or be a doctor. Because of all the extras, and the on-call I began to look at other options. One of the doctors I job-shadowed said, 'have you

thought about a nurse practitioner? I thought about that'. I started looking into that. Eventually that is what I want to be, so I needed to attend nursing school first." She attended school in a city 300 miles from her hometown, but knew she'd come back here to live and work. Lailah did clinical practice as a student at hospital 07, which she attributed to her current comfort level with the facility. "Every 4th year nursing student has to do the practicum, and I think that really helps. I also worked as an aid here prior to being a nurse. I think that really helped, too."

Sarah-Hospital 16

I greeted the night staff from the night before. The non-smiling nurse from my earlier visit with Sophia was transformed into friendliness this morning, and greeted me with a smile. I said hello to Sophia, asking her how the night went: "I'm tired. It wasn't too bad. My first night on, I am always wiped out by this time of the day."

Sarah arrived from the report room and introduced herself. She was friendly and smiling. I reminded her of the aim of my study. I reviewed the consent form with her, which she signed, keeping her copy. Sarah was a 2009 graduate of a baccalaureate program of nursing. This nurse, who was in her 20s, explained she had not originally planned to work at this rural facility. "I had a job offer at Mayo after graduation. Then, as I was preparing to move, they said, 'sorry—we have to rescind—they are closing the wing we hired you for'. I wondered what to do. The hospitals in the city where I went to school were not hiring—they didn't hire quite a few of our class. A friend of mine works at [a neighboring hospital] and she said, "Try [this place]—it is really good experience." So I did and I'm really glad. I've learned so much."

Sarah chose to do observations first, which began at 07:00 a.m. This was a very busy part of the day for Sarah. The situation turned out to be similar to that of my visit with Eve in that we ended up simultaneously conversing as I shadowed her for approximately two hours. I contacted her with follow-up questions for clarifications when I transcribed our interview notes later that morning. She was working a 12-hour day shift and explained to she began her day with report, then assessments. When we were at the desk, she cleared it off, stating, “I have to start my day with a clean desk—I just can’t think without that.” Sarah’s first task was an IV start. I accompanied her to the room. She easily started an IV, attaching an infusion port to the site. When she was done, she assessed the patient and visited with her about pain—asking for a rating, which the patient gave. We moved on to the next room. Sarah performed focused assessments on all of her patients. She asked them all about pain, and made comparisons to them about yesterday versus today, related to how they looked and how they reported they were feeling.

During my time with Sarah, I noted her communications with her co-workers and the health care providers, who included both physicians and nurse practitioners. Sarah credited her confidence with how she had been treated not only by her co-workers, who were not always supportive, according to her, but also with the relationships with the providers at this CAH. On the way down the hall, she stated, “I used to try to fake it when I didn’t know the answer. The nurse practitioners would say, ‘If you don’t know, just say—it’s okay’. So, now, I just say if I don’t know.” She smiled at this.

Sophia-Hospital 16

When I entered hospital 16, the entry way was dark and the lobby was empty. There were no visitors in the building. It was the night shift and the hospital was quiet. I found my way to the nurses' station, just around the corner, and met a dark haired woman in a nurse's uniform there. She did not greet me; however, I introduced myself. Without smiling, she asked if Sophia was expecting me, and stated, "She's down there—she'll be here in a moment." I seated myself at the nurses' station after asking if it was okay. Sophia arrived after five minutes and we introduced ourselves.

Sophia graduated in 2009 and began working here immediately after passing her board exam. The nurse in her 20s, stated, "I am married to a guy from here. We have two kids. I'm from [a smaller town] just down the road and so it was logical. I did think about working in a bigger city, but when I graduated, the hospital I wanted to work at wasn't hiring any new grads, so I came here."

I reminded her of my aim and reviewed the consent form with her, which she signed, keeping her copy. Sophia asked that I shadow her for a period of time first, and then do the interview. Observations took place over the next 90 minutes. As we left the nurses' station to round on one of her patients, I noticed the hospital vision, mission, and goals statement. One of the mission statements was related to being technologically advanced. I asked Sophia about this, and she explained: "We're going electronic [medical record] at some point soon. I'm excited, but some people aren't so excited about it here." I mentioned the sign near the entrance of the hospital, the same sign I saw at other hospitals I visited, outlining federal and state regulations, which allowed for the healthcare provider to live within 20 minutes of the hospital. The sign notified visitors

and patients that nurses and other trained staff would care for them, initiating certain treatments, until the provider arrived. I asked Sophia what that meant to her. She explained the physician response was usually much quicker than what was provided for in the regulations. She also told me that she was comfortable with the situation at her hospital and explained, “The nurse practitioners also help and are available, especially during the clinic hours.”

Sophia told me she was the charge nurse, responsible for all the assessment charting and most intravenous medications, as well as coverage of the emergency room. She informed me that she had advanced cardiac life support (ACLS), trauma nurse core curriculum (TNCC), and would soon have pediatric advanced life support (PALS). “I really liked TNCC—it was so good.” This hospital was not unlike other hospitals in the study as they sought to increase the variety of services available for their community. Sophia noted they would soon be expanding services to include laparoscopic procedures, like appendectomies and cholecystectomies, which would require an over-night stay. “When that goes through, all the RNs are getting a class for sedation.”

During the recorded 30 minute interview, which took place in a conference room just off of the nurses’ station, and during and my observations, I noted Sophia appeared comfortable in this facility and in her interactions with the patients. She was relaxed and made eye contact as we conversed. She easily made conversations with her patients. Sophia told me she has been involved in health care for some time. “I was a CNA for about seven years at the nursing home, which is attached to this place. I wanted to do something more. I shouldn’t say it was money, too, but really, the pay for an RN is better and that was part of it.”

Categories, Themes, and Assertions

Through the process of open coding, in which participants' own words were used first to search for patterns, four major categories emerged. These categories were labeled as: (a) Sociocentricity, (b) Grasping and Rationalizing, (c) Education, and (d) Versatility (Figure 5). Constant comparison to the collected data and current literature provided guidance in development of the categories, themes, and propositions. The participants' words and actions, along with member checking, supported the themes. The combined activities of the interview processes, the analysis process, and the literature review served to inform development of propositions and axial coding of a central phenomenon.

Category I: Socio-centricity

The category of socio-centricity emerged early in the process of analysis (Figure 5). This category related to Bandura's (1977) social learning theory as well as Lave and Wenger's (1991) situated learning theory. Bandura believed in "reciprocal determinism", that is, the world and a person's behavior cause each other (p. 9). He placed emphasis on the idea of observational learning, which involves attending to behavior, remembering as a possible model, and rehearsing, or playing out that behavior (p. 22). Lave and Wenger placed more emphasis on the social relationships than on acquisition of skills and knowledge through cognitive processes, asserting individuals must understand their worlds by participating in frameworks that have a structure. Both theories emphasized context. In this case, the rural critical access hospital provided a very unique context, as did the requisite responsibilities of the registered nurse within these hospitals.

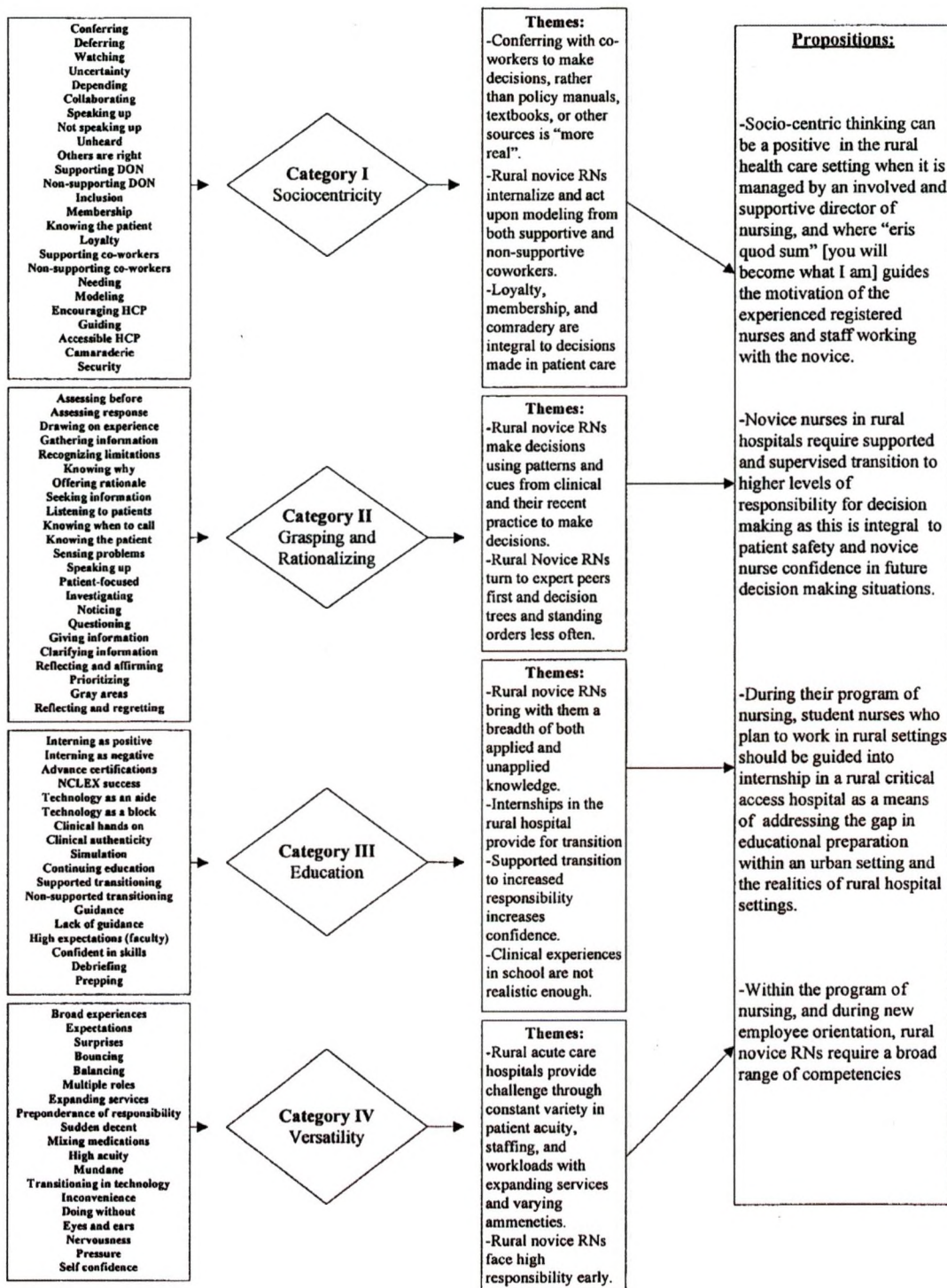


Figure 5. Open coding map with propositions.

This context directly influenced cue acquisition, and therefore decision making in a way that was unique to the rural setting. Three themes emerged from the category of socio-centricity:

1. Conferring with co-workers to make decisions, rather than policy manuals, textbooks, or other sources is “more real”.
2. Rural novice RNs internalize and act upon modeling from both supportive and non-supportive coworkers.
3. Loyalty, membership, and camaraderie are integral to decisions made in patient care.

Theme One: Conferring With Co-workers to Make Decisions, Rather Than Policy Manuals, Textbooks, or Other Sources of Information is “More Real”

The idea of co-workers as a source of information for decisions being “more real” was a direct quote from Ally, who noted that she was not indiscriminate in searching for information from her coworkers, but that this was the most convenient and realistic method.

Teresa: How often are you confronted with aspects of patient care/procedures with which you do have prior knowledge?

Ally: I'd say most of the time unless we have a patient where you come to work and they say, “So and so is in with such and such,” and I think, “Oh, I've never heard of that.”

Teresa: What do you do when something like that comes in? How do you prepare yourself?

Ally: I'll ask the nurse who's coming off what they did or what the patient was like for them and try to be really specific so if anything deviates, I'll know. I guess if it's something really rare I might look it up. I guess I have better luck asking other nurses. That seems more real.

When participants were asked for the most important resource for confirming or denying the decisions they made in patient care, all but one (Celeste) answered in some

manner that their co-workers were their first source of information. Celeste, when asked about getting help when faced with high-pressure decisions, such as in the ER, cited her co-workers as well, however.

Teresa: Do you have nursing journals or policy and procedure books?

Jewel: Yup there is a go-to book for procedures, like if someone has a port. And there is a policy and procedure for everything in this drawer.

Teresa: Do you go to policy and procedure books more or nurses more?

Jewel: If I am wondering about a hospital policy on something I will look in the policy book, but if it a patient situation, a patient concern, I'll go to the nurse I am working with.

The fact that most participants cited their nurse co-workers as a source of information was not entirely surprising, but these novice nurses did not limit their source for cues to other nurses. Physicians, directors of nursing and unlicensed assistive personnel, including paramedics, certified nursing assistants (CNAs) and ancillary staff played a part as well.

Teresa: What would you say has been your most important resource you have for confirming or denying choices you make in patient care?

Meesha: My most valuable resource? Um, I guess when I am looking at it, I look at the whole clinical picture, what your assessment findings are, what the labs are. There is not just one resource. I find myself looking at labs and then thinking, "Do their lungs sound better today and how do their labs look?" I also think I have great resources in the staff I work with. We can always talk things out—even with the nursing assistants that have worked there 30 years.

Teresa: In a typical day, how often are you confronted with aspects of patient care procedures with which you do not have prior knowledge?

Jewel: On a typical day, it may not happen at all, but it can definitely happen at any moment. You know, I had no pediatric experience at all, so you have a 7 month old come in with respiratory problems and it's terrifying because I know they can go bad at any moment, but I had a nurse with me that I could ask, "Hey, this is what he's doing. And she'd say "It's okay, calm down."

Respiratory therapy is really good too. They have lots of experience with pediatrics. So I could call them in a panic and say, "I don't think this is right." and I'd think, "Good thing you guys know what you're doing."

During my observations of Jewel, I was able to see her utilization of ancillary staff. She called the radiology department for two orders, because she was not sure of what the tests meant. As an experienced nurse, I recognized the tests, but did not interfere. Jewel asked the radiology tech (on the end of the line) for help in understanding why a carotid duplex would be done for a patient. In another section of the orders she was observing, Jewel could not make out the doctor's handwriting. She called a nursing assistant over. The two of them could not decipher it. The director of nursing passed by, overheard the conversation, and directed Jewel to call the physician to clarify as per policy.

While participants described careful consideration before calling the physician about patients, they also related comfort with calling their physicians. Some commented that they knew this was not the case at larger facilities.

Teresa: What types of decisions do you find you most frequently make in your practice setting?

Isabel: Probably when to call the doctor. I would say that would be a big one that you have to make when working nights.

Teresa: Do you have someone you can call besides the doctor?

Isabel: I would feel comfortable—like I said the other nurses are really good. I could call one of them. I can call the doctor, though. In a rural community they're all really friendly and so I'm not really intimidated by them like you see some places. Of course they have their moments but everyone does.

Teresa: What do you feel has been the greatest factor in helping you transition into your role as a rural nurse?

Sophia: How willing everybody is to answer questions. They say there's no stupid question. I would argue there is, but they don't mind answering a question or showing you—even the providers—and the doctors, if you haven't done it, they understand that.

Teresa: What do you feel has been the greatest factor in helping you transition into your role as a rural nurse?

Meesha: I guess for me, I had a close relationship with the physicians and staff. I worked here as a CNA- so, I knew a lot of the staff. Everyone is very willing to

help out. I've never felt stupid if I had a question. If I was unsure of something that they wanted, if I said, "Now why'd you do this?" they would help me learn. I know a big part of this was my relationship with our director of nursing because I was good friends with her daughter. She's really helped me develop my decision making skills. She isn't afraid to say, "You did this great, next time maybe we can try this or that." I have a lot of trust in her. I'm never scared to call her in for help or questions. Even our physicians—they are never upset if you call—never get mad at you. That's helped me a lot—just personal relationships. They've helped me learn and grow.

I rounded with Meesha and the physician covering that morning. I noted their conversations regarding a six year old boy in isolation for severe pneumonia to be mutually respectful. Meesha offered her opinion about the child's antibiotic based on the culture report she had just read, and asked the physician if he would be changing the drug. This was patient advocacy, based on supporting lab data. The physician had not yet looked at the labs and thanked Meesha for her input. I found out later in the morning that the physician thought I was a nursing student shadowing Meesha. I have pointed this out, because I did not believe he had anything to gain by behaving differently in front of me, when his impression was that I was a nursing student, not a researcher with 24 years of experience in healthcare.

I saw similar conversations between healthcare providers at hospital 16 and Sarah. She asserted her opinion regarding a patient's improved oxygenation, pointing out her ability to take a walk in the hall, which she could not the day before, and maintain an appropriate oxygen saturation. Sarah explained further to the physician assistant: "It is actually when the patient is resting—sleeping that the [oxygen level] goes down." Her opinion was noted and discharge plans were made.

The physician who came into to see the emergency room patient at hospital 14 was described later by Eve as approachable, and easy to talk to.

Theme Two: Rural Novice RNs Internalize and act Upon Modeling From Both Supportive and Non-Supportive Coworkers

All of these novice rural nurses gave examples of the help they sought from co-workers. Asking others was an expectation when one is new and especially when one is new to a healthcare setting. “The more costly and hazardous the possible mistakes, the heavier the reliance on observational learning from competent examples”

(Bandura, 1977, p. 12).

Teresa: Can you tell me about a time when you made a decision recently wherein you felt sure of your rationale for your decision-making process.

Hannah: Having the trust that it’s the right decision to wait or not to call. Like tonight I am working with Linda (pseudonym). She is a great nurse. She’s been here a long time. She’ll come in and check out the patient, and then together we decide if we should call.

Teresa: Have you had any exciting experiences?

Arial: The first time I gave a blood transfusion, that was fun, because I was so nervous to do it and I did it and it wasn’t bad at all. I felt like I learned a lot that day.

Teresa: Who helped you get through it?

Arial: Wanda (pseudonym). She was working that day.

Teresa: In a typical day, how often do you think you are confronted with aspects of patient care/procedures with which you do not have prior knowledge?

Arial: Well, at the nursing home, not that often. At the hospital—probably every day.

Teresa: Who would you ask?

Arial: We had a director of nursing for a while who was good. But, for a while we didn’t have a director of nursing—we had a fill in. Half the time no one was there. Margaret (pseudonym) is a really good director. I can ask her for anything.

Teresa: What do you feel has been the greatest factor in helping you transition into your role as a rural nurse?

Jewel: The coworkers I have because if I need help, they don’t have any problem, and if they have something to show me, they do. If there is something they think would be interesting for me, they call me. I love that.

But what happened when the purported competent examples were not necessarily experienced, encouraging, or competent? Even when participants pointed to co-workers

as their greatest sources of information, some conceded that they had, through experience, become choosy about the person they sought advice from in a time of need.

Teresa: How do you know the other nurses are right?

Ally: Because they always are! (laughs). I guess you just have to use your judgment. If I was going to ask something, I guess I would say, "Okay, so their foot is purple. Was it purple all night? Does the doctor know? Okay, I'm going to go in a check it so I know." I guess too, it depends on who the nurse is. I know that isn't very nice.

Teresa: Tell me about your best day to date in this career.

Lailah: I had a patient one time—he wasn't in the ICU—he was really border line He is a transplant patient and on all the anti-rejection medications. When he came in, he was just shaky and had a cough and fever and wasn't feeling well and in the middle of the night he crashed. He got up to go to the bathroom and he was weak and dizzy. His BP was 70/40. I called the physician assistant and she said, "Just watch him." He had fluids going. She said, "Oh its okay, just watch him" and I was like, "Oh my gosh"—it was my first summer out of school—and I asked the other nurses that were on. I ended up just documenting and documenting and documenting. When the doctor came in the next morning, after I was gone, he wondered why he hadn't been called. I went in and talked with my nurse manager about it. She visited with me and said, "You did everything correctly. You documented everything." and basically she just said, "If you don't like the answer you get when you call, you can go above them. We have a policy written for that." But I think even her just telling me I did things well, even though I was scared to death, just verified in my mind that I can handle things.

Teresa: Can you tell me about a time when you made a decision recently wherein you felt unsure about the rationale for your decision-making process.

Lailah: That same night, I definitely felt unsure. Do I call the doctor? I called the physician assistant and she definitely didn't have the right answer. I probably should have called the doctor, but I didn't know if I should or not. I felt very unsure.

In this case, Lailah considered the available cues, noting the patient's blood pressure and his complaints of weakness. She turned to the other nurses and even a physician assistant. Lailah indicated that she was not entirely comfortable with the answer, but thought this was her only option. The fact that she mentioned her continued documentation, presumably full of her assessments of the patient's vital signs and

condition, revealed her certainty that something was not right. The problem was, she was uncertain with what to do with the unsatisfying answer she had received.

Eve has experienced similar advisement, which was observed on the night of our interview. A patient had arrived complaining of right sided weakness. After being told by the seasoned nurse that she would be the charge nurse for the evening, it became clear that Eve was not in charge. Rather, she was delegated duties such as paging the doctor and retrieving the chart from medical records, while the seasoned nurse attended to the patient, directing Eve to give the patient aspirin as per a chest pain protocol. I noted Eve did not verbalize refusal to this, but neither did she follow the directive. When the episode was over, Eve shared her frustration.

Eve: This is not how I wanted this to go...

Teresa: What do you mean?

Eve: I wish I wasn't working with Oprah (pseudonym). She tells me to be charge, and then she takes over. There are other things I would have done, but I can't talk about that right now about it.

We discussed this situation later, as a part of follow up questions to the observation:

Teresa: Can you tell me about a time when you made a decision recently wherein you felt unsure about the rationale for your decision-making process.

Eve: I guess one of them just happened. You know, when that patient came, she had been drinking, and when she got here she obviously wasn't making decisions, but when she came back from CT she was making decisions. She said she wanted to go home; she kept saying she had a right. We had given her [sedation] earlier and I don't think she was very wound up, but the doctor ordered more [sedation]. I guess I sort of felt like I was doing this against her will, because the patient kept saying, "I have a right." And she did have a right.

Teresa: I think the doctor felt pressured because he had called for helicopter transfer and wanted her to get checked out further.

Eve: I don't know if you noticed, but [Oprah] wanted her to have aspirin right away and I didn't give them for that reason. I guess I wanted the doctor to see her because I guess a bleed was in the back of my mind.

Teresa: You are asking the right questions, though.

Eve: That is hard for me though, when I know something is right, I guess I feel pressured that they know more than me and they know what's right and I should just do what they say.

Eve described the impact of the events of that night as good: "I know that I have to stand up for what I know is right and make sure I am heard, so others know what I am able to do." She also explained that she had asked her director of nursing to not schedule her with Oprah (pseudonym) whenever possible so that she could work with seasoned nurses she felt were more reliable.

Mentoring and modeling were important responsibilities of seasoned RN staff, yet even within the small and interdependent work in a rural hospital, horizontal violence still occurred. Participants tended to down-play this phenomenon. Sarah, for example, stated that "as a whole" everyone was great. Isabel and Hannah denied they had seen such behavior, as did Jewel. It may very well be that due to the tight social connections within the community and the hospital there were less occurrences of bullying. The literature indicated otherwise (Baltimore, 2006; Pollard, 2009; Schmalenberg & Kramer, 2008; Simons, 2008). Baltimore (2006) described this unsupportive behavior by veteran nurses toward new nurses as "blatant rejection of their responsibility for a new staff member's success or failure" (p. 29). Sarah described a critical incident of learning under pressure. In this case, she sought the help of the director of nursing, who stepped in to the situation.

Teresa: Have you had a worse day?

Sarah: Yes, definitely. It was one of my busiest and we had a patient come in to the ER with a blood sugar of like 1000. She wasn't responsive. The nurse I was working with was someone who thinks it is, sink or swim. So, this patient comes in, and she says, "Well you're the charge nurse; you're supposed to know what to do, so do it." At one point the doctor said he wanted some Kaexyalte and I asked her where it was. She said, "What?! You should know that by now."

I just started crying. I called [our director of nursing] and she came down right away. She helped me a lot. That night I went home and just cried and I thought I

never want to be a nurse again. We've had worse things since then. I've handled it, but that was bad.

Sarah explained to me that the aggressor had resigned from the hospital. The director of nursing proved to be a protector for both the patient and the novice nurse. This director, when I discussed this emerging theme with her, brought this same incident up without prompting. She began nodding, and stated, "There are some older nurses who, I think, really push the newer nurses by asking them questions and making them think, and that is a good thing. That particular nurse went beyond that, though. She has since moved on. It was unfortunate she chose to behave that way."

Theme Three: Loyalty, Membership, and Camaraderie are Integral to Decisions Made in Patient Care

All participants discussed the need to call in other nurses for help. They had no qualms about doing this, citing both their safety and the patient's safety as a reason. Ariel noted that part of her reason for leaving the acute side of the hospital was because available help was not always a given. She indicated appreciation for the new director of nursing they presently had, stating that she was "good", but was still 20 miles from the hospital. The majority, however, indicated there were persons who came to their aide for critical incidents. This fact seemed to cement their belongingness to the rural health care system.

Teresa: Are there people on call for you for back up?

Celeste: No one is on call, but like the night I had that first trauma, I just called. And you'd be amazed at the people I got in at like three o'clock in the morning. It was Jenny [pseudonym] the one that was there today. She came in and she was just awesome. I would have lost it without her. An LPN came in and we just worked together. We had another one, where our firemen were in an accident and umm I think we had seven come in on trauma code and we had them all stabilized and transferred out in 40 minutes. That is with two physician assistants and two physicians. We work fast. So, we treated what we could here and sent out. It

worked like clock-work—I know it won't always be like that, but that day it was. I was called in on that one. It was amazing to come in and see all the people that were there.

Teresa: I just want to be clear. You supervise extended—or long-term care, but you are also on the acute side?

Grace: Yeah, I cover over on the acute side if we get traumas or respiratory or codes. I help out as needed, if we are extra busy. You know, we are a limited number of staff in this community, so when we had 11-12 patients over the month of January, well usually we just need two nurses, but for then I came over and helped as a floor nurse. You would think well, really six patients? How busy can you be? But there is always the ER and it doesn't matter if it is Tuesday in the middle of the day. I never knew a rural hospital could be that busy.

Teresa: What do you do when you're not familiar? What's your resource on nights?

Isabel: Actually, a lot of times we have an RN who does office work at night instead of coming in during the day. I'd say she's here 50% of the time when I'm working. Other times, I would call—well we only have two nurses in town, but I could call one of them.

Through the in-vivo coding, I noted the term “knowing” related to the patient.

This code aligned with both the category of sociocentricity and the category of grasping and rationalizing, as there was also discussion that supported the benefit of continuity of care as it impacted knowing normal presentation of the patient from previous experience with her or him. I also observed these nurses in contact with patients they knew from the community. Jewel told me, after a family of five stopped at the desk to say hello to her, that she knew them and had taken care of the baby earlier that spring. Grace discussed the café-talk which occurred when she first arrived in town and how she has now become a person who engages in café-talk. Meesha was related to the gentleman she started an antibiotic on through her husband, and had helped work his cattle at one time in her life. Eve and the nurse she was working with commented that the patient being brought by private car was known to them, as she frequented the ER. Ally described a memorable

incident of caring for her husband's uncle when he began hemorrhaging. This intimate knowledge places an extra value on the delivery of care, according to these participants.

Meesha articulated this well:

Teresa: Tell me about your best day to date in this career.

Meesha: I guess nothing in particular...not the best thing ever. I've had a lot of good days where, ahhh I don't know. I think a lot of my better experiences are where I feel we've done what we could do for them or we've transferred them to get the better care and when the patients are gratified and feel like they've gotten good care, that is good. I don't want patients to feel like they're not treated well and like we don't care about them. Having a personal relationship with them—just growing up here—and knowing so many people from this small community has made a big difference in my nursing. I really want them to know that I want to make their bad experience a little bit better.

Discussion of Category I

One of the themes of NDM is related to the study of individuals who were tasked with decision making which involved ill-structured problems set in dynamic and changing environments, often in high-stakes situations. The rural CAH environment encompassed such an environment. Novice nurses were tasked early in their career with decision making that is often high-stakes, in that at times, patient lives depended on the decisions which were made. Yet, the participants indicated they were not alone, even when they might be the only licensed person on a shift, they believed they could get help, at least by phone, to confer about their patients.

The Situated Clinical Decision-Making Framework (Gillespie & Paterson, 2009) provided for a critical assumption related to the social context of decision making of novice nurses:

Efficacious decision-making relies on what nurses know about a patient, nurses' ability to engage a patient in discussion about his/her needs, and nurses ability to engage others (e.g., family, health care practitioners) in both the identification and evaluation of decisions. (p. 166)

The last point made by researchers Gillespie and Paterson (2009)—nurses’ ability to engage others—was especially crucial for these participants. Indeed, they made decisions about who to trust and who to engage in patient decisions. They verbalized and demonstrated during observations the exchange of information between several health care disciplines, not just senior nurses with whom they worked. Although they paid attention to cues gathered from the patient, such as vital signs, and cues from their own intuition (e.g., “he didn’t look right”), these nurses recounted the necessity to involve others, even if it meant calling others at home in the middle of the night. The director of nursing from hospital 16 expanded on this point, “Our unlicensed staff often wear other hats. For example, some of our nursing assistants are also paramedics who can intubate patients. So they are credible sources for information.”

Lave and Wenger (1991) suggested as persons, who are new to a community of practice, became more competent, they moved from peripheral learning into the center of the community. They emphasized the fact that the nature of the situation impacted this process, positing that the novice was supported by senior, or experienced individuals, as knowledge expanded. Gillespie and Paterson (2009) aligned with Lave and Wenger, as they described the subversive role of the novice nurse, asserting they were “junior partners” (p. 166), who developed decision making skills within their social learning context. The challenge for the novice nurses in this study, however, lay in the fact that they may not have had the opportunity to sit at the periphery, or be a junior partner for very long as they took on leadership roles (charge nurse) and advanced certifications within their first year in their rural healthcare setting. The potential for emergency room

visits alone, amidst the normal patient load, was a constant reality. While many of the CAH hospitals had either back up staff to call in, or nurses dedicated to the role of charge and emergency room, the novice nurses in this study had all experienced some form of responsibility of care for emergency patients when they also were responsible for patients on the floor within the first two years, and in some cases, within the first year, of practice.

Category II: Grasping and Rationalizing

From an extensive review of research on clinical judgment in nursing, Tanner (2006) developed a Model of Clinical Judgment in Nursing. She drew five conclusions from the research, which she suggests emphasized the role of the nurses' background, the context of the situation, and the nurses' relationships with patients as integral to their ability to notice, interpret and respond:

(1) Clinical judgments are more influenced by what nurses bring to the situation than the objective data about the situation at hand; (2) Sound clinical judgment rests to some degree on knowing the patient and his or her typical pattern of responses as well as an engagement with the patient and his or her concerns; (3) Clinical judgments are influenced by the context in which the situation occurs and the culture of the nursing unit; (4) Nurses use a variety of reasoning patterns alone or in combination; and (5) Reflection on practice is often triggered by a breakdown in clinical judgment and is critical for the development of clinical knowledge and improvement in clinical reasoning. (p. 204)

In this study, six of the novice nurses had graduated from their programs in 2008, the other six in 2009. All of them graduated in the spring, and all but one of them had graduated from a baccalaureate program of nursing. Considering their orientations lasted anywhere from four weeks to eight weeks, they had been working as RNs post-orientation for a range of 9-21 months at the time of the study. They all worked in critical access hospitals with emergency services. While they were not a completely homogenous group, their recounted experiences were similar. Their collaboration with, and at times

reliance on, others was also a theme, but so too were the types of data they gathered to inform their decision making. Benner, Tanner, and Chelsa (2009) called the inferential reasoning exhibited by the novice, advanced beginner, and competent performer calculative rationality. Calculative rationality involved comparing mainly textbook descriptions of signs and symptoms to actual patient presentations (Benner et al., 2009). From their extensive investigation into the development of nursing expertise, these nurse researchers noted that as nurses become proficient, they rely less on calculative rationality. This was due in part to the realization that the textbook did not provide for the variations seen in real people and in real situations (Benner et al., 2009, p. 385). Tanner (2006) described three interrelated patterns of reasoning used by the experienced nurse. She asserted, “Rarely, will clinicians use only one pattern in any particular interaction with a client” (p. 207). The three patterns she identified were: (a) analytic processes—in which the nurse generates alternatives, weighing them against the presenting data; (b) intuition—in which the nurse experiences apprehension of a clinical situation, and (c) narrative thinking—in which the nurse seeks meaning of a patient experience through interpretation of human concerns, intents and motives (p. 207). Two themes emerged from the category of grasping and rationalizing:

1. Rural novice RNs make decisions using patterns and cues from clinical, and their recent practice to make decisions.
2. Rural Novice RNs turn to expert peers first and decision trees and standing orders less often.

Theme One: Rural Novice RNs Make Decisions Using Patterns and Cues From Clinical and Their Recent Practice to Make Decisions

In response to questions such as “Tell me about your best/worst day to date”, “What decisions do you make most frequently?”, and “How often are you confronted with the need to make a decision, when you are sure/unsure of your rationale?” provided insight into the cues these nurses used when making clinical decisions. Observations provided for more data from which to draw conclusions about the information they gathered prior to clinical decisions. The participants were able to articulate familiarity with the situation. Some verbalized seeing similar situations in clinical. Others talked of the patient “not looking right”, which can be described as clinical forethought (Benner, Kyriakidis, & Stannard 1999). “Clinical forethought both shapes and is shaped by the practitioner’s clinical grasp, which can be thought of as an immediate understanding of the clinical situation” (Benner et al., 1999, p. 64). This intuitiveness was based on patterns of recognition, and a sense of awareness that was based on experiential learning.

Teresa: Tell me about your best day to date in this career.

Sarah: Oh, yeah. There was this lady, and she came in and she just sort of had vague symptoms. She didn’t feel well and she was nauseated and just hadn’t been herself for a few days when she came in. The doctor wanted to discharge her. And I just thought, “There is something wrong with her”—so I said something. And the doctor said, “Well, what do you think is going on?” and I said, “I think she’s having an MI” and he said—“Fine, then do what you want.”

So, I followed the standing orders for ER and I did enzymes and an EKG and found out she was having and MI and we sent her out.

Teresa: You told me about an incident that qualified as one of your most challenging. Can you tell me how that even impacted the way in which you make decisions now?

Ally: Taking care of my patient while he was hemorrhaging rectally helped me feel more confident that I had trusted my gut feeling. I had a bad feeling about him all night and then when he started bleeding very heavily I was not that surprised and was more ready for it, because I had been preparing in my mind and

had warned others on the shift that I had a bad feeling about how this might turn out.

Teresa: Can you tell me about a time when you made a decision recently wherein you felt unsure about the rationale for your decision-making process.

Grace: Well that would be just like, with this code. I had a code—I'll never forget it—I was all by myself on the hospital side with an aide. The care center side had a nurse. It was my last night before I was leaving to get married, so I was just counting the hours before I was going to be off for two weeks. This lady was not supposed to code. I had just talked with her 20 minutes before, and everything was great. I was making my two o'clock rounds—and she codes. I yell for the nurse on the other side. She makes the calls to get people in. My hands were just shaking but I was like, directing: "You start CPR and you get oxygen and bag her. We got the crash cart, got the pads placed. Our doctor lives 20 minutes away, the nurse from the across the street was here fast and another nurse in town, too. They intubated her and we pushed the epi. I knew those decisions. I had the rationale.

Teresa: How did you have that rationale?

Grace: I think I saw a lot of codes as a CNA and the nurse who came in was also an EMT—so there was that expertise there. I had seen about 5 codes prior to that, here. I also get called in for codes since I live in town. I think all that helped. I was calling the shots and my hands were shaking. The doctor came and he said "Geez, I could have stayed home." We had everything as we should have. The ACLS classes and PALS. I don't have TNCC yet. I'm taking it though. When we do our ACLS, one of our trauma nurses is retired but she comes in and helps us out with keeping up on trauma and ACLS. We do mock codes and things like that when she is here.

Knowing the patient in relation to expected patterns of presentation (e.g., a patient with chest pain, or chronic obstructive pulmonary disease) has been cited as a component of decision making (Benner et al., 1999; Benner et al., 2009; Cioffi, 2000; and Tanner, 2006). In the stories related by nurses within this study, there were accounts of knowing what normal, versus abnormal were in terms of vital signs parameters and expected presentation of specific illnesses.

Teresa: If you were asked to describe the most important aspect of your job, what would you say that is?

Meesha: Prioritizing and recognizing changes. I just think that is my most important responsibilities because we don't have a physician there 24 hours a day. So just getting a good background on them and noticing distress in them. If I don't recognize it, there is no one else to recognize it—especially at night. That is

one of them that happens a lot—with the elderly—maybe they weren't having trouble at the beginning of the shift, but half way through they are and if I don't recognize that, then no one else will and they'll get worse. And then I think with the ER, you are the first one in there and you get the background and sometimes they'll tell the nurse a little more—talk a little more openly. Some people don't want to waste the physician's time, so they'll talk to me instead.

Teresa: Tell me about your most challenging day to date.

Meesha: Yeah, I've had a couple. Last summer we had a lot of bad traumas coming in. One of them was at the end of my shift. It was a horrible accident—someone I knew and they called it right at the ER—there was nothing we could do, but it was just a really tough day for me—there was absolutely nothing we could have done and I know that, but I just felt like we should have tried. I feel like it's unfair, but you can't change it. Another one too, was I had a younger gal—and I was pretty new at it. She was just very sick and I did call my physician several times and he kept saying, "It's okay—we're sending her out" and I just had this feeling that something wasn't right. It turned out to be an ectopic pregnancy. I feel I should have been more persistent. I tried to address the problem, but I should have been more confident.

Teresa: It's hard when you know something is wrong but you don't have hard evidence.

Meesha: And that is exactly what it was. She was puking. She would get up and almost pass out. I tried cathing her and I couldn't get urine. I finally had 5 ccs and they got a pregnancy test and that's when "click", and everyone was like "Oh crap, you gotta get her going." It just didn't feel like we were doing everything we could. I felt like the physician wrote it off. I'll never forget that. But that is one of those things—abdominal pain, kidneys—you just aren't sure. There have been other times, where you just have a bad feeling; you just know that something isn't right. I did talk to the doc about it. I said, "You know, I know I'm new and I might cry wolf five times, but I had a sense." I do think after that he took me more serious. I think maybe I won something there. He usually does listen very carefully to what I have to say. I just felt badly that I should have—could have done more. Thankfully there were not bad results, but still

Teresa: Can you tell me about a time when you made a decision recently wherein you felt really, really, sure of your rationale for your decision-making process?

Celeste: ahhh (sighs) well, I think probably—and this wasn't just my decision—I brought it to another nurse, but we had this COPD patient. She was there a while, and it got to the point where she didn't want her Bi-Pap anymore. So, we were trying to wean her off. She got to the point where she was very anxious, you know how COPD-ers are. Her color wasn't very good. We wanted to keep her at 88-90% and her O2 saturation had been running 96%, but her color wasn't good. She was going down-hill. We asked the Dr. if we could do ABGs. He said, "No." and we were like, "Won't you just go look at her?" Her color was just ashen—not good. It took over the weekend before he did an ABG on her as she was leaving

for a clinic visit in [another city]. She had critical labs, so, we kept her. It was frustrating, I couldn't get him to order the ABGs for her and that was frustrating because I knew that something wasn't right.

Teresa: What types of decisions do you find you most frequently make in your practice setting?

Jewel: That's a tough one. Because I think there are decisions I make that I don't consciously make. It's just something you get used to doing, like comfort measures, like hot packs or ice, cognitive status. You make decisions about if they are okay or not, and whether to call the physician for something like O2 saturations and accu-checks. I suppose patient assessments are the most common decisions I make. You know one time I had a patient whose O2 stats were 93, 94, 97%...for the month he was in here he pretty much stayed at that level. He was a burn patient. Then one day, he was at 91%. That's not anything too far below normal, but it didn't seem right. It's not alarming, but it's not normal for him. So, I called respiratory and said, "What do you think?" and they said, "The doctor should be made aware." So I called the doctor.

Observations supported the idea that these nurses took in multiple pieces of data to make decisions. For example, Hannah took copious notes during report and clarified information about her patients with the nurse who took care of them in the prior shift. When I ask her about this, she stated, "I want to know everything. I have had enough experience on nights to know that I need to plan ahead and ask a great deal of questions. I like to have my ducks in a row." One of her patients was a man with a long history of coronary artery disease, who had unstable angina and two bypass operations. Rather than assume he knew to put on his call light for chest pain, Hannah asked him about how his pain had felt when he had a myocardial infarction and then asked him to describe his current chest pain rating.

Ally questioned the accuracy of a blood pressure obtained by a nursing assistant, asking her if the patient was sitting up and if she used an automatic or manual cuff. The nursing assistant admitted she took one reading with an automatic cuff. Ally then left the desk heading down the hall toward a utility room. "I think I'll grab a smaller cuff. Maybe

the cuff she used is too big.” She took the blood pressure manually and determined it was within normal limits for that client based on her baseline vitals. She told me, however, that she planned to monitor the blood pressure.

Sarah performed focused assessments on all of her clients during my observations with her. She asked them all about pain, verbalizing comparisons regarding their pain ratings from the day before versus now, and related to how they looked and how they reported they were feeling. She advocated for a patient with a diagnosis of bowel obstruction who the physician was about to discharge, providing rationale: “Are you sure you want to send her home—she hasn’t eaten anything—we don’t really know her bowel function.” The patient was not discharged.

Lailah caught a potential medication error as she reviewed medications she was about to give. The pharmacist had loaded the cart with an incorrect dose. Lailah noted the dose did not make sense to her and questioned it at the pharmacy. At that point the drug was replaced with the correct dose.

Theme Two: Rural Novice RNs Turn to Expert Peers First and Decision Trees and Standing Orders Less Often.

When I checked with participants about the emerging themes, Hannah noted, “I am not sure about this one, I use standing orders more, but decision trees less.” Where I was able, I reviewed the available standing orders which ranged from a page or two of general orders, such as “May give milk of magnesia for constipation.” to specific order sets for patients presenting with chest pain and anaphylaxis. Sarah and Sophia both shared in their interviews that they might turn to the standing order as a part of the information they gather, but that it would not be a primary source for deciding what to do

with a patient. As Sarah put it, “I’d still call or ask someone if I questioned what was going on at all. I wouldn’t just use a standing order.” Jewel showed me decision trees in the emergency room and informed me that she would review them, but when it came to deciphering what she should do with a client’s borderline blood sugar, for which she did have a standing order, she turned to her seasoned co-worker for advice.

Teresa: What would you say has been your most important resource here at this hospital for confirming or denying decisions you make in patient care?

Jewel: The nurse I am working with that shift. A lot of the time I second guess myself. I am a ‘what-if’ kind of person. I turn to the nurse and say, “What if this happens?” and they say “Well this is what we’re going to do.” and then I feel better if I have a plan of action. So, I would say my biggest resource is the nurse I’m working with on that shift.

Teresa: Can you tell me about a time when you made a decision—about anything wherein you felt sure of your rationale for your decision-making process.

Lailah: A lot of times, after I’ve made a questionable decision, and then I come back and have the same situation again, it’s my own experience. I don’t have to go to another nurse. Like even with the insulin, I had someone with a very low blood sugar, and I wasn’t sure if I should give her long acting. I did, though, because I knew it wouldn’t affect her until the morning. I did consult with another nurse, who agreed, and it did turn out okay. We ended up adjusting her morning insulin, actually.

Teresa: How do you know the other nurses are right?

Ally: Because they always are! (laughs) I guess you just have to use your judgment. If I was going to ask something, I guess I would say, “Okay, so their foot is purple, was it purple all night? Does the doctor know? Okay, I’m going to go in a check it so I know.” I guess too, it depends on who the nurse is... I know that isn’t very nice, but.....

Teresa: What would you say has been your most important resource for confirming or denying decisions you make –if you aren’t sure of yourself?

Ally: Depending on what it is—if it’s a medication question, I might just look it up. We have web MD so I might look it up on there. I probably ask people more than I should, but especially to reassure—especially if I think I know something but I don’t for sure—I ask people a lot of questions.

Teresa: Do you feel comfortable asking?

Ally: Yeah, I feel like I’m able to use good judgment about when it’s appropriate and when I need to look something up.

Teresa: In your nursing education, what stands out in your memory as the most helpful to you in planning, implementing and evaluating the care you give?

Celeste: Probably it was pounded into my head to look everything up. If you don't know it—don't be afraid to find that book. Look it up if you don't know how a disease progresses. Or if you have questions, don't be afraid to ask someone.

Teresa: Do you have access to those sorts of resources?

Celeste: I do—I have them at work and I still have all my nursing books at home. So, if I come in and say, someone has something I only remember touching on--like ARDS, I'm no expert at that. When I got home, I would read about it.

Teresa: What if something comes in and you're not sure entirely sure about a procedure—is there a book you can check or some other reference?

Isabel: Well, I suppose I could check a book, but I feel comfortable asking the doctors if they are here, which if it's an ER, I would have to call them anyways. They are usually good 'cuz they know I'm a new grad.

The findings here mirrored those of a five-year longitudinal study of the post-entry competency of LPNs and RNs (NCSBN, 2009). Seeking help from an experienced physician or nurse was typically a first action. "When asked to describe resources available to support their practice, no nurses described seeking research evidence, or consulting printed or electronic resource material to support their clinical decision making" (NCSBN, 2009, p. 13). The novice nurses in this group, however, indicated they used multiple pieces of information from their patient situations as cues, along with the advice of others to help them make decisions. At times they used standing orders and even decision trees, but less often, according to their accounts.

Discussion of Category II

In Naturalistic Decision Making, the focus was on situation awareness, diagnosis, and strategies toward decision making. Cioffi (2000) found that nurses identified the need to call for help in emergency situations by gathering information from touch, observation, listening, feeling or sensing and knowing. Through interviews and observations, I sought

to understand the cues used by these novice registered nurses as they made clinical decisions. I was also interested in sources of feedback that would influence subsequent decision making. The fact that these novice participants described intuition as a part of cue acquisition surprised me. The main tenet of clinical forethought, or intuition, was that this distinguished the novice from the expert (Benner et al., 2009; Thompson & Dowding, 2002) in that the expert is able to bypass the analytical steps in order to arrive at a decision. The group of novice nurses in this study verbalized use of intuition. However, while these novice participants discussed “gut feelings” and “knowing something was not right”, they also sought further information for the cues they perceived. They searched for confirmation either in the midst of the event, or in the aftermath, as they reflected on the situation.

One of the main differences between novice and expert nurses is their organization of and use of information when making decisions (Benner et al., 2009; Cioffi, 2000). As the novice nurses in this study recounted their stories, they talked about using the expertise of others to confirm their suspicions and support their decisions, something Benner et al. (2009) referred to as “pooled expertise” (p. 236).

It can be argued that enlisting the help of others was also a form of decision-making. That is, the nurses in this study seemed to know the bounds of their developing expertise and collaborated. When decisions were complex and set in high-stakes situations, as they often are in health care, even seasoned nurses experienced uncertainty (Cioffi, 2000) and resorted to collaboration. In rural health care, where the patient census and patient acuity is highly variable, development of expertise, in terms of recognizing familiar patterns and cues for similar patient situations, may come at a different pace than

in an urban center where a nurse works with a specific patient population. Recognizing the need to collaborate and engage others for the benefit of the patient was something these nurses described. Observations provided instances where the participants were astute to important cues, such as blood pressure, patient-reported information, like pain ratings, and inaccurate information on a medication dosage.

Category III: Education

In most rural areas, nurses have limited professional education and continuing education opportunities, yet they must know how to interface services between hospital and community based-services, and must be comfortable navigating rural social structures (NRHA, 2005b, p. 1). The participants of this study were all college educated. Eleven of the 12 had a baccalaureate degree in nursing. They were not asked specifically about their success with their state board licensure test, but the dates they started their employment indicated they were successful on their first attempts. One participant reported starting work a few months after her graduation date because her mother was seriously ill. All participants and their directors of nursing established the importance of advanced certification courses. In hospitals with expanding surgical services, the RNs were receiving training on management of the patient recovering from anesthesia. It was apparent that educational needs were being addressed, as evidenced by the participants' descriptions of their activities. There were, according to participants, and supported by observations and discussions with the directors, continuing education activities in place for the nursing staff. In some cases, they were required to travel off-site for this education.

This study revealed the varied nature of nursing in a CAH. The fact that rural hospitals provided for a diverse patient population was well documented in the literature (Bushy, 2004; Hegney, McCarthy, Clark, & Gorman, 2002; Keahey, 2008; Kenny & Duckett, 2003). The challenge, for those who educate and hire, as well as for the novice rural nurses themselves, lay in gaining the knowledge and skills to manage their roles.

Four themes emerged from the category of education:

1. Rural novice RNs bring with them a breadth of both applied and unapplied knowledge.
2. Internships in the rural hospital provide for transition.
3. Supported transition to increased responsibility increases confidence.
4. Clinical experiences in school are not realistic enough.

Theme One: Rural Novice RNs Bring With Them A Breadth of Both Applied and Unapplied Knowledge.

Teresa: In your nursing education, what stands out in your memory as the most helpful to you in planning, implementing and evaluating the care you give?

Arial: Just your clinicals. You can read anything in a book, but just doing it. I felt we got to do hands on things and see a lot of stuff.

Teresa: In your nursing education, just in general, what stands out in your memory as the most helpful to you in teaching you how to plan, implement and evaluate the care you give?

Jewel: From the beginning, they start you with critical thinking in mind. They start you right off the bat, so it becomes—not quite second nature—you can't have it second nature at that point—but it starts you immediately thinking that way. It's a frame of mind and way of thinking that becomes automatic. They also have specific classes for critical thinking. They are good about that but they are also good in specific clinical situations to talk with you, "Okay—this is what you did, this is the decision you made."—you know they would help you recognize the critical thinking and recognize the progress you made, because sometimes, you don't even realize it.

Teresa: What stands out in your memory as the most helpful to you in planning, implementing and evaluating the care you give?

Sophia: um (pauses). I think somewhere toward the end of your junior year, when I was able to connect the classroom with what I was seeing in clinical. You know, seeing something in lecture—you now seeing a patient and then seeing those bullets on the power point—it was finding a way to connect the two.

Teresa: In your nursing education, what stands out in your memory as the most helpful to you in planning, implementing and evaluating the care you give—or does something stand out?

Isabel: Definitely the clinical experience, and I had one teacher who was very particular. She actually made me cry a lot (laughs), but I think about her now actually because she always just drilled into your head the nursing process and she'd ask you, she made sure you understood the entire picture. Even now when I do stuff I think of her now—I hated her at the time, but experiences with her stand out a lot.

Teresa: In your nursing education, what stands out in your memory as the most helpful to you in planning, implementing and evaluating the care you give?

Grace: I never thought I would be accepting a job like this two years out of school. I gained a lot of experience on the floor where I worked on the oncology floor at General Hospital (pseudonym) as an aide during school. The nurses would take you in and let you see things. "I'm putting an NG in, want to help me?" I also had one instructor that just gave you a lot of confidence. Just complimented you and would let you make decisions but also say, "I don't know are you sure about that?" I think out in clinical you would see that nurse and you'd think, "Okay I want to be like that." I did my preceptorship in ER and there was one nurse who was amazing and confident and everyone looked to her. And I thought: I want to be like that where people trust me and I know what I'm doing.

In the rural hospital settings from this study, the novice nurses had advanced certifications within the first year of their practice. Sophia commented, when I returned for a follow-up visit, "I know my classmates who are working in a bigger place—none of them are in ICU—but they are on the floors and some in other specialty areas, I know they don't have these certifications. I think that is interesting." My visits with the directors of nursing revealed these advanced certification classes were offered at the expense of the facility. It was not a question of whether these nurses would receive the training—they would—and within their first year at most facilities. The guidelines within these certification courses apply nationally. In some cases, such as those hospitals

offering labor and delivery services, or at facilities where a population of patients with chronic wounds was served, the nurses traveled to take classes from experts in the field.

The director of nursing at hospital 15, where Meesha worked, commented on the educational supports for new nurses transitioning into the role of ER nurse: “Yes, usually when they first start we don’t have them do it, but within a year, we have ACLS and TNCC. TNCC is very good—they learn a lot. It helps them organize the trauma—the abc’s. You know, that is the hardest part. It can be scary. I’m just a phone call away. Our nurses are willing to come in. Our providers are great to work with.”

Participants easily recounted their continuing education activities for me. Lailah graduated from a program of nursing which required certification as a nursing assistant in order to apply for the program and then offered ACLS and PALS as well later in their program of study.

Teresa: What kind of certifications do you have?

Lailah: I got ACLS and PALS through school.

Teresa: Oh you did? and TNCC?

Lailah: No

Teresa: Are some things offered through the facility and some things on your own?

Lailah: Hmmm

Teresa: How does that work?

Lailah: ACLS is and I think TNCC. But when the nurses orient to OB, the nurses go on their own to take a two day class in [another city]. Our nurse educator-- she’s got lots of little classes that aren’t necessarily certification, but you can get CEUs. She’ll do a heart class and just different classes throughout the year.

Teresa: In your nursing education, what stands out in your memory as the most helpful to you as a new graduate?

Lailah: Before I started school I wasn’t a nursing assistant, but to get into school, we had to have it. In nursing school I worked at a nursing home and then during the summer I worked here. I think it really opened up my eyes and I got to see more of what goes on beyond the textbooks. So I’m glad they made us do that. They didn’t make us get employment, but they had us take the class.

Teresa: I know it helped me, as a nursing student.

Lailah: Yeah, and it helped me appreciate the aides and what they are going through and understanding that they have busy days too—they may not be passing meds.

Theme Two: Internships in the Rural Hospital Provide for Transition.

The idea of a rural nurse residency program to improve retention is described in several studies within the nursing literature (Keahey, 2008; Molinari et al., 2008; Squires, 2002). While none of these participants were a part of a residency, some did choose to do their internships, or practicum clinicals at a rural hospital. Those who had done an internship at the facility where they were eventually hired (Hannah, Celeste, Ally, Lailah, Meesha, & Jewel), reported that this was helpful.

Teresa : What was your orientation like?

Celeste: I started in June and it went to August. But, I mean, I feel if I have any questions, any doubts, the girls are wonderful. The majority of the time there are two RNs working—not always. My orientation was good. I also did my internship here, so that helped a lot, too, because I got to know some of the girls then.

Grace, who had worked as a nursing assistant at the facility in hopes of getting to know the place, related she had to defend her need for full orientation by reminding other staff she had been in a different role during that employment, not that of a nurse. Hannah noted the internship was helpful, but that the staff may have thought her familiar with the facility due to the internship, thus needing less in terms of orientation.

Hannah: Umm it helped that I did my internship here, so I was able to spend a full summer. Just following the other leaders and learning how they do things. And then I did an orientation when I started.

Teresa: If there has been an obstacle to your transition into your role as a rural nurse—what has it been?

Hannah: Probably going from the intern to the nurse. Everyone expects I was here before I started, which is good—there's a lot of trust, but it's also a lot of pressure.

Theme Three: Supported Transition to Increased Responsibility Increases Confidence.

The varietal nature of patient acuity and census, along with the staffing ratios in rural health care, potentially created situations in which novice nurses were placed under stress. “Inherent to rural nursing is the demand for the nurses to possess a high level of self-confidence and competence” (Keahey, 2008, p. E15). Without effective orientation and continued support, novice rural nurses may choose to leave the acute care area altogether as Arial did. Ally and I talked specifically about transition into charge nurse roles. She worked at hospital 07 where Lailah also worked.

Teresa: At this point, are you one of the nurses in charge of the ER?

Ally: To actually be a charge nurse, you have to sign off as charge, which I haven't done that yet, but I've pretty much done ER since I've started here and I've done charge and ER when it's me and an LPN—so not officially I'm not, but I've done it and I'm comfortable in that role.

Teresa: Is that as if to say, “I'm ready to do this”?

Ally: Yeah, and there's a class we take, which hasn't been offered. I'm actually taking it next week, so I'll sign off after that.

When I had arrived at hospital 10 for my initial interview with Hannah, the director of nursing explained that another nurse, whom I was supposed to interview, had expressed that she did not feel comfortable: “She's having some personal issues and is struggling a bit with being in charge, so I am working with her to reorient and just slow down a bit.” This story was later alluded to by Hannah, who works at this hospital.

Teresa: How long before you take charge in the hospital?

Hannah: I have my book with tonight. I'm studying TNCC that's always required before you take charge, and I take that next month. Anytime after that they could start orienting me, but I asked our director if I could have six more months before I orient to charge. I don't feel competent enough. I think it's one of those things where if they push you, you push back up and hate it even more. And like, I've seen a couple nurses who they pushed and one was ready, but the other wasn't and now she's having a hard time with it—hopefully not for another 6 months.

I observed and heard from participants about how involved the directors of nursing were in direct patient care at their facilities. At several of the facilities, these leaders were giving direct patient care during times of high census or when emergencies presented. The participants talked of their directors' visibility and involvement. When I asked the director of nursing at hospital 06 about orientation for new graduates, she explained her rationale for giving full orientation: "No nights until fully oriented with support to nights and ER. We make that a priority. Prior to my coming, one new grad, who had interned here, told me she had a two-week orientation. She is now one of my nurses with the most medication errors. I am putting her through more orientation as a result."

This practice, of watching for instances of too much responsibility too soon, occurred where there was an involved director. Keahey (2008) described key elements of a successful residency where there was (a) a caring environment, (b) a learner driven competency checklist, (c) a single dedicated preceptor, and (d) manager involvement and support (p. E17). Where support was lacking, the results were detrimental as was the case with Arial, who left the acute care side of the hospital. She and Grace, who also worked at hospital 04, both shared separately that they admired and appreciated their current director of nursing. When Arial had started at this facility, there were several turnovers in the director's position.

Teresa: So you are just a year out of school?

Arial: Brand new.

Teresa: And you now work mainly extended care?

Arial: When I first started, I worked hospital and the care center and I don't know, after I worked here three months, I don't know, I had tons of stuff going on. I was planning a wedding. I just bought my first house. I was brand new and like the hospital was just crazy—so busy—and I didn't feel like I had a lot of

guidance, you know? So I thought, you know, maybe I'll just work at the care center for a while. Then I got pregnant, and I thought, I don't want to be nervous all the time. At the care center, I'm not so nervous, I don't have to worry about ERs coming in. It's just a comfort zone for me right now.

Teresa: you mentioned that when you came here, you didn't have a lot of guidance.

Arial: No not at all. When I started they were like, "Oh you'll have two months of orientation and this and that." I didn't get all the orientation I was supposed to get and I just felt lost—just nervous all the time. I think if they didn't have the ER here, I'd be fine. You know, you can get like four ERs at a time plus have five patients out here and that is really overwhelming being a new nurse. Yeah, that's how I felt. Not a lot of—like if I worked till 6:00 pm—if I had questions, there really wasn't anybody here, just me and an LPN.

Theme Four: Clinical Experiences in School are not Realistic Enough.

When I asked these novice nurses about what they felt might have been missing from the nursing education that they believe would have prepared them for decision making, their responses typically centered on what was missing from hands-on experiences. In follow-up questioning, Sarah expanded on this: "It's just not realistic. We don't take care of one patient in real life. Now when I got to do a practicum, where I was paired with another nurse—that was more real."

Teresa: In your nursing education, was there anything missing that would have been helpful to you starting out?

Hannah: Probably more patient loads. I mean I think my education was pretty well rounded. They don't focus on any specialty. They just want you to be a general nurse. But clinicals aren't really a realistic load. I mean as a student I probably would have freaked out if I had more. Usually one was all I could handle and sometimes if you were really doing well, you'd have two patients.

Teresa: Was there anything you wish you would have had in your nursing education?

Isabel: I wish they would have done like a rural hospital clinical. And I guess they used to, but then it just got too hard to get people in or something like that. I think that would have been helpful. It's totally different than at a bigger hospital. I think it would be good to do a little bit of all the shifts. Because you know, most people don't even consider working in a rural place, but they'd probably enjoy it.

Teresa: As long as we're on the topic of education in your nursing education, was there one thing or something that was missing what would you say would have helped you take on this job?

Eve: I guess, experience. The more you have the easier it would be, but school can only be so long. So, that would be the most important thing, I think—hands-on, to learn by doing. I guess I think the more experience the better, but I feel that we had a good amount of time.

Teresa: So, is there anything as you reflect back, that you've thought "You know I really wish I would have had 'blank' in my nursing education"?

Meesha: I think that some of the stuff we did was—some of the areas we visited—were not always helpful, but if I could have had three more weeks of full clinical and seen the changes over the shift, that would have helped. We never saw a patient go down. I just think too much time in some areas and not enough in others. Early on there is a lot of floor time, but you've barely completed your med modules, so all you are doing is assessment. I was fine with it, but some students aren't comfortable with patients, but once you are comfortable with baths and all that, then you have three to four weeks of clinical—I think that would be more beneficial and life like.

Teresa: Is there anything, as far as your nursing education goes that you wish you would have had that might have helped you come to a job like this?

Ally: I don't think so. I think there is only so much you can learn in the classroom and then you have to go out in learning it in the real world.

Teresa: What did you think of your practicum? You said you did it here.

Ally: My clinicals that were here, during internship, were really good 'cuz I got to do everything. My other clinicals, during school, were pretty pointless because you spent like one day at the hospital or nursing home. I guess I didn't feel like I got much out of them but maybe I did, I don't know.

Teresa: Did you have a rural nurse clinical?

Arial: No, but that would have been helpful. Like when I thought of working at a small hospital, I thought, "Oh that's boring, there's nothing going on." But on the other hand it's crazy. It's different than how I pictured working in a rural place.

Teresa: You mentioned that in your nursing education, you wish you would have had TNCC and more critical care.

Sophia: My class, the majority said this too, that we needed more ICU and ER. I've had ACLS, which was wonderful, but before that I had two codes and I just sort of felt like I was winging it. I called the Dr. of course, and you're never alone, like we can call people in.

Teresa: In follow-up to your comment that you agree, clinicals were not realistic, what do you think would be most helpful, in terms of internship, or practicum for a nurse who is going to work in a rural hospital.

Sarah: Well, doing an internship in a rural hospital would help, I think. I don't really see how it would hurt. I did mine in an ER, and I would say that, too, was very beneficial, because really, we are like a big ER. Anything can and does come in and you have to be organized. I learned about prioritizing.

Discussion of Category III

Traditionally, Naturalistic Decision Making studies have involved participants who were experts (Zsombok & Klein, 2009). While these nurses may not have qualified as experts at this point in their careers, they did bring with them a wide breadth of knowledge. Nursing education is unique, in that students are able to engage in both didactic and numerous clinical experiences. "When describing how they learn to become a nurse or 'think like a nurse', students invariably pointed to clinical situations" (Benner, et al., 2010, p. 12). Accordingly, they were typically given increasing responsibilities in clinical as they progress through their program of study (Benner et. al., 2010).

Participants in this study related positive comments about their nursing education as a whole, but nearly across the board, described clinical as unrealistic. Some of this may have been a function of student engagement, student choice in practicum (as was the case with Arial), and the situation of being novice in a real world setting. Isabel recalled feeling the pressure of high-stakes learning during her education and finding no particular enjoyment in it. Now that she is a practicing nurse, however, she has reflected on her instructor's expectations and understands.

Some participants acknowledged that they would not have been able to take the full patient loads they were expected to take once in their workplace, but related disappointment with the lack of relevancy to some of their clinical experiences. Clinical

education is about more than taking a realistic patient load, however. From their Carnegie Foundation commissioned research comparing nine schools of nursing and surveying 1,648 student nurses, Benner et al. (2010) described the clinical experience as “high-stakes learning” (p. 41). The most effective experiences for experiential learning were those born of learning in context, planning and feedback, and supported learning through questioning (Benner et al., 2010, p. 42-44). The most effective teachers tied classroom and clinical experiences together. These researchers concluded a practice-education gap exists wherein nursing education has now fallen behind the reality of practice in the real world.

Even as participants lamented the lack of realism in their clinical rotations, many talked of how their practicum experiences, which occur in the senior semester, prepared them for practice as they were able to take on more responsibility and were forced to be organized. How nursing students come to choose their practicum sites is not clear. For these novice nurses, a majority chose either a medical surgical, emergency room, or rural health setting because they planned to work in such a setting. Not all students are fully decided upon where they will be employed at that point in their education, however.

Discussions with both directors of nursing and participants revealed the pitfalls to unsupported orientation and transition into higher accountability roles. Lave and Wenger (1991) described legitimate peripheral participation as a bridge between the communities of practice and the developing novice (p. 55). The CAH is a challenging community of practice, as the opportunity to work with senior partners for the length of time required to master the variety of skills required to be a rural nurse is cut short by the needs of the facility to place the registered staff in positions of responsibility. Staffing is such that

upon completion of orientation, the new nurse was often the charge nurse, working with either an unlicensed person, or perhaps another nurse. Some of the directors of nursing described methods to facilitate transition: availability of experienced staff on call, extra orientation to specialty areas (e.g., emergency room, intensive care, and labor and delivery), and advanced certification courses. As surgical services expanded at the facilities, the nursing staff were being trained on post anesthesia care, such as monitoring during and after moderate and deep sedation procedures, and recovery of anesthetized patients.

Category IV: Versatility

One respondent (Sophia) asked me during a follow up interview if I was surprised at the different types of patients they cared for. She was curious because, she said, “I think some people think we don’t know anything and we don’t do anything important here.” Role diffusion (Lee & Winters, 2006) refers to the fact that the rural nurse is always a nurse (e.g., in church, in the grocery store) and that the rural nurse must also be able to perform a variety of tasks within the professional setting (p. 10). The rural nurses in this study described the requisite to practice in a number of specialties, including pediatrics, emergency care, post anesthesia recovery, ambulatory surgery care, oncology, trauma, and gerontology. The patient presentations during my observations supported their assertions and varied from pediatric to oncology and from emergency room to intermediate care services. There were patients with chronic infections who had implanted ports which were accessed for antibiotic infusions. Participants described expanding surgical services, labor and delivery services at some sites, and descent of

emergency patients—some of them with traumatic injuries and critical illnesses. Two themes emerged from the category of versatility:

1. Rural acute care hospitals provide challenge through constant variety in patient acuity, staffing, and workloads with expanding services and varying amenities.
2. Rural novice RNs face high responsibility early in their careers.

Theme One: Rural Acute Care Hospitals Provide Challenge Through Constant Variety in Patient Acuity, Staffing, and Workloads With Expanding Services and Varying Amenities.

Suzanne (pseudonym), the director of nursing at hospital 16, discussed hiring practices with me, after I shared the emerging categories and themes, along with my propositions. She told me the theme of versatility really jumped out at her due to some recent failed placements:

I've changed my practice in interviewing. I want someone who will fit our needs, as much as I want to fit their needs. Nurses here need very good organizational skills, and they need to know how to prioritize. There are a few of us who interview in a group. We are very forthright with the expectations and responsibilities of the RNs here. We tell them they'll be in the ER, they'll deal with traumas. We don't necessarily want to scare them, but in a sense, we do want to do that—to emphasize the awesome responsibility. They might be the only licensed person on a night shift, with back-up, of course. You'd be surprised how much that narrows the pool of applicants. I've had nurses with 30 years experience decide against working here after hearing about the types of patients we care for.

The nurses I interviewed expanded easily on experiences—usually in the ER setting—when I asked them to describe both their best and worst days to date. The variability of patient acuity, along with the sudden descent of patients on the ER, was a topic all participants related.

Teresa: Okay, so far, since November, tell me about your best day to date in this career. Where you went home and thought, "I rocked."

Jewel: I was working night shift and we got two car accident victims and then the next person that came strolling in, oh, she was horrible sick, with flu and dehydration and fever and vomiting. All of these came in within five minutes of each other and then as we're working on to CT scans, a two year old comes in with an asthma attack. So from 1:00 a.m. to 6:00 a.m. we were in ER. And we were bouncing back and forth checking our patients here and then coming back to our ER patients. Six o'clock is shift change and so I came out here to give report to the next shift and the doctor from the ER came out here to say, "Hey, you did good—thank you." That made my day, so then I went home and could sleep 'cuz the doctor said I did good. It was a good night, and it had a happy ending.

Teresa: Tell me about your best day to date in this career.

Celeste: Oh, we delivered a baby—and we don't do that here! I was still on orientation, and I was on nights. The doc happened to be here, and this lady came in, and it was her sixth child. I said, "We don't do that here", but the doc was like, "Well, maybe we should check her before we send her in the ambulance." She was already at eight centimeters, and that's how fast the baby came. I am very thankful—very healthy baby. We are not set up—no monitors. It was all natural, poor lady. I mean I had OB in school, and I've seen my sister deliver babies. We just did what we had to do.

Arial shared what was for her a traumatic, and ultimately, one of the last ER experiences for her. Her closing comment, "Your head is just spinning and you don't know what to do", underscored the magnitude of uncertainty, and the overwhelming pressure of initially managing these situations alone, until more help arrived.

Teresa: Tell me about your most challenging day to date.

Arial: I was working at the hospital and I had about eight patients. It was me and an LPN. I had three ERs come in all at the same time. One was unresponsive, one was kind of—I believe he was intoxicated—he was just going crazy, the other one was probably—she was young—maybe six and she had a really low blood sugar. So, I had all these patients. I had no help. It was hectic. I was trying to send one out on the ambulance; trying to get an IV in this little girl, which we don't get a lot of kids here. She was scared, and it was hard. But days like that, I called W. in and she came in to help. Another CNA came over to help. And I didn't work over here that much, so it wasn't in my comfort zone to begin with. There were call lights going off like crazy. I went home like four hours after my shift. I just cried. It was awful.

Teresa: When you walked into that how did you go about prioritizing?

Arial: The unresponsive was obviously first, but then we got him shipped out. Your head is just spinning and you don't know what to do.

The technology varied by facility. All sites had internet access, but aside from hospital 10, this was not a great source of information in decision making. Hannah showed me how she used tele-pharmacy to scan an order to a larger facility, and how she used an online resource for care plans. Nurses at other facilities explained they were in the midst of transitioning in technology. Some found the fact that they had been trained using electronic medical record and medication systems in their program of nursing, a hindrance initially.

Teresa: What do you feel has been the greatest factor in helping you transition into your role as a rural nurse?

Eve: Just the experience of others. The people I work with. I guess it's different for me, because I didn't have the paper charting in school. We had electronic charting.

Teresa: So are you saying that was difficult?

Eve: Well it was just different coming from electronic charting. We never had to make lab or x-ray requests, nothing like that.

Ally showed me the computerized discharge process, which was a function of her putting the physician orders into a template to be printed for the patient. She explained that at this point, they do not have computer charts, "We put everything in." They also do not have automated medication systems. I ask her if she trained in school on a computerized system: "I did, but I didn't care for the system. It was cumbersome. I actually do a better job of charting, I think, with paper." Others (Isabel, Jewel, Sophia) shared similar transitional experiences with inputting lab, radiology, and physician orders from a paper chart. Soon, they all shared, they will be on a paperless system.

Teresa: I am not sure if you feel you've had obstacles, but could you tell me about something you'd consider an obstacle to your transition.

Celeste: Probably my biggest was going to school in a bigger facility where everything was computer and here it's not. We're slowly getting there, but we still are all paper—everything is paper except common registration. You learn

everything on computer and it's like re-learning. It feels like you have to relearn and that's okay, no, that was the biggest transition.

Grace: Coming here is a 180 degree change. The technology isn't here. Everything is paper charting. Just how they do things; where things are kept. But you are just used to that technology. It's just little things. Like for an NG, for example. At [General Hospital] if you need to put something in, you go pick it up. Here, I open the closet and there is random stuff everywhere. Where's everything I need?

Teresa: No kits?

Grace: Yeah, it's just simple things like that. Like here, you have to worry about how patients are paying their bills. At a bigger place, they eat a lot of costs, but we have to watch that. Our patients in the hospital can only go acute for three days and then they have to go swing bed. And that is because we are critical access.

Teresa: Do you have internet access?

Isabel: Yeah, I try not to use it, but I make sure it's a credible source.

Teresa: Yes, I use Google, too, sometimes—just as a start. Did you have a handheld device in school?

Isabel: I can't find my charger for my handheld and I really miss it. I also wish we had a good database here. I'd like to look up research articles—even on nights if I think of stuff, I'd like to look up things and do research on it, but we don't have that.

Teresa: How do you manage that? [As an oxygen alarm is sounding on a cardiac monitor for telemetry at the nurse's station].

Sophia: It makes an entry every minute on the minute. This was something to learn right away—and not everyone knows it too now! [Continued to scroll through strips on the monitor, looking for a recording of the client's low oxygen saturation.] I'm going to run down and put her oxygen back on and check her. [Left before I could follow and was back within five minutes]. She was better with the oxygen. She definitely needs it—it looks to me like she'll qualify and then see, we get a home agency to set it all up for her, so it's nice.

I observed Meesha, at hospital 15 administer antibiotic to an out-patient who had low white blood cell counts from a round of chemotherapy. Next, I observed her caring for a six year old in isolation with pneumonia, an elderly gentleman who presented to the ER with an exacerbation of chest pain, and a woman who is an in-patient and who has an infected dialysis graft. Many of these patient visits occur sporadically, which presents a

challenge to the rural novice especially, in becoming proficient. Where some CAH are fortunate to have an experienced staff, there are nurses who are “specialists” with certain procedures.

Teresa: In a typical day, how often are you confronted with aspects of patient care/procedures with which you do have prior knowledge?

Hannah: Pretty much every—you mean patients seeming the same?

Teresa: Well, no, let’s see...well things like, how about portacaths—how familiar are you?

Hannah: I’ve only seen a couple.

Teresa: Okay & how many IVs have you started?

Hannah: Can’t count—a lot!

Teresa: Okay, does that illustrate it better? In terms of things you know about (IVs) and things you aren’t familiar with.

Hannah: I’d say most of the time I’m pretty comfortable. And like the porta-caths—there are specific nurses for those; chest tubes—there’s been one since I worked here. That is not an everyday occurrence we once had a teenager with one.

Theme Two: Rural Novice RNs Face High Responsibility Early In Their Careers.

I am not certain that I fully appreciated the amount of responsibility these nurses faced each day in their jobs. Even with my background in nursing and my experience in rural health care, I found myself impressed. I noted the sense of agency these nurses possessed. They verbalized an understanding of their obligation to advocate for their patients and to maintain a heightened sense of awareness for developing problems.

Teresa: If you were asked to describe the most important aspect of your job, what would you say that is?

Meesha: Prioritizing and recognizing changes. I just think that is my most important responsibility because we don’t have a physician there 24 hours a day. So just getting a good background on them and noticing distress in them. If I don’t recognize it, there is no one else to recognize it—especially at night. That is one of them that happens a lot—with the elderly—maybe they weren’t having trouble at the beginning of the shift, but half way through they are and if I don’t recognize that, then no one else will and they’ll get worse. And then I think with the ER, you are the first one in there and you get the background and sometimes they’ll tell the nurse a little more—talk a little more openly. Some people don’t want to waste the physician’s time, so they’ll talk to me instead.

Teresa: What do you feel has been the biggest obstacle to your transition into your role as a rural nurse?

Ally: Probably just maybe the huge variety of things we treat. You have to be a jack of all trades and knowing a little bit about everything.

Teresa: As far as specialty certifications, what do you have?

Ally: I have PALS and ACLS and I will have NALS—I was supposed to get that this spring, but unfortunately, I missed the class, so I'll get that later this year.

Teresa: If I asked you to describe the most important part of your job here what would you say that is.

Lailah: I would say being the go-between for the doctor and the patient, because a lot of times, the doctor leaves, and the patient is going, "What are we doing?" Maybe advocating goes along with that.

Teresa: If you were asked to describe the most important part of your job here, what would you say?

Hannah: Kind of being the eyes and the ears for the doctors—trying to use your critical thinking. I work a lot of night shifts, and so the doctors aren't always here—knowing if they need to be called or not.

Sudden descent of ER patients was a constant topic from all participants and directors of nursing. The vignettes under each of the emerging categories in this study often reflected incidents related to management of the emergency room patient or patients. Celeste described a particularly difficult incident with a child who died in the ER. In this case, the director of nursing proactively arranged for debriefing.

Celeste: Being a new nurse—I haven't had the experience. I wouldn't mind being second nurse, but I don't like being charge. And that is probably just being new. There are decisions there that I have to make, and I don't feel comfortable making them. There are not a lot of traumas here, but the first month I was here, we had six traumas come in. The one time I was working, we had a young trauma come in and that was difficult, but we had a debriefing and that helped a lot.

Teresa: Debriefing doesn't always happen.

Celeste: Yeah-it was good.

Teresa: I would guess hearing seasoned people say, "I felt that too" would help. Who arranged that?

Celeste: Our director of nursing, she had it scheduled before I left my shift so, I knew when it was. I did my debriefing the next night and I got home at nine o'clock. I was exhausted. I climbed into bed and I hear ambulances and then 20 minutes later I heard the helicopter, so I knew whatever it was wasn't good. And I was so thankful I wasn't there. I wouldn't have been able to do it, if I had two

nights in a row like that. They were two traumas and they both had to be airlifted. It kind of goes in spurts like that. In a rural hospital you see everything. It's not like some big hospital where they have their floors—you see everything.

Discussion of Category IV

The nurses in CAHs in this study were under pressure to function in roles that would be considered outside of their scope of practice. For example, participants in this study related they were often the first to triage and treat patients in the emergency room, functioning as the physician until he/she arrived. They figured out technology and equipment which ranged from bedside monitors to chemotherapy pumps. The focus on NDM is on how people use their knowledge and experiences to assess complex and uncertain situations and take action. It seems there could not be a better example of a complex and uncertain situation than a CAH, where patients presented at anytime and with anything. As one participant, Meesha, stated, “We’re like one big emergency room.” The category of versatility emerged as much from participants’ descriptions of the types of patients they cared for, as it did from the directors of nursing’s descriptions of what they hope to foster in their newly hired register nurses through support and education.

Celeste explained:

Teresa: On the other hand, in a typical day, how often are you confronted with aspects of patient care/procedures with which you do have prior knowledge?

Celeste: Oh, that is every day multiple times a day probably. Stuff you could do blind folded, minor things, like flushing IVs starting IVs hanging IVs. I’ve had a couple chest pains that were just indigestion, so I never got to start a nitro drip. When that happens, it will be new. And there’s been something I had to do ‘cuz I was charge and of course I’ve never done this, and so I grab the book and I’m looking through it and another nurse says: “I’ve been here 20 years and I’ve never given that.” So, everyone gets involved and learns together.

Bushy (2000) contended there was “ongoing debate as to whether rural nursing should be considered a specialty area or whether it is simply nursing that occurs in a rural

setting” (p. 31). These novice registered nurses indicated they felt their practice was specialized. All of them engaged in continuing education and specialty certifications. As their hospitals strived to expand services to the community, there will be a continual requisite to maintain a broad range of competencies. This versatility, in terms of persons and place presents a challenge to the staff of these CAH—staff who it seems are always on call.

The axial coding paradigm served to illustrate connections between the emerging categories (Figure 6). Because the propositions asserted after thematic analysis were derived from the observed consequences via axial coding, the axial coding paradigm and its constructs are explained next.

Central Phenomenon

The central phenomenon was a core category derived from the emerging categories, and which best exemplified the experience of the participants (Creswell, 2007, p. 160; Corbin & Strauss, 2008, p. 104). The axial coding paradigm (Figure 6) provided a visual aid to the central phenomenon, causal conditions, strategies, context, intervening conditions and consequences.

Sociocentric Rationalizing was identified as the central phenomenon and referred to the sense of belonging and agency which impacted the decision making in this small group of novice nurses in rural critical access hospitals. The significance of interdependence and welcoming relationships with their co-workers was pivotal in these novice nurses’ decision making experiences.

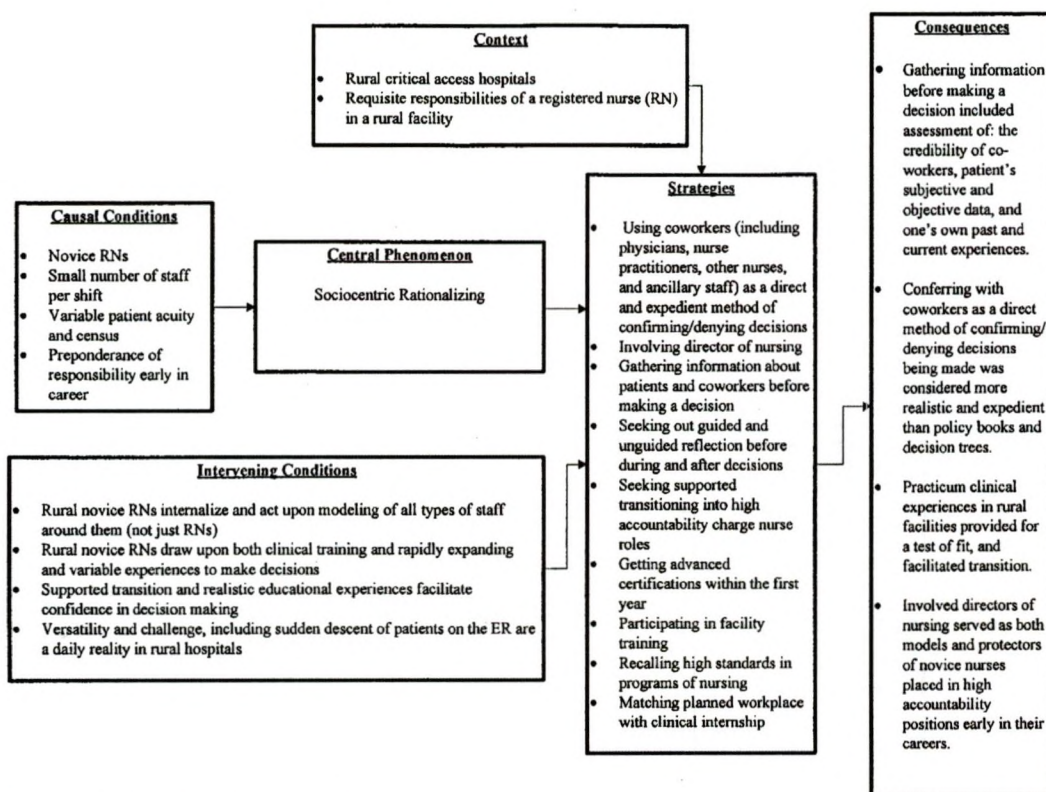


Figure 6: Axial coding paradigm.

The examples of supported decision making given by these participants related not only to Lave and Wenger's (1991) situated learning theory, but also to Bandura's (1977) classic theory of self-efficacy.

"The strength of people's convictions in their own effectiveness determines whether they will even try to cope with a difficult situation" (Bandura, 1977, p. 79). Without the collaboration of co-workers, and support of their directors of nursing, it was unlikely these novice nurses would continue to believe in their abilities, even if they had arrived to the workplace with a great deal of confidence. While participants indicated they also relied on the patient's subjective and objective data (e.g., vital signs, over-all appearance, and verbalizations) they relied heavily on co-workers to collaborate before

independently making complex decisions, such as when to call the doctor, when to give insulin to the diabetic client, and what to do when patients developed changes in their clinical presentation.

Causal Conditions

Causal conditions constituted actions and or situations which caused the core phenomenon of sociocentric rationalizing. In this context, there were novice nurses who had come to work in a rural facility directly after graduation. These nurses often operated in leadership roles, within the first year of hire. They were often the charge nurse, working with a limited staff, while managing an ever changing census and acuity of patients.

Context

The context of the grounded theory axial coding paradigm described the broad situational factors involved in the central phenomenon (Creswell, 2007, p. 64). In this case, the broad situational influence was the macro-system of rural critical access hospitals, where services were offered under CAH guidelines provided by state and national entities. The other broad situational factor at play was the requisite responsibilities of a registered nurse, who functions within a scope of practice, delineated by his or her practice area, and under the bylaws of the board of nursing within his or her state.

Intervening Conditions

The micro-system of the small close knit staff of the rural hospital in which the participants were employed provided a specific situational factor which directly affected the central phenomenon identified in this study. The first intervening condition was

related to participant internalization and action upon the modeling of all types of staff around. Observations and interviews provided insight into the collaborative relationships which existed between not only the RNs, but also between the RNs and LPNs, and unlicensed staff, and between the RNs and physician and advanced practice nurse providers.

The second intervening condition was participant use of multiple pieces of information to inform their decision making, while drawing upon both clinical training, and rapidly expanding and variable experiences. It was logical that they utilized learned concepts from their formal programs of study; it was also evident that they were rapidly building experiences from emergent and urgent cases into which they were thrust early in their careers.

The third intervening condition referred to the educational experiences which were a part of these novice nurses' program of study, and their subsequent orientation to their rural facility of practice. Participants pointed to their clinical experiences within the program of study as valuable to their repertoire of expanding expertise. Those with emergency room and medical surgical internships, or internships at the rural facility, indicated the experiences helped them recognize cues in patient assessment that would merit further investigation and collaboration with staff and physician or advanced practice nurse providers. Because these novice RNs were required to take on charge nurse roles, including management of emergency room patients within their first year of practice, it was observed, and noted through interviews, that the directors of nursing and senior nursing staff were integral to building confidence.

The fourth intervening condition was the fact that rural CAHs provided for a constant variety of patient presentations. This versatility was challenging to novice nurses. The sudden descent of emergency room patients was a daily reality, and something all participants discussed in interviews. Arrival of emergency room patients was observed at these facilities. The theme of versatility applies not just to the type of patients in a CAH, but also to a requisite characteristic of the nurses who work in these facilities. Participants described “bouncing” between the ER and the floor patients, as well as a need to be highly organized.

Strategies

Strategies were the actions taken in response to or as a result of the core phenomenon (Creswell, 2007, p. 67). The strategies were identified directly from observations and interview data of the participants of this study. Directors of nursing in the CAH sites contributed information, as did participant journals and documents (e.g. mission statements, public notices of service parameters, and standing orders).

The 12 rural novice registered nurses in this study described conferring with co-workers, including licensed and unlicensed staff, and physicians, and nurse practitioners, as a chief strategy for making decisions and for confirming decisions they had made. This was not an indiscriminate process, as this small group of nurses indicated they learned who could be trusted for advice and who could not be trusted. They also discussed, and I observed, the various types of information they gathered regarding their patients before making a decision. More often than not, cues came from the patients, the novice nurses' recent experience, and the experience of co-workers. Less often, the participants utilized standing orders and decision trees.

Participants verbalized involving the director of nursing by advocating for themselves in emergency situations and when they weren't ready to take on more responsibility. Directors of nursing also involved themselves, acting as models and protectors of their novice nurses. In some cases, directors intervened to add additional orientation and acknowledged participants' fears of taking on higher levels of responsibilities, such as labor and delivery, critical care, and emergency room.

This group of novice RNs were highly educated and had advanced certifications within their first year of practice. They also reported participation in facility sponsored training. All of them described the impact of their formal education, relating that they drew on clinical and some classroom experiences to inform their critical thinking. The large majority of these RNs reported participation in a practicum in either a medical surgical, emergency room, or rural hospital as a purposeful strategy toward the aim of working in a rural setting.

Consequences

The outcomes of the strategies which were employed by novice nurses as they experienced decision making through the phenomenon of sociocentric rationalizing were described as the consequences. The observed consequences, which were conceptualized within the axial coding paradigm (Figure 6), align with the propositions asserted within the thematic analysis in the open coding (Figure 5). These consequences were derived from observations and interviews of the 12 novice nurses in this study and include:

1. Gathering information before making a decision included assessment of: the credibility of co-workers, patient's subjective and objective data, and one's own past and current experiences.

2. Conferring with coworkers as a direct method of confirming/denying decisions being made was considered more realistic and expedient than policy books and decision trees.
3. Practicum clinical experiences in rural facilities provided for a test of fit, and facilitated transition.
4. Involved directors of nursing served as both models and protectors of novice nurses placed in high accountability positions early in their careers.

Gathering Information Before Making a Decision Included Assessment of the Credibility of Co-workers, Patient's Subjective and Objective Data, and One's Own Past and Current Experiences.

The lived reality of being a nurse in these rural critical access hospitals was a function of constant challenge in decision making in often complex, and time-constrained situations. The interplay of task complexity, personal characteristics and environment, therefore, could not be dismissed when seeking to understand decision making for these rural novice nurses. These nurses were consistent in their claims that their co-workers were their greatest source of confirmation and conference when it came to decisions of which they were unsure. With that, the nurses described discretion when choosing a collaborator. For some, this discretion was born of learning that others may not have all the right answers, as with the case with Lailah and Eve.

When patients presented to the emergency rooms, with symptoms like chest pain, the participants indicated more familiarity and confidence with making decisions related to those problems. Some said this was due to repeated admits of this nature, which became routine because they had come to learn the orders. What respondents indicated they struggled with was “gray areas” as Alley put it.

Conferring With Co-workers as a Direct Method of Confirming/Denying Decisions Being Made was Considered More Realistic and Expedient Than Policy Books and Decision Trees.

The nurses in this study often related emergency or urgent situations when asked about memorable experiences to date in their nurse roles. Participants discussed recognizing when patients did not “look right.” Benner et al. (2009) strongly posited differences between experienced practitioners and novice practitioners, related to their use of intuitive judgment rather than relying solely on analytical principles. Although the concept of intuition seems to be at odds with empirical science—that is, it is difficult to prove—it has found legitimacy and was often described in the literature on decision making (Thompson & Dowding, 2002; Zsombok & Klein, 2009; Benner et al., 1999). Offredy (1998) sought to augment the research on intuition by showing intuition was actually supported by intentional pattern recognition. Jewel described realizing her patient’s oxygen saturation had dropped slightly, and that with his recovery from burns, this might be significant even though the saturation level was not completely outside of normal parameters. Lailah described knowing her immune-compromised patient had a very low blood pressure, but was not sure of the next steps for addressing this. When she sought help from a physician assistant, she did not receive clear direction, therefore she stalled at what she knew to keep doing—monitor the patient. Celeste described knowing something was wrong with a patient who had chronic obstructive pulmonary disease (COPD) based on presentation. She found a need to collaborate for next steps, however, as the physical data was not entirely supporting what she found out later to be true—the patient was suffering from lack of oxygen at the cellular level. Eve told me she took what she knew about initial care of the patient presenting with stroke symptoms and applied it

to the situation I observed wherein a senior nurse insisted on giving the patient aspirin. Eve stalled; refusing to do so until the physician arrived who confirmed that the aspirin should not be given because a computed tomography (CT) had yet to be done to compare symptoms with diagnostics. In these and other situations described by participants, there were no decision trees or facility policies to guide the nurses' decision making. The nurses described collecting more data from their patients, such as vital signs, level of consciousness, general appearance, urine output, and drainage. They relied on co-workers instead, and with the exceptions in Lailah and Eve's cases, the patients benefited from that collaboration. Gazarian (unpublished dissertation, 2008) used the paradigm of naturalistic decision making and specifically, the RPD model, to elicit nurse decision making in preventing cardiac arrest. She found knowledge management and shared decision making to be particularly important supporting factors for the nurses in her study.

*Practicum Clinical Experiences in Rural Facilities
Provided for a Test of Fit, and Facilitated Transition.*

Clinical experiences within the educational program have the potential to facilitate critical thinking and decision making in a high-stakes learning situation. The problem, however, is that clinical instructors cannot control for the types of patient situations that may be available on any given day. Thus, those opportunities for thinking through a complex situation do not consistently exist. The participants in this study described clinical experiences in their last semester, often referred to as practicum experiences, as most meaningful to them. Many of the participants had a practicum experience at the rural facility where they planned to work upon graduation. Others did

their practicum experience in the emergency room, intensive care, and medical surgical settings. Those who had experiences in the emergency rooms and rural facilities related enthusiasm for how these experiences helped them transition into the roles they held. Arial had chosen a practicum in the neonatal intensive care unit. When asked how that helped her in her current position, she replied, “Its sort of opposite. I guess maybe watching your meds carefully, ‘cuz if you mess up, its going to kill a baby, so I guess just being really careful with dispensing medication.”

Involved Directors of Nursing Served as Both Models and Protectors of Novice Nurses Placed in High Accountability Positions Early in Their Careers.

The degree to which participants discussed interaction with their directors of nursing indicated comfort, on their part, with asking for help from a nurse in a leadership position. According to McGilton (2010), the most influential factor whether workers feel valued and respected at work was their relationship with their supervisors. In larger facilities, where nurse managers and house supervisors took on the supervisory roles, these nursing leaders may hold more influence than the director of nursing, who traditionally was not directly involved in patient care. However, in the CAHs I visited, the directors of nursing were visible, according to participants, and verified by my observations. For example, there were instances wherein I was making arrangements for follow-up visits, and the director of nursing answered the phone at the nurses’ station, explaining she was doing patient care. With the exception of Arial, who was without a director of nursing for a period of time, participants described communications with their director regarding issues ranging from readiness to take on more responsibility to arrangement for debriefing of a critical incident. Grace and Arial explained how they

valued their current director, whom they described as both supportive, and as someone they admired. Both participants also voiced fear that she would leave, as others had. Participants described their directors as one of the persons they could call for back-up when emergency patients presented or when they were unsure. During my observations of Eve, the director was called in to assist in management of a patient with right-sided paralysis who became uncooperative during the course of her emergency room visit.

Propositions

As the categories and themes emerged, I began to develop propositions (Figure 5) which were drawn from the participants' descriptions as consequences to managing the phenomenon of sociocentric decision making emerged. Constant comparison to the literature informed the development of propositions. As a part of member-checking I validated these propositions with the participants and with four of nine directors of nursing. Four propositions are presented here:

1. Sociocentric thinking can be a positive in the rural health care setting when it is managed by an involved and supportive director of nursing and where "eris quod sum" guides the motivation of the experienced registered nurses and staff working with the novice.
2. Novice nurses in rural hospitals require supported and supervised transition to higher levels of responsibility for decision making as this is integral to patient safety and novice nurse confidence in future decision making situations.
3. During their program of nursing, student nurses who plan to work in rural settings should be guided into internship in a rural critical access hospital as a

means of addressing the gap in educational preparation within an urban setting and the realities of rural hospital settings.

4. Within the program of nursing, and during new employee orientation, rural novice RNs require a broad range of competencies.

Sociocentric Thinking can be a Positive in the Rural Health Care Setting When it is Managed by an Involved and Supportive Director of Nursing and Where "Eris Quod Sum" [You Will Become What I Am] Guides the Motivation of the Experienced Registered Nurses and Staff Working With the Novice.

Culture has been described as "the thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups" (Spector, 2004, p. 10). Organizational culture can be conceptualized as "a normative glue, preserving and strengthening the group, adhering its component parts, and maintaining its equilibrium" (Sleutal, 2000, p. 3). While, as a researcher, I recognized there may be subcultures within cultures, the aim of the proposition, related to sociocentricism, was to underscore the support found in situated decision making, at the same time, acknowledging there is not always harmony, or perfection in this culture. This aligned with Lave and Wenger's (1991) situated learning theory where learning was an evolving form of membership (p. 53) in which there is a very explicit focus on the person-in-the world, as a member of a socio-cultural community (p. 52).

Rural novice nurses, working in critical access hospitals, provided the cultural context for this study. As new nurses, they were engaged in the process of acquiring the knowledge, skills, and sense of identity which were characteristic to the rural registered nurses around them. According to Masters (2009) the nurse engaging in professional socialization has four goals:

1) to learn the technology of the profession—the facts, skills, and theory—2) to learn to internalize the professional culture, 3) to find a personally and professionally acceptable version of the role, and 4) to integrate this professional role into all the other life roles. (p. 127)

External factors within the cultural setting affect the professional socialization process. In order to progress to a state of interdependence within the profession, one must experience a “culture of trusting tolerance” (Masters, 2009, p. 132).

The term sociocentric was used to describe the interdependence of the participants and those around them as they make day to day decisions in the rural CAH setting. These rural nurses cited conference with the staff and providers within their immediate reach as integral supports to their decision making. They indicated and demonstrated far less reliance on decision trees and standing orders to facilitate their decision making. Their help-seeking behaviors were not limited to looking to other RNs; they also conferred with unlicensed staff, such as paramedics and nursing assistants, and lab and radiology staff. One participant referred to a nursing assistant with whom she works who has 30 years experience, as the “unlicensed nurse.”

Rural RNs in this study were required to be skilled generalists. The presentation of a variety of patients, with complex medical histories was a constant pressure. The most distressing situations described by these new nurses were typically related to either emergency room patients, including traumas, or patients who became critically ill after admission with problems such as hemorrhaging, respiratory compromise, and blood sugar variances. The social support of their peers, directors of nursing, and providers—both physicians and nurse practitioners, as well as unlicensed assistive personnel such as nursing assistants and paramedics, and ancillary personnel was integral to decision

making for nurses in this study. At the same time, some participants had experienced “sink or swim” challenges from seasoned nurses who were not collegial. The director of nurses became involved in some of these instances. In other cases, the director was either not present due to attrition, or was not aware of the situation. The nursing literature was replete with studies confirming the necessity of appropriate support for transition to increased responsibility (McKenna, Smith, Poole, & Coverdale, 2003; Schmalenberg, & Kramer, 2008; Schoessler, & Waldo, 2006; and Simons, 2008).

Novice Nurses in Rural Hospitals Require Supported and Supervised Transition to Higher Levels of Responsibility for Decision Making as This is Integral to Patient Safety and Novice Nurse Confidence in Future Decision Making Situations.

The nursing literature revealed patient outcomes are improved by nurses’ supported critical thinking and decision making (Aiken, et al., 2008; American Association of Colleges of Nursing [AACN], 2009; Levin & Feldman, 2006; Vollers, et al., 2009). The research indicated patient safety was dependent on supported decision making; it also revealed the fact that new nurse orientation was not necessarily tailored to individual learning needs (Olson, 2009; Duchscher, 2001).

Self efficacy, according to Bandura (1977, p. 79-89) was not the same as self esteem and was linked to variables such as persistence, strategy use, and help seeking. While Duchscher (2001) found new nurses to be frustrated by the dichotomy of being independent and at the same time dependent on others, the novice nurses in this study did not voice frustration, rather they indicated they sought support and collaboration on a continual basis. One participant, who related she had watched five directors of nursing come and go in her two year tenure and who experienced heavy responsibility in the

emergency room immediately after her orientation was over, described frustration with the lack of guidance from her director; however, described her co-workers' support in helping her managing three emergency room patients at once. That particular nurse related anxiety to her lack of guidance during decision making. A director of nursing at another facility shared her tactic for retaining and supporting a new nurse who had experienced anxiety over increased responsibility—more orientation and training. In addition, Hannah, who was from that same facility, had self-advocated, refusing to take on the charge nurse role, requesting a longer orientation period. Ally, at hospital 07 related making the same request of her director; while another director, at hospital 05, stated that she meets with her new nurses regularly, questioning them about their comfort level. She emphasized, “I’d rather spend extra time orienting them, than lose them. I’ve become more aware of this as my experience as a director has grown.” The director at hospital 06 commented, after reviewing the coding concept map with propositions: “This only reinforces the fact that we need to be careful with our new nurses. This job is hard—it can be rewarding—but this confirms I need to remain alert to how orientation is going.”

During Their Program of Nursing, Student Nurses who Plan to Work in Rural Settings Should be Guided Into Internship in a Rural Critical Access Hospital as a Means of Addressing the Gap in Educational Preparation Within an Urban Setting and the Realities of Rural Hospital Settings.

Situational learning in the context of this rural community of practice related not just to learning the role of nurse, but also to identity and membership of both the CAH and the community. It encompassed the phenomenon of the whole person acting in the world (Lave & Wenger, 1991, p. 53). Careful hiring for fit, and perhaps focused internships, both suggestions from transcribed interviews, may facilitate this role

development. It was clear that the social support was a requisite, however, and that it must be managed well for the development of the novice as well as the safety of the patients. Many urban centers provided for mentoring or residency programs wherein the new graduate is paired with an experienced nurse for up to a year, which promotes competence, critical thinking, organizational skills, time management skills, and autonomy (Molinari, et al., 2008). In the smaller CAHs I visited, the staffing was such that a residency lasting this long would not be feasible, according to participants.

This small group of novice nurses all related lack of preparation in their programs of study for the expert generalist role they found themselves in at the CAH sites. All participants talked positively about their programs of nursing as providing “well-rounded” educational experiences, but also described some degree of disappointment with their clinical experiences as they reflected back on them. Sophia, Grace, and Meesha discussed emergency room practicum, at the end of their program of study as conducive to teaching them about organizational skills and as a means of seeing a variety of patients similar to those seen in their own work settings. Celeste, Jewel, Ally, Lailah, Hannah, and Sarah all participated in practicum clinical placements at their rural facility at the end of their program of study and prior to employment. They related these educational experiences as the most helpful to transitioning into the role of rural nurse. The problem with practicum placement, however, can be related to the “feast and famine” Jewel described occurs in the rural hospital, noted she felt fortunate to see a number of patients during her practicum, because during orientation, the census was low. Grace, who did not participate in a practicum at her rural facility, but who worked as a nursing assistant at the facility, found that she had very few patient experiences during orientation due to low

census. Arial, who did not do a practicum in any medical surgical area, also oriented during a low-census time for the hospital and then was confronted with multiple acute patients on the floor and emergency room presentations immediately upon the end of the orientation. This uncontrollable truth of rural hospital census is one of the reasons extended support for the new nurses is crucial. At the very least, practicum experiences provide for some orientation to the culture of the facility, as well as opportunities for peripheral participation in decision making situations with patients.

In discussions with some of the directors of CAH employing the nurses for this study, some were aware of a formalized rural nurse residency program, offered through Idaho State University (Molinari, et al., 2008) but had elected not to participate. One director stated that she simply had not had time to explore the program. Another indicated cost was a factor. The impetus for such a program is not only recruitment of rural nurses, which in the instance of these novice nurses was typically not an issue because they were from the rural towns they chose to practice in, but also retention of those nurses. There is a critical importance in bridging the undergraduate learning experience with workplace expectations (Benner et al, 2010; Duchscher, 2008a). It is imperative that if there is not time or money for a formalized residency, the directors of nursing must at the very least consider what types of patients and patient census the novice nurses experienced during their orientation and adjust orientation time accordingly.

*Within the Program of Nursing, and During New Employee Orientation,
Rural novice RNs Require a Broad Range of Competencies.*

The work of Benner et al. (2010) has revealed an unchanging phenomenon as new graduates enter their work places: the knowledge and technical competencies required to pass their NCLEX-RN exams are necessary, but do not prepare them for the complexities of the clinical situations they will encounter as new nurses. Other nursing researchers laid the ground work for discovery of this problem (Kramer, 1974; Benner, 1984), which begs the question why a problem that everyone in nursing seems to be aware of, continues to exist. In this study, all participants were graduates of accredited programs of nursing, and had passed their NCLEX-RN test. Much of the literature described the complex work environments of nurses while asserting new graduates are generally faced with a limited ability to meet the entry-level expectations for safe practice (del Bueno 2001, 2005; Li & Kenward, 2006). Within my descriptions of the CAHs these novice nurses worked in, it was clear there was complexity in terms of patient acuity, variability, available nursing staff, physician and advanced nurse provider staff, and ancillary supports. Therefore, it should not be surprising that new rural nurses struggle in the first one to two years of practice. Rather than lament their lack of preparation, effort should be placed upon facilitation of the social skills required to navigate their new roles. These novice nurses overwhelmingly cited their coworkers and directors as resources for decision making. Several described feeling comfortable calling other nurses, advanced practice nurses, and physicians for consultation on decisions, regardless of the time of day. According to Gillespie and Paterson (2009) decision making relies not only what a nurse knows about a patient, but also the nurses' ability to engage patients, families, and coworkers in the

identification of decisions. Where one novice nurse (Eve) was placed with a non-supportive seasoned RN, her ability to find her voice and speak up for the patient and for herself was diminished. Eve discussed how the ability to make decisions was dependent on who she worked with on a particular shift. After recognizing this, she asked her director for limited contact with that individual. If new graduates do not arrive with the social skills to seek help and engage others, they must be mentored to do so for the safety of patients as well as the security of their future in nursing.

Summary

In Chapter IV, I described the context of this study, providing personal narratives from the participants in both initial and follow-up interviews, descriptions of observations, and descriptions of the settings in which decision making takes place. Categories emerged from the open coding and were found, through constant comparison to the literature and to the participants' accounts, to relate to four categories, which are represented in a coding map (Figure 5). Theme development from the categories was supported through member-checking and was discussed, along with category development, in relation to supporting literature from nursing education, nursing role development, naturalistic decision making, and sociology. I then reconfigured the data into an axial coding model which reflects the subsequent identification of sociocentric rationalizing as a central phenomenon from the emerged categories: sociocentricity, grasping and rationalizing, education, and versatility.

The culture of an organization was acknowledged as a factor impacting decision making (Benner et al., 2009; Gazarian, 2008; Oliver, 2007; Zsombok & Klein, 2009). These novice nurses described sociocentric influences on their decision making. They

turned more often to co-workers around them, regardless of licensing or rank, for help in making patient decision—especially when they were faced with complex or ill-defined situations. While internalization of the professional culture is an expectation in role development, these rural novice nurses were in a situation wherein they did not always have the luxury to engage in mere peripheral participation, or to learn from more experienced peers around them, because at time they were the only RN on their scheduled shift. These nurses managed this decision making situation by utilizing not only their own experiences to cue them, which were expanding rapidly, but also by reaching out by phone or directly to co-workers who were both licensed and unlicensed, supervisory and non-supervisory, and physician and nurse practitioner providers. In Chapter V, I have summarized my findings with discussion related to the research questions, and offered recommendations for education, research, and practice.

CHAPTER V
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to develop a theory, grounded in the interview and observation data, of the decision making of rural novice nurses. Theory development was based on the investigation of experiences in decision making of 12 novice registered nurses working in rural critical access hospitals in the state of North Dakota. Two research questions guided the study:

1. What cues are used by novice rural registered nurses in order to make clinical decisions?
2. What are the sources of feedback which influence subsequent decision making for processing of cues for these novice nurses?

The participants selected for this study included 12 rural registered nurses with less than two years experience post-orientation. They had completed their hospital orientation and had not worked at any other hospital as a licensed nurse prior to their employment at a rural acute care facility. The 12 nurses practiced at nine critical access hospitals (CAHs). The locations of these CAHs were south eastern, south western, north western, and north central North Dakota. These nurses participated in individual initial and follow-up interviews. Review of documents, discussions with directors of nursing,

and observations of the nurses during their work day contributed to the information, and served to triangulate data.

Chapter IV contained my description of the processes used to analyze the data. I illustrated the steps of analysis through a coding map and an axial coding model. The coding map (Figure 5) located in Chapter IV depicted my use of the participants' accounts as they related to four emerging categories (sociocentricity, grasping and rationalizing, education, and versatility). Constant comparison to the literature during the coding process informed category labeling and theme development. The themes from these categories reflected the participants' experiences as told by them, and which were supported through member checking activities and literature review. The data was reconfigured into an axial coding paradigm, found in Chapter IV (Figure 6) which highlighted the central phenomenon of sociocentric rationalizing as it related to the emerging categories. I addressed four propositions (Figure 5) which were derived from the process of open coding and axial coding as well as validated with the participants and with four of the directors of nursing from the facilities. The discussion of findings, in relation to two research question, was provided in this chapter.

*Question 1: What Cues are Used by Novice Rural Registered Nurses
in Order to Make Clinical Decisions?*

Participant interviews and observations revealed clues to the analytical processes involved in their decision making. These nurses were, by Duchscher's (2008b) definition of novice, at a point in their professional development of knowing. That is, they were building a repertoire of knowledge, which contributed to their decision making abilities. Educational experiences contributed to both theoretical and practical inputs toward

recognition of cues. The nurses in this study were formally educated and engaged in practicum clinicals in their last semester of the nursing program. All participants described their education experiences as a contributing factor to recognizing problems. Their opinions varied somewhat on the value of clinical experiences, but there was agreement regarding the impact of practicum experiences as valuable in terms of facilitating skills in prioritization for decision making.

Open coding, using the participants own words, revealed that these novice nurses utilized a number of cues, including patient vital signs, the patients' admitting diagnosis, and changes in the patient assessments. In some instances, participants knew what to do immediately, based on recognition of cues (e.g., put on oxygen, initiate resuscitation, instruct the patient to call for help, repeat vital signs, correct a medication error, call the provider). In other instances, participants described uncertainty—what one participant described as a gray area regarding knowing what to do next, based on the cues they had gathered. Certainty is not possible, according to Benner et al. (2009) in the time-constrained decision making which takes place in clinical settings. Those who are expert in their practice are often able to read the patient, and respond instantly (Benner et al., 2009, p. 148). Research has also indicated that reasoning patterns vary regarding the level of expertise and was largely dependent upon the nurses' clinical grasp, which was influenced not only by the context of the decision making, but by the nurses' relationship with the patient (Coffi, 2001;Tanner, 2006, p. 200).

Knowledge of the patient contributed to attentiveness and surveillance and was integral to the nurse's discernments and decisions about the patient (Benner et al., 2009, p. 407). Knowing the patient was a cue cited by the participants in this. This knowledge

was related to familiarity with: a) normal presentation for a particular diagnosis (textbook knowing); b) normal presentation for a particular patient based on previous encounters with that patient during the hospital stay, or from previous stays; and c) the patient as an individual in the community. Bushy (2004) and Lee and Winters (2006) identified the latter as unique to rural nursing, where rural nurses experience both advantages and disadvantages due to familiarity with patients outside the hospital.

Participants recounted recognition of potential problems using phrases such as: “I knew something wasn’t right”, or “I had a feeling”, which pointed to their attentiveness to their own apprehension, defined by Benner et al. (2009) as intuition. Intuition has been described as a component of critical thinking (Scheffer and Rubenfield, 2000, p. 357), and as one of the three patterns of reasoning used either alone or in combination by nurses in decision making (Tanner 2006, p. 207). While intuition has been attributed to the reasoning patterns of experts (Benner et al., 2009; Tanner, 2006) these participants described this level of knowing when discussing clinical situations in which they recognized their patient was in need of intervention that they were not necessarily equipped to provide. When participants described such situations, they related asking for help, sometimes persistently, on behalf of the patient.

Question 2: What are the Sources of Feedback Which Influence Subsequent Decision Making for Processing of Cues for These Novice Nurses?

Benner et al. (2009, p. 137) asserted the proficient nurse became expert when he/she had achieved the ability to read a situation in context, rather than rely on abstract principles, without recourse to calculative reasoning. This level of expert decision making was born of experiential learning through practice, wherein nurses had

opportunities to apply concrete experiences, viewing a clinical situation within its context and as a whole (Benner et al., 2009). Experiential learning requires self-efficacy, which was linked to persistence, strategy use, and help seeking (Bandura, 1977). Experiential learning also required support and mentoring, where situational learning can be fostered as the novice nurse moved from legitimate peripheral participation in a junior partner role, to that of an experienced individual with increased responsibilities (Gillespie & Paterson, 2009). The reality for these rural nurses, however, was that they were functioning without the benefit of consistent support, due in part to staffing needs in a rural facility. They were not able to remain as junior partners for very long, because, once orientation was over, they often became the nurse in charge—or at the very least an equal in decision making. Despite access to a number of resources at their disposal, including policy books, decision trees, standing orders, textbooks, and in some cases internet resources, the 12 nurses in this study pointed to collaboration with coworkers as a major means of reinforcing their decision making. Therefore, weighing the pros and cons of decisions against the available cues, as described by Tanner (2006, p. 207) was most frequently done by the nurses in my study, in collaboration with co-workers. The coworkers were not always present in the facility. Frequently, the participants called them on the phone for consult, and in some instances, called them to come in to work. These coworkers were also not always other RNs. Participants cited consultation with LPNs, physicians, nurse practitioners, paramedics, nursing assistants, and technicians. Not only did the coworkers help the participants talk through situations and weigh options before making decisions, they were often a source of confirmation or redirection when the new nurse had made a decision. This collaborative reflection in action (determining how the

patient responded) and later, reflection on action (review of the situation as a whole) was supported in Tanner's (2006) model of clinical judgment. Participants reported discussions with directors of nursing, senior nurses, fellow novice nurses, and even debriefing as a means of reflecting on their actions. Although there was, according to these nurses a wealth of social support from their co-workers, there was not a formalized method for reflection and debriefing.

Conclusions

The findings of this study revealed novice nurses in rural critical access hospitals were able to identify varying cues used for decision making in their practice settings. These cues included patient vital signs and patient assessments, which were often compared to the nurses' previous encounters with the patients through the health care system or through contact in the community. Familiarity with common diagnoses, such as pneumonia and chest pain, was explained by participants as information they had gained in school in both theory and clinical, in practicum clinical placements, and in patient encounters within their first year of practice. The nurses in this study related feeling confident about a number of skills, such as starting and IV, taking vital signs, and performing assessments, but conceded they encountered unfamiliar patient situations on a frequent basis.

Participants related feelings of apprehension in situations where they sensed an urgent need to do something more for the client, although they were not necessarily able to say how they knew this. Benner et al. (2009) considered intuition a pattern of reasoning used by experts. When the participants in this study discussed intuitive feelings, it was in relation to clients who were seriously and often critically ill. The

vignettes where intuition was mentioned were offered by participants when they were questioned about best and worst days, or when questioned about certain and uncertain rationale for decision making. Perhaps these experiential learning experiences provided for expedient recognition of cues for future encounters with similar situations due to the drama and meaning in such situations. Within their classes for advanced certifications in life support of adults and children and trauma core competencies, the participants engaged in didactic and clinical application through simulation. For example, as a part of the standardized curriculum of their certification courses, they practiced reading rhythm strips to detect abnormalities of the heart's conduction system and recognition of shock related to hypovolemia. They acted as a team leader to decide what actions would be taken in the treatment of such emergency conditions. These are accepted teaching and learning methods for the advanced certification courses of advanced cardiac life support (ACLS), pediatric advanced life support (PALS), and trauma nurse core curriculum (TNCC). Meaningful experience has allowed us to recognize patterns and improve our intuitive skills (Klein, 2003). There is nothing like real life to reinforce such experiences, and all participants discussed encounters with emergency room patients, including trauma and patients with chest pain, within their first few months of practice in their CAHs.

The nurses in this study related clinical practicum experiences as the most beneficial in helping them begin to understand the saliency of nursing. They cited organizational skills as one of the greatest benefits of this activity. Many of the participants were familiar with simulators from their nursing education, although none cited that educational activity as helpful to their decision making. During their programs of study, the programs they attended had just acquired the simulators and, as one

participant surmised, were not sure of what to do with them yet. Health care is an ever changing and fast-paced system; therefore, health care education must anticipate and adjust for changes in practice within the curriculum.

The purpose of nursing education was, according to the National League of Nursing (NLN, 2005), to prepare individuals to meet the health care needs of the public. Clinical experience has been an accepted part of nursing curriculum, although experiences may vary from program to program. One of the disadvantages of clinical experience on an agency site, such as a hospital surgical floor, was related to the fact that not all students were able to experience the same learning situations. For example, having the experience of observing and assisting in the resolve of patient respiratory distress, thereby avoiding the condition of patient respiratory arrest, would be an excellent teaching and learning moment. For obvious reasons, not all students will engage in this activity, yet will most likely encounter such a situation in their career.

The nursing education literature suggested patient outcomes were improved by nurses' critical thinking (American Association of Colleges of Nursing [AACN], 2009; Levin & Feldman, 2006), and so the impetus to facilitate and improve critical thinking has always been an aim of the nursing curriculum. The latest innovations in nursing education involved a new twist on an old teaching technique: simulators. Simulation provides options for exposing students to theories and concepts that they may otherwise have been unable to experience in mere classroom or occasional clinical agency experiences. Debriefing has been integral to the simulation process (Gillespie & Paterson, 2009; Fanning & Gaba, 2007). In theory, debriefing had the benefits of helping to shape mental models toward reflective practice (Gillespie & Paterson). However, instructor led

dialogue in a problem based learning situation, such as simulation, can also be detrimental, if not damaging to students (Fanning & Gaba, 2007). Guided reflection as a part of the debriefing process, combined with narrative dialogue could help transform nursing practice by bridging the gap between what was learned in theory and the realities of practice. Gillespie and Paterson (2009) offered the Situated Clinical Decision-Making framework as a means of assisting students in decision making, guiding their reflection on decisions-making processes and outcomes, socialization to the nature of decision making; and as a tool to foster confidence and increase knowledge development (2009, p. 164). These participants described use of the nursing process in planning care during their program of study. None reported use of a decision-making model to guide thinking.

Where cues were more subtle, such as described by Jewel and Celeste regarding changing oxygen saturation, participants turned to coworkers to confirm or deny their hunches and to help them decide on actions. They did not, as Benner et al. (2009) suggested, turn back to textbooks or linear decision making models to help them analyze the situations. There has been criticism of linear decision making models, such as the nursing process (Tanner, 2006; Gillespie & Paterson, 2009) yet these same researchers acknowledge the complexities involved in clinical decision making, which is owed largely to the variable context of patient care situations. Tanner (2006), as well as Gillespie and Paterson (2009), suggested new nurses be taught to utilize decision making models as a means of review of their decision making through reflection. Reflection in action and reflection on action (Tanner, 2006; Gillespie & Paterson, 2009) were integral to development of decision making skills. Such reflection must be guided by more experienced nurses, however. In a setting where the novice nurse can be mentored to

reflect upon their decisions, they can come to understand and recognize effective patterns of reasoning (Tanner, 2006; Gillespie & Paterson, 2009).

The reality for these 12 nurses was one of general social support and mentoring, without benefit of a formalized and consistent method to examine actions and outcomes in order to increase clinical knowledge and a capacity for clinical decision making. The directors of nursing were involved and visible. While they were a source of support for their new nurses, they were not always present during critical moments of decision making. Those directors who recognized when a new nurse was struggling described interventions such as increased support in the form of further orientation. According to the novice nurses in this study, there were general guidelines in place for the length of orientation at these hospitals. When they advocated for themselves, orientation could be extended. There were no formal mentoring programs, however, wherein new nurses could be formally guided to increase decision-making skills through reflection.

Recommendations

Within this section, I provided the reader with recommendations based on findings from this study. Recommendations were made for nurse educators, who have been tasked with facilitating critical thinking in all nursing students in the preparation of the graduate generalist practitioner. Researchers have been provided suggestions for future exploration of decision making processes in rural nursing. Those who practice nursing, in either leadership or supportive work roles are given recommendations related to mentoring the new nurse in rural care, while fostering decision making skills.

Recommendations for Nurse Educators

1. In order to implement evidenced based practice, student nurses need to practice complex decision making in a safe, simulated setting with a prescribed model of decision making, such as the Situated Clinical Decision-Making Framework (Gillespie & Paterson, 2009) or the Contextual Learning Intervention (Forneris & McAlpine, 2006).
2. Internships in the senior semester should be carefully supervised with a formalized method for reflection on action and in action, wherein the preceptors are treated as partners in teaching. Internships which help prepare nurses to be generalists, rather than specialists may be more beneficial than internships held in a specialty area where there is less opportunity for the student to experience guided decision making.
3. Decision making does not occur in isolation within the practice setting, therefore, educators need to foster social skills required to seek help through modeling and simulation, rather than focus on the model of the autonomous nurse.
4. Clinical experiences throughout the program should focus less on tasks, and more on preparation for the expert generalist role. Finkelman & Kenner (2009, p. 244) compiled information from the Institute of Medicine (IOM) reports, which suggested a focus on six major direct-care concerns for nurses when planning curriculum:
 - Monitoring patient status and surveillance
 - Physiologic therapy (the most visible intervention that nurses perform)
 - Helping patients compensate for loss of function

- Providing emotional support
- Education for patient and families
- Integration and coordination of care

Recommendations for Researchers

1. Since engagement with coworkers played a pivotal role in decision making, the perceptions of those who orient and train new nurses in rural facilities should be investigated. Specifically, are they given the resources required to effectively orient new nurses? What are their perceptions of the decision making skills of these new graduates?
2. Directors of nursing were cited as a factor in facilitating transition to higher accountability decision -making roles. An investigation into their leadership practices, through direct interview to gain their perceptions related to challenges in hire and retention of new graduates. It would also be interesting to know if seasoned nurses consider these rural directors to be supportive through a survey of rural nurses.
3. This study focused on decision making in general by rural novice nurses. Participants frequently illustrated their decision making with critical or emergent incidents. Investigation into their step by step decision making processes during critical incidents may reveal specific strengths and weaknesses in their ability to recognize and intervene before a patient deteriorates.
4. Research has shown clinical knowledge is socially imbedded (Benner et al., 2009). An investigation of the social and emotional climate of the rural

hospitals may contribute to current research done in larger facilities (Schmalenberg & Kramer, 2008).

Recommendations for Practice

1. Experienced nurses practicing in rural hospitals play an important role in facilitation of self-efficacy in decision making for novice nurses. Bandura (1977) suggested individual performance is significantly affected by a sense of self-efficacy, which is socially shaped. Therefore, experienced nurses must take ownership of their responsibility to guide, model, and constructively provide feedback to new nurses.
2. Orientation should be tailored to the needs of the new nurse, not to the staffing needs of the facility. When a graduate nurse has had an internship at the facility they continue to need the support orientation provides, therefore the orientation period should not be shortened. Directors of nursing, and those responsible for providing orientation and training, must advocate for new nurses as well as for patient safety in setting parameters for length of orientation and transition to care of emergency patients.
3. Directors of nursing should provide potential new nurses hires with authentic representations of what can be expected in terms of patient acuity and professional support.
4. Directors of nursing should consider partnering with programs of nursing to recruit new nurses for practicum experiences in their senior year.

Limitations

This study was restricted to 12 participants at nine critical access rural hospitals. Investigation of the decision making experiences of a larger sample of rural nurses within this state, and within other states would have possibly produced further categories and themes. The participants in this study happened to be females. Their ethnicity was not officially determined. All but one of the participants had graduated from a baccalaureate programs of nursing. Further investigation using individuals from both sexes and differing ethnic and educational backgrounds might also yield data that would contribute to the category of sociocentricity. Directors of nursing acted as gatekeepers to both the facility and to access of the novice nurses employed there who fit the parameters of the study. It is possible there were other new graduates who were not offered as potential candidates for varying reasons.

Reflections

The process of this research provided me with further understanding of the needs of new graduates in relation to situational learning. Specifically, I see where I have focused on individual decision making, rather than acknowledging the social interactions that must occur in the interest of the patient. Results of this study also underscore the opportunities for situated learning—specific to decision making—within clinical rotations.

To say I enjoyed my time with the research participants would be an understatement. As a nurse with nearly 25 years experience, it was affirming for me to listen to these new nurses as they described their decision making experiences. When I came to understand that first, these participants cared, and that second, they relied heavily

on what Benner, et al. (2009) described as pooled expertise (p. 235) in order to make decisions, I was encouraged. The literature is replete with accounts of less than collegial treatment of new graduates, yet these nurses denied this was true for them.

I engaged with and observed individuals who related a desire to do their best for their patients. When participants were asked what the most important part of their job was, their answers centered on the patient, and specifically on patient advocacy. It may seem to some that caring has nothing to do with decision making, but nurses' values, including caring, influence what they attend to, and ultimately the decisions they make (Tanner, 2006). In this study, the central phenomenon of sociocentric rationalizing is best supported through the work of Benner et al. (2009) who asserted, "Caring is social through and through" (p. 234).

APPENDICES

Appendix A. IRB Forms

Facility Participation Letter

Dear _____,

You are invited to participate in a research study being done by Teresa Seright MSN, RN, CCRN, under the supervision of her advisor, Dr. Myrna Olson, EdD., of the University of North Dakota.

Critical thinking, which informs clinical judgment and ultimately clinical decision making, is an important skill of graduates of accredited programs of nursing. The purpose of this research study is to generate knowledge regarding the complexities of decision making for the novice nurse in rural hospital settings.

The research interview process will be guided by these research questions:

3. What cues are used by novice rural registered nurses in order to make clinical decisions?
4. What are the sources of feedback which influence subsequent decision making for processing of cues for these novice nurses?
5. How do novice nurses in rural settings sort important cues from less important cues in the process of decision-making?

Methodology of the study:

Participation will be sought from novice nurses in rural healthcare facilities within this North Central Rural state. I will approach the Director of Nursing of each facility first, as they are the gatekeepers of the hospitals in terms of access to the nursing staff and the patient care areas. There are a total of 36 hospitals designated as "rural" by the Center for Rural Health. I anticipate interviewing and observing novice nurse participants at 12 different sites to determine their experiences of decision making in the rural hospital settings. I have chosen these hospitals because they are similar in size and services offered.

Upon meeting participants for interviews, I will give each a copy of the consent form and explain it in detail, including that they will be given pseudonyms and that their identity will be kept confidential. I will have them sign the form if they consent, and then give them a copy to keep. There will be no way to link consent forms to any collected data. Consent forms will be stored separately in a locked cabinet. Participants and

organizations will be given pseudonyms, and only pseudonyms will be used in the transcripts of the interviews. Transcripts will be stored in a locked cabinet and in password protected files on the researchers' computer.

Because I am entering a healthcare setting as a healthcare professional who is not employed by that setting, I will request to sign a HIPPA form at each facility. I will request a copy of these forms, which will be kept with the other consent forms obtained from the participants. While I am not extracting medical record information, it is imperative that the involved facilities and participants are assured of my diligence in protection of the privacy of the facility, the participants, and the clients. In addition, the consent form for participants explicitly states the intent of this research. The aim of this research is not to critique the novice nurses' practice, rather it is to explore their experiences in clinical decision making.

The collection and analysis of data will be carried out exclusively by the investigator. Transcriptions will be done by the researcher. Peers, advisors, and committee members will be asked to carry out validity checks (e.g., peer debriefing, inter-rater reliability checks of coding), but only after names and identifying information of participants and facilities are removed. Participants and organizations will be given pseudonyms, and only pseudonyms will be used in the transcripts of the interviews. .

For most subjects, their participation will involve short, semi-structured interviews or focus group discussions (in facilities where there are more than one novice nurse) of 30 to 60 minutes. Participants will also be observed and asked informal questions within the rural hospital settings. These observations may take anywhere from one hour to four hours. The audio recordings of interviews and observation notes will be kept in a locked cabinet.

If you have questions about this research project you may contact the researcher, Teresa Seright, MSN, RN, CCRN, at 701-624-5130.

Your signature indicates agreement to participation in this study.

Thank you,

Teresa Seright MSN, RN, CCRN
University of North Dakota

I certify that Teresa Seright, MSN, RN, CCRN may conduct research in this facility under the terms described here. I understand that I may rescind participation in this research at anytime.

Signature

DATE

INSTITUTIONAL REVIEW BOARD
c/o RESEARCH DEVELOPMENT AND COMPLIANCE
DIVISION OF RESEARCH
TWAMLEY HALL ROOM 106
264 CENTENNIAL DRIVE STOP 7134
GRAND FORKS ND 58202-7134
(701) 777-4279
FAX (701) 777-6708
www.und.edu/dept/rdc/regucomm/IRB

March 5, 2010

Teresa Seright
P. O. Box 1173
Minot, ND 58702

Dear Ms. Seright:

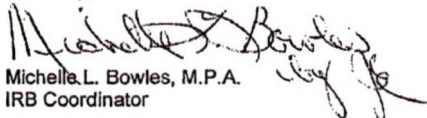
We are pleased to inform you that your project titled, "Clinical Decision Making of Rural Novice Nurses" (IRB-201003-260) has been reviewed and approved by the University of North Dakota Institutional Review Board (IRB). The expiration date of this approval is March 1, 2011. Your project cannot continue beyond this date without an approved Research Project Review and Progress Report.

As principal investigator for a study involving human participants, you assume certain responsibilities to the University of North Dakota and the UND IRB. Specifically, an unanticipated problem or adverse event occurring in the course of the research project must be reported within 5 days to the IRB Chairperson or the IRB office by submitting an Unanticipated Problem/Adverse Event Form. Any changes to or departures from the Protocol or Consent Forms must receive IRB approval prior to being implemented (except where necessary to eliminate apparent immediate hazards to the subjects or others.)

All Full Board and Expedited proposals must be reviewed at least once a year. Approximately ten months from your initial review date, you will receive a letter stating that approval of your project is about to expire. If a complete Research Project Review and Progress Report is not received as scheduled, your project will be terminated, and you must stop all research procedures, recruitment, enrollment, interventions, data collection, and data analysis. The IRB will not accept future research projects from you until research is current. In order to avoid a discontinuation of IRB approval and possible suspension of your research, the Research Project Review and Progress Report must be returned to the IRB office at least six weeks before the expiration date listed above. If your research, including data analysis, is completed before the expiration date, you must submit a Research Project Termination form to the IRB office so your file can be closed. The required forms are available on the IRB website.

If you have any questions or concerns, please feel free to call me at (701) 777-4079 or e-mail michellebowles@mail.und.edu.

Sincerely,


Michelle L. Bowles, M.P.A.
IRB Coordinator

MLB/jle

Enclosures



**Minot State
UNIVERSITY**

**North Dakota Center
for Persons with Disabilities**
A University Center of Excellence

Notice of IRB Approval

Name of Principal Investigator: Teresa Seright

University Address: Teaching/Nursing

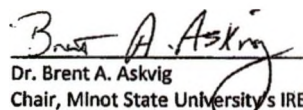
Title of Project: Clinical Decision Making of Rural Novice Nurses

March 5, 2010

The above project has been reviewed and approved by the IRB under the provisions of Federal Regulations 45 CFR 46.

This approval is based on the following conditions:

1. The materials you submitted to the IRB provide a complete and accurate account of how human subjects are involved in your project.
2. You will carry on your research strictly according to the procedures as described in materials presented to the IRB.
3. You will report to the chair of the Institutional Review Board any changes in procedures that may have a bearing on this approval and require another IRB review.
4. If any changes are made, you will submit the modified project for IRB review.
5. You will immediately report to the IRB Chair any problems that you encounter while using human subjects in your research.



Dr. Brent A. Askvig
Chair, Minot State University's IRB

500 University Ave W, Minot, ND 58707 701-858-3580 1-800-233-1737 FAX 701-858-3483

CONSENT TO PARTICIPATE IN RESEARCH

TITLE: *Clinical Decision Making of Rural Novice Nurses*
PROJECT DIRECTOR: *Teresa J. Seright*
PHONE # *701-624-5130/701-777-3188*
DEPARTMENT: *Teaching and Learning*

STATEMENT OF RESEARCH

A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask.

INVITATION

You are invited to be in a research study about clinical decision making in rural novice nurses because you are a recently graduated nurse who has completed orientation, and has been practicing less than 2 years past the end of that orientation. You are invited because you may have opinions or knowledge about this issue. Your participation is voluntary. Approximately 8-12 novice nurses will participate in this study.

WHAT IS THE PURPOSE OF THE STUDY?

The purpose of this research study is to generate knowledge regarding the complexities of decision making for the novice nurse in rural hospital settings. The ability to think critically is considered an essential skill of the professional nurse.

WHAT WILL MY PARTICIPATION INVOLVE?

If you decide to participate in this study, you may be interviewed about your knowledge, experiences, or observations. These interviews typically last thirty (30) minutes to an hour. You may also be asked to participate in a small group discussion about your clinical decision making experiences as a novice nurse in a rural hospital.

The researcher may observe you in your work setting in order to inform discussion and interview at a later date.

You will be asked if voice recordings can be made of you interview. Such recordings will be used only for writing down exactly what you say or for training other researchers. Your name will remain secret. Tapes will be stored in a locked cabinet after use. Being recorded is voluntary. You may still participate without being recorded.

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Approved on MAR 2 2010
Expires on MAR 1 2011

Date _____ 1
Subject Initials: _____

WILL MY CONFIDENTIALITY BE PROTECTED?

Information learned from this study will be used in scientific journal articles, in presentations, or to train teachers, service providers, or other researchers. None of these will identify you personally. Any information that is obtained in this study and that can be associated with your identity will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of assigned pseudonyms for health care agencies and participants. Only pseudonyms will be used in the transcripts of the interviews. Transcripts will be stored in a locked cabinet and in password protected files on the researchers' computer.

ARE THERE ANY RISKS?

The risks involved in this study include the possibility of loss of confidentiality. Though I make many steps to ensure secrecy, the identity of participants might accidentally become known. This may cause embarrassment or discomfort. Some questions I ask about your knowledge and experiences might cause worry, embarrassment, discomfort, or sadness. You may choose not to answer such questions. Referrals to counseling will be available should you experience bad feelings, but no money is available from the study to pay for such services.

Another drawback for you might include the amount of time spent in interviews.

Financial, legal or reputation risks are not anticipated to occur. Participants may perceive risk to reputation by participating in the study in that they are being observed in their work places wherein they are novice nurses. The aim of this study is generate knowledge regarding the complexities of decision making for the novice nurse in rural hospital settings. The aim of this study is not to critique your nursing practice, rather it is to gain understanding of your perception of your experience in decision making. If at any time you feel your professional reputation is threatened, you may stop participation in this study. In addition, the researcher will seek your input, as a form of fact checking, as to the validity of observations and findings during this research writing process.

ARE THERE ANY BENEFITS?

No direct benefit is guaranteed to you from participating in this study. By describing your experiences of clinical decision making, you may gain insight into your thinking. You may also feel slight gratification for helping a researcher or having the opportunity to talk about themselves and their experiences to an interested other (Cresswell, 2007). Health care facilities and nursing education programs may benefit from an understanding of the clinical decision making experiences of novice rural nurses.

WILL I BE PAID FOR PARTICIPATING IN THE STUDY?

No participants will receive pay for taking part in the study.

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2
Date _____
Subject Initials: _____

IF I DECIDE TO START THE STUDY, CAN I CHANGE MY MIND?

Your decision to participate in this research is entirely voluntary. You may choose not to participate. If you do decide to take part, you may change your mind at any time without penalty or loss of benefits that you had before the study. Your decision to participate or not in this study will not affect any relationship you might have with employers or service providers. You may choose not to participate in certain interviews or surveys, and you can skip any questions you do not want to answer.

WHAT IF I HAVE QUESTIONS?

If you have questions about this research in the future, please contact the researcher, Teresa J. Seright, by phone at 701-624-5130 or by email at teresa.seright@und.edu. If you have questions regarding your rights as a research participant, or if you have any concerns or complaints about the research, you may contact the University of North Dakota Institutional Review Board at (701) 777-4279. Please call this number if you cannot reach research staff, or if you wish to talk with someone else.

Authorization to participate in the research study:

I have read the information in this consent form, had any questions answered, and I voluntarily agree to participate in this study. I have received a copy of this consent form.

Participant's Name (please print)

Signature of Participant

Date

Signature of Investigator or Person Obtaining Consent

Date

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Date _____ 3
Subject Initials: _____

Appendix B
Potential Interview Questions

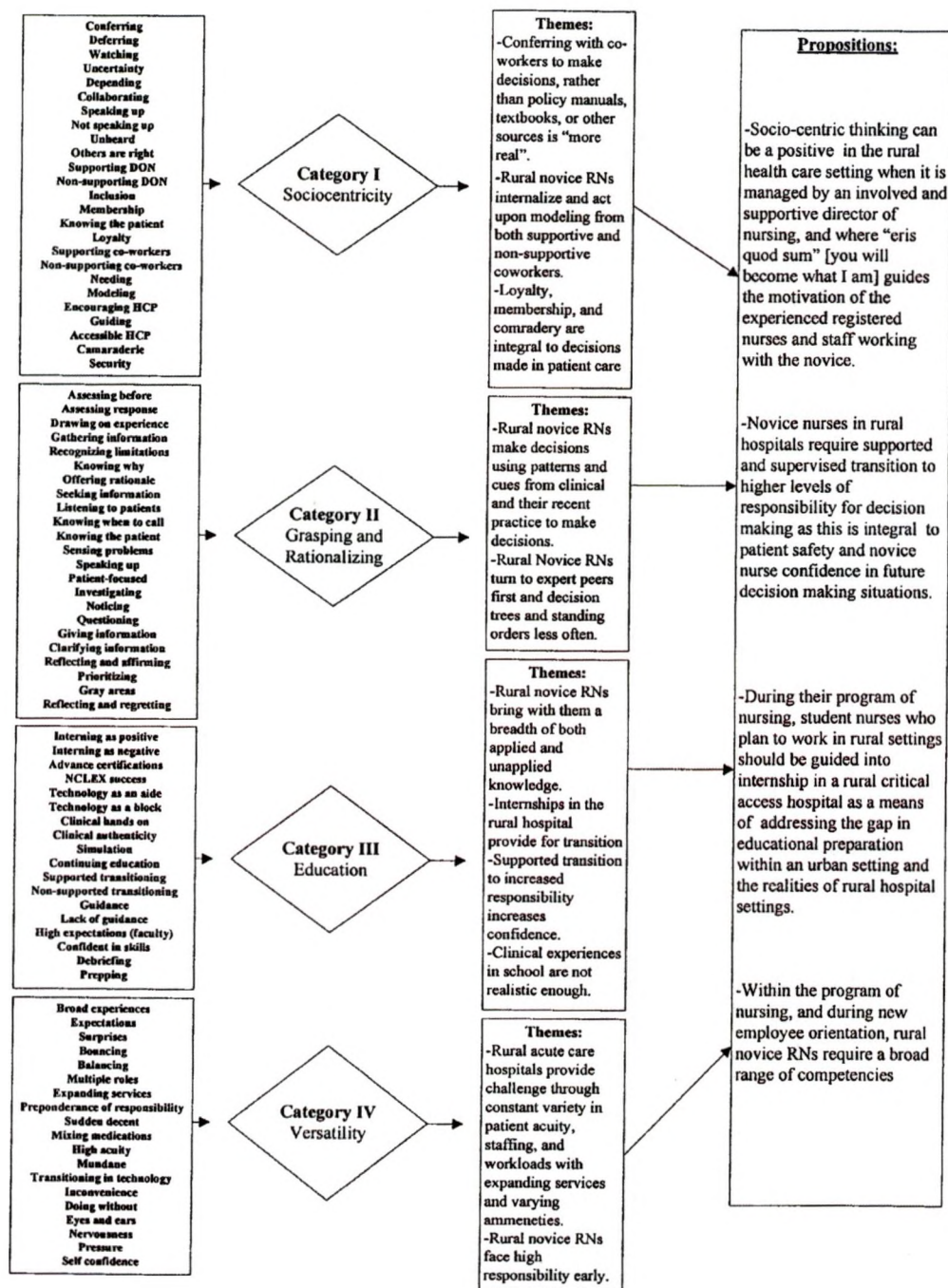
- 1) Would tell me about how you decided to become a registered nurse?
- 2) How did you decide to work in this rural hospital?
- 3) When did you graduate from your program of nursing?
- 4) How long have you worked here?
- 5) What is your job title here?
- 6) If you were asked to describe the most important part of your job, what would you say?
- 7) What do you feel has been the greatest factor in helping you transition into your role as a rural nurse?
- 8) What do you feel has been the biggest obstacle to your transition into your role as a rural nurse?
- 9) What types of decisions do you find you most frequently make in your practice setting?
- 10) Can you tell me about a time when you made a decision recently wherein you felt sure of your rationale for your decision-making process?
- 11) Can you tell me about a time when you made a decision recently wherein you felt unsure about the rationale for your decision-making process?
- 12) Tell me about your best day to date in this career.
- 13) Tell me about your most challenging day to date.
- 14) In your nursing education, what stands out in your memory as the most helpful to you in planning, implementing and evaluating the care you give?

- 15) Tell me about your “aahhaa” moments to date.
- 16) In a typical day, how often are you confronted with aspects of patient care/procedures with which you do not have prior knowledge?
- 17) In a typical day, how often are you confronted with aspects of patient care/procedures with which you do have prior knowledge?
- 18) What would you say has been your most important resource for confirming or denying choices you make in patient care?

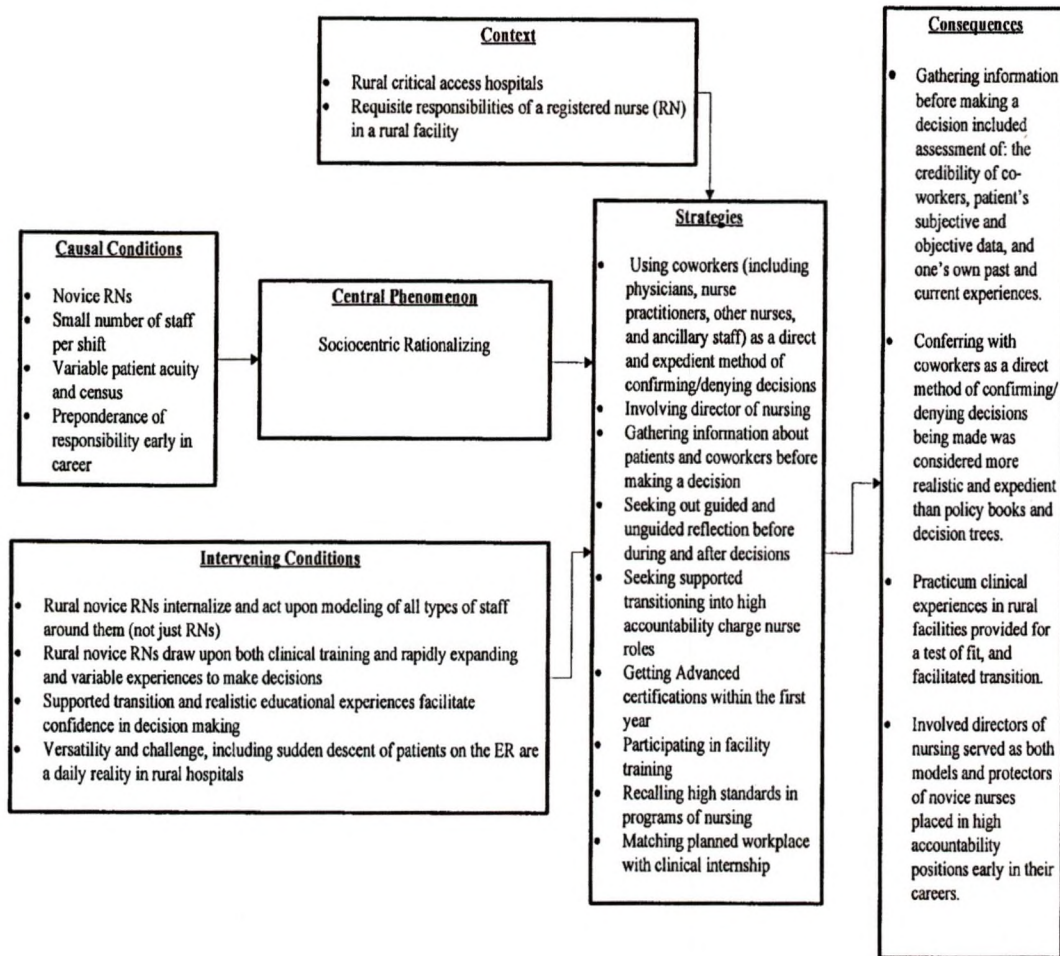
Appendix C
Participant Coding Matrix

PARTICIPANT NAME	HOSPITAL CODE	INITIAL FACE TO FACE INTERVIEWS	PARTICIPANT PSEUDONYM	FOLLOW UP INTERVIEWS
CONFIDENTIAL	04	4/20/10	GRACE	6/01/10
CONFIDENTIAL	04	4/20/10	ARIAL	Unable
CONFIDENTIAL	05	3/30/10	CELESTE	6/14/10
CONFIDENTIAL	06	3/24/10	JEWEL	6/14/10
CONFIDENTIAL	07	4/19/10	ALLY	6/01/10
CONFIDENTIAL	07	4/20/10	LAILAH	6/01/10
CONFIDENTIAL	08	4/07/10	ISABEL	6/09/10
CONFIDENTIAL	10	4/07/10	HANNAH	6/08/10
CONFIDENTIAL	14	4/14/10	EVE	6/10/10
CONFIDENTIAL	15	4/14/10	MEESHA	6/14/10
CONFIDENTIAL	16	4/07/10	SARAH	6/09/10
CONFIDENTIAL	16	4/06/10	SOPHIA	6/09/10

Appendix D Open Coding Map With Propositions



Appendix E Axial Coding Paradigm



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