Neonatal Nurse Practitioner: A Project to examine Role Identity

by

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A practicum report
presented to the University of Manitoba
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A practicum submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements of the degree of

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DEDICATION

TO MY HUSBAND TOM

FOR PATIENCE, UNDERSTANDING

AND ENCOURAGEMENT

Abstract

This practicum was designed to 1) demonstrate the role of the neonatal nurse practitioner and 2) identify variables related to the knowledge and practices of the nurse practitioner which represent a unique perspective in comparison with the practice of staff nurses and neonatal residents. The investigator functioned as a nurse practitioner in a tertiary care neonatal intensive/intermediate care setting for four months, utilizing a participant-observer research strategy.

Data collected during this demonstration project consisted of taped field notes. Sources of data included: systematic observation, daily bedside rounds and weekly case conferences with the staff neonatologist.

The field notes were transcribed to form a text which was then interpreted using a framework developed by Benner (1984). The data from this project provide additional support for the competencies developed by Benner (1984), and those identified by Brykcznyski (1985) in her study of nurse practitioners in ambulatory care. Two new competencies were identified in this study: mentoring and role modelling, and providing consistency/flexibility in patient care.

The exemplars generated in this study demonstrate an integration of medical and nursing therapies to provide a

comprehensive approach to patient care. Evidence of improved consistency in patient care was also found. Communication with parents, nurses and other health care workers was found to be an important role function for the nurse practitioner.

Anecdotal evidence suggesting acceptance of the nurse practitioner role by physicians and other nurses in the setting was found in this study. Problems with the role identified in this project included: knowledge gaps in the areas of physiology and pharmacology, and time pressures associated with the integration of medical and nursing functions.

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STATEMENT OF THE PROBLEM

1.1 Introduction

The field of health care has witnessed dramatic changes in the last fifteen years. Nowhere is this more evident than in the area of pediatrics, where neonatology has arisen as a major subspecialty. Nurses working in this setting have been called upon to provide increasingly complex care to both neonates and their families. In response to these demands an expanded role for neonatal nurses has been suggested (Barnett & Sellers, 1979; Bellig, 1983; Johnson, Jung & Boros, 1979; Tappero, 1983).The call for this expanded role has been met with mixed reactions in the nursing and medical community (Monnig, 1983; Monteiro, 1978). One of the major areas of concern among nursing leaders has been the potential for a loss of nursing identity in this role transition (Rogers, 1975; Williams, 1983).

Tomich (1978) has stated that "adoption of the medical model by nursing constitutes the single most salient and most self-defeating barrier to achievement of full status for nursing" (p. 303). Prior to implementing such a program in the Canadian health-care system, the role of this practitioner must be carefully defined.

1.2 Purpose of the Study

The focus of this practicum was to implement the role of the Neonatal Nurse Practitioner (NNP) in a Level lll NICU and to explore the role identity which emerged from this experience. Specifically, this project 1) demonstrated the role of the neonatal nurse practitioner and 2) attempted to identify variables related to the knowledge and practices of the nurse practitioner which represented a unique perspective in comparison with the practice of staff nurses and neonatal residents. By examining these questions, it was hoped that the role of the Neonatal Nurse Practitioner might be more clearly defined. This definition will facilitate examination of the contributions of the nurse practitioner to the health care of neonates and their families.

1.3 Conceptual Framework

A conceptual model can be defined as a set of concepts integrated into a meaningful configuration (Nye & Berado, 1966). Conceptual models give direction in asking relevant questions (Fawcett, 1984) and provide a framework for data analysis. In interpretive research, the model provides an organizational basis for thinking and for interpretation of observations. This practicum project, designed to identify role functions of the neonatal nurse practitioner, is based on the work of Benner (1982, 1983, 1984, 1985).

Benner's model (1982, 1983, 1984, 1985) was developed from systematic observation, recording and interpretation of clinical nursing practice. The philosophy of this model is derived from the work of Polanyi (1962) and Kuhn (1962) who distinguish between "knowing that" (theoretical knowledge) and "knowing how" or practical knowledge learned or acquired through experience. Many skills are developed without an understanding of the theoretical basis or rules governing the skill. For example, those who ski or skate may not understand the rules or principles which allow them to maintain their balance. When applying this to the discipline of nursing, we recognize that not all aspects of clinical knowledge can be quantified or described in scientific formulae. Clinical knowledge often goes unrecognized and to some extent unappreciated. The finely tuned instincts of the expert nurse may be referred to as a "gut feeling or sixth sense," without giving credit to the wealth of knowledge needed to develop that feeling. Benner views practical knowledge, the knowledge embedded in clinical expertise, as central to the advancement of nursing practice and the development of nursing science (Benner, 1984). In her words:

> Knowledge development in an applied discipline consists of extending practical knowledge (know-how) through theory-based scientific investigations and through the charting of the existent "know-how" developed through

clinical experience in the practice of that discipline (p. 3).

The development of practical knowledge occurs through experience when nurses try-out and rethink hypotheses and theoretical expectations in the practice setting. Since experience is a prerequisite for expertise, Benner (1984) has identified five levels of nursing practice: novice, advanced beginner, competent, proficient, and expert. These levels are derived from observations of how nurses make decisions in clinical practice.

Expert nurses make qualitative or perceptual assessments of clinical situations based on senses of touch, smell, and sight as well as the patient's physical, verbal and behavioral expressions. Beginners work on each of these senses separately until they gain the experience to integrate the information into a holistic picture of the patient (Benner, 1982).

In addition to the identification of levels of expertise in nursing, Benner (1984) has also identified seven domains of nursing practice which serve as an organizational framework for describing the intentions, expectations, meanings and outcomes of expert practice. Interpretation of data generated by interview and observation of acute care nursing practice resulted in the identification of competencies. These competencies were then

grouped together into domains based on similarities of function and intent.

According to Benner (1984), a domain may be defined as " a cluster of competencies that have similar intents, functions, and meanings" (p. 293). Competencies, or areas of skilled performance, emerged from analysis of field notes obtained from the study of beginning and experienced nurses in various clinical settings. Seven domains of nursing practice were identified as follows: 1) the helping role; 2) the teaching-coaching function; 3) the diagnostic and patient-monitoring function; 4) effective management of rapidly changing situations; 5) administering and monitoring therapeutic interventions and regimens; 6) monitoring and ensuring the quality of health care practices; 7) organizational and work-role competencies. Detailed description of these domains can be found in Appendix A.

Use of this framework has been compared to the interpretation of text. A sentence alone does not explain the meaning of a paragraph but must be examined in the context of the entire passage. Similarly, behaviors may have multiple meanings and are best understood when examined holistically in a larger context (Benner, 1983).

The interpretive approach described by Benner (1983) attempts to synthesize rather than analyze meanings to provide a way of organizing and describing practice.

The goal of interpretive research is not to extract theoretical terms or concepts but to achieve understanding (Benner, 1985). This type of description is needed in order to better understand the role of the nurse practitioner. Examination of nursing know-how, and the perceptions and clinical judgements that arise as a result of acquiring skills through delegated practices, are particularly appropriate in the study of new nursing roles.

Benner's model (1984) of interpretation of clinical nursing practice provided the framework within which to organize and interpret data collected in this practicum project. This model was found to be particularly appropriate for interpretation of data generated by a new nursing role. The framework allows an opportunity for systematic study and comparison of the data generated by this project with that of other researchers using the Benner model.

1.4 Definition of Terms

Nurse Practitioner- a registered nurse with advanced training, working in a collaborative relationship with a physician, who provides patient care services previously designated as medical functions.

Competency- "an interpretively defined area of skilled performance identified and described

by its intent, function and meanings." (Benner, 1984, p. 292)

Domain- "domain of practice is a cluster of competencies that have similar intents, functions and meanings." (Benner, 1984, p.293)

1.5 Background

In the last ten years survival rates for low birth-weight infants have increased sharply. Improvements in neonatal mortality have been most significant in those infants weighing 500-1000 grams. Manitoba statistics indicate a 20% survival rate for infants 500-999 grams born in 1980. In 1986, the survival rate for this group had increased to 50% (College of Physicians & Surgeons of Manitoba, 1980, 1986).

Decreases in neonatal mortality, combined with factors such as improvements in antepartum care and the provision of a neonatal transport team, have greatly increased the number of admissions to the neonatal intensive care units (NICU's) in Manitoba. In 1988, 54% of the 4,363 deliveries at St Boniface Hospital were classified as high risk according to standardized perinatal risk scoring. There were 323 admissions to the hospital's NICU, up 25% from ten years ago (MacDonald, 1988). The length of stay in neonatal units has also increased. Very low birthweight infants may stay in

NICU as long as ten months before going home or being transferred to a chronic care facility.

As neonatal care becomes more complex and more prolonged, the needs of the neonate's family also increase. A number of researchers have demonstrated the positive effects of structured support programs and consistent care givers on parental comfort and involvement with their infant (Hawkins-Walsh, 1980; Meier, 1978). Parents have also become more active in decisions regarding their infant's care and in seeking answers to their questions. A number of books written by parents for families of premature infants suggest that parents should become as knowledgeable as possible in the care of their infant (Henig & Fletcher, 1983; Lieberman & Sheagren, 1984; Pfister & Griesemer 1983). This change in approach represents an increased workload for both physicians and nurses who must help the parents meet their learning needs.

These factors have placed a great strain on the resources available in neonatology. A shortage of neonatologists has been in evidence for a number of years (American Academy of Pediatrics, 1980). The number of medical residents being admitted to pediatrics has also been reduced. In Manitoba, there were seven fewer pediatric residents in 1985-86 than in 1982-83. This impacts dramatically on the number of senior residents available to provide twenty-four hour medical coverage. Currently, 80% of

on-call coverage for St. Boniface NICU is provided by casual or paid call (Kelly, personal communication, October, 1987). Under this system, a physician is paid to work in NICU overnight and on weekends for a varying number of shifts each month. Continuity of patient care and parent contact is not possible with this system.

In response to similar manpower challenges in other settings, nurses have broadened the scope of their practice to assume a more comprehensive role on the health care team. Silver and McAtee (1984) have suggested that the use of expanded role nurses will allow house staff and fellows in training additional time to care for more complex patients without requiring additional resident programs. The term "nurse practitioner or nurse clinician" has been used interchangeably to describe the nurse who received advanced training in expanded role functions. The clinician working in the neonatal setting has been described by Strickland and colleagues (1980) as being involved in planning, implementing, and evaluating total care of high risk neonates, performance of diagnostic and therapeutic procedures and management of emergency situations.

1.6 Historical Overview

i) United States:

The first NP demonstration project was developed in 1965 at the University of Colorado and was intended to

determine the safety, efficacy and quality of a nursing program providing care to children and families (Ford & Silver, 1967). Since the 1960's, the nurse practitioner movement has grown in the United States to encompass almost all fields of clinical practice with over 24,000 nurses having received NP training (Mahoney, 1988). As of 1988, thirty-five states had changed their nurse practice acts to accommodate expanded role nursing. Twenty-eight states allow nurses to prescribe medication and nineteen allow third party reimbursements (Waters & Arbeiter, 1985; Nurse Practitioner, 1989).

In the neonatal setting, the first nurse practitioner program was established in 1973 in Tuscon, Arizona in a normal nursery setting (Slovis & Comerci,1974). Also in 1973, a NNP demonstration project was undertaken in a Level III NICU in Salt Lake City (Johnson, Jung & Boros, 1979). This project was initiated in response to identified manpower shortages and resulted in the development of a full-scale training program for nurse practitioners. In 1976, one of the best known neonatal nurse practitioner programs was established by Sheldon and Dominiak (1980) in Denver, Colorado. A 1982 survey done by Harper, Little and Sia (1982) found that 57% of Level III NICU's in the United States employed NNP's. A 1987 survey done by the National Association of Neonatal Nurses identified thirteen masters

and nineteen non-masters programs in the United States which prepare Neonatal Nurse Practitioners (NANN, 1987).

ii) Canada

In 1971, McMaster University in Hamilton initiated an education program for nurse practitioners with a focus on family practice. Ninety-nine nurse practitioners graduated from that program (Scherer, Fortin, Spitzer & Kergin, 1977). A 1972 report (cited in Gray, 1983) commissioned by the Federal Government recommended that the development of the nurse practitioner be regarded as a high priority in meeting primary health care needs in Canada. A Canadian Medical Association-Canadian Nurses Association joint committee recommended in 1973 that "selected responsibilities now tended to be handled by physicians can reasonably be delegated to nurses" (cited in Gray, 1983). In the neonatal setting, McMaster once again developed the first Canadian program for nurse practitioners. This program, initiated in 1986 as part of the Masters in Health Sciences program, is jointly sponsored by the University, the Ministry of Health and the Ontario College of Physicians and Surgeons (Schultz, 1987). In a Canadian survey (Askin, 1986) only one other center was reported to be considering a nurse practitioner training program.

1.7 Problem Summary

A number of studies have examined the practitioner in

terms of patient and physician acceptance and in terms of outcome results. (Chacko & Wong, 1984; Ward, 1979; Zammuto, Turner, Miller, Shannon & Christian, 1979). However, little work has focused on the knowledge and practices of this nurse.

Several authors have called for the investigation of those aspects of nurse practitioner practice that are different from physician care (Fagin, 1982; Gortner, 1984; Molde and Diers, 1985; Prescott & Driscoll, 1979; Sullivan, 1982). Qualitative description is needed to identify those aspects of expanded role practice which have not been captured by more traditional research approaches. Billingsley and Harper (1982) have identified as a research priority, exploration of the care versus cure dichotomy. In their words: "These functions are the crux of the difference between nursing and medicine... The bulk of the research about nurse practitioners has focused on the curative (medical) tasks. The caring (nursing) tasks have been ignored" (p.23).

A review of the literature has shown support for Stanford's (1987) claim that:

> There has been an underlying assumption that nurse practitioners bring with them to primary care an added dimension of holistic and humanistic care that incorporates principles of health maintenance, health promotion, patient education, counseling, advocacy

> collaboration and comprehensive patient-centered care... These assumptions about the "art-of-care" of nurse practitioner practice have not been conceptualized for research purposes. (p. 68)

Specifically, the problem this study addressed is the lack of information about the methods of care delivery used by the nurse practitioner and how this care differs from that provided by the staff nurse and the medical resident.

1.8 Relevance

This study provided an opportunity to study the implementation of a new nursing role within the context of the setting. It was designed to broaden the understanding of the role of the nurse practitioner as compared to staff nurses and physicians. While the nurse practitioner has been studied extensively in the United States, little work has been directed to studying the knowledge and practices of this group of nurses. This interpretive study will contribute to an understanding of the uniqueness of the practitioner role and its contribution to nursing knowledge and the health-care of clients. The knowledge gained from this study should ease the transition of other nurses into the role due to an increased understanding of the role and role identity.

Chapter II

REVIEW OF THE LITERATURE

2.1 Introduction

Much of the practitioner research reported in the literature has focused on three basic areas: 1) knowledge base or preparation, 2) role acceptance and 3) a comparison of outcome results for nurse practitioners and physicians. A brief review of the research in these areas will be described. Literature and research related to the practice of the nurse practitioner will also be reviewed.

2.2 Knowledge Base

Programs designed to prepare Neonatal Nurse Practitioners vary widely in both length and complexity. Courses ranging from several weeks of theory and clinical practice to Masters preparation have been reported in the literature (Andrews & Yankauer, 1971; Bellig, 1980; DeCastro & Rolfe, 1973; Ostrea & Schuman, 1975; Sheldon & Dominiak, 1980).

Much concern has been expressed regarding the adequacy of educational preparation for the NNP role (Bellig, 1980; Johnson & Boros, 1979; NAACOG, 1985; Sheldon & Dominiak, 1980). In 1985, the Nurses Association of the American College of Obstetrics and Gynecology (NAACOG) identified

three essential components for a neonatal nurse clinician program: 1) identified objectives, 2) planned learning experiences, and 3) subjective and objective evaluation. Further to this, in 1986, NAACOG's affiliate, the NAACOG Certification Corporation (NCC), changed the eligibility criteria for the Neonatal Nurse Practitioner certification exam to include graduation from a recognized nurse clinician program of at least one year in duration (NCC, 1985). The trend in the United States over the past ten years has shown an increase in the number of nurse clinician programs affiliated with academic institutions and an increase in the length of the program (Bullough, Sultz, Henry & Field, 1984; Sultz, Henry, Bullough, Buck, & Kinyon, 1983).

In Canada, the Canadian Nurses Association (CNA) has expressed support for the move to higher education for nurse specialists. In the CNA Position Paper on Specialists' Roles in Maternal Infant Nursing (1984), CNA states:

> Specialist preparation is in addition to general preparation as a nurse. A specialist must systematically acquire knowledge and skills...Such a course of study should be developed in academic settings...(p.6).

The specific knowledge base required to function in the NNP role has been the subject of several papers (American Nurses Association & American Academy of Pediatrics, 1971; Schneider, Ziegek & Patterson, 1975; Bellig, 1980; Sheldon &

Dominiak, 1980). Very little empirical evaluation of the nurse practitioner's training has been seen in the literature. One study (Davidson, et al, 1975) demonstrated a significant ($p<0.001$) difference between entry level knowledge and outcome knowledge in a seven month Pediatric Practitioner program. Slovis and Comerci (1974) evaluated a short neonatal program that included cribside teaching and a supervised clinical experience and found that the program objectives were met. However, their evaluation methods were not extensive and further investigation was recommended by the authors. Other authors have also carried out limited evaluations of their programs' outcomes and have demonstrated positive results in quantity and quality of work, consistency of care and patient satisfaction (Barnett & Sellers, 1979; Ostrea & Schuman, 1975; Strickland, 1980). Few authors, however, have evaluated specific content requirements of an NNP program.

2.3 Role Acceptance

This aspect of the expanded role of the nurse has been examined in several studies. These studies have looked at acceptance of the NNP by patients or families, physicians and other nurses.

i) Patient Acceptance

The acceptance of nurse clinicians by patients and families has generally been found to be positive. An early

literature review by Andrews and Yankauer (1971) discussed a number of studies of parental reaction to pediatric nurse practitioners. All showed high levels of acceptance among the parents. Similar results were found by Day, Egli and Silver (1970), by Shively (1975) and by Gortner and Nahm (1977).

Studies by Yankauer, Tripp, Andrews and Connelly (1972) and by Chenoy, Spitzer and Anderson (1973) demonstrated an acceptance of nurse practitioners by patients and a preference for nurse practitioner provision of certain types of care such as: patient education, well child care and care in certain medical conditions. In 1978, Levine, Orr, Sheatsley, Lohr and Brodie surveyed 701 patients seen by nurse practitioners in Philadelphia. 94.1% of the patients expressed comfort with the nurse clinicians and 95.5% rated the clinicians as good or very good.

In 1985 the American Nurses Association conducted a poll of the American public's attitudes toward nursing. The results of the survey demonstrated that 85-96 % of the respondents believed that with training, nurses could safely prescribe routine drugs, perform physical examinations, deliver babies and provide home health-care services.

ii) Physician Acceptance

The research relating to physician acceptance of the nurse practitioner role has been mixed. Devlin (1975) reviewed fifty-eight articles on nurse practitioners that

appeared in the literature between 1965-1975 and found that 45% mentioned interdisciplinary conflicts involving the nurse practitioner role. Monteiro (1978) identified the following issues as possible sources of conflict "1) economic infringement and 2) infringement on the physician's exclusive hold on diagnosis and treatment as legitimate medical actions" (p.338). Antonelli (1985) surveyed 127 neonatal nurse practitioners to identify sources of role stress. Results of this study indicated that practitioner-physician conflict was rated as the highest source of stress. Specific problems identified in this category of stress included: perceived medical mismanagement, disagreements over medical management and physician reprimands.

Lawrence, and colleagues (1977) queried North Carolina physicians as to their willingness to delegate tasks to nurse practitioners and found that only 34% of the respondents would hire a nurse practitioner while 52% approved of the concept but would not hire. The authors of this study speculate that physician reluctance is related to the manner in which physicians are socialized to their own professional roles and the legal and ethical support systems which have developed to insure the quality of medical practice.

Fottler, Gibson and Pinchoff (1978) surveyed 944 physicians in Western New York and found that only 23.4%

would be willing to hire a nurse practitioner. Reasons for unwillingness to hire included satisfaction with traditional roles, problems with legal liability, perceived inability of the nurse practitioner to perform the role and a perceived lack of patient acceptance.

Other studies have shown that physician acceptance can be achieved (Levine et al, 1978). Schoen and colleagues (1973) surveyed California pediatricians and found that the majority suggested that nurse practitioners be used in areas where present health care was inadequate. Ostrea and Schuman (1975) surveyed a group of medical residents, the majority of whom said that they found nurse practitioners to be helpful.

Pierce, Quattlebaum and Corley (1985) studied the attitude changes of residents associated with a pediatric nurse practitioner program and concluded that favourable attitudes on the part of physicians toward nurse practitioners can be fostered during residency through exposure to the role. Secondly, the authors suggest that subsequent years of exposure will reinforce favourable opinions.

A randomized clinical trial using nurse practitioners in an Ontario family practice setting demonstrated that physicians involved in the trial believed that their own work became more efficient when nurse practitioners were utilized (Spritzer et al, 1974). Spector, McGrath, Alpert,

Cohen and Aikins (1975) conducted a controlled trial in a large medical clinic setting and found that two thirds of the 115 physicians in the clinic referred patients to a nurse practitioner during the study. They concluded from this that "nurses can be integrated into direct patient care...without difficulty" (p. 1236).

Silver, Murphy and Gitterman (1984) found in a pilot project utilizing nurse practitioners in hospital pediatric wards, that the nurse practitioner had an improved collaborative relationship with physicians and other health personnel. In their words, "physicians with whom they worked stated that they were more comfortable in transferring many of their own functions and responsibilities to the nurse" (p. 14).

iii) Nurse Acceptance

Studies addressing support among nursing colleagues have been scarce. Many authors speak incidently about role stress and isolation related to collegial relationships (Bellig, 1980; Sheldon & Dominiak, 1980). Herzog (1976) suggested that the nursing colleagues may be threatened by the nurse practitioner because she is thought to be more capable than other nurses.

Findings of acceptance are also found in the literature. Mauksch (1975) found that initial criticism of the nurse practitioner had been replaced by acceptance on the part of many nurses, and has suggested that the initial

resistance resulted from confusion of the nurse practitioner with the role of physician's assistant.

Wright (1976) surveyed the attitudes of 800 registered nurses toward expanded role functions and found that 88% expressed positive or very positive favourable opinions of the expanded role concept. Johnson and Boros (1979) found that there was a high degree of satisfaction among NICU staff working with nurses in an expanded role. Tharp, Baker and Brower (1979) studied the change in attitudes occurring when geriatric nurse practitioner students were introduced into a long-term care facility. They found that initially the staff held a wait-and-see attitude, while following the trial, the staff demonstrated a positive attitude toward the nurse practitioner.

2.4 Patient Outcome

Competence, safety, improved health status and increased compliance with treatment regimens were demonstrated in a number of early nurse practitioner studies (Charney & Kitzman, 1971; Conant, Robertson, Rosa & Alpsert, 1971; Yankauer et al, 1972). In 1967, Lewis and Resnick published a study of nurse practitioners working with chronically ill adults. The results of that study suggested that patients seen by the nurse practitioner had greater adherence to appointment schedules and received a higher quality of health care.

The classic study of patient outcomes in a care-by - nurse practitioner setting was reported by Spritzer and colleagues in 1974. This randomized, controlled study assessed the effects of substituting nurse practitioners for physicians. Health status of the patients (physical, emotional and social) was evaluated before and after the trial. Quantitative analysis demonstrated a similar quality of health care for both physician and nurse practitioner patients.

Simborg, Starfield and Horn (1978) examined three pediatric and three adult primary care practices. He found a higher rate of follow-up of identified problems in the nurse practitioner group when compared to the patients seen by physicians. Runyan (1975) demonstrated superior results in a group of diabetic and hypertensive patients cared for by nurse practitioners. This study found that patients cared for by nurse practitioners had greater decreases in blood pressure, greater control of blood sugars and 50% fewer hospital days than similar patients cared for by physicians.

Thompson, Basden and Howell (1982) report a comparison study which examined, among other variables, the detection rate of significant new findings during routine exams. The results demonstrated the nurse practitioners recorded new findings at a rate nearly double that of physicians in an aged matched group of patients. Other studies have also

demonstrated superior results in nurse practitioner performance (Merenstein, Wolfe, & Barker, 1974)

A comprehensive review of patient outcome research was done by Sox in 1979. He examined twenty-one studies which compared care given by nurse practitioners and physician assistants with that given by physicians. The results of all of these studies showed that the quality of primary ambulatory care given by these groups was indistinguishable.

Other review articles reached similar conclusions (Abdellah, 1982; Feldman, Ventura & Crosby, 1987). Edmunds (1978) reviewed 471 books and articles dealing with nurse practitioner research and concluded that there was convincing evidence that nurse practitioners were fully accepted by patients and were competent to deliver high quality health care. Fagin (1982) analyzed twenty years of nurse practitioner research and found convincing evidence that nurse practitioners provided safe and efficacious health care.

Similar results were found in pediatric practice (Chen, Barkauskas, Ohlson et al, 1983; Foye, Chamberlin & Charney, 1977; Graham, 1978). In a chart review of 182 children seen by nurse practitioners and pediatricians, there was total agreement in assessment findings in 86% of the cases (Duncan, Smith & Silver, 1971). Prescott and Driscoll (1980) also report equivalent care given by physicians and nurse practitioners. Goodman and Perrin (1978) found that

nurse practitioners actually scored higher on history-taking and disposition than pediatricians and pediatric house staff in a telephone management study.

2.5 Knowledge and Practice

Much of the preceding research has focused on the nurse practitioner as a substitute for medical care. Little research has been done to address the nursing components of this expanded role (Diers & Molde, 1979).

Prescott and Driscoll (1979) have suggested that much of the existing nurse practitioner research has focused on measures of the performance of the nurse using physician standards of care. They see this as problematic because the population served by the two groups tends to be quite different with the nurse practitioner often caring for a patient population which is older, sicker and poorer. In addition, they suggest that questions as to how well physicians perform certain tasks have not been addressed. Shamansky (1985) further discusses the importance of correctly defining nurse practitioner practice in order to capture the art-of-care elements which otherwise might be overlooked in research.

Failure to circumscribe the role of nursing practice within the practitioner role has been suggested as one reason for the continued opposition to development of the nurse practitioner (Brykczynski, 1985; Lewis, 1972; Weston,

1975). Hershey (1973) describes an expanded role concept based upon an independent practitioner, clearly as a separate profession with functions paralleling those of medicine. Ford (1979) identifies the purpose of one of the first nurse practitioner demonstration projects as being "to develop a new nursing role" (p. 517). It is Ford's contention that "fulfillment of the nursing role- that of support, comfort, teaching, and preventive measures- is enhanced and enriched by the additional nurse practitioner skills" (p. 518).

Identification of those factors which constitute 'uniqueness' in the role of the nurse practitioner has been suggested as an important research agenda (Fagin, 1982; Gortner, 1984; Sullivan, 1982). Tomich (1978) describes the "need to specify a central core for nursing which differentiates nursing practice from medical practice" (p.303). Chard, Dunn and Mandelbaum (1983) stress that it is essential that nurse practitioners develop research studies to elucidate more effectively the contributions which their practices make to the health care system.

Molde and Diers (1985) discuss the need to explain outcome results based on nursing practice. A number of examples where the outcomes achieved by nurse practitioners exceed those of physicians have been cited in the literature (Hastings et al, 1980; Ramsay, McKenzie & Fish, 1982; Watkins & Wagner, 1982). However, none of these studies

examine why the nurse was able to achieve a better outcome or how the roles of physicians and nurses differ qualitatively.

Only two studies were identified in which attempts were made to examine the role functions of nurse practitioners. Cruikshank, Clow and Seals (1986) used content analysis to examine aspects of the pediatric nurse practitioner role in a tertiary care Outpatient Clinic. Findings demonstrated that the nurse practitioner spent much of their time functioning as a patient manager to ensure that the patient did not become lost in the system. Time was also spent promoting continuity, compliance and in arranging support services. Counseling and patient education were found to be universally part of the nurse practitioner's role.

Brykczynski (1985) used an interpretive research strategy to examine the role of nurse practitioners in ambulatory care. Benner's framework was used to categorize the functions of these practitioners in an attempt to uncover their expert knowledge. Several new competencies were identified which were unique to the nurse practitioner role including that of self-monitoring and seeking consultation, providing primary care and providing constructive feedback to physicians.

2.6 Summary

This review of the literature has demonstrated overall acceptance of the nurse practitioner by those that use the service and by the physicians and nurses who work with the practitioner. The safety and efficacy of the nurse practitioner has also been demonstrated in repeated studies. Little has been documented about the specific role functions of the nurse practitioner or about the aspects of practice which distinguish the nurse practitioner from other health care providers. An attempt to interpret the clinical practices of the nurse practitioner will help us to define the scope of nursing practice and to broaden our understanding of the contributions of the nurse practitioner to the health care system.

Chapter III

METHODOLOGY

3.1 Introduction

This project incorporates a participant-observer approach to demonstrating the NNP role and identifying functions inherent in that role. The project took place in a tertiary care NICU/IMN setting over a four month period. This chapter outlines the steps taken in project planning, data collection and analysis. Issues of validity and ethical considerations are also addressed.

3.2 Project Design

This practicum demonstrated the role of a nurse practitioner in a tertiary care intensive care/intermediate care nursery, and explored the concepts related to role identity which emerged during implementation. The length of the practicum was four months. Closure was determined by the emergence of the data. The participant-observer design involved the investigator functioning in the nurse practitioner role while collecting field notes and case studies.

During the practicum, the investigator spent six weeks in the Intermediate and Triage Nurseries and ten weeks in

NICU. The NNP worked primarily weekdays with two weekend and three evening shifts. No night call was involved. A total of 320 clinical hours were logged during the project. Throughout this experience, the NNP (investigator) assumed the following medical responsibilities: collection of health histories; physical examinations; and treatment planning, implementation and evaluation for selected neonates. The NNP wrote progress notes and medical orders which were co-signed by the neonatologist. Patient management was reviewed regularly by the neonatologist. The investigator did not perform any technical skills other than those currently performed by the unit nursing staff.

Nursing responsibilities encompassed by this experience included: consultation for difficult patient management problems; assisting with care and discharge planning; and the provision of information and education to the parents. Nursing supervision was provided by the Director, Maternal-Child Nursing.

This qualitative design, utilizing strategies of participant observation, offered the advantage of allowing observation and interpretation in a natural setting and credibility in the participant role. Brykczynski (1985) identifies an interpretive approach as being "particularly appropriate for uncovering the knowledge implicit in the practice of a cultural group, in this case nurse practitioners" (p.7).

3.3 Setting

This practicum took place in the Intermediate and Intensive Care Nurseries in a large teaching hospital in Winnipeg. Newborn deliveries at this hospital totalled 4,363 in 1988, with 54 % of these deliveries classified as high risk. Admissions to the neonatal intensive care unit numbered 323 last year. The investigator was previously employed in this setting for seven years. This setting was chosen because of an expressed interest in the nurse practitioner role on the part of both nursing and medicine; and because it was felt that past experience in the setting was necessary to establish credibility in the role. Ragucci (1972) suggests that the success of participant-observation depends on the investigator's ability to establish rapport and relationships of mutual trust and respect with his informants.

3.4 Project Planning

3.4.1 Site Access

Negotiations for site access began some time prior to the anticipated start date for the project. Letters requesting access were sent to the Director of Maternal-Child Nursing and the Head, Section of Neonatology at the

hospital (Appendix B & C). Letters granting access may be found in Appendix D and E.

A formal proposal outlining the rationale for the project, the objectives and the methodology was developed and submitted to the Department of Pediatrics for approval (Appendix F). The proposal was reviewed and approved by the Pediatric Department and forwarded to the Vice President, Medical and the Vice President, Nursing for their approval. Memos outlining the project's activities were sent to the relevant hospital departments .

An advisory committee was established in the hospital to oversee the project. Committee members included : the Director of Maternal-Child Nursing, the Assistant Director, Education for Maternal-Child Nursing and the Head, Section of Neonatology. This committee met with the investigator during the project planning phase and weekly throughout the project to review any problems and to monitor the NNP's performance.

Prior to implementation, meetings were held with the staff of both demonstration units to inform them of the purpose and the methodology of this practicum project. Staff were informed of the investigator's role and questions regarding legal coverage for advanced practice were addressed. In addition, a statement for project participants was placed in the Communication Book in both demonstration units. A copy of this statement is found in Appendix G.

3.4.2 Role Preparation

Prior to implementing the NNP role, it was necessary for the investigator to supplement practical experience in the setting with additional theoretical knowledge. To achieve this objective, a self-learning program was designed to upgrade knowledge in the area of neonatal physiology, pharmacology and radiology. Nursery policies and protocols were also reviewed. For three months prior to the project start date, the investigator attended pediatric rounds and selected x-ray rounds. In addition, the investigator also participated in house-staff teaching sessions.

3.5 Research Methodology

This demonstration project utilized a participant-observer methodology for data collection. Pearsall (1965) has defined participant observation as " research aimed at maximal knowledge of the beliefs and behavior of human beings in their natural settings interpreted in some general theory or combination of theories from one or more of the behavioral sciences" (p. 37).

Of the four types of participant observation, complete observer, complete participant, observer-as-participant and participant-as-observer, this project utilized the latter approach. These roles differ in the degree of involvement which the investigator has in the research setting. In the

participant-as-observer role, the observer and the observed are aware of the purpose of their relationship but over time, relationships approach an intimate level of trust and sharing. Pearsall (1965) describes the participant-as-observer role as follows:

> the participant-as-observer can penetrate farther beneath the surface of public behavior and superficial expression...In this version of the role it is possible to collect minutely detailed data on a wide range of topics and verify them by careful crosschecking p. 38.

This type of methodology has been identified as appropriate in the study of complex organizations such as hospitals (Jackson, 1975). Weick (1968) has described the benefit of participant-observation in providing data with a wide range of detail and immediacy with whole events preserved. Leininger (1985) suggests that in nursing, "such detailed and documented data are essential for building a sound, reliable and valid base of knowledge." (p. 40). Brykczynski (1985) has identified the strength of this method as "overcoming both the extreme objectivity and subjectivity by maintaining the situational context and by studying the person in the situation" (p. 70).

3.6 Assumptions

The interpretive approach to data collection and analysis rests on several assumptions about human nature. The following assumptions identified by Benner (1985) underlie this study:

1) human beings are self-interpreting. That is, they are able to examine and interpret thier behavior.
2) In self-interpretation, the individual takes a stand on the kind of being he or she is .
3) Interpretations of behavior available to the individual may change but change is limited by language, culture and history.

Additional assumptions may be identified as follows:

4) previous experience in the setting will provide the investigator with credibility in the NP role.
5) the investigator's history with the participants will allow the staff to feel more comfortable in sharing their thoughts.

3.7 Limitations

The findings of this study are limited by having data from only one nurse practitioner. One method of validating data in this type of research is to compare data and develop shared meanings as a group. With only one practitioner, validation of data occurs within the larger context of the unit staff rather than within a nurse practitioner group.

In an attempt to control for this, expert validation was obtained for a subset of the data.

In serving as a participant-observer, the investigator may introduce bias into data collection. Vidich (1969) has identified the loss of objectivity as a problem when the participant observer unqualifiedly immerses himself in the group he is studying. In this case vested interests may be introduced into the data. The use of a separate participant-observer would have been useful in this study.

3.8 Data Collection

The goal of this interpretive practicum project was to gather data which could then be transcribed to form a text for interpretation. Systematic observation, daily bedside rounds, and weekly case conferences with the staff neonatologist were used as sources of data. A summary of the sources of data, methods and time frame for collection is presented in Table 1.

Table 1

DATA SOURCE	METHOD	TIME FRAME
Investigator	Journal	written daily analyzed biweekly
Physicians	Bedside rounds Case conferences	daily weekly

Nurses	Bedside rounds	daily

The rationale for using these data sources relates to the objectives of the study. Since the nurse practitioner role is seen as a role overlapping with both physicians and staff nurses, data from these groups allowed the investigator to compare and contrast approaches to patient care between the three groups. Data sought during bedside rounds and case conferences included: 1) perceptions of patients needs, 2) approaches to care and 3) concerns regarding patient care.

Examination of bedside rounds, case conferences and journal records was chosen because these provide a basis for a direct comparison of three different approaches to the same clinical situation. Information was collected during routine interaction between the nurse practitioner, staff nurses and physicians to maintain as natural a setting as possible.

Field notes were written or tape recorded during or after each day in the setting. The taped field notes consisted of an overview of the day's events with a detailed description of significant practice situations. The detailed description included accounts of activities, thoughts, feelings and concerns of the nurse practitioner. In addition

notes were made of comments, concerns and questions raised by nursing, medical staff or other health care professionals. This type of narrative record has been described by Benner and Wrubel (1982) as assisting in "securing sufficient detail, thinking and chronology for the listeners to understand the incident and for the interpreters of the script to grasp the essentials of clinical knowledge exemplified in the encounter" (p. 14).

3.9 Data Analysis

The field notes were transcribed to form the text for interpretation. Data analysis was initiated at the start of the project and continued on an ongoing basis according to the process used by Benner (1984), and Brykczynski (1985). The steps in data analysis can be identified as follows:

1) The transcript of the field notes was read through and initial themes and interpretations identified.
2) Clinical situations were studied in depth to identify common themes.
3) Examples of the domains of nursing practice were identified.
4) The material generated in the previous stages was reread to identify competencies.

3.10 Validity

The investigator's interpretation of identified themes was discussed with the nursing and medical staff in the setting for validation and further interpretation. Validation was also obtained by having two expert neonatal nurses from outside the study setting independently read forty-five of the clinical situations and provide verbal interpretations. These experts were asked to provide their interpretation of the exemplars as to role function and areas of differences in practice between the nurse practitioner, the physician and the staff nurse. Benner (1985) has stressed the need for expert validation of at least some of the data in order to prevent the "importation of meanings not actually supported by the text" (P. 11).

The reader of interpretive research also actively participates in the validation process. Cherniss (1980) has proposed five criteria useful in determining the internal validity of this type of qualitative research:

- the work should help us to understand the lives of the subjects.
- themes should maintain the integrity of the original data.
- interpretations should be internally consistent.
- data that support the findings should be presented. These data usually take the form of excerpts from interviews.

- Reported conclusions should be consistent with the reader's own experience.

3.11 Ethical Considerations

The investigator applied for, and was granted approval from the University of Manitoba School of Nursing Ethics Committee (Appendix H). At all times during the conduct of the practicum, the investigator respected the rights of the physicians and nurses in the setting. Prior to commencement of the practicum, all nurses and physicians anticipated to be working with the investigator were informed verbally of the purpose of the study. Physicians and nurses were informed that, from time to time, they may be asked to describe their observations and interpretations of a particular case they are involved in. They were informed that they were free to read the field notes taken by the investigator and may delete any portion which they do not wish recorded. Participants were informed that confidentiality would be maintained and that no names were be recorded in the data.

All patient interventions proposed by the investigator were carried out only after being co-signed by the staff neonatologist. Because no changes in patient care resulted, parental consent was not obtained.

3.12 Summary

The phases of project planning, role preparation and site selection have been described in this chapter. In addition, methods of data collection and analysis have been outlined. Rationale for the selection of this methodology was discussed. Ethical considerations and validity issues were also addressed.

Chapter IV

RESULTS

4.1 Introduction

Data presented in this section consist of exemplars of clinical practice identified during the participant observation experience. Benner (1985) defines an exemplar as follows:

> an exemplar is a vignette or story of the particular transaction that captures the meaning in the situation so that the reader is able to recognize the same meaningful transaction in another situation where the objective characteristics might be quite different...They present the context, the intentions of the actors and the meanings in the situations (p. 10)

These examplars have been categorized according to the domains of nursing practice identified by Benner (1984) and Brykczynski (1985). Two new competencies have been identified from the data collected in this project. These have been identified under the appropriate domains.

4.2 Management of Patient Health/Illness Status

Brykczynski (1985), in her study of the clinical practice of nurse practitioners in ambulatory care, combined the diagnostic and patient monitoring domain and the domain related to administering and monitoring therapeutic

regimens. For the purposes of this study, the combined domain labelled Management of Patient Health/Illness Status was also utilized because of the similarity in the practice responsibilities of the two groups. Brykczynski's work (1985) was modified to omit the competency related to scheduling follow-up visits. The competency of building and maintaining a supportive and caring attitude was combined in other competencies. This domain is presented in Table 2.

Table 2

DOMAIN: MANAGEMENT OF PATIENT HEALTH/ ILLNESS STATUS

Competencies:

- assessing, monitoring, coordinating and managing health status of patients over time
- detecting acute and chronic disease while providing routine care.
- providing anticipatory guidance for expected changes, potential changes and situational changes.
- selecting appropriate diagnostic and therapeutic intervention and regimens with attention to safety, cost, invasiveness, simplicity, acceptability, and efficacy.

From Brykczynski (1985) p. 124.

Assessing, Monitoring, Coordinating and Managing the Health Status of Patients Over Time

In her study of nurse practitioners, Brykczynski (1985) found that this competency reflected the nurse practitioner's provision of primary care. The definition of primary care utilized in her study was derived from the participants in the study and reflected aspects of continuity, comprehensiveness, contact with the health care system, coordination, and patient advocacy.

By virtue of the specialized nature of care, the NICU setting is not traditionally associated with primary care. Primary care activities are, however, evident in the following excerpts which demonstrate the nurse practitioner's role in the provision of coordinated, consistent care.

> Baby D is a 34 week infant who is now six days old and weighs 1650 grams (growth retarded). Because the baby is small she would normally not be allowed to bottle feed or be cared for in an open crib. However, since she is growth retarded she is more mature than her weight would suggest therefore I elected to put her in a crib and bottle feed her. She maintained her temperature nicely and continued to gain weight nicely. This illustrates the importance of taking time to

assess where the infant is at not where his weight would suggest he should be at. It also demonstrates the importance of having the time to follow up these infants rather than using the more conservative guidelines established to provide safe care with minimum attention.

* * *

When I am making daily assessments of my patients, I spend some time at the bedside observing the infant: how he moves, how well he sucks, etc. I also spend time with the patient's nurse asking how she thinks the infant is coping, breathing, eating, tolerating handling, etc. I base my judgements on both subjective and objective data because I feel that the subjective data provides more subtle and hence earlier information about the infant's well being.

The following excerpt from a physician's comments illustrates the importance of the ability to take in information from a variety of sources when caring for an infant:

One pediatrician who volunteered his comments stated that" nurse practitioners were more expert than junior residents because the residents haven't learned to use their eyes and ears and to appreciate what they are seeing and hearing."

Detecting Acute and Chronic Disease While Providing Routine Care

When caring for the sick or premature infant, one must constantly be on the look-out for unexpected complications or problems. The following constitute examples of the skill of the nurse practitioner in detecting subtle changes condition.

> Baby T was 25 weeks gestation and 610 grams. Today he is four days old and already he has lost 100 grams despite being given 250 cc/kg/day. When I examined him this morning I didn't like the look of his colour. His pulse pressure was widened and his femoral pulses were full. When I got an echocardiogram done, there was a PDA (Patent Ductus Arteriosus) present.
>
> * * *
>
> I was doing rounds in the nursery today, when I stopped to look at Baby S. She was 29 weeks, six days old, ventilated with moderate RDS(Respiratory Distress Syndrome). Up until today she had been weaning on her ventilator settings and was progressing reasonably well. Today her CO2 had gone up a little and she was needing a little more oxygen. When I looked at her, I could see that she wasn't comfortable. She was breathing harder with

more indrawing, but mostly she just looked uncomfortable. She was kicking and squirming but not in a healthy way. I listened to her chest but couldn't really hear anything unusual. I wasn't happy with the way things were so I ordered a chest x-ray. The x-ray showed a right upper lobe atelectasis which explained why she wasn't happy.

Providing Anticipatory Guidance for Expected Changes, Potential Changes and Situational Changes

There were many examples in the data which demonstrated that the nurse practitioner assisted parents to prepare for the alternating progression and regression common to the premature infant.

Baby M is a 1600 gram infant delivered yesterday at 31 weeks gestation. The baby has moderate respiratory distress syndrome and is on a ventilator. I sat down with Mr and Mrs M to explain their infant's condition. They had many questions about how long their baby would be ventilated, what would happen next, how he would be fed, and when he would go home. Dad said that "last night he was on 40 (ventilator rate) and now he is on 37 so he must be getting better." I knew that these kids often have a number of ups and down and set backs that we consider normal but that would upset and

discourage these parents. I made a point with these parents of really emphasizing these normal ups and downs. A few days later the baby's settings had to be increased because of atelectasis. I saw Dad in the hall and he said very matter-of-factly that " the baby went back up in his settings but that was to be expected."

Selecting and Recommending Appropriate Diagnostic and Therapeutic Intervention with Attention to Safety, Cost, Invasiveness, Simplicity, Acceptability, and Efficacy

The nurse practitioner in this study tended to emphasize nonpharmacologic and low technology treatments whenever possible. This finding is congruent with that of Simborg, Starfield and Horn (1978) who found in their study that physicians prescribed slightly more drug therapy and significantly less non-drug therapy than nurse practitioners.

Baby S is a premature infant who has been extubated for three days now and is beginning to feed. The physician asked me to order electrolytes for this baby so that the results would be available "in case" an IV was needed. By taking time to calculate the volume of the infant's feeding I determined that the infant would be on full feeds by evenings and wouldn't need an IV order. This saved the baby from an unnecessary

blood test and the pharmacy from making up a solution that wouldn't be used.

* * *

Baby Y is three days old, and is weaning from the ventilator. Her nurse approached me because the baby was agitated and was felt to need sedation. I worked with the nurse to reposition the baby on her abdomen. We bundled the baby and used rolls to help her feel secure. When we had done this the baby settled and went to sleep.

The following excerpt demonstrates an integration of medical and nursing therapies implemented by the nurse practitioner to deal with a complex problem.

Baby T was an extremely premature infant who had such permeable skin that he was losing more fluid than we could keep up with. I was checking his urine and electrolytes every six hours and increasing his fluids until he was getting almost 200 cc/kg/day. He was also having temperature problems and was being cared for under a radiant warmer. I asked the nurses to move him to an isolette even though he still had a lot of equipment. Then I put extra humidity into the isolette, put a saran blanket over him and wrapped the isolette in bubble plastic for insulation. With all of that we

finally got his temperature and his fluids under control.

In the following situation, the nurse practitioner elected to order a test that the physician may not have ordered, based on her assessment of the value of the test to the parents' peace of mind.

> Baby C is a premie who was to be discharged on Saturday (three days from now). Last night he was thought to have aspirated his feeding and ended up back on oxygen. The nurse noted that he had increased tension in his fontanel and charted this in her notes. Mum (a nurse) had either noticed the same thing or read the nurses notes and became concerned. The nurse asked me to talk to mum to explain what might cause this finding and what we might do about this. I talked with her about hydration, activity, and the chance that something in the ventricle might be causing increased pressure. I said that I would talk to the baby's doctor about a cerebral ultrasound. The ultrasound physician came to the unit before the baby's physician so I asked her to go ahead and do the ultrasound. She seemed skeptical about my reasoning and when the baby's physician came in he asked for my rationale for doing the test. I explained the parent's anxiety and the medical

indications for the test and he agreed to go ahead. The test was normal and the parents were greatly relieved.

4.3 Effective Management of Rapidly Changing Situations

Benner (1984) has described this domain as a form of management that nurses undertake until the physician arrives. This domain also describes the activities which nurse practitioners may undertake in the case of an emergency. The competencies for this domain are described in Table 3.

Table 3

DOMAIN: EFFECTIVE MANAGEMENT OF RAPIDLY CHANGING SITUATIONS

Competencies:

- Skilled performance in extreme life-threatening emergencies: rapid grasp of a problem.
- Contingency Management: rapid matching of demands and resources in emergency situations.
- Identifying and managing a patient crisis until physician assistance is available

From Benner (1984) p. 111

Skilled Performance in Extreme Life-threatening Emergencies: Rapid Grasp of the Problem

This competency speaks to the nurse's ability to

recognize a problem quickly and to intervene appropriately. All nurses working in critical care areas such as NICU receive training in this area. Nurse practitioners, by virtue of their job responsibilities, may frequently be called upon to provide first response in emergency situations. The following excerpt illustrates the nurse practitioner's ability to make a rapid assessment of the situation and to take appropriate action:

> Baby R is 42 days of age, has bronchopulmonary dysplasia (BPD) and is ventilator dependent. This morning he was assigned to a nurse who didn't know him very well. R's nurse called me over because R was having a BPD "snit" and was looking quite blue. When I looked at R I could see that he was struggling to get his breath and fighting against the ventilator. When I listened I didn't hear much air entry so I suctioned his ETT (endotracheal tube). I got a small plug and lots of secretions on the outside of the suction catheter. I asked the physician to come and reintubate R. When we pulled his tube the lumen was almost completely occluded.

(note: "snit" has been described as an accute episode of bronchospasm initiated by a variety of factors)

Contingency Management: Rapid Matching of Demands and Resources in Emergency Situations

Hospital nurses who know their units well frequently serve as the coordinator of resources during a crisis situation. The nurse practitioner, because of her familiarity with the unit and the hospital, in addition to her clinical expertise may also be called upon to fulfil this role. The following situation depicts the nurse practitioner as a team coordinator during an emergency in the delivery room:

> We had a fairly new resident in the unit who was doing the caseroom calls since I couldn't intubate. It was early in the morning, about 8:00 am when the caseroom called to say they were delivering a baby with meconium and a 35 week infant. The neonatologist wasn't in yet and the charge nurse was still in report. I sent the neonatal nurse who was fairly senior with the resident to the mec because that baby would need intubating for sure. I went by myself to the 35 week infant and arranged to call the anaesthetist for help if I needed it. Fortunately both babies were fine so we didn't need any extra hands.

The above excerpt demonstrated that the nurse practitioner knew what needed to be done and who to call on for help if it was needed.

Identifying and Managing a Patient Crisis until Physician Assistance is Available

For the most part, the nurse practitioner was acting in the role of a physician during this practicum. The decisions made by the nurse practitioner were being checked by the neonatologist prior to implementation, therefore action in emergency situations where a physician was unavailable was represented by this competency.

> The caseroom called to say that they had a flat baby. The resident was in the middle of putting in a UAC (umbilical arterial catheter) so I ran to the delivery room. When I got there, I found a term baby who was dusky and floppy but who had a good heart rate. I suctioned and stimulated the baby and gave some oxygen. The baby came around quickly and by five minutes had an Apgar Score of 8.
>
> * * *
>
> I was called to see a baby in Triage Nursery who was 42 weeks gestation and severely growth retarded. The baby's blood sugar was 1.3. I had to make a decision about what to do with this baby, whether to start an IV or to give a milk feeding. The neonatologist was unavailabel at the time. I did

not feel uncomfortable with the decision that I made. It was clear to me that an IV should be started. My only discomfort was in not being able to check with the physician first to confirm my treatment decision. The IV was started and the accuchek was still low so I had the nurses feed the baby. When the neonatologist came along he was quite comfortable with what had been done and helped me to establish a regimen for adjusting the infant's fluid intake according to his blood sugar.

4.4 The Helping Role

The competencies in this domain were modified to reflect parental involvement appropriate to the study population. The competencies are presented in Table 4.

Table 4

DOMAIN: HELPING ROLE

Competency:

- creating a climate for healing
- providing comfort measures and preserving personhood in face of pain and extreme breakdown
- providing comfort and communication through touch
- providing emotional and informational support to patient's families.
* presencing: being with a patient/parent.
* maximizing the parent's participation and control in their infant's recovery.
- interpreting kinds of pain and selecting appropriate strategies for pain management and control.
* guiding a parent through emotional and developmental change.

From Benner (1984) p. 50
* modified in this study

Creating a Climate for Healing

The highly technical environment of the tertiary care nursery does not readily lend itself to the establishment of a healing relationship. Vast arrays of equipment with flashing lights and alarms may overwhelm the uninitiated. The infant's acuity and care demands may prevent the nurse from spending extra time with the parent to allow them to

ask questions and seek information. Evidence from this study suggests that the nurse practitioner may be in a position to move beyond the 'rules' which dictate nurse-parent interactions in order to foster the parents' comfort and participation in the infant's care.

> A baby was brought to triage nursery from the caseroom after a caeserean section for fetal bradycardia. The baby had a high-pitched cry and was arching. After consulting with the baby's physician I ordered the baby to be kept NPO and started an IV. When I went to talk to the mum I found that she was very anxious to see her baby so I came back to the nursery and took the baby to see her. The nurse commented that they didn't usually take baby's with IV's out to the mother but I explained that the mum wouldn't be passing by for several hours and that she was very anxious. Mum enjoyed her cuddle and was greatly relieved to see her baby.
>
> * * *
>
> Baby R was admitted to the nursery with a diagnosis of respiratory distress of unknown origin. He was on oxygen and had an IV. I went to talk with mum and explain the baby's condition. I also wanted to collect a history and to examine

possible causes of the distress. It was important to me that I not alarm the mum or leave her feeling that she was to blame for the baby's problems so I chatted with her very casually about how her pregnancy had gone and how lucky she was not to have any problems with her blood pressure or sugars. By the time I was finished I had collected all the information that I needed and didn't ring any alarm bells with mum.

* * *

Mrs Y was very anxious about breastfeeding her baby because he had a scalp IV in place for antibiotics. When I went to talk with her she said that she planned to quit breastfeeding even though the baby was scheduled to get his IV out later that night. She was extremely upset and refused to feed the baby. When I talked to her further I found that the IV had been dislodged yesterday during feeding. I phoned the attending physician and arranged to have the final dose of antibiotic administered by IM injection and removed the IV so that mum could breastfeed.

Part of the establishment of a healing climate depends of the ability of the nurse and the care-giver to communicate effectively. The following comment, offered by a

staff nurse, speaks to the importance of a nursing background in developing communication skills.

> Staff nurse: "The difference between nurse practitioners and residents lies in the background training. Nurses are more tuned into communication with the parents. Residents often speak over the heads of parents in an effort to be comprehensive and for legal reasons. This often leaves the parent frustrated and uninformed."

Providing Comfort Measures and Preserving Personhood in The Face of Pain and Extreme Breakdown /Providing Comfort and Communication through Touch

The data from this project provided many examples of the provision of comfort. Since most of these examples involved touch, a hand on the arm, or an arm around the shoulder, these two competencies were combined.

> One of my patients needed a chest tube inserted this morning. While we were gathered around the bedside doing the procedure I saw mum come to the door and then leave again. I went and found her in her room crying because she thought the baby had died. I put my arm around her and explained what had happened. We talked for a long time about her fears and concerns and about the baby's condition. Then I took her back into the nursery and sat her

down beside her baby so that she could talk to him.

Communication and touch were found to be important not only for the parents but also the infant as the following exemplar suggests.

> I have been known to take a chronic baby who needs attention with me on rounds when no one else has time to cuddle. I also spend time feeding difficult patients or bundling and calming agitated patients. I feel that I provide some good for the patient but also serve as a role model for nurses in providing care attention and nonpharmacological interventions in the chronic infants.

Providing Emotional and Informational Support to Patient's Families

There was some evidence from this project to suggest that families look to nurses for different kinds of support and information than they expect from physicians. The nurse practitioner is in a position to fulfil aspects of both expectations as is described in the following excerpt.

> I feel that I am able to approach parents differently than some of the physicians do. I go to talk to the parents sooner after admission than the physicians do because they often wait for the

chest x-ray results so that they can explain the disease process and expected treatment. I feel that as a nurse the parents don't expect me to have all of the answers when I go to talk with them. I go the first time to talk about how their baby looks, what we are concerned about and what we are doing for the baby. Then I go back later with more information about the medical diagnosis, prognosis, etc.

* * *

Mrs B was a 35 year old mum who had delivered 28 week twins. Although the twins were doing well mum was quite anxious and had a lot of questions. She also expressed some distrust and animosity toward some of the staff. I spent a lot of time with her answering her questions and explaining to her what the plans were for her sons. The staff physician was concerned that she may have concerns about my role in caring for her infants but we developed a rapport which allowed her to receive information from me without concern.

There are many times when caring for critically ill newborns that it is difficult to know what to say or do. When a normally happy event goes wrong, just being there may be all that can be done. The following example speaks to the importance of 'just being there.'

> I met Mrs J when she was on the labour floor with premature contractions at 25 weeks. She asked to talk to someone about what would happen if she went on to deliver. I spent some time with her that day and over the next week until she delivered. Her baby was about 800 grams and was ventilated. He did well over the next two weeks with moderate RDS and a PDA. When I came back today (Monday) his bed was empty. The ward clerk told me that he had died yesterday. When the parents came into the hospital the ward clerk called me and I found them in Pastoral Care. There wasn't much I could say, I just put my arm around mum and held onto her. We sat there for a few minutes and then she and Dad started talking and told me what had happened to their little guy and how grateful they were for all that the nursery staff had done.

Maximizing the Parent's Participation and Control in Their Infant's Recovery

Participation means much more than helping with physical care. Asking questions and being at the bedside are important activities for parents whose infants are sick. Parents express their readiness to participate in their infants care in a variety of ways.

> Mr D was a well read man whose 28 week infant had just been diagnosed as having a grade II- III IVH (intraventricular hemorrhage). Because he had done some reading of a premature baby handbook, he had an idea of what that diagnosis meant and wanted to know about treatment options if complications developed. We don't usually talk about treatments until we see if complications actually develop because in many cases they never occur, but I could see that this man needed some idea of what he could expect to happen to his baby and what decisions he might be given to make. I sat down with him and talked about the kinds of problems his baby might develop, the chances of that happening, how the problems are detected and briefly about what might be done.

The nurse practitioner goes on to further explain her

interpretation of this incident.

> There is a lot of discomfort in the units when parents want technical information about ventilator settings, x-rays and blood gases. The parents who get into that are usually well educated people, often professionals, who are very distressed over the lack of control that they feel in the situation. I think there is a fine line between giving enough information to make them comfortable and overwhelming them with meaningless numbers. If asking about ventilator settings helps Dad to feel okay about coming to see his baby then I go ahead and tell him the settings. I just remind him that the machine is only a small part of what his baby is all about.

Interpreting Kinds of Pain and Selecting Appropriate Strategies for Pain Management and Control.

The experience of pain in the neonate is often hard to quantify and qualify. Shapiro (1989), in reviewing the literature, found that no appropriate tools exist for measuring pain in the neonate. Practical experience documented in the following exemplars dictate that neonates do experience pain which may interfere with their recovery process.

Baby Y is three days old, and is weaning from the ventilator. Her nurse approached me because the baby was agitated and was felt to need sedation. I worked with the nurse to reposition the baby on her abdomen. We bundled the baby and used rolls to help her feel secure. When we had done this the baby settled and went to sleep.

* * *

Baby J is 31 weeks of gestation and had severe RDS. He is ventilated and had a chest tube in place. When I examined him, I noticed that he arched and stiffened a bit. I thought maybe he was seizuring but he had good Apgar scores and no history of asphyxia. When I checked his medication record, I found that he was getting small doses of Fentanyl every two hours. I felt that he was in pain and agitated by the equipment and chest tube so I put him on a continuous fentanyl drip. With that he soon settled and we were able to wean his ventilator settings slightly.

Guiding a Parent through Developmental and Emotional Change

Examples to support this competency in Benner's (1984) work came from nurses working in Psychiatry. Although intuitively it was felt by the investigator that examples of this competency might exist in the neonatal setting, such

examples were not identified in this study, perhaps because of the short duration of the project.

4.5 Teaching-Coaching Function

Benner (1984) emphasizes the important role that nurses play in providing teaching and coaching. " Teaching and learning transactions require great skill under the best of circumstances, but they take on new demands and require different skills when the learner is threatened and ill" (p. 78).

Benner (1985) further delineates the tasks of the nurse who serves as a coach for the patient as: 1) interpreting unfamiliar tests and treatments; 2) coaching the patient through alienated stances; 3) identifying changing relevances; 4) ensuring that care enhances cure. The competencies associated with the teaching-coaching function are presented in Table 5.

Table 5

DOMAIN: TEACHING-COACHING FUNCTION

Competency:

- timing: capturing a parent's readiness to learn

* assisting parents to integrate the implications of their infant's illness and recovery into their lifestyle.

* eliciting and understanding parent's interpretation of their infant's illness.

- providing an interpretation of patient's condition and giving a rationale for procedures.

** providing mentoring, role modelling to nursing staff (identified in this study).

From Benner (1984) p. 79.

* modified for this study.

The nurse practitioner in this study had many opportunities to participate in teaching and coaching function with the neonate's family. The teaching that occurred offered a unique blend of medical and nursing information. As a nurse, the practitioner spoke to many of the questions that parents have about the day to day routines and needs of their infant. As a medical delegate the practitioner was able to provide comprehensive

information about the infant's diagnosis, treatment plan and to some extent, prognosis.

Timing- Capturing a Parent's Readiness to Learn

Providing information at a time when the learner is ready to learn has been identified as a basic principle of adult education (Brundage & MacKeracher, 1980). Assessment of the readiness to learn is important, if the greatest benefit of teaching is to be derived from the situation. This represents not only a benefit not only to the learner, but also to the nurse who must make maximum use of limited time and resources.

The concept of learning readiness is particularly applicable to the parent of a sick infant, who may be in a crisis state and unable to learn when the teaching is most available. Frequently these parents experience periods of anger and denial which preclude their ability to absorb and process information (Brundage & MacKeracher, 1980; Caplan, 1960). The following excerpts document the attention given by the nurse practitioner to responding to a parent's readiness to learn.

> Baby K was 32 weeks and was ventilated for moderate respiratory distress syndrome and a PDA. Mum didn't ask many questions and seemed reluctant to talk very much about her baby. Today she brought in a Premature Baby handbook that a friend had

lent her. I sensed that she had questions that she wanted to ask so I asked her if she wanted to go for coffee with me. We talked for a long time and she asked many questions about everything from PDA's to jaundice, feeding and sibling jealousy. Mum told me that up until today she couldn't organize her thoughts to ask many questions but today she felt like she needed to know more about what was going on with her baby.

Assisting Parents to Integrate the Implications of their infant's Illness and Recovery into Their Lifestyle

Benner (1984) has used this competency to describe the function of nurses who work to maximize the functional ability of patients with temporary or permanent disability. This competency can also be applied to the parents of critically ill newborns where the disability may be a physical one, or may be the loss of the perfect child that was hoped for. The next excerpt illustrates this competency.

I like to talk with the parents about things that are not part of the medical diagnosis such as how hard it is to go home without their baby and how gorgeous he is or how much hair he has. I feel that this helps to make this little person more

like a baby and less like a medical problem. I feel that the parents give me permission to do this because I am a nurse and not a physician and so they expect a different approach.

* * *

Eliciting and Understanding Parent's Interpretation of Their Infant's Illness

The taking in and interpreting of information may be severely hampered by anxiety, stress and unfamiliarity with the situation. For these reasons, the understanding that parent's have about their infant's condition must be validated to prevent misunderstanding. Giving parents permission to ask the same questions repeatedly is important in establishing a trusting relationship and in fostering the parents' comfort and well-being. The following example speaks to the role the nurse practitioner plays in checking what parents hear and understand.

Mr and Mrs H were visiting their baby when the opthamologist came to examine the baby's eyes. When he left I asked them if he had talked to them. They gave me a funny look and said yes. When I asked them what he had said, Dad said that they had difficulty understanding him but that they thought their daughter would be blind. When I looked at his consult on the chart, I found that he had noted a mild degree of retinopathy of

prematurity and had recommended further follow-up. I sat with the parents and explained the disease process and the concerns we had about their baby. They were greatly relieved to learn that they had misunderstood what was said.

Providing an Interpretation of Patient's Condition and Giving a Rationale for Procedures

The provision of information is one of the major tasks for nurses and physicians working with the parents of newborn infants. This information must be both accurate and understandable and it must also be directed to answering the immediate concerns of the parent. Because the parents are asked to speak for their infants, rationale for tests and procedures is also important. Frequently, the nurse practitioner has the task of providing information to the family and interpreting information which has already been given.

Baby P was a full term baby who was admitted to the unit because of an intestinal obstruction. I went to the parents to explain the diagnosis and plans for surgery. I took along some paper and drew a picture of the baby's duodenum and sketched in the surgery that was to be done. I also spent some time just talking with these parents and answering their questions. Not all of the

questions that the parents asked were medical. Mum had a lot of questions about how her baby would be fed and what she should do about nursing and expressing milk.

* * *

Many times I feel that the staff nurses do not have all the information that they need to speak to the parents. Plans for the baby's care are sometimes made outside the unit or may be based on information from several days ago when the nurse was not on. I am able to provide that information to the parent because I am with the attending staff whenever they make rounds or make plans for my patients. I am not constrained by having to avoid giving medical information to the parents but can also answer their 'nursing' questions. As much as possible I make a point of talking with the parents and the baby's nurse at the same time so that everyone shares the information and my teaching can be reinforced.

There is evidence from this study to suggest that information is provided differently by the nurse practitioner than by the staff nurse or the resident. As one nurse put it "the nurse practitioner has permission to provide the parents with medical information and at the same time answer their questions about NICU or breastfeeding."

Another staff nurse describes it this way: "You know exactly what the parents have been told and what the medical plans for the baby involve. I've been off for two days and I wasn't at rounds this morning so I can't explain things to them."

Providing Mentoring, Role Modelling to Nursing Staff

Part of the job description of a professional nurse includes self-development and the development of other nurses. The nurse practitioner role presented many opportunities to encourage the professional development of the nursing staff through role modelling and mentoring. The nurse practitioner was given legitimacy to act as a teacher and was allowed to participate in activities which are often hidden from nurses in positions of authority as the following examples demonstrate.

> When I collect a history from the parents in front of the nurses I notice that the nurses are very interested in what kinds of questions that I ask. When I'm finished I try to make a point of explaining what kinds of information I was looking for and why.
>
> * * *
>
> I sat with R's nurse who was frustrated and anxious about his care. We talked about her frustrations and about the plans for R's care. I made some

changes in his medications and she made some changes in his routine. Together we made a care plan to help other nurses in setting up a schedule to care for him.

* * *

Another day I spent some time watching the nurses care for Baby R and then made some suggestions for changing his routine to facilitate feeding. I took him for the next feed and tried some of the suggestions to see how they would work. My experience in the past tells me that as teacher or head nurse, my watching the nurse would be very upsetting and threatening. As a nurse practitioner, it was felt that I was there to improve the care to the patient and didn't pose a threat to the nurses.

* * *

I (nurse practitioner) have certain changes that I want to make in nursing practice such as keeping isolette temperatures cooler than we have in the past. As a "nurse" I could explain the rationale and ask for the change but little was done. As a nurse practitioner I could ask that the patient's isolette be kept at a certain temperature and it was done, no questions asked. My credibility was

definitely different because of different job responsibilities.

The following excerpts illustrate the non-threatening nature of the nurse practitioner role.

> I feel that nurses are more willing to ask questions of a peer rather than of the medical staff because they don't want to look silly in front of the physician or they are not sure how the physician is going to respond. Suggestions about nursing care that I made as a staff member would go largely unnoticed. Today the same suggestions were taken very seriously and without question. A change in title and authority seems to have changed my credibility in the eyes of the staff.

* * *

> I find that as a nurse practitioner I have legitimacy in what I do. It is clear to everyone why I am in the unit and what my job is. As such I can move freely among the staff and ask or answer questions without causing concern or threat. This provides an opportunity for situational teaching and on-the-spot learning.

Anecdotal evidence of the legitimacy of the teaching role was also provided by staff nurse comments.

> " It seem that you are a far more effective teacher in this position because you are in here

all day you know exactly what is going on with each patient and you don't mind sharing that with us."

4.6 Organizational and Work-Role Competencies

Working in a busy tertiary care unit necessitates skill in organization and the ability to attend to a multitude of requests and problems in a short space of time. Table 6 presents the competencies that have been identified for this domain.

Table 6

DOMAIN: ORGANIZATIONAL AND WORK-ROLE COMPETENCIES

Competency:

- coordinating, ordering, and meeting multiple patient needs and requests; setting priorities.
- building and maintaining a therapeutic team to provide optimum therapy.
- making the bureaucracy respond to patient and family needs (Fenton, 1984).
- coping with staff shortages and high turnover.

From Benner (1984) p. 147

Coordinating, Ordering and Meeting Multiple Patient Needs and Requests; Setting Priorities

As a novice in the role of the nurse practitioner, evidence early in the study indicated some difficulty with the demands of the role. As the study progressed, the data indicated evidence of increasing ability to juggle the demands of the role. The first excerpt is taken from very early in the project.

> There were several admissions, discharges and kids to see in Triage. By the afternoon I felt quite disorganized. I had knots in my stomach about what decisions I had made or forgotten to make. On the spot decisions about trivial things are hard because I have to think carefully about how each decision will be interpreted.

* * *

> By now I have realized that things have to get done whether or not the physicians are around. I make a point of being in the unit at 0730 so I can get report and examine my patients. If rounds are late, I write as many orders for the day as I can, leaving blanks to be filled in on rounds. I take the charts with me on rounds and fill in the blanks as I go. That way, at the end of rounds I have most of my orders written and ready for so-

signature. If I don't do it this way it takes forever to get things done and the nurses are frustrated with having to wait for routine orders.

Building and Maintaining a Therapeutic Team to Provide Optimum Therapy

The nurse practitioner is often in the position of providing a bridge between groups of nurses or between medicine and nursing to foster a team approach to patient care. There was evidence from this study to suggest that the nurse practitioner was respected by both physicians and nurses and was allowed to move freely between both groups. Anecdotal support was expressed for this demonstration role by both physicians and nurses.

Staff nurse: "I really think that there is a need for a role like this. It makes for better communication between medicine and nursing. You always ask the nurses opinion about what should be done for the baby and about when we want tests to be ordered."

* * *

Staff nurse: " I hope that they are going to continue with this role. It is really good for us because you are right here when we need you."

* * *

Physician: " I think that the nurse practitioner role works really well in here especially for the chronic kids. The nurses have years of specialized experience and are more knowledgeable than some of the residents. The residents have a broader basis of training and should be used for the sicker babies.

The following examples provide some evidence of the nurse practitioner's role in developing a team to provide care for the patient.

In many ways I see the nurse practitioner as being treated as a colleague by both nurses and physicians. In this way a link is provided between the two groups of care providers as the NP can interpret each point of view to the other care provider. I don't see an adversarial relationship between the two groups but rather different philosophies which aren't always understood by others.

* * *

Baby K was scheduled to have surgery to repair an esophageal atresia. It was anticipated that he would go to NICU after the surgery so I arranged for mum to have a tour of NICU. I also had the

nurse from NICU come to meet the baby and discuss his routines with the nurses from IMCN. I spoke with anaesthesia about the case and arranged to have them start the IV in the OR to minimize the disruption to his sleep and to avoid waking him up when he couldn't be fed.

* * *

When caring for infants of diabetic mothers I noticed that there was a lot of confusion and uncertainty about the best way to manage their fluids. Different physicians had different preferences but the final decision was usually left up to nursing. I identified with the staff a need for a protocol or guidelines to address some of their concerns. I worked with them to bring some of their questions to the attention of the physicians who would be responsible for developing these guidelines.

* * *

An IDM (infant of a diabetic mother) baby was admitted to the nursery today. The staff called me to collect the bloodwork and start the IV because his veins were difficult to locate. The intern ended up administering the oxygen while I started the

IV. This nursing experience gave him an opportunity to see a different side of caring for these kids. Later that day a baby needed to go to ultrasound but the unit was busy so the intern and I bundled the baby into the transport and took her for the test.

Making the Bureaucracy Respond to Patient and Family Needs

This competency was identified by Fenton in her 1984 study of clinical nurse specialists. The hospital is a complex bureaucracy which works best for those who know the system. The following exemplars provide evidence of the value of knowing the system.

Resident comment: "You always know just when to order something to make it fit with what the nurses are doing. It is a big help to know the routines of the hospital."

* * *

When I have to order blood gases I always ask the nurse what time is most convenient. This is more than a courtesy because I know if the gas is ordered for a time when nothing else is due the baby will be undisturbed and we'll get a better gas result.

* * *

Baby R has chronic BPD (bronchopulmonary Dysplasia) and needs to have his fluid restricted but he also needs lots of calories because he isn't growing well. I had read about a new concentrated formula that had 27 cal per ounce instead of 24 so I ordered that formula for the baby. I was told that it wasn't available in the hospital so I got on the phone and phoned the company rep who said she could get it for us. Next I talked to the Head Nurse and got her to put in an order, then I phoned the Admin Assistant who brings in all our products. By that afternoon the formula was in.

Coping with Staff Shortages and High Turnover

This competency was not identified in this study. One explanation for that is that the role of the nurse practitioner was sufficiently removed from the day-to-day running of the unit to prevent the NP from having contact with shift-to-shift shortages.

4.7 Monitoring and Ensuring the Quality of Health Care

The competencies in this domain utilize the framework developed by Brykczynski (1985) and are outlined in Table 7.

Table 7

DOMAIN: MONITORING AND ENSURING THE QUALITY OF HEALTH CARE PRACTICES

Competency:

- providing a back-up system to ensure safe medical and nursing care.
- getting appropriate and timely responses from physicians.
- self monitoring and seeking consultation as necessary. (Brykczynski, 1985)

** providing consistency/ flexibility in providing patient care (identified in this study).

- assessing what can safely be omitted from or added to medical orders.

From Benner (1984) p. 137.

Providing a Back-up System to Ensure Safe Medical and Nursing Care

This competency speaks to the nurse's ability to detect errors and shortcomings in judgement on the part of physicians and other nurses. The nurse practitioner plays a similar role with both groups of staff as the following examples illustrate.

I went to the caseroom with the resident for the delivery of a 31 week infant. The baby was blue and grunting and obviously needed intubation. The resident elected to wait for the staffman to come into the unit because she wanted to have him look at the baby's eyes and nose because she thought they were funny looking. I felt frustrated because the child was being compromised. The staff were looking at me to do something but I felt really caught in the middle. I went to the desk and asked to ward clerk to find the attending as quickly as possible. Fortunately the attending came into the unit shortly and the baby was intubated.

* * *

I find that my suggestions about nursing care carry a lot more weight in this role than they did previously. When I was making my rounds I came to examine a 29 week infant who weighed 1350 grams. The baby was lying on his ISC probe and the isolette temperature was 36 degrees. I called the nurse over and explained to her that the temperature was too high and that the baby needed repositioning. I suggested that the ISC temperature be readjusted to keep the baby at a cooler temperature to avoid apneas. These

suggestions were met with a favourable response and a request for more information about thermoregulation and apneas.

Getting Appropriate and Timely Responses from Physicians

As with hospital nurses, the nurse practitioner also seeks to develop mechanisms for communication with the physicians. In this project, all orders were co-signed by the neonatologist and consultation was obtained for all treatment decisions. For that reason, the nurse practitioner had to be particularly vigilant about sorting urgent requests from those that could be dealt with in due course. Although the system established for this project generally worked well, there were occasions when frustrations were expressed over delays or uncertainties as the following excerpts demonstrate.

> I find it frustrating that each physician has a different way of dealing with certain disease processes. Each way provides safe care to the infant but is difficult to follow when the physicians are changing. When an infant with tachypnea is admitted to triage, one physician has a set protocol he follows with chest x-ray and then septic work-up if suspicious. Another likes to wait and watch the infant for a while before

doing any testing. This is frustrating when you are trying to order treatment for the infant but are unsure of the philosophy of the attending physician.

* * *

It is sometimes difficult to sort out the workings of the system as to who is responsible for what. I was asked to go to the normal nursery to see an infant with a rash. I examined the baby in the mum's room and felt that the rash was a normal newborn rash, but I didn't feel that I could discuss this particular case with mum until the attending confirmed my diagnosis because it seemed that I was going to see the baby for my learning rather than to make a diagnosis or talk to the mother about her baby.

* * *

Having orders co-signed can be frustrating if the neonatologist isn't readily available. If the orders are urgent they can be paged but if they are routine then they wait. This frustrates the nurses because they are waiting to get on with their day and want to know if the infant will be fed, transfused, extubated, etc. Good organization

prevents some of this. I usually try to have my orders written during rounds or right after so I can catch the physician before he/she goes off to the next task.

Self-monitoring and Seeking Consultation as Necessary

This competency was identified by Brykczynski (1985) in her study of ambulatory nurse practitioners. She found in that study that the process of seeking consultation changed over time as the nurse practitioner gained experience. Similar results were demonstrated in this study as these examples illustrate.

During morning rounds I presented a baby who had hyperbilirubinemia. The physician asked me several questions about the etiology, complications and what diagnostic tests should be done. I knew the theoretical causes of this problem and that phototherapy was indicated as a treatment. I didn't know how much testing was warranted and what the most likely cause of this particular infant's problem was.

* * *

I find that I have to discipline myself very carefully to follow-up on all of the details of each case. As a nurse I was used to implementing orders as

they were written and to following up certain details but not on others. I frequently have to go to the mother's chart to fish out little pieces of information.

* * *

Language is a shortcoming which I have identified. I had no idea how many anatomic and physiologic terms were foreign to me and how difficult it can be to communicate intelligently.

The following exemplar illustrates a critique of the nurse practitioners work from someone in another department. Criticisms such as this one result in further self-monitoring activities.

Baby T, 33 weeks mild HMD (hyaline membrane disease), weaning from the ventilator. I was in charge of weaning this baby according to his gas results so I made changes in his ventilator settings every few hours followed by a blood gas one hour later. In all the baby had twelve gases in eighteen hours. The respiratory tech felt that too many gases had been done because the physician was relying on my judgement instead of making several changes before confirming the baby's condition with a gas. I was very concerned about that comment and sought confirmation from the

physician who was supervising. The physician supported my judgement and felt that the gas schedule was appropriate for someone who is weaning quickly from the ventilator.

Providing Consistency/ Flexibility in Providing Patient Care

One of the motivating factors for the establishment of a nurse practitioner program has been identified as a need for consistency in providing patient care (Becker, Fournier, & Gardner, 1982; Martin, Fenton, Leonardson, & Reid, 1985). Evidence from this study suggests that the nurse practitioner is able to provide consistency by virtue of her commitment to the unit and her presence over time. In addition, advantages to this role were identified in the ability of the nurse practitioner to provide both services in the area of nursing and services which have traditionally been considered to be medical in nature. Both staff nurses and physicians identified consistency as an important feature of the nurse practitioner role.

Physician: " It is really helpful to have someone here who knows exactly what is happening with each of my patients."

* * *

Physician: "I think that the nurse practitioner is able to provide a clear and concise picture of what is happening with each of the babies in here. That is really important when everyone else is coming and going."

* * *

Staff nurse: "It is really difficult to answer the physicians questions on rounds if this is the first day I am caring for the baby. It's so much better when you have been here every day and know what is going on."

Support for this competency was also identified in the following exemplars.

It is difficult to pick up the pieces after a weekend off. Not all residents are good about writing admission notes so I may end up writing the note three days after the baby is admitted to the nursery. This is especially a problem in Intermediate Nursery.

* * *

By virtue of my presence in the unit on an ongoing basis I was able to provide a measure of consistency to the care of the infant. For example: Dr X was on call for one day on the

weekend. It was a busy day and he had ten patients to deal with. He ordered a metabolic screen on an infant who already had one done because he didn't know the baby's history. He also ordered that the baby be put on room air even though she had been on room air for several days.

* * *

Baby H is a complex patient who has been in the unit for two months. We discussed her on morning rounds and found that she was gaining almost no weight and had ten apneas overnight. She has a history of apneas and many treatments have been tried in the past. The new physician on that week wanted to continue her CPAP and increase her theophylline. The on-call physician wanted to extubate her. I knew she wouldn't tolerate extubation, you just had to look at how hard she was working. I also knew that she had been on higher levels of theophylline before that didn't work and besides theophylline isn't good for weight gain. We ended up putting her on the drug Doxapram and a ventilator rate of 10. She also got a transfusion and her apnea rate went down to two or three a day.

Evidence of the advantages of a strong nursing background in this role are provided in the following examples.

I have an advantage in being very familiar with the workings of the monitoring equipment. When we went on rounds today we discussed a baby with low blood pressure that they were going to start inotropes on. When I looked at the baby I saw that his transducer had been elevated on blankets and was sitting two inches higher than his atrium. When I pointed this out and the transducer was lowered his blood pressure fell within normal limits and the dopamine was cancelled.

* * *

Chest tubes are frequently used on infants with RDS but few residents understand how they work. When a malfunction occurs it is difficult for the resident to sort out when it is mechanical and when the chest tube should be irrigated or removed. Because I evaluated this equipment I have a clear understanding of the mechanics and can offer trouble-shooting suggestions for the staff.

* * *

Several times I have been called upon to provide hands on nursing care when the unit is busy. I am

able to assist with procedures, go to the caseroom or suction an infant who may be in trouble.

* * *

Today I walked into the triage nursery to check on one of the babies. The nurse was busy feeding a baby when I noticed that another baby had vomited and was choking. I picked up the catheter and suctioned the baby without thinking. The nurse commented after that I should be paid for double duty.

Assessing What can Safely be Omitted from or Added to Medical Orders

This competency was not identified in this study. By virtue of the nurse practitioner role in writing orders, omissions from the orders were discussed with the nursing staff before the orders were written or, if appropriate, the orders were changed.

4.8 Summary

This chapter discussed the results obtained from systematic interpretation of the text obtained from transcribed field notes. Brykczynski's (1985) domain Management of Patient Health/ Illness Status was found to be applicable to this study. This domain focused on the

expanded role functions characteristic of the nurse practitioner's practice.

Several competencies were not supported by data from this study. These included: guiding a parent through emotional and developmental change; coping with staff shortages and high turnover; and assessing what can safely be added to or omitted from medical orders.

Some competencies were modified to reflect parental involvement in this setting. These included, in particular, competencies related to teaching and the provision of support and information where the nurse practitioner was found to have a combined medical-nursing approach.
Other competencies were found to overlap. In particular, the competencies relating to the provision of comfort measures and the provision of comfort and communication through touch were amalgamated.

In the area of Organizational and Work Role competencies Fenton's (1984) competency, making the bureaucracy respond to the patient's needs, was found to be relevant to this study. Brykczynski's (1985) competency relating to self-monitoring and seeking consultation as necessary was supported by evidence in this study.

Two new competencies were identified in this study. In the Teaching-Coaching domain, evidence existed to support the addition of a competency named "providing mentoring and role-modelling to nursing staff." In the domain Monitoring

and Ensuring the Quality of Health Care Services, a competency was identified which was entitled "providing consistency/ flexibility in patient care." The domain of Effective Management of Rapidly Changing Situations was utilized in this study with no modification.

These competencies represent only a partial description of the role of the nurse practitioner. Further research of this type will aid in the validation of these competencies and in describing more completely the practice of the nurse practitioner.

Chapter V

DISCUSSION

5.1 Introduction

The purpose of this study was to 1) demonstrate the role of the neonatal nurse practitioner, and 2) identify variables related to the knowledge and practices of the nurse practitioner which represent a unique perspective when compared to staff nurses and residents. This project utilized a participant-observer approach to data collection and analysis. Benner's (1984) model provided the organizational framework for categorizing the experiences of the nurse practitioner.

The investigator functioned as a nurse practitioner for four months in the Intermediate and Intensive Care Nurseries of a tertiary care hospital. During this experience, field notes were collected and analyzed on an ongoing basis.

This chapter will summarize the interpretation of the data collected using Benner's (1984) Domains of Nursing. A model representing the unique competencies of nurse practitioner practice will be presented along with project recommendations. The implications of this project for health care and future research will be discussed.

5.2 Conclusions

In summary, the investigator will comment on some of the findings of this project which have importance for nursing and health care. As a demonstration project, the sample size was one and should be enlarged in future studies. Another sample of nurse practitioners in a different clinical setting may generate additional competencies and domains.

The utilization of participant observation was effective in generating nursing practice exemplars. However, the investigator's role as a participant-observer calls into question the objectivity of the data (Byerly, 1969). Future studies might consider utilizing an independent observer.

Categorization and analysis of the data utilized Brykczynski's (1985) combination of the Diagnostic and Monitoring Domain and the domain related to Administering and Monitoring Therapeutic Interventions and Regimens (Benner, 1984). This combination was felt to more accurately reflect the nurse practitioner's expanded roles in the area of direct management of patient care.

The demonstration project suggests that with appropriate training, the nurse practitioner is well suited to managing the health status of the neonatal patient. Support for this finding was generated by anecdotal comments of physicians who worked in the area and during weekly chart reviews done by the project supervisors.

Questions relating to nurse and physician acceptance were not specifically addressed in this study, however, comments provided by these groups suggested a great deal of support and acceptance of the role. Several staff nurses and physicians expressed their willingness to write letters in support of the project. Other nurses spoke with the physicians and nurses supervising the project to express support. Since the termination of the project, nurses and physicians in the setting have continued to call for further development of the nurse practitioner role. No negative feedback from nurses or physicians was given to the investigator or the project supervisors during this project.

Evidence of parent acceptance was also evident during this project. One parent, a family physician offered the following comments:

> We'll miss you when this project is over, you are really able to spend a lot of time with the parents in here. It helps to have someone to answer their questions. The nursing staff seem to appreciate having you too.

Data from this project demonstrates an integration of medical and nursing therapies to provide a comprehensive approach to patient care. An example of this occurs on page 55 where positioning and bundling are used instead of pharmacologic methods for pain control. This supports

Brykczynski's (1985) findings that nurse practitioners are more likely to use low technology interventions.

Examples of the integration of medical and nursing therapies are found in the domains of Managing Patient Health/ Illness Status and the Helping Role. This integration represents a bridge between nursing and medicine and a unique approach to patient and family care.

Current medical and nursing staffing patterns in NICU's have raised concerns regarding the consistency and quality of care available to the patient (Barnett & Sellers, 1979; Bellig, 1983; Johnson & Boros, 1979). This project demonstrated that the nurse-practitioner was readily available to the unit over a long period of time and could contribute a stabilizing effect on patient care consistency.

The results of this study indicated that the practice of the nurse practitioner fit closely with the domains and competencies identified by Benner (1984). Evidence suggested that the nurse practitioner played an important role in teaching, counselling and supporting parents whose infant may be critically ill. The type of communication provided combined medical explanations with compassionate nursing support.

Several exemplars highlighted the rapid change and organized chaos which characterize a Neonatal Intensive Care Unit. The need for an organized response to patient care involves priority setting, coordinating activities and

providing a rapid response in emergency situations. Findings in this study suggest that the nurse practitioner's experience in the area and familiarity with the hospital allow her to maintain control of these situations.

Self monitoring functions were identified by Brykczynski (1985) as an important competency for nurse practitioners. In a relatively new role, the nurse practitioner's clinical competence is often under close scrutiny. In addition, the autonomy of the position demands quality assurance and professional responsibility. Evidence from this study suggests the nurse practitioner engages in an almost constant exercise of introspection and frequent self-checks to ensure the quality of care that she provides.

Support was also generated for the work of Fenton (1984) who identified a competency in clinical nurse specialists that she termed "Making the Bureaucracy respond to Patient's and Families Needs." Several exemplars outlined the nurse practitioner's ability to utilize hospital contacts, policies and a familiarity with nursing practices and equipment to the benefit of the patient.

Several of Benner's competencies were not identified in this project. Some of these competencies including coping with staff shortages, contingency management, and assessing what can be added to or omitted from medical orders may not be applicable to the role of the nurse practitioner. Others such as maximizing the patient's participation and control

in his or her own recovery may not be applicable to the neonatal population although many of the patient centered competencies apply to the infant's family. Other competencies may not have been identified within the relatively short time frame of this project. Further research is necessary to validate these conclusions.

Several of the exemplars from this project were found to overlap into two domains. Categorization of data between the Helping Role and the Teaching Coaching Function were particularly difficult to separate. Several of the exemplars fit both providing emotional and informational support and providing an interpretation of the patient's condition.

The competencies representing communication were common to this study and to the work of Benner (1984). Evidence from this study, however, suggests a unique approach to parent communication on the part of the nurse practitioner. The approach of the nurse practitioner to communication with the parents suggests that a different relationship between the parents and this nurse might result in increased comfort and satisfaction on the part of the parents. Further research in this area is needed to examine this relationship.

New competencies were identified in two domains. The first, Mentoring and Role Modelling arose from observations regarding the frequency of questions directed to the nurse practitioner about her patients and about other situations

in the setting. Additional observations regarding the response of the staff to care suggestions provided by the nurse practitioner confirmed this as a legitimate and important role function. These findings also suggest an important role for the nurse practitioner in influencing and shaping patient care practices.

The second new competency identified has been termed Providing Consistency/ flexibility in Patient Care. This project has shown that the nurse practitioner offers an approach to patient care that may result in improved outcomes secondary to improved consistency. The nurse practitioner is able to track various therapeutic interventions and patient responses to these interventions which aid in determining appropriate treatment strategies. In addition, the nurse practitioner becomes very familiar with her patient population and is able to detect very subtle changes in their condition allowing more rapid intervention.

One of the difficulties with the role identified in this project revolves around making time for the teaching, coaching and mentoring functions of the nurse practitioner. These activities have been identified as an important source of job satisfaction among nurse practitioners (Brykczynski, 1985). Despite their importance, it is sometimes difficult to allow time for these activities in a busy NICU/IMN unit where patient needs for therapeutic interventions are

immediate and life-threatening. Role overload has been identified as a real concern in an expanded role position (Rubin, 1988) and this concern requires further exploration.

Several gaps in the knowledge base of the nurse practitioner were identified. One of these relates to the scope in approaching a patient problem. The nurse practitioner's approach to a physiologic problem was broader than that of the bedside nurse but narrower than that of the physician. In addition, shortcomings in the knowledge of physiology and pharmacology were noted. These findings have implications for curriculum development in nurse practitioner programs.

The findings of this project suggest that the nurse practitioner in this setting functioned largely in a complementary role to that of the physician. This may be accounted for by the fact that the nurse practitioner in this project did not assume any technical skills not already delegated to nursing and worked in very close contact with the supervising physicians. Support for the complemental function of the nurse practitioner can be found in the writings of Allen (1977) who views the replacement function of the nurse practitioner as "the expansion based on increasing the medical knowledge and skills of the nurse so that her understanding of the pathological processes, diagnosis and treatment closely parallel that of the medical person." (p.39). She sees the complemental role as not

replacing other health professionals but as adding another dimension to health care services.

The identification of unique aspects of the nurse practitioner role from this project supports Stanford's (1987) contention that the nurse practitioners approach patient care with a unique perspective and are not merely physician extenders. The importance of this finding relates to the opposition to nurse practitioners expressed in some of the nursing literature. Much of this opposition centers around the argument that nurse practitioners do not practice nursing (Diers & Molde, 1985; Henry, 1986; Rogers, 1972; Weston, 1975). Billingsley and Harper (1982) see the failure of nurse practitioners to clearly articulate and define the scope and boundaries of their practice as one of the major reasons for role identity problems. It is hoped that qualitative descriptions of nurse practitioner's practice such as this one will assist in the process of identifying the knowledge embedded in clinical practice and will help to identify the unique contributions of the nurse practitioner to this clinical practice.

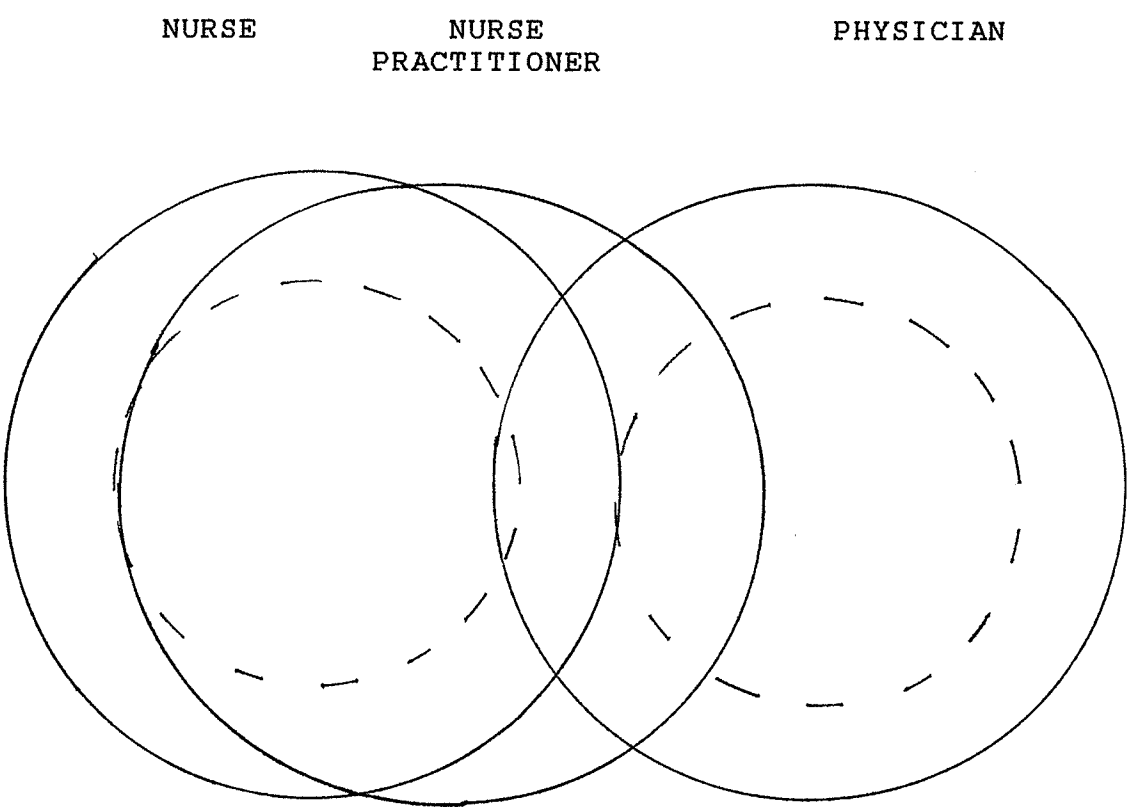
5.3 A Practice Model

The findings of this project may be represented in a model (see Figure 1). This diagram depicts the close fit between the nurse and the nurse practitioner. The areas of overlap between these two groups represent the common

domains identified by Benner and in this project. Areas unique to the bedside nurse represent those competencies and nursing practices not found in nurse practitioner practice. Areas unique to the nurse practitioner circle represent those competencies identified by Fenton (1984), Brykczynski (1985), and in this study. The areas of overlap between the nurse practitioner and the physician represent functions related to independent patient management.

Concentric lines within each circle represent the levels of practice (novice to expert) identified by Benner (1984) in her conceptualization of nursing practice. In any given interaction the level expertise of the participants may vary and the type of interaction will change as the level of expertise changes.

FIGURE 1



5.4 Implications for Health Care

The data generated by this project indicate that the nurse practitioner offers a unique and valuable approach to the health care of neonates and their families. The exemplars described in this study demonstrate an important

role for the nurse practitioner in providing teaching, informational and emotional support to the parents of premature infants. This type of communication represents a unique approach to parent care unlike that of the physician or the bedside nurse.

The birth of the premature infant has been described as a crisis event for the family (Caplan, 1960; Elsas, 1981). In addition to the maturational crisis of becoming a parent, there is also the situational crisis of the infant's illness. The premature delivery interrupts the adaptational process of pregnancy and forces the parents to confront a fragile infant before they are fully prepared. Failure to resolve this crisis may have long-term consequences for the parent-child relationship. Several studies of abused and neglected children have found that 20 - 40% of these children were born prematurely (Elmer & Gregg, 1967; Goldson et al, 1978; Klein & Stern, 1971; and Shaheen et al, 1968). That compares to an overall premature delivery rate of 10% (Babson, 1978).

Additional factors including anxiety levels, (Avant, 1981) maternal visiting patterns, (Fanaroff, 1979) and maternal information-seeking patterns (Mason, 1963) also play a role in the parent-infant relationship. This study demonstrates a positive interaction between parents and the nurse practitioner which centered around the provision of

information, interpretation of their infant's condition and emotional support directed at decreasing parental anxiety.

The availability of the nurse practitioner on a continuing basis provides continuity not available with rotating house officers. This is particularly important in the neonatal setting where infants may remain in the nursery for upwards of eight months. This study suggests that nurse practitioners have both the time and knowledge of the hospital system necessary to follow up on the details of complex patient care. These findings support the work of Martin and colleagues (1985), who found that medical coverage by neonatologists and neonatal nurse practitioners provided a consistent level of care that did not vary between day and night or day of the week.

An additional implication for the health care system is that the data indicated that the nurses in the project setting received role modelling or mentoring from the nurse practitioner. This role modelling took the form of consultation with and for the nurses and team involvement in decision making. This approach to care has been identified as an important factor in attracting and retaining nursing staff. Research into the organizational environment which best attracts nurses indicates that characteristics such as autonomy, power, and shared decision making are important in attracting and retaining staff (McClure, Poulin, Sovie & Wandelt, 1983). In light of the current nursing shortage in

critical care settings, perceived improvements in the work environment may be useful in encouraging retention.

5.5 Project Recommendations

The recommendations that evolved from this project are divided into three sections. The first section consists of clinical recommendations specific to this project. The second section relates to the conceptual framework and the third, to research questions generated by this project.

Clinical recommendations relate to future development of the Nurse Practitioner role within the project setting. The data from this project leads to the recommendation that a further demonstration project of approximately twelve months duration be carried out to address the following issues:

1. What legal questions must be considered in implementing this role?
2. What technical skills, if any should be undertaken by the Neonatal Nurse Practitioner?
3. How can time be protected for the nursing functions in the NP role? A common complaint of many NP's centers around the medical work which must be done on a daily basis leaving little time left over for other tasks.
4. What degree of NP autonomy is desirable and/or feasible within the Manitoba context? That is to

say, many models for NP practice have been developed ranging from a protocol or standing order system to a consultative or cooperative arrangement. Both ends of this spectrum offer advantages and disadvantages which should be more fully explored.

5. What are the implications for curriculum development of such a nursing role? Issues surrounding the educational standards for nurse practitioners have been thoroughly addressed within the American system. Very little has been written, however, regarding specific learning needs for nurses going into an expanded role. Questions concerning to program content should be explored in relationship to the level of nursing expertise in Manitoba.

The second group of recommendations relates to the conceptualization of nursing practice. Benner (1984) states

> that knowledge development in an applied discipline consists of extending practical knowledge (know-how) through theory- based scientific investigations and through the charting of the existent 'know-how' developed through clinical expertise in the practice of that discipline. (p.3)

The data generated in this project serves to further describe and define the unique body of knowledge

embedded in clinical practice. Specific questions related to Benner's conceptual framework which arose from this project include:

1. Do nurse practitioners progress through the stages from novice to expert? In most settings, nurses are selected for practitioner programs on the basis of their clinical expertise. Further research would be helpful to determine if this group of expert nurses represent a sixth level of nursing practice or if they follow a parallel path from novice to expert practitioners.
2. Does the model of nurse practitioner-nurse-physician interaction proposed in this practicum report have validity. Repeated application of this model in both neonatal and other settings may serve to clarify existing competencies and domains and to generate additional categories which will further define the practice of nursing.

The final area for further exploration relates to specific research questions which were generated during this practicum. There have been many gaps in nurse practitioner research identified in the literature. Perhaps the greatest gap relates to the effects that a nurse practitioner has on her clients and her practice setting. A clearer understanding of the effects of NP practice on patients, families and colleagues will help to resolve the issues

surrounding the use of nurse practitioners to complement physician practice. Specific questions to be addressed include:

1. What impact does the nurse practitioner have on the health of the family unit and on the parent-child relationship?
2. What impact does the nurse practitioner have on the parent's feelings of comfort and their ability to cope when their infant is discharged from hospital?
3. What factors contribute to patient/family satisfaction with nurse practitioner service?
4. What impact does the nurse practitioner have on morbidity of patients in NICU? Many studies have addressed the issue of mortality rates but little is written regarding the effects on morbidity.
5. What effect does the nurse practitioner have on
   - nurses' feelings of job satisfaction
   - nursing turnover rates?
6. What is the economic impact of the nurse practitioner in the neonatal setting?

5.6 Summary

This project has attempted to demonstrate that a nurse practitioner is able to fulfil a unique nursing role in the neonatal setting. Evidence is presented in this study which suggests that this role is complementary to that of the

physician and provides an additional source of support for parents and nursing staff.

Evidence is also provided which supports and further expands the competencies and domains of nursing practice identified by Benner (1984). The fit between the work of the nurse practitioner identified in this project and Benner's domains lends support to the claim that nurse practitioners do indeed practice family centered, holistic nursing.

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Appendix A

DOMAINS OF NURSING

The Helping Role

Competencies which were grouped together under the helping role included such things as providing comfort measures and preserving personhood; maximizing the patient's control and participation; providing comfort and communication through touch; teaching and mediating; and providing emotional and informational support to families.

The Teaching-Coaching Function

The role of nurses as teachers and coaches for patients has long been recognized. The expertise of nurses in this domain can be captured in the following competencies: timing; eliciting the patient's interpretation of his illness; providing an interpretation of the patient's condition; and the coaching function.

The Diagnostic and Monitoring Function

This is perhaps one of the most rapidly expanding areas of nursing care. Competencies in this domain relate to functions such as the detection and documentation of changes in a patient's condition, early warning signals, and

anticipating problems.

Effective Management of Rapidly Changing Situations

Nurses are often called upon to manage an emergency situation until the physician arrives. Expertise in such management is captured by the competencies in this domain.

Administering and Monitoring Therapeutic Interventions and Regimens

Competencies in this domain reflect the technical skills used by nurses to manage complex patient needs. Skills such as IV insertion, administration of medications, prevention of skin breakdown and wound management are included here.

Monitoring and Ensuring the Quality of Health Care

With round-the-clock coverage, nursing is often called upon to coordinate and monitor the functions of a variety of health team members. In particular nurses often serve to ensure that the patient receives proper attention from physicians.

Organizational and Work-Role Competencies

Leadership and management skills become more and more important in nursing as the health-care system grows more

complex. Skills involved in coping with staff shortages, building a team to provide therapy, and priority-setting are grouped within this domain.

Appendix B

November 20, 1987

Mrs Edith Parker
Director, Maternal Child Nursing
St. Boniface General Hospital
409 Tache Ave
Winnipeg, Manitoba

Dear Mrs. Parker:

As we have discussed, I am writing to request access to the Intermediate Care and Neonatal Intensive Care Nurseries at St Boniface Hospital, for the purpose of conducting a practicum experience. This practicum will be undertaken in partial fulfillment of the requirements for the degree of Master of Nursing at the University of Manitoba. The proposed practicum will take place over four months commencing May 2, 1988. This project will be conducted in the manner outlined in the attached proposal.

Thank-you very much for considering this request. If you have any questions please feel free to contact me.

Sincerely,

Debbie Askin

Debbie Askin
Practitioner-Teacher, NICU

Appendix C

November 20, 1987

Dr Nigel MacDonald
Head, Section of Neonatology
St. Boniface General Hospital
409 Tache Ave
Winnipeg, Manitoba

Dear Dr. MacDonald:

As we have discussed, I am writing to request access to the Intermediate Care and Neonatal Intensive Care Nurseries at St Boniface Hospital, for the purpose of conducting a practicum experience. This practicum will be undertaken in partial fulfillment of the requirements for the degree of Master of Nursing at the University of Manitoba. The proposed practicum will take place over four months commencing May 2, 1988. This project will be conducted in the manner outlined in the attached proposal.

Thank-you very much for considering this request. If you have any questions please feel free to contact me.

Sincerely,

Debbie Askin
Practitioner-Teacher, NICU

Appendix D

Hôpital Général — St. Boniface — General Hospital
409 Taché Avenue,
WINNIPEG, MANITOBA R2H 2A6
(204) 233-8563

December 7th, 1987

Ms. Debbie Askin
Practitioner Teacher
NICU
S.B.G.H.

Dear Debbie:

I am in receipt of your letter of November 20th in which you requested access to the patient population in our Intermediate and Neonatal Intensive Care Nurseries for the term of your practicum. We are delighted to see that you are doing this particular practicum and would not hesitate to grant you the requested access. We are well aware that you are both an experienced and expert practitioner in this area and so for that reason this doesn't present any problem whatsoever. As you are aware, we are still trying to work something out that would make the notion of this practicum more appealing to the Neonatologists as well in order that we can count on their full cooperation and input to provide preceptorship.

I feel very encouraged and committed to this particular project and I believe it could be both beneficial to you in your graduate studies but also could be a positive project and a positive experience for your department and particularly for our nurseries. I have also spoken to Merle Libbrecht, the Head Nurse in the Nurseries, in regards to this project and she indicated that you have already had discussions with her. Again, we are pleased to see you doing this practicum and if there is anything we can do further to support and assist you, please do not hesitate to ask.

Yours sincerely,

Edith Parker
Director, Maternal/Child Nursing

EP/mmm

cc: J. Dick
M. Libbrecht

Appendix E

Hôpital Général — St. Boniface — General Hospital
409 Taché Avenue, (204) 233-8563
WINNIPEG, MANITOBA R2H 2A6

April 26, 1988

Ms. Debbie Askin, B.N., R.N.C.
Practioner Teaching
Neonatal Intensive Care Unit
St. Boniface General Hospital

Dear Debbie:

RE: PRACTICUM, THE NEONATAL NURSE PRACTIONER

A PROJECT TO EXAM ROLE ACCEPTANCE IN MANITOBA

I wish to confirm that supervision for the above practicum will be provided by the Neonatologists at St. Boniface General Hospital under my direction, this includes; Dr. M. Davi, Dr. S. Moisiuk, and Dr. M. Kelly.

For this, as previously agreed an honorarium will be provided and critical written and verbal reports provided.

Yours sincerely,

Nigel T. MacDonald, M.B., Ch.B., D.C.H., F.R.C.P.(C)
Head, Section of Neonatology

NTM/lmw

Appendix F

The Neonatal Nurse Practitioner:
A project to examine role identity.

Project Summary

During the four months commencing May 2, 1988, the investigator will assume selected functions of the role encompassed by the term 'nurse practitioner.' These functions will include: gathering health histories, performing physical examinations with documentation, developing and implementing a therapeutic regimen and evaluating responses to treatment. This role will include only those technical skills or procedures currently performed by NICU staff nurses. Medical supervision will be provided by the Head, Section of Neonatology, and his delegates. Nursing supervision will be provided by the Director, Maternal Child Nursing.

Project Setting

This project will be carried out in the Intermediate, Triage and Intensive Care Nurseries at St. Boniface Hospital (SBGH). SBGH is a tertiary care referral center and a university teaching hospital. The obstetrical department in

this hospital does approximately 4,300 deliveries per year, of which about 53% are high risk. The Neonatal Intensive Care Unit (NICU) admitted 362 infants in 1986, 74 of whom were transported from other centers.

Project Objectives

The purpose of this project is to examine the following questions:

1. What factors represent a unique perspective for the nurse practitioner in comparison with staff nurses and neonatal residents?
2. What nursing/medical knowledge is required to move from the traditional nursing role to an expanded role in neonatal nursing?

Definition of Nurse Practitioner

For the purpose of this practicum, the following definition of nurse practitioner will be used:

Registered nurses with advanced preparation who provide direct patient care to high risk neonates and their families in collaboration with other health care professionals.

The scope of practice of the nurse practitioner includes the ability to:

1. Provide for continuity and evaluation of health

care through cooperation and consultation with other team members.

2. Manage and provide care for patients requiring intensive care, utilizing consultation with team members.
   i) secure a health history and record the findings systematically.
   ii) perform a complete physical examination and discriminate between normal and abnormal findings.
   iii) interpret findings, initiate appropriate therapeutic actions and evaluate the results of these actions.
   iv) incorporate explanations and health education into the care of neonates and their families.

(adapted from Bellig, 1980).

Purpose of a Practicum

As a final step in obtaining a Master of Nursing Degree, the practicum is designed to provide an opportunity for the student to implement and evaluate a program in an area of interest. The project is undertaken by the student for her learning, to gain experience in the skills of program evaluation.

Rationale for the Project

After careful examination of the literature, implementation of a nurse practitioner program was chosen for this practicum experience. Several trends in the field of neonatology have lead the investigator to explore this topic.

In the last ten years, survival rates for low birthweight infants have increased sharply. Improvements in neonatal mortality have been most significant in those infants weighing 500-1000 grams. Manitoba statistics indicate a 20% survival rate for infants 500-999 grams born in 1980. In 1984, the survival rate for this group had increased to 78% (College of Physicians and Surgeons of Manitoba, 1980, 1984). Improvements in mortality, combined with factors such as improvements in antepartum care and the provision of a neonatal transport team have greatly increased the numbers of admissions to the neonatal intensive care units in Manitoba.

The length of stay has also increased. Very low birthweight infants may stay in NICU for up to ten months before discharge. These factors have placed a great strain on the resources available in neonatology.

In addition, the number of medical residents being admitted into pediatrics has been sharply reduced. In Manitoba, there were seven fewer pediatric residents in 1985-86 than in 1982-83. Currently, 80% of the on-call

coverage for St. Boniface NICU is provided by casual or paid call (Kelly, personal communication 1987). In view of the economic crisis in health care, this is a very expensive system. The annual cost of this coverage is approximately $200,000 (MacDonald, personal communication, 1987).

In response to similar problems in other settings, nurses have been asked to broaden their roles to assume responsibilities traditionally performed by physicians. In many United States centers this expanded role has taken the form of a nurse practitioner. Harper (1982) surveyed Level III NICU's in the U.S. and found that 57% employ nurse practitioners. Neonatal Nurse Clinicians/Practitioners have not been widely used in Canada. In a national survey(Askin, 1986), two programs were identified which offered training for nurse practitioners. Both of these programs have been implemented in the past two years.

Many practical questions about the nurse practitioner in the Canadian health care system remain unanswered. The purpose of this practicum will be to examine those questions as identified under project objectives.

Project Participant

This proposal is being submitted for consideration by Debbie Askin, BN, RNC. Ms. Askin is currently employed in the Neonatal Intensive Care Unit as a Clinical Instructor, a position which she has held for the past five years. Prior

to this, Ms. Askin worked as a staff nurse in NICU. She received certification as a neonatal intensive care nurse in 1985 through the Nurses Association of the American College of Obstetricians and Gynecologists(NAACOG). She is currently a member of the NAACOG National Committee on Practice, the Neonatal Network editorial board and is an external item writer for the NAACOG Certification Corporation. During the practicum experience, Ms. Askin will be on a leave of absence from her position in NICU.

Critical Path

Phase 1- Project Planning

Time Frame- Dec 1987-April 15, 1988

Elements- Request access to institution.

Establish advisory committee.

Prepare unit staff for role transition.

Phase 2- Project Implementation

May 2- June 10, 1988 - Intermediate and Triage Nursery. Care will be provided for a variety of patients found in this setting. Responsibilities will include those outlined below.

June 13- Aug 19, 1988 - NICU and caseroom. Weeks 1 and 2 with chronically ill infants and families.

Weeks 3-8 with acute and chronically ill infants and their families.

Responsibilities: collection of health histories
physical examinations
ongoing documentation
treatment planning, implementation and evaluation
provision of information to families

Phase 3 Program Evaluation

The question of knowledge will be addressed through analysis of a journal which will be kept by the practitioner and through evaluations provided by the medical supervisor and his delegates.

Supervision: Patient management plans will be reviewed regularly by the staff neonatologist.
All medical orders will be co-signed by the neonatologist.
There will be initial and random supervision of patient evaluations by the neonatologist.

Supervisors: Dr. Nigel MacDonald, SBGH Medical
Mrs. Edith Parker, SBGH Nursing
Dr. Janet Beaton, University of Manitoba School of Nursing

Appendix G

STATEMENT TO PROJECT PARTICIPANTS

"For the next four months I will be working on a research project to investigate the potential role of the nurse practitioner in the neonatal setting. During this time, I will be working as a Nurse Practitioner in Intermediate, Triage and NICU and will be responsible for histories, physical assessments and treatment plans for selected infants. I will be writing medical orders which will be co-signed by the neonatologist before implementation. I will not be assuming any technical skills not currently performed by unit nursing staff. During this project I will be supervised by the neonatologists, Mrs E. Parker, and Dr. Janet Beaton.

The purpose of this project is to identify the components of the nurse practitioner role which are different from those of staff nurses and medical residents. From time to time during this study, I may be asking you to share with me, your observations and interpretations of cases which you are involved with. I will be making notes of these discussions to help me develop an overview of the case under discussion. You may read my notes at any time and may delete any portions which you don't wish recorded. The notes will not contain any names and confidentiality will be

maintained. You are free to decline to participate in this project at anytime without consequence."

Appendix H

The University of Manitoba

SCHOOL OF NURSING

ETHICAL REVIEW COMMITTEE

Proposal Number N#88/11

Proposal Title: "NEONATAL NURSE PRACTITIONER: A PROJECT TO EXAMINE ROLE IDENTITY IN MANITOBA"

Name and Title of Researcher(s): D. Askin
Master of Nursing Student
University of Manitoba School of Nursing

Date of Review: April 11, 1988

Decision of Committee: **Approved:** April 29/88 **Not Approved:** _____

Approved upon receipt of the following changes:

Approved with the changes submitted on April 27, 1988.

Date: May 4, 1988

Theresa George, R.N.,Ph.D. Chairperson
Associate Professor
University of Manitoba School of Nursing
Position

NOTE:

Any significant changes in the proposal should be reported to the Chairperson for the Ethical Review Committee's consideration, in advance of implementation of such changes.