



## Copyright Statement

This copy of the thesis/dissertation has been supplied on condition that anyone who consults it is understood to recognize that its copyright rests with its author and that information derived from it may not be published without attribution.

Copyright ownership of theses and dissertations is retained by the author, but the student must grant to TWU royalty-free permission to reproduce and publicly distribute copies of the thesis or dissertation. In circumstances where the research for the thesis or dissertation has been done in conjunction with other policies discussed in The Texas Woman's University Policy on Intellectual Property, those policies will apply with regard to the author.

No further reproduction or distribution of this copy is permitted by electronic transmission or any other means. The user should review the copyright notice on the following scanned image(s) contained in the original work from which this electronic copy was made.

### Section 108: United States Copyright Law

The copyright law of the United States [Title 17, of the United States Code] governs the making of photocopies or other reproductions of copyrighted materials.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specified conditions is that the reproduction is not to be used for any purpose other than private study, scholarship, or research. If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that use may be liable for copyright infringement.

No further reproduction and distribution of this copy is permitted by transmission or any other means.

Texas Woman's University ©2013.

[www.twu.edu](http://www.twu.edu)

JOURNEY TO ADVANCED PRACTICE: EXPLORING THE PROCESS  
USED BY NEONATAL NURSE PRACTITIONER STUDENTS IN  
CHOOSING TO ENTER GRADUATE SCHOOL

A DISSERTATION  
SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY  
IN THE GRADUATE SCHOOL OF THE  
TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

By

MELINDA COLLEEN BRAND, M.S.N.

DENTON, TEXAS

AUGUST 2013

Copyright © Melinda Colleen Brand, 2013 all rights reserved.

## DEDICATION

To Karl, my loving husband for his patience and support. It has been a long journey and I am thankful he has been there and has given me the space, the freedom, and the support to complete this goal.

## ACKNOWLEDGMENTS

I would like to thank all the people who have contributed to the success of this dissertation. There were so many along the way that I am sure to have missed someone in this list. I am grateful to you all.

First, I would like to thank my dissertation committee. I would like to thank Dr. Sandra Cesario, my dissertation chair, for keeping me on track and offering insights and support along the way. I would like to thank Dr. Lene Symes for offering suggestions and sharing her expertise in qualitative research. This has been a new endeavor for me and I appreciated the help. I would also like to thank Dr. Diane Montgomery for reviewing this manuscript in light of her expertise as a nurse practitioner.

I would like to thank Dr. Debra Armentrout for being my faculty sponsor and leading me through the process of obtaining electronic access and negotiating the IRB process at UTMB.

I would like to thank Dr. Lynn Rasmussen at UMKC, whose article "Pilot survey of NICU nurses' interest in the neonatal nurse practitioner role" inspired this research topic. Her advice, guidance, and support throughout this study have been invaluable to me.

I also want to thank Sally Northam, RN, PhD, from the University of Texas at Tyler for allowing me the opportunity to do a qualitative research practicum.

The opportunity to sit in on qualitative interviews and talk about the process was invaluable to me in planning this study.

I would like to thank my family, especially my husband for tolerating the time, expense, and academic clutter. My sons have encouraged me to continue despite major events in their own lives. During the time I have been in school, both of my children have left home. One son has graduated with a doctorate, married, and become a father twice over. The other son has served in the military, been deployed to a combat theater twice, has married, and is soon to become a father.

I would like to thank my friends and colleagues. Dr. Barbara McFadden and Dr. Marlene Walden have led the way and have encouraged me to take this step in my career. I would like to thank my research partner at work, Holly Boyd, RN, M.S.N., NNP-BC for lending a sympathetic ear and offering opinions along the way. If I could I would share my degree with Holly, as she has been there as a sounding board from the very beginning. I would like to thank Dr. Rachael Nurse, who did not listen sympathetically but told me to “just do it,” a mantra I have repeated daily. I can’t stop without thanking coworkers Vanessa Kastner RN, M.S.N., NNP-BC, Brandy Wells, RN, M.S.N., NNP-BC and Lori Zinner, RN, M.S.N., NNP-BC for letting me practice interviews on them before starting my pilot study. I really appreciated it.

I appreciate the help of Tim Mattis at Ensearch for sharing the results of the yearly graduate survey of NNP programs and I appreciate the information

shared by Judy Lincous and Kelly Rushing regarding current job openings and a list of NNP programs that Lincous and Associates compiled. Betty Burns, from the National Credentialing Corporation, was also helpful in providing information on the history of the organization.

I would like to thank those that participated in this study for sharing their experiences with me. It was a great opportunity to meet a motivated and engaging group of future NNPs. I will look forward to interacting with them in the future.

The IRB staffs at both UTMB and at TWU were very helpful and their help was appreciated. Without their support and information I would not have been able to complete the IRB application process. Nancy Luca and Mary Jackson have been very helpful in helping me navigate the IRB process at TWU. April Vanderslice and the staff at the UTMB IRB office were available to answer questions and were great help throughout this study, and the IT staff at UTMB has been very supportive and quick to respond to access issues.

Texas Children's Hospital is on my list as well for maintaining an environment that encourages nurses to gain knowledge. The support of the hospital and my supervisor, Sharon Fassino, RN, M.S.N., NNP-BC regarding schedule and tuition reimbursement have helped me to complete this doctoral program.

Likely I have missed someone along the way. I have met and have been supported by many along the way. Please know I appreciate it.

## ABSTRACT

MELINDA COLLEEN BRAND

### JOURNEY TO ADVANCED PRACTICE: EXPLORING THE PROCESS USED BY NEONATAL NURSE PRACTITIONER STUDENTS IN CHOOSING TO ENTER GRADUATE SCHOOL

AUGUST 2013

**Purpose:** To describe the experiences of Neonatal Nurse Practitioner (NNP) students regarding their decision to become an NNP.

**Subjects:** Eleven NNP students were interviewed during their first year of study regarding their decision to become NNPs.

**Design:** This was a qualitative study using guided interview questions to gather information regarding the process used to decide to become NNPs and enroll in graduate school.

**Methods:** This study used grounded theory methodology to conduct and analyze interview transcripts. Interviews were conducted between October 2011 and September 2012 and were analyzed simultaneously through constant comparison methodology.

**Results:** Four main themes were identified: recognizing the NNP role, deciding to stay in the NICU, deciding to become NNPs, and readiness to enter the NNP role. The core category was choosing career advancement to the NNP role. Conditions needed to support this theme include working in an NICU, liking the



work, being motivated by personal goals, timing as to family and finances, and the availability of online NNP programs. Strategies employed to proceed with the decision-making process included gathering information through observation and social interaction with practicing NNPs regarding both the role and available NNP programs, examining career options for the best fit, and the ongoing development of a support system that included family, coworkers (especially NNPs), and fellow students.

**Limitations:** The study was restricted to two geographic locations and only included students enrolled at online universities.

**Implications for Practice:** The role of NNP has low visibility outside of the NICU arena. Engaging undergraduate nursing students in discussion of advanced practice opportunities might be an initial step in garnering interest in NICU practice and the NNP role. NNPs were recognized mentors by the majority of study participants, and this role should be taught in NNP programs and developed in the workplace. Institutional support seldom went beyond verbal encouragement and tuition reimbursement. A cost-benefit analysis of supporting nurses to become NNPs compared to recruiting costs might be beneficial as well as promoting the value-added effects of continuing education of NNP students as they continue to practice as staff nurses while attending graduate school.

## TABLE OF CONTENTS

	Page
COPYRIGHT .....	iii
DEDICATION .....	iv
ACKNOWLEDGMENTS .....	v
ABSTRACT .....	viii
LIST OF TABLES .....	xiii
LIST OF FIGURES .....	xiv
Chapter	
I. INTRODUCTION: NEONATAL NURSE PRACTITIONERS .....	1
Focus of Inquiry .....	1
Statement of Purpose .....	6
Study Questions .....	7
Rationale for the Study .....	7
Researcher Bias .....	7
Philosophical Underpinnings and Theoretical Framework .....	8
Summary .....	11
II. REVIEW OF LITERATURE .....	12
Career Choice .....	12
Characteristics of Advanced Practice Nurses .....	13
History of the Neonatal Nurse Practitioner Role .....	16
Effectiveness of Neonatal Nurse Practitioners in the Clinical Arena .....	18
Workforce Surveys .....	22
The Neonatal Nurse Practitioner Shortage .....	24
Neonatal Nurse Practitioner Education .....	26
Recruitment of Neonatal Nurse Practitioner Students .....	28
Barriers to Advanced Education .....	29
Summary .....	31

III. PROCEDURE FOR COLLECTION AND TREATMENT OF DATA .....	33
Research Design .....	33
Setting.....	34
The University of Missouri-Kansas City.....	34
The University of Texas Medical Branch Galveston.....	36
Interviews.....	37
Participants .....	37
Protection of Human Subjects .....	40
Data Collection .....	40
Data Analysis.....	41
Trustworthiness of Data .....	44
Conclusion.....	45
IV. STUDY RESULTS .....	46
Study Design .....	46
Protection of Human Subjects .....	47
Participants .....	47
The Interview Process .....	48
Transcript Analysis .....	49
Results.....	50
Recognizing the NNP Role .....	51
Deciding to Stay in the NICU .....	54
Deciding to Become a Neonatal Nurse Practitioner .....	57
Applying to Graduate School .....	66
Prerequisites .....	68
Doctorate of Nursing Practice .....	69
Validation .....	70
Conclusion.....	71
V. CONCLUSIONS, DISCUSSION, AND SUGGESTIONS FOR FUTURE RESEARCH .....	72
Career Decision Model .....	73
Discovery .....	73
Specialization.....	75
Career Decision .....	76
Readiness .....	77
Discussion .....	79
The NICU as a Social System.....	80
Developing a Support System.....	81
NPNs as Role Models and Mentors .....	84

Impact of the DNP Proposal.....	85
Institutional Support .....	85
Study Limitations .....	89
Suggestions for Future Research .....	89
The Impact of Mentorship Programs on Enrollment.....	90
A Cost-Benefit Analysis of Recruitment and Retention .....	90
Efforts of Schools to Make Courses Accessible .....	90
Continued Analysis of the NNP Workforce.....	91
Conclusion .....	92
REFERENCES .....	95
APPENDICES	
A. Interview Guide .....	106
B. Faculty Letter from University of Missouri-Kansas City .....	109
C. Faculty Letter from University of Texas Medical Branch .....	111
D. Recruitment Email Message .....	113
E. Assessment of Neonatal Nurse Practitioner Workforce in the United States .....	115
F. IRB Letter from Texas Woman’s University .....	118
G. IRB Letter from University of Texas Medical Branch .....	120

## LIST OF TABLES

Table	Page
1. 10-Year Estimate of NNP Graduates .....	4
2. Assumptions of Grounded Theory .....	10
3. Characteristics of Advanced Practice Nurses .....	13
4. NNP Programs in the United States .....	28
5. Study Demographics .....	48

## LIST OF FIGURES

Figure	Page
1. Sorting using note cards and a large table .....	50
2. Thematic Diagram .....	51
3. Career Decision Model .....	73

## CHAPTER I

### INTRODUCTION: NEONATAL NURSE PRACTITIONERS

#### **Focus of Inquiry**

Neonatal nurse practitioners (NNP) have been important members of the health care team in the neonatal intensive care unit (NICU) for over three decades. The need has increased in recent years due to constraints on resident duty hours, increased survival of premature infants, and the proliferation of intermediate and tertiary neonatal intensive care units, resulting in a shortage of NNPs to fill open positions (Honeyfield, 2009; LeFlore et al., 2011; Pressler & Kenner, 2009; Reynolds & Bricker, 2007; Witt, 2009; Zukowsky et al., 2011).

Dr. Loretta Ford and Dr. Henry Silver developed the first nurse practitioner (NP) program at the University of Colorado in 1965 to address health care disparities in underserved areas (Reynolds & Bricker, 2007). The first NNP program was offered in 1973 at the University of Utah under the direction of Dr. August Jung (Nagle & Perlmutter, 2000; Reynolds & Bricker, 2007). Initially the role was limited to transporting ill neonates between institutions and attending high-risk deliveries; the role later expanded to include management of patients in the NICU. During this time experienced NICU staff nurses were taught by neonatologists and received certificates for this training. National certification of NNPs began in 1983 (B. Burns, personal communication, August 3, 2010).

National certification prompted standardization of program content in order for graduates of NNP programs to be eligible to test for certification. Education gradually moved to the university setting and a master's degree was required to sit for certification boards by 2000 ( National Certification Corporation, 2012; Nagle & Perlmutter, 2000; L. B. Rasmussen, Vargo, Reavey, & Hunter, 2005; Reynolds & Bricker, 2007).

NNPs now provide comprehensive management of neonatal patients in a variety of settings and function primarily in intermediate and intensive care nurseries caring for premature infants and newborns with complex needs. The role of NNP requires a high level of clinical skills and critical thinking ability in order to manage both acute and long-term care of critically ill newborns and technologically dependent infants in collaboration with neonatologists and with other specialty services. Providing continuity in patient care; education for nurses, parents, and physicians in training; and promoting collaboration among caregivers add value to the NNP role (Juretschke, 2003; Nicolson, Burr, & Powell, 2005; Pressler & Kenner, 2009; Reynolds & Bricker, 2007; Ulmer, Wolman, & Johns, 2008; Witt, 2009).

Care provided by NNPs is an accepted standard in NICUs and the role is endorsed by the American Academy of Pediatrics (AAP). Care provided by NNPs is cost effective and safe when compared with physician assistants and physicians in training (Aubrey & Yoxall, 2001; Bissinger, Allred, Arford, & Bellig, 1997; Juretschke, 2003; Karlowicz & McMurray, 2000; Pressler & Kenner, 2009;



Reynolds & Bricker, 2007; Siewert, Rasmussen, Lofgren, & Clinton, 2011; Wallman & Committee on the Fetus and Newborn, 2009). Estimates of open NNP positions have ranged from 500 to 800. Pressler and Kenner (2009) estimated 80 open positions for each NNP graduate. More recent estimates are 300 to 500 posted positions (J. Lincous, personal communication, November 30, 2012). This number may be low as open positions are not always posted due to economic hiring freezes, multiple openings in single institutions, the use of recruiting companies other than the two surveyed, or self-recruiting.

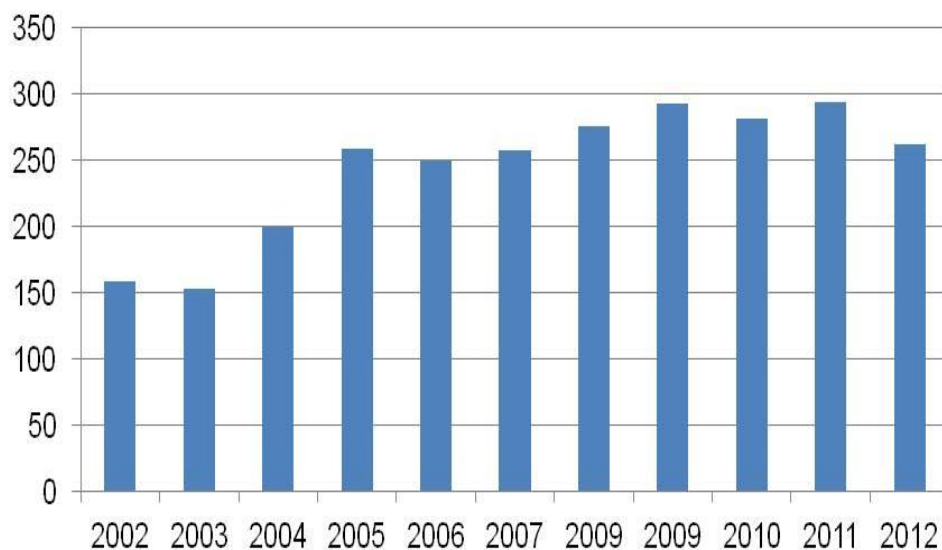
Reductions in resident physician workload have occurred recently, and nurse practitioners are considered a viable solution to provide safe patient care (Common Program Requirements, 2010). The current shortage of NNPs, the need to replace retiring NNPs, and the need to provide quality care for patients to compensate for reduced resident workloads underscore the need to recruit qualified nurses to consider a career as an NNP (Rasmussen et al., 2005; Ulmer et al., 2008).

Approximately 260 NNPs graduate each year (Cusson et al., 2008). This number has remained static since being published by Cusson. Ensearch, a company that specializes in placing NNPs, conducts a yearly survey of programs to obtain estimates of the number of graduating NNPs expected each year (Table 1). This information is presented at an annual meeting of NNP educators. Survey results indicated that in 2009 308 NNPs were expected to graduate, in 2010 281 NNPs were expected to graduate, in 2011 290 were expected to graduate, and in

2012 256 NNPs were expected to graduate (Bellini, 2012). Following graduation, NNPs are eligible to become certified through the NCC with 5,622 being certified through November 2012 ( National Certification Corporation, 2012). An accurate estimate of the current workforce is difficult because not all graduates become certified. Some states do not require certification.

Table 1

*10-Year Estimate of NNP Graduates (Bellini, 2012; Cusson et al., 2008)*



The National Association of Neonatal Nurses (NANN) recommends 2 years of practice in an NICU before entering an NNP program (Educational Standards for Neonatal Nurse Practitioner Programs, 2009). Honeyfield (2009) suggested that recruiting qualified nurses into NNP education programs remains a concern because potential NNP students are recruited from practicing nurses who are older when they enter the program and therefore less likely to move to

attend school or to change work venues. Online education may provide access to NNP programs for these nurses (LeFlore et al., 2011; Siewert et al., 2011; Zukowsky et al., 2011).

In the current educational structure NNP students are recruited from experienced NICU nurses. A survey by Rasmussen and colleagues (2005) indicates that only a third of NICU nurses surveyed showed interested in becoming NNPs. Lack of interest limits the pool of potential students. Educational programs for NNPs have not increased in number or capacity to meet the current demands for qualified NNPs. In addition, discussion is continuing regarding the 2004 recommendation by the American Association of Colleges of Nursing (AACN) that the Doctorate of Nursing Practice (DNP) degree become the requirement for entry into practice. This adds 12 months of full-time education and associated costs to the education of NNPs. The DNP is focused on evidence-based practice with an emphasis on interpreting and incorporating research into clinical practice. The impact on recruitment into NNP programs, faculty shortages, and nursing research is unknown (Cusson et al., 2008; Honeyfield, 2009; Johnson, 2008; "Nurse Practitioners," 2009; Pressler & Kenner, 2009; Rasmussen et al., 2005).

Unless the number of nurses entering NNP programs increases, the shortage will continue, leaving unfilled positions in NICUs. Healthcare providers other than NNPs are being asked to fill this void and this trend may continue if the availability of NNPs does not increase (Cusson et al., 2008; Pressler &

Kenner, 2009; Reynolds & Bricker, 2007; Smith & Hall, 2003; Witt, 2009) Loss of these positions limits the career choices of NICU nurses. Dilution of the workforce through filling NNP positions with other neonatal specialists obscures the impact NNPs have on neonatal care.

### **Statement of Purpose**

The purpose of this study is to discover the process by which NICU nurses decide to become NNPs. The nature of a process is that it is temporal, a pattern that occurs over time (Charmaz, 2006). This study attempts to determine the process used by NICU nurses from first recognizing the existence of the role through taking steps to enroll in an educational program that will prepare the nurse to practice as an NNP. This information can be combined with information gained in studies regarding education, orientation to the role, and retention in the role to provide the optimum career advancement experience for those NICU nurses who choose to pursue the role of NNP.

Exploration of the process includes examining phenomena surrounding the nurse's initial interest, experiences that influence that interest, and events leading to enrolling in an NNP education program. This project focused on NNP students, as they are NICU staff nurses who have made the decision to become NNPs, and have followed through on that decision by enrolling in a program of study to qualify for that role.

## **Study Questions**

The questions for this study include “What is the process NNP students use to decide to enter graduate school to become neonatal nurse practitioners?” “What solidifies the decision to follow through with entering an educational program to become an NNP?” and “How does the proposed DNP program impact the decision to enter an educational program to become an NNP?” Understanding this process is important in providing support for NICU nurses who want to move forward in their career to consider the NNP role as a viable advanced practice option. Knowing whether the proposed DNP proposal has an impact on the decision-making process is important for future planning.

## **Rationale for the Study**

Understanding the decision-making process used by NNP students will identify strategies to encourage and support this process. This is particularly important at this time because of the current shortage of NNPs, the aging NNP workforce, the rollback of resident work hours, the proliferation of NICU beds, and the increased survival of ill neonates.

## **Researcher Bias**

The researcher has been practicing as an NNP for 31 years and has completed both a certificate and a master’s degree to practice as an NNP. In addition to practicing as an NNP, the researcher has practiced in a number of roles in the neonatal arena including staff nurse, transport nurse, nurse manager, research nurse, faculty in an NNP program at a major university, and as a

preceptor for NNP students. For this study, the researcher assumes that NICU nurses who choose to continue on a career pathway to become NNPs are committed to the expert care of premature and sick neonates and see this as a way to impact the care of these infants in a meaningful way. The researcher also assumes that clinical practice enhances learning and believes a background in neonatal nursing provides an added dimension that complements the medical aspects of the NNP role.

### **Philosophical Underpinnings and Theoretical Framework**

Classic grounded theory was used to analyze study results. Classic grounded theory was introduced in 1967 in a book by Barney G. Glaser and Anselm Strauss titled "*The discovery of grounded theory: Strategies for qualitative research*" (Glaser, 1967). Grounded theory methodology was developed to assist social scientists in generating theory and to enhance social research (Glaser, 1967). "To understand experience, that experience must be located within and can't be divorced from the larger events in a social, political, cultural, racial, gender-related, informational, and technological framework..." (Corbin & Strauss, 2008, p. 8).

Anselm Strauss along with Juliet Corbin modified classic grounded theory in order to acknowledge the researcher's difficulty in maintaining intellectual separation from the research and provided techniques to enhance the researcher's sensitivity to the data. Mills, Bonner, and Francis called this "evolved grounded theory." Kathy Charmaz, a student of Glaser and Strauss,

developed a third generation of grounded theory known as constructivist grounded theory in 2000. Constructivist grounded theory uses strategies of classic grounded theory but rejects the concepts of emergence and objectivity, placing the researcher within the study (Mills, Bonner, & Francis, 2006). Corbin (2008) attributes this to the postmodern movement and acknowledges that there is some validity to this view. Variations of grounded theory can be considered to be located along a “methodological spiral” (Mills et al., 2006) with classic grounded theory as a base and constructivist theory at the top. Common characteristics of both classic and constructivist grounded theory occur throughout the spiral.

Philosophical underpinnings of grounded theory are based in symbolic interactionism and in the pragmatic philosophies of John Dewey and George Herbert Mead (Charon, 2010; Corbin & Strauss, 2008). The focus of symbolic interactionism is on the development of self and identity within the context of society. Assumptions of grounded theory include the ability of humans to see themselves in other social roles (role-taking) and the ability to adopt the attitudes and values of those who are performing in the role. The ability of humans to communicate through symbols such as language and writing to define objects or concepts enhances communication. Because of this, humans are able to adapt to their social world through interactions with others. These interactions form the basis for society (Bielkiewicz, 2002; Charon, 2010; Strauss, 1997). The

assumptions of grounded theory that are appropriate to this study are listed in Table 2.

Table 2

*Assumptions of Grounded Theory*

---

Need to develop identity within society

Ability to visualize self in alternate roles

Ability to interact through verbal and nonverbal communication

Adaptation occurs through interaction with others

Society results from social interactions

---

Grounded theory is appropriate in exploring this process as it is used to discover underlying conditions, social interactions, and problem-solving strategies. Grounded theory is a useful technique to explore the decision-making process and consequences related to decisions to become an NNP. Discovering these actions and interactions helps pinpoint areas for intervention and/or further study.

Grounded theory is a useful method to explore this subject as the decision to become an NNP is influenced by interpersonal interactions among NICU staff within the NICU environment. Symbols and language, the ability to see oneself in the role, and interactions with practicing NNPs and other team members within the social milieu of the NICU setting influences decision making.



## **Summary**

Currently there is a shortage of qualified NNPs to fill open positions in NICUs across the country, and this shortage is likely to continue while demands for NNP services increase and current NNPs retire. NNP education programs have not increased to meet current need for NNPs, and the proposed practice doctorate's impact on recruitment of NNP students is unknown. While studies on the interest of NICU nurses in becoming NNPs are not reassuring, there are nearly 300 NICU nurses who choose to enroll in educational programs each year (Cusson et al., 2008; Honeyfield, 2009; Rasmussen et al., 2005). Discovering how these nurses came to choose a career path that includes becoming an NNP is important in assuring that qualified candidates continue to move into the role.

The purpose of this study was to discover the process used by NNP students to decide to become NNPs. Qualitative interviews with NNP students were utilized to explore each student's experience with the process. Understanding the process is important in enabling managers, educators, and currently practicing NNPs to remove barriers and to provide support for NICU nurses who consider becoming NNPs. The information gained during this study can be combined with information from studies on education, orientation, and retention of NNPs to provide the optimum career advancement experience for NICU nurses who choose to pursue the role of NNP.

CHAPTER II  
REVIEW OF LITERATURE

**Career Choice**

Achieving the status of registered nurse is seldom the endpoint in a nursing career. There are many options open to nurses depending on interest, time, family constraints, and financial goals. Nurses may choose to stay in one location or specialty or make lateral moves within the field of nursing. Returning to school for an advanced degree is an option as well.

The role of NNP is a career choice that requires an advanced nursing degree. Nurses entering this field are NICU nurses who wish to advance in their career while staying in the NICU setting. Understanding the decision-making process of nurses currently making this choice will help devise strategies to encourage qualified nurses to choose this route in the future.

According to Price (2008), career choice is a dynamic process of career development based on personal, situational, and organizational factors that include job satisfaction, life experiences, and self-assessment. It is important to explore the career choice advancement of future nurses (and for this study, future NNPs) in order to understand their perceptions and expectations. Understanding how professionals progress in their careers is important in developing recruitment strategies (Price, 2009).

## Characteristics of Advanced Practice Nurses

Concepts regarding advanced practice nursing are being explored by a number of authors, as this role is now being adopted internationally. A number of authors have researched and written about the characteristics of nurse practitioners. The concepts are compiled in Table 3.

Table 3

### *Characteristics of Advanced Practice Nurses*

<b>Characteristic</b>	<b>Waugaman (1999)</b>	<b>Jones (2005)</b>	<b>Williamson (2006)</b>	<b>Gardner (2006)</b>	<b>Mantzoukas (2006)</b>	<b>Callaghan (2008)</b>	<b>Srivastava (2008)</b>
Adaptability		*		*			
Assertiveness		*					
Clinical Expertise			*		*	*	*
Collaboration		*		*			*
Creativity		*	*	*			
Critical Thinking					*		
Ethical Decisions							*
Leadership							*
Motivation		*	*				
Political Astuteness		*					
Professional Autonomy	*		*		*	*	
Research					*	*	*
Self-efficacy		*		*			

Jones (2005) conducted a systematic review and meta-synthesis of relevant qualitative literature pertaining to role development and effective practice roles in acute hospital settings. Adaptability, assertiveness, collaboration, motivation, creativity, and political astuteness were found to be important personal attributes. Organizational culture and the attitudes of physicians and coworkers promoted or limited the role of the advanced practice nurse (APN). Jones (2005) noted that clinical responsibilities tend to overshadow professional development goals. Excessive workload was associated with stress and burnout in APNs (Jones, 2005).

Mantzoukas and Watkinson (2006) reviewed nursing literature to find concepts associated with the role. They found that attaining professional autonomy in practice was a common goal among APNs. Important competencies of APNs include clinical knowledge and judgment, critical thinking, leadership, mentoring, and using research to change practice (Mantzoukas & Watkinson, 2006).

Callaghan (2008) found that advanced nursing practice improved patient outcome and recommended developing services and practices led by APNs. The most important elements of the role were leadership abilities, autonomy, clinical expertise, and research skills. Collaborative practice was recommended to improve patient care (Callaghan, 2008).

In qualitative interviews with 15 APNs, Gardner et al. (2008) found capability rather than competency determined the APNs' ability to function in the

role. Important capabilities included creativity, the ability to learn new skills, self-efficacy, and collaboration. Capable NPs were noted to use a holistic approach in complex situations associated with the APN role. The ability to identify self-learning needs, confidence, determination, innovative thinking, a logical approach, motivation, a positive attitude, technical knowledge, a love of learning, problem-solving abilities, and the ability to remain calm under pressure were characteristics attributed to capable APNs (Gardner, Hase, Gardner, Dunn, & Carryer, 2008).

In a cross-sectional study regarding ethnic and cultural effects on professional socialization and career commitment of 2,008 registered nurse anesthetist students (RNAs), Waugaman and Lu (1999) found that social processes influenced the move from registered nurse to graduate education. The authors proposed that the primary reason for seeking the role was a desire for increased professional autonomy. In this study they found that individuals from all cultural and ethnic groups strongly identified with the RNA role, suggesting that there may be some characteristic shared by nurses who desire to become nurse anesthetists (Waugaman & Lu, 1999).

Srivastava and colleagues (2008) conducted a literature review of APN practice in intensive care settings. They found the impetus for promoting the APN role in the United Kingdom stemmed from the need to care for patients despite a reduction in physician training hours. Barriers to the role included lack of role clarity, role conflict, resistance, opposition, and obstruction. The authors note that

to be successful the APN needs the authority to carry out the role (Srivastava, Tucker, Draper, Milner, & Study, 2008).

Many authors discussed the challenges of the APN role. Mantzoukas and Watkinson (2006) suggested that nursing disciplines need to separate from organizational and cultural restrictions in order to achieve professional autonomy. Several authors noted a lack of clarity in the definition of the role (Hoffman, 2009; Jones, 2005; Nicolson et al., 2005; Rasmussen et al., 2005; Srivastava et al., 2008). Callaghan (2008) stresses the importance of defining the role clearly while being careful not to restrict practice and opportunities for professional growth through the definition.

Callaghan (2007) suggested that there are two distinct avenues of practice for nurse practitioners. One is through preparation as a generalist, creating new services not currently provided by traditional medicine. The other is through specialization, replacing services traditionally provided by physicians. There is concern that linking advanced practice with specific specialties limits the scope of practice to that specialty (Callaghan, 2008). NNPs fall into the specialist category, and while it is true that the scope of practice is limited to the specialty of neonatology, there is a need for advanced practice nurses to care for these patients.

### **History of the Neonatal Nurse Practitioner Role**

The role of the NNP is a long-standing one, formally beginning in 1973. The impetus for developing the role resulted from the proliferation of technology

that improved survival for premature and ill neonates, and from moving the care of premature and ill neonates to regional centers of care. Through a mandate for regionalization, neonatal care became centered in specialized hospitals. Use of specially trained nurses allowed the neonatologist to stay in the NICU to meet the needs of existing patients while allowing patients to be transported safely between hospitals by nurses with advanced training (Cusson et al., 2008; Honeyfield, 2009; Nagle & Perlmutter, 2000; Samson, 2006).

Initially, NICUs were staffed by pediatric physicians in training, often called house staff or residents, because of their role in caring for patients at night after the neonatologist had left for the night. In large programs, this could be as much as a third of their training. As the educational needs of the physicians were evaluated and programs of study revised, nurses were trained to replace some of the work traditionally done by residents. The first NNPs were called clinicians and rapidly became indispensable in both academic and private NICUs.

Neonatologists have supported the NNP role from the beginning. The AAP first endorsed NNPs in 1982 and has recently updated that endorsement (Bellflower & Carter, 2006; Geiss & Cavaliere, 2003; Wallman & Committee on the Fetus and Newborn, 2009).

When the Accreditation Council for Graduate Medical Education (ACGME) reduced NICU rotations for resident physicians in 2000, NNPs were hired to manage infants in the NICU. When the same agency organization reduced resident work hours in 2003, more NNPs were hired to meet the needs of NICU

patients. In 2011 further reductions in resident workload were mandated by the ACGME. Recent recommendations proposed by the ACGME further reduced the workload of residents in training and provided recommendations for strategic naps during nights on call, which also need to be covered for patient management (Common Program Requirements, 2010; Nagle & Perlmutter, 2000; Ulmer et al., 2008; Weinstein, 2002).

### **Effectiveness of Neonatal Nurse Practitioners in the Clinical Arena**

NNP practice has been shown to be safe and cost effective. A comparison of 244 infants cared for by an NNP/physician assistant (PA) team and those cared for by a pediatric resident team was conducted to evaluate this. Although infants cared for by the NNPs were more premature than the infants cared for by the pediatric residents, no significant difference in outcome was found in this study (Carzoli, Martinez-Cruz, Cuevas, Murphy, & Chiu, 1994).

In 1996 Mitchell-DiCenso and colleagues conducted a controlled trial comparing NNPs to pediatric residents. Mortality, complications, length of stay, quality of care, and parent satisfaction was measured in 821 infants with 414 randomized to NNP care and 407 randomized to pediatric resident care. Although patient outcome was noted to be similar, NNPs performed better in recognizing jaundice and in charting (Mitchell-DiCenso et al., 1996).

A retrospective study comparing patient outcome and cost of care in infants managed by an NNP team and those managed by a pediatric resident team showed that care was equal in quality but patient care costs were \$18,240



less for patients on the NNP team. Continuity of care, communication skills, and an understanding of the infant's nursing needs were suggested as possible reasons (Bissinger et al., 1997).

Karlowicz and McMurray (2000) conducted a retrospective study evaluating 71 infants cared for by an NNP team and 82 infants cared for by a resident team. No differences were found in the frequency of complications associated with prematurity or in the cost of care (Karlowicz & McMurray, 2000).

A retrospective analysis following resuscitation in 245 premature infants showed that although infant outcome was similar in resuscitation teams led by NNPs and physicians, the NNP team intubated in less time. Infants resuscitated by NNPs were also more likely to have normal temperatures on admission to the NICU (Aubrey & Yoxall, 2001).

The Ashington experiment indicates that nurses with advanced training were able to provide satisfactory care to neonates. In 1996, support for pediatric residents to provide newborn service coverage in a sparsely populated area of England was discontinued. In order to maintain a delivery service in the area, NNPs were brought in to provide the services vacated by the pediatric residents. An audit group was put together to monitor the service for safety and efficacy. A number of prospective studies were conducted to compare the service provided by NNPs with care provided in similar units managed by medical doctors. Resuscitation at birth, routine newborn care, recognition of congenital heart disease, discharge summaries, hospital readmissions, staff stress, the perceived

adequacy of training, cost, neonatal deaths, neonatal seizures, and transfers to other facilities for higher level of care were evaluated. The NNP service was found to be as good as or better than the medically staffed comparison hospitals (Ashington Audit, 2004; Ward Platt, Brown, & Ashington Evaluation, 2004). A prospective review of sentinel cases included 14,572 infants. Independent external auditors were used to review selected cases. The study evaluated the NNPs' practice in each case where neonatal resuscitation was needed and found that NNPs were successful in managing all appropriately (Chan & Hey, 2006). The "experiment" underwent extensive scrutiny. Hall and Wilkinson (2005) suggested that comparing NNPs to junior grade doctors was unfair because the nurses had more experience. Nevertheless, the experiment showed that NNPs were able to provide high quality of care without a doctor on site. They suggest that the concentration of care in time and place, protocol based decision making, and teamwork resulting from mutual trust and respect among nursery personnel contributed to the success of the project (Hall & Wilkinson, 2005).

In a retrospective study of 61 NICU patients, Woods (2006) compared charts of 16 patients admitted to NNPs to charts of 45 patients admitted to physicians. Physicians documented a more comprehensive history, while the NNPs documented a more comprehensive plan of treatment. No statistical differences were found in treatment. There were no statistical differences in medications ordered by either group, but the NNPs had fewer errors. The medical staff records were more complete, but NNP records were more legible.

NNPs were found to be better at managing temperature and ordered fewer lab tests (Woods, 2006).

Lee and colleagues (2001) conducted a prospective study comparing NNPs with senior residents during routine newborn examinations. NNPs were more likely to detect abnormalities of the hip and eye during the physical examination. Other aspects of the examination were similar (Lee, Skelton, & Skene, 2001).

Although NNPs have practiced safely in the NICU for three decades, confusion about the role continues to exist. Nicholson (2005) suggests continuing to compare NNPs with residents perpetuates role confusion and strife in the workplace (Nicholson et al., 2005). Hoffman's (2009) survey of NNPs notes a major concern of NNPs is the lack of understanding of the role by parents, the public, and hospital administrators (Hoffman, 2009). While the safety of the NNP role has been demonstrated by comparing NNPs with pediatric residents, the unique contributions of NNPs is difficult to measure.

NICU nurses in the Rasmussen and colleagues' study (2005) listed lack of understanding of the role by parents as a reason for disinterest in the NNP role. Jones (2005) noted that ambiguity in a role confuses expectations regarding scope of practice and individual responsibilities. Continuing to compare the practice of NNPs to that of pediatric residents and physician assistants and the use of reductive terms like physician extender, nonphysician provider, mid-level provider, and nonphysician practitioner perpetuates this confusion. Despite

obstacles, the NNP role has evolved over time to be an integral component of the comprehensive care delivered to premature and sick neonates, and qualified NNPs are currently in high demand.

### **Workforce Surveys**

Over the years a number of surveys have been performed in an effort to assess the pediatric workforce. One impetus for this is a change is the reduction in resident work hours with workloads being shifted to APNs and PAs. Assessing the characteristics of the current NNP workforce as well as current needed resources is necessary in order to plan for the future. Surveys of the NNP workforce in the United States are summarized in Appendix E.

In 2003 Smith and Hall reported on the scope of practice and role of neonatal nurse practitioners in the United Kingdom. In a survey of 95 NNPs, 79 (83%) were returned. Of the 79 responses, 4 were male, 75 female, 57% were married, 29% single, and 6% divorced; 68 were working as NNPs at the time of the survey with 41% in general hospitals and 59% in tertiary centers. They found the role was dependent of the needs of the unit with most NNPs involved in patient management and in education of nurses, residents, parents, and students, including NNP students. When asked if they were in a “career cul-de-sac,” 35% responded yes, 28% responded no, and 37% were unsure. The authors urged strategic long-term planning and investment to ensure proper coverage in neonatal units (Smith & Hall, 2003).

In 1996, Pollack et al. surveyed 675 neonatology practices and found that 55.3% used NNPs in their practice and 66% of these indicated they were planning on hiring more. A similar number of practices who were not employing NNPs at the time of the survey were planning on hiring NNPs in the future (Pollack, Ratner, & Lund, 1998).

Freed and colleagues (2010) evaluated the distribution, roles, and scope of practice of NNPs. They used data from the National Certification Corporation to determine the number of practicing NNPs with the caveat that all certified NNPs are not practicing and all states do not require certification. They found that there was a concentration of NNPs in the Midwest, South, and Mid-Atlantic states. They concluded that the distribution of NNPs might not be according to need and recommended studies regarding the NNP workforce to determine whether a true shortage of NNPs exists.

Freed and colleagues (2011) also looked at trends in coverage as resident hours were reduced. A response rate of 65.4% of surveys returned from 114 children's hospitals. Forty-two percent reported increasing the FTEs of neonatal nurse practitioners, and 43% planned to increase the number of NNPs over the following 2 years as well as increasing the number of PAs. No one reported reducing the number of NNP positions. While there has been an increase in the number of nurse practitioners recently, there has not been an increase in the number of NNPs. Freed predicts that failing to increase the number of NNPs will result in increased competition for their services (Freed, Dunham, Moran, Spera,

& on behalf of The Research Advisory Committee of the American Board of Pediatrics, 2012).

Smith and Hall reviewed the UK NNP workforce in 2011. The first educational training program for NNPs in the UK began in 1992 in an effort to improve the quality of neonatal care. NNPs were shown to be effective in providing care as an alternative to physicians in training. As resident hours are being cut back there is discussion of adding PAs to the mix. Although PAs are generally employed in primary care and emergency departments, they have been shown to work effectively alongside NNPs. The authors note that there are at least 250 NNPs in the UK and recommend financial investment in training. The authors note previous experience is beneficial to the role. An advantage is that they are generally established within a geographic area and less likely to leave the area following training. The authors recommend long-term planning in regard to providing personnel with the skills and knowledge needed to cover neonatal units (Smith & Hall, 2011).

### **The Neonatal Nurse Practitioner Shortage**

There is currently an NNP shortage in the United States (Cusson et al., 2008; Geiss & Cavaliere, 2003; Honeyfield, 2009; Reynolds & Bricker, 2007; Witt, 2009). This issue has not been resolved and a comprehensive plan to reduce the shortage has not been established.

In a study of 271 NNP conference attendees, Cusson and colleagues (2008) found that respondents reported workforce shortages. Participants

reported an average of 6 to 18 months to fill vacancies with a range of less than 3 months to several years. One third of the respondents reported substituting PAs, PNPs, family practice nurse practitioners, neonatologists, hospitalists, and moonlighters to fill NNP vacancies. Cusson warned that unless strategies are initiated to increase the number of graduating NNPs the shortage will worsen (Cusson et al., 2008).

In 2011 NANN conducted a workforce survey that included 679 NNPs throughout the United States. While the authors identified several levels of education, most NNPs were nationally certified. One-fifth of the NNPs surveyed had more than 20 years' experience. The majority of practices surveyed employed 10 or fewer NNPs. Large NNP practices were more likely to be located in the South or West. The majority of NNPs work both day and night shifts. Many work 12-hour shifts or 24-hour shifts. Most NNPs care for inpatients in single hospital practices. Most NNPs work full time and many have a second job. Responsibilities of NNPs include medical patient management in level II and III NICUs, attendance at deliveries, neonatal transport, teaching or supervisory responsibilities, and prenatal and newborn consultation (Timoney & Sansoucie, 2012).

The use of nurse practitioners and PAs to compensate for workforce shortages due to reduced resident duty hours has been proposed. Although PAs are traditionally trained in primary care, programs have been proposed recently

to develop PA training programs for practice in NICUs (Reynolds & Bricker, 2007).

### **Neonatal Nurse Practitioner Education**

Prior to 1980, education of NNPs was likely to be obtained through a hospital-based certificate program taught by neonatologists. The first NNP program was held in 1973. The program was 11 months in length, including 9 months of didactic education, 7 weeks in internship with neonatologists, and 2 weeks in internship with a radiologist. Education was directed at assessment, diagnosis, and patient management. In the early 1980s NNP programs began moving to university settings where similar content was taught and courses in nursing theory, research, and leadership were added (Nagle & Perlmutter, 2000).

The National Certification Corporation (NCC) began certifying NNPs in 1983, requiring programs to include specific content in order for graduates to be qualified to sit for the certification boards. Education for NNPs began moving to a master's level in the 1980s, and a master's degree became a requirement for NCC certification in 2000 (B. Burns, personal communication, August 3, 2010) . Currently, ongoing clinical experience and continuing education is required to maintain NCC certification. Triennial testing was introduced recently to direct continuing education to maintain competency. Educational requirements for recertification are targeted to individual NNP needs (Bellflower & Carter, 2006; Nagle & Perlmutter, 2000; Reynolds & Bricker, 2007).



The National Association of Neonatal Nurses (NANN) published guidelines for NNP education and practice in 1992. The American Nurses Association (ANA) developed guidelines for NNP education in 1994. The NANN has recently revised the NNP education guidelines but still includes a 2-year practice requirement for entry into NNP educational programs (Bellflower & Carter, 2006; "Educational Standards for Neonatal Nurse Practitioner Programs," 2009). One of the strengths of the NNP role has been the clinical experience of the NICU nurses who become NNPs (Cusson & Strange, 2008; Reynolds & Bricker, 2007; Smith & Hall, 2003). Although universities comply with these guidelines, some are beginning to question whether the 2-year requirement limits the ability to recruit NICU nurses into NNP programs (Honeyfield, 2009).

In 2005, Rasmussen and colleagues reported that there were 42 university-based NNP programs, including 3 online programs. In a survey of NNP programs in 2010 there were approximately 44 universities that provided education to prepare neonatal nurse practitioners for practice and 23 of these were online, with an additional 14 including some online content. Thirty-two of these universities had DNP programs in place and 6 others were developing DNP programs (T. Mattis, personal communication, June 8, 2010). A more recent survey lists 38 schools that prepare nurses for practice as NNPs. Of these 35 are listed as online or partially online (T. Mattis, personal communication, November 29, 2012). Information as to whether these programs were at the Master's level or the DNP level was not collected. These are summarized in Table 4.

Table 4

*NNP programs in the United States*

Year	2010	2012
NNP Programs	44	38
Online	37	35
DNP	6	Unknown

There is support for NNP education to remain at the master’s level. The AAP and NANN support this (Educational Standards for Neonatal Nurse Practitioner Programs, 2009; Wallman & Committee on the Fetus and Newborn, 2009). Internationally there is interest in developing the APN role. A web-based survey conducted by Pulcini and colleagues (2010) reviewed responses from 20 countries and reported that 50% are currently at the master’s level. The International Council of Nurses recommends that APN education occur at the master’s level (Pulcini, Jelic, Gul, & Loke, 2010; Ulmer et al., 2008).

**Recruitment of Neonatal Nurse Practitioner Students**

NICU nurses are recruited for the NNP role. Because of the practice requirement, these students tend to be older than traditional students when entering graduate school. Having been in practice for 2 years, these nurses are more settled and less mobile than younger students. Many have families and need to work full time, limiting their ability to return to school (Honeyfield, 2009; Rasmussen et al., 2005). Introducing the NNP role at the undergraduate level,

providing mentoring by NNPs, and a media program to make the NNP role more visible have been proposed as strategies to encourage nurses to consider the NNP role (Bellflower & Carter, 2006; Cusson et al., 2008). Bellini (2012) suggests that recruitment might need to start even earlier, as high schools now employ career coaches to help students make career decisions early in life. She also suggests that media include social media such as Facebook and Twitter, as these are more up-to-date ways to communicate with young people who may be considering career options.

### **Barriers to Advanced Education**

There is a shortage of nurses in general who are educated at the graduate level. Graduate education develops critical thinking skills while preparing nurses for leadership roles. There is concern that these leadership roles are being filled with nurses who lack the educational preparation to meet the challenge of today's complex medical systems (Plunkett, Iwasiw, & Kerr, 2010).

Career selection is linked to the conviction that one is able to perform in a certain role or situation. The term for this is self-efficacy. Self-efficacy is influenced by personal success, social interaction, and identification with role models. A study by Plunkett, Iwasiw, and Kerr (2010) on the intent of Bachelor of Science in nursing students to pursue graduate level education found nurses to be confident in achieving RN licenses, but not in being admitted into a graduate program. Authors suggested the need to expose nursing students to the long-term benefits of graduate school. In contrast to Honeyfield's (2009) concerns that

delay in entering graduate school reduces the pool of potential students, Plunkett and colleagues (2010) observed that nurses were more likely to enter graduate school if the decision is deferred until later in their career (Plunkett et al., 2010).

Although the role of the NNP is long-standing and well accepted in the NICU, little interest in the role was found among NICU nurses in a study conducted by Rasmussen and colleagues (2005). In a convenience sample of level III NICU nurses, only a third of the 209 participants expressed an interest in the role (Rasmussen et al., 2005). This is significant as potential NNP students are recruited from NICU nurses. Clinical experience in the NICU promotes the process of education and orientation to the NNP role and is thought to be a reason contributing to the success of the role. Six themes were identified regarding why the role did not appeal to the majority of the nurses: family obligations and NNP responsibility were the central themes. Satisfaction with their current position, the hours NNPs were required to work, education costs, and NNP salaries were also listed as reasons NICU nurses were not interested in the role. Participants were also concerned about the variability in practice styles among attending neonatologists. The narrow margin between the salaries of experienced staff nurses and NNPs did not provide a financial incentive to take on additional responsibilities. Nurses working in the NICU expressed concern regarding the lack of opportunity for advancement in the NNP role. Nurses interested in becoming NNPs listed salary, knowledge, and autonomy as reasons for that interest (Rasmussen et al., 2005).

The implementation of the DNP as the degree to enter practice as an NNP has been proposed by the American Association of Colleges of Nursing. The impact of this requirement in regard to interest, enrollment, availability of faculty, and impact on clinical practice has not been studied. The American Medical Association notes that in other disciplines where the doctorate has been required for entry into practice the amount of research in those disciplines has declined. The potential impact of a mandatory practice doctorate on the role of NNP needs to be evaluated (American Medical Association (AMA), 2009; Educational Standards for Neonatal Nurse Practitioner Programs, 2009; Honeyfield, 2009; Pressler & Kenner, 2009; Pulcini et al., 2010; Wallman & Committee on the Fetus and Newborn, 2009).

### **Summary**

The role of the NNP is well established and has been shown to be effective in the care of neonatal patients. There is currently a shortfall in the NNP workforce with open positions going to non-NNP healthcare workers. Loss of these positions limits the ability to study the work of NNPs and to document their impact on clinical care.

Limited studies have been conducted on the interest of NICU nurses in becoming NNPs, and no study was found on the decision-making process used by NNP students when making the decision to become an NNP. If the role of the NNP is to remain viable, information is needed about how to interest NICU nurses in pursuing NNP education and ways to facilitate that interest. The role of

the NNP needs to be clearly defined by those practicing in the role in order to withstand and evolve with changes in healthcare delivery (Beal, Maguire, & Carr, 1996; Callaghan, 2008; Furlong & Smith, 2005; Pulcini et al., 2010).

## CHAPTER III

### PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This was a qualitative study using a grounded theory approach. The goal of this study was to explore the decision-making process as it applies to choosing a direction for career advancement. This study explored the process as it applies to career advancement from NICU nurse to NNP. Interviews were conducted with NNP students to find the process they used to decide to enter graduate courses to become NNPs. Interviews focused on NNP students because they experienced the decision-making process firsthand and demonstrated the decision by enrolling in graduate school. The rich descriptions of how they came to that decision have been examined for similarities and differences to highlight the process. Understanding the process used to decide and act on career goals may lead to strategies that support the decision-making process. Barriers that interfere with the decision-making process can also be identified by this method and steps taken to remove them from the process, as NNPs are in short supply and great demand. If the role is to remain viable, recruiting enough qualified nurses to meet current needs of the NICU population is essential.

#### **Research Design**

A grounded theory approach was used to explore the process that NNP students followed to decide to become NNPs. The researcher investigated the

process by interviewing NNP students about the decision-making steps taken to decide to become an NNP and the actions and strategies utilized to make the decision a reality. An interview guide was used to facilitate the interview. A copy of the interview guide is included in Appendix A.

Grounded theory was an appropriate design to use in exploring this process. Grounded theory maps temporal patterns that may be diagrammed for analysis. These diagrams may be used to pinpoint areas for intervention and further study (Creswell, 2007; Polit & Beck, 2008). Grounded theory, with underpinnings of symbolic interactionism, was a useful method in exploring this subject, as the decision to become an NNP is influenced by interactions with coworkers in the NICU environment.

### **Setting**

The setting for this study was two universities offering online master's level neonatal nurse practitioner programs. Both the University of Missouri-Kansas City (UMKC) and the University of Texas Medical Branch (Galveston, TX) are large universities with well-established and well-recognized programs.

#### **The University of Missouri-Kansas City**

The University of Missouri-Kansas City (UMKC) is situated in the Midwest. The NNP program started in 2000 through a development grant from the U.S. Public Health Service. Although the program is centered at UMKC, students at South Dakota State University, the University of Iowa, and the University of Missouri-Saint Louis can also enroll (Neonatal Nurse Practitioner (MSN), 2012).



The 43-credit hour program at UMKC focuses on health management of the neonate and core classes for graduate nurses that include nursing theory, research, cultural diversity, health policy, and leadership. The program is an accredited Master of Science (M.S.N.) program, and graduates of the program are qualified to test for certification as an NNP through the NCC (Neonatal Nurse Practitioner (MSN), 2012).

Two years of recent full-time NICU experience is required for admission, including 1 year in a tertiary care (level III) NICU. The program is online with the exception of two on-campus workshops each year. A minimum of 600 hours of clinical experience with a preceptor is required to complete the program. Faculty at UMKC assist students in choosing experienced preceptors and a clinical site that provides a variety of experiences in providing neonatal care. Both must be approved by the director of the NNP program (Neonatal Nurse Practitioner (MSN), 2012).

The program director at UMKC was contacted and agreed to facilitate contact with students by forwarding an email invitation to first year students enrolled in the program. A letter of support is included in Appendix B.

There are currently 65 NNP students enrolled in the NNP program at UMKC. Of these, 47 are first year students. Student demographics include 1 American Indian, 1 Asian, 1 African American, 5 Hispanic, 1 with two or more ethnicities, 2 who did not declare race or ethnicity, and the remaining 54 are Caucasian (L. Rasmussen, personal communication, November 29, 2012).

## **The University of Texas Medical Branch Galveston**

The second university is UTMB, which is located in the gulf coast region of Texas. The program started in 1991. The 46-credit hour program includes 729 clinical hours. A number of tertiary NICUs are available in the gulf coast region, and students are offered experience in a variety of practice sites with experienced NNPs as preceptors. The program content is online with the exception of short on-campus classes each semester (Neonatal Nurse Practitioner Program (NNP), 2012).

Students are required to have two years of tertiary NICU experience prior to admission to this accredited M.S.N. program. Graduates of this program are qualified to test for certification as an NNP through the NCC (Neonatal Nurse Practitioner Program (NNP), 2012).

The program director was contacted and agreed to facilitate contact with students. The program director also agreed to serve as a faculty sponsor for the study at UTMB, as Institutional Review Board (IRB) approval is required at UTMB in order to contact students at that institution. A letter of support is included in Appendix C. There are currently 36 NNP students enrolled in the NNP program at UTMB. Since 2009 the number of first-year students has ranged from 14 to 27. The demographics of the students include 2% male, 98% female, 3% African American, 10% Hispanic, 5% Indian, 78% Caucasian, and 4% not specified. The majority of students are from Texas (75%) and 25% are from states other than Texas (D. Armentrout, personal communication, December 5, 2012).

## **Interviews**

Interviews were conducted at a location of the participants' choosing. When face-to-face interviews were not feasible due to distance or schedule, an interview using an Internet program that allows both visual and audio interaction was offered, or if the participant preferred, the interview was conducted by telephone. The geographic diversity of the two universities enhances generalizability of the study, but access to students for face-to-face interviews proved difficult. Providing alternative options for interviews enhanced access by making it more convenient for students to participate and helped obtain the number of participants needed to reach saturation.

## **Participants**

NNP students are RNs with experience in neonatal care. Levels of prenatal and neonatal care differ from the levels of trauma care that might be familiar to most nurses. Levels of care provided by NICUs have recently been updated by the AAP.

A level II nursery is a special care or intermediate care nursery. A level II nursery provides care for infants who are 32 weeks or greater and who weigh at least 1500 grams. These nurseries provide mechanical ventilation to newborns for up to 24 hours and have the resources to stabilize an ill or immature infant for transport to a higher level of care.

A level III nursery is intensive care. Level III centers are often described as tertiary care centers due to their ability to provide specialized neonatal care.

Level III nurseries can provide mechanical ventilation for long periods of time and provide subspecialty services such as pediatric surgeons and pediatric anesthesiologists. Advanced diagnostic imaging including MRI and echocardiology are usually available as well.

A Level IV NICU is a regional nursery that can maintain a full range of pediatric subspecialists. Level IV nurseries facilitate neonatal transport through the provision of a specialized transport team and are charged with providing outreach education (American Academy of Pediatrics Committee on Fetus & Newborn, 2012). While each level of neonatal care provides valuable experience, the higher levels of care give the NNP student a wider variety of experience during the NNP educational process.

NNP students were ideal subjects for this study as they had recent experience with the decision-making process that was investigated. Although 20 interviews were planned to complete this study, saturation was achieved with 11 interviews. Interviews were with NNP students who were in their first year of study. This allowed the interview to be conducted prior to entering courses that required clinical assignments. In a pilot study on this subject, the researcher found that once the students were further along in their educational coursework they were preoccupied with the cost of education and with the time commitment for completing both coursework and clinical experience. Conducting interviews early in the educational process allowed the participant to relate clearer and more detailed memories of the decision-making process.

Once IRB approval was obtained, students were invited to participate through faculty at their respective schools. The invitation was sent to the faculty member and then forwarded by email to first-year NNP students. Interested students contacted the researcher by email for more information, and the consent to participate was then sent back to the potential participants as a PDF email attachment. Interviews were scheduled once the consent had been received. One interview was conducted face-to-face and the consent was signed at the beginning of the interview. Participants received token compensation for their time in the form of a \$25.00 gift card to an online store.

A semistructured interview guide was used to elicit substantial information on key questions related to the process of deciding to become an NNP. The questions were designed to guide the interview but not to override the participant's willingness to share experiences. Interviews were conducted over 20 to 40 minutes including introductions and postinterview conversations. Participants were assigned a study number to ensure confidentiality, and recordings and transcripts were labeled with the number only. A study log was kept in a separate locked filing cabinet to ensure confidentiality.

A brief demographic description was obtained, including gender, age, and years in practice as an RN and as a nurse in the NICU. Interview questions were designed to obtain a description of the process used by the NICU nurse to decide to pursue advanced education as an NNP. Interview questions were tested in an earlier pilot study. Entry into practice in the NICU, initial recognition of the NNP

role, interactions among coworkers, support and barriers to finalizing the decision, determining which school to attend, and preparation for school were included in the interview. The participant was also asked whether the proposed DNP program had any affect on the decision to become an NNP, as this recent proposal has not yet been studied for the impact on the decision-making process.

### **Protection of Human Subjects**

The research study was discussed with the program directors of the two universities selected in order to obtain agreement to forward the email invitations and to obtain letters of support. Approval for the study was obtained though the internal review board (IRB) at Texas Woman's University (TWU). This IRB approval was accepted by UMKC; however, UTMB required a separate IRB approval, which was obtained prior to enrolling UTMB students in the study. Informed consent was obtained from each participant for the interview and for audio taping of the interview. A study number was assigned to identify participants. The audiotapes will be erased once the dissertation has been accepted.

### **Data Collection**

One interviewer, the researcher Melinda Colleen Brand, conducted all of the interviews to provide continuity. Interviews were audio recorded to preserve the exact phraseology and tone of responses and to provide a medium for transcription. Field notes were constructed immediately after the interview to document any additional information.

## **Data Analysis**

Audio recordings were transcribed by Melinda Colleen Brand, a student at TWU. The data were then analyzed using grounded theory technique to give them meaning and to provide an interpretation that might be useful to others. Analysis identified properties, defined meanings, and provided dimensions for the data. Field notes, constructed immediately following, were available as additional sources of data. Because the majority of interviews were conducted via telephone, the extent and value of the field notes was limited.

Grounded theory was used to analyze the transcripts. Analysis was used to discover categories and themes derived from the experiences related by the study participants. These themes represent the researcher's understanding of what is described in the experiences related by the participants. Experiences, interactions, and issues are all important aspects of the participant's experiences.

The first step in analysis was to code data (Corbin & Strauss, 2008). Codes are used to identify key points in the data and then these codes were used to generate categories. Data analysis began with line-by-line open coding. These codes were later reduced through consolidating similar codes into more general terms to simplify the process. Codes were added and the list reduced as needed through the analysis. Similar codes were grouped into categories to help better understand the process. Similar concepts were then grouped into themes by sorting those categories that were similar.

The coding paradigm developed by Corbin and Strauss was used in both open and in axial coding. A three-tiered coding paradigm was used as recommended Kelle (2005) for novice researchers. A simple coding system provides structure. Coding paradigms help describe social processes (Corbin & Strauss, 2008).

The three-tiered coding paradigm included 1) conditions; 2) interactions, strategies, and actions; and 3) consequences. In this coding matrix, “Conditions” identify data that explain “why, where, how and what happened” and provide insight to circumstances or conditions related to the decision-making process. Interactions, actions, and strategies related to situations that affected the decision-making process. “Consequences” refers to the outcome of the interactions, actions, and strategies (Corbin & Strauss, 2008; Kelle, 2005). The use of the coding paradigms supported identification of key codes, preventing the data from becoming overwhelming (Corbin & Strauss, 2008; Kelle, 2005).

Open coding began with the first interview transcript. Each line of the transcript was examined for the action in the line and coded. Codes of the second interview transcript were compared with the first; the codes in the first interview were compared to the third interview, and so on. After the codes were reduced, the transcripts were reanalyzed to be sure all of the concepts were captured. This type of analysis is called constant comparison and is used to examine data for similarities and differences. Constant comparison helps identify subtle relationships within the data.



Ongoing analysis of the data continued, using the constant comparison technique to collect, code, and analyze the data. Constant comparison continued until the core category became apparent. Once the core category was identified, selective coding was to identify data that relates to the core category. Axial coding was then used to determine how these related categories affected the core category (Corbin & Strauss, 2008; Kelle, 2005; Mills et al., 2006).

Data analysis techniques described by Corbin and Straus were used to analyze data that included negative cases. These are cases that do not seem to fit. Examining the negative cases helps to identify more components of the data.

Sorting the categories into related themes highlights relationships between categories (Glaser, 2012). Sorting was conducted using index cards and a large table. Sorting the codes into categories provided a one-dimensional visual picture of the relationships between categories and reaffirmed the core category. Constructing a visual diagram is a useful technique to illustrate conditions, actions, and consequences. Diagrams show logical relationships between codes and categories (Corbin & Strauss, 2008; Mills et al., 2006).

Data collection continued until saturation was achieved. Interviews stopped when no new information was being obtained and sorting did not reveal any new themes. Field notes and memos accompanied data collection and coding. Field notes provide additional data through impressions surrounding the interview. Memos provide an audit trail by documenting

thoughts and dates. Memos were used to refine questions and determined when saturation was met. An audit trail was constructed so data could be reviewed and interpretations revised. It can also be used by other researchers to evaluate the study.

### **Trustworthiness of Data**

Research, including qualitative research, needs to be evaluated in order to be trustworthy. Training in qualitative research is essential in the development of quality research. The researcher must have a clear goal at the beginning of the study of what the study hopes to achieve.

Memos not only document thought and interactions that occur during research but include thoughts and feelings that might influence research findings and promote a consistent approach to data analysis. To be trustworthy data must be treated in the same way or interpretation becomes difficult. The audit trail documents steps taken during the study, modifications of the study, and emerging results as new data are added (Corbin & Strauss, 2008; Williams & Morrow, 2009).

Data collection continues until saturation is achieved; that point at which new information is not being added through subsequent interviews. It is important to have a sufficient quantity of data to provide the rich description needed for credible results (Corbin & Strauss, 2008; Williams & Morrow, 2009).

Research must be examined for fit and relevance. Fit describes how closely concepts describe the stories of the participants. In this study the fit was

evaluated by sending a copy of preliminary analysis to the participants to see if it described the participants' experiences.

### **Conclusion**

A process is action taken in response to situations or problems with the purpose of reaching a goal. By nature it is temporal; it occurs over time and involves sequences of activities and interactions. This study examined the process NNP students used to decide to become NNPs. Interviews were examined for conditions, interactions, actions, and strategies, and the consequences of those. Knowledge of this process provides insight into the way NICU nurses decide to become NNPs. Practicing NNPs, managers, and educators may find this information useful in supporting the process to ensure that qualified NNPs are available to fill needed positions in NICUs.

## CHAPTER IV

### STUDY RESULTS

There is a shortage of neonatal nurse practitioners (NNPs) in the United States. Neonatal nurse practitioners are crucial in providing care to infants in NICUs across the country. The need for NNPs has increased as neonatal care has become more complex. Smaller and sicker infants are surviving while at the same time the hours and responsibilities of physicians in training (residents) have been reduced. There is a need for NNPs to fill the void left by these reductions. It is important to develop strategies to foster interest in the NNP role and to recruit students into NNP programs in order to meet this need. Understanding how students decided to become NNPs will help with the development of new strategies to support the decision-making process of nurses considering this role.

#### **Study Design**

A qualitative study was conducted to describe the decision-making process used by NNP students in deciding to become neonatal nurse practitioners (NNPs). The study used interviews to determine necessary conditions, interactions among NICU personnel, and strategies that supported the step by step decision-making process. Interviews were conducted face-to-face, via Internet video-conference, or by phone and then transcribed verbatim by the researcher.

## **Protection of Human Subjects**

Internal Review Board (IRB) approval was obtained prior to conducting the study. An Invitation to participate was sent to program directors at two universities and the invitation was then forwarded to the students. The email contained the researcher's contact information. Students willing to participate responded by email or phone and were sent a consent form to read and sign prior to the interview.

## **Participants**

Fourteen students responded. Of these 11 agreed to participate and returned signed consents. One student declined to participate after contacting the researcher due to a busy schedule. One student agreed to mail the consent but it was not received, and one responded to the email invitation after the study was concluded.

One interview was conducted in person, 2 via Internet video-conference, and the remaining 8 were conducted by phone. The interviews ranged from 20 to 40 minutes including introductions before the recording commenced and included time for conversation after the recording concluded. Each participant was given a gift card for \$25.00 to an online store as token compensation for the time spent in the interview.

All of the participants were employed in a Neonatal Intensive Care Unit (NICU) at the time of the interview. All of the participants were currently in an

online master’s degree program to become a neonatal nurse practitioner. The participants were in the first year of the program.

Demographic information included age, experience as an RN, and experience in the NICU. Ages of the participants ranged from 28 to 44 years of age and averaged 32.2 years. Experience as an RN ranged from 4 to 16 years and averaged 8 years. Experience in the NICU ranged from 4 to 14 years and averaged 7.6 years. Demographic information is included in table 5.

Table 5.

*Study Demographics*

<b>Gender</b>	<b>Age</b>	<b>Number years nursing</b>	<b>Number years NICU nurse</b>
<b>F</b>	28	7	7
<b>F</b>	30	7.5	7.5
<b>F</b>	29	6.5	6.5
<b>F</b>	41	16	14
<b>F</b>	32	6	6
<b>F</b>	30	5	5
<b>F</b>	28	4	4
<b>F</b>	34	10	10
<b>F</b>	44	11	11
<b>F</b>	31	8	8
<b>F</b>	28	7	5

**The Interview Process**

Participants chose the time, place, and method of interview. Introductions and casual conversation were followed by information regarding the purpose of the study and interview confidentiality. The participants were told they could skip any questions they were uncomfortable with, and they could stop the interview at

any time. The plan for transcription was described, and the participant was told when the tape was turned on. The recording began with an introduction of the study, the title and purpose, the name of the interviewer, and the study ID. Participants were also told when the recording was stopped. General conversation followed the interview.

An interview guide was used to channel but not tightly structure the flow of the interview in order to obtain data pertinent to the study questions and to keep the interview to a reasonable time frame. Open-ended questions were asked regarding the participant's introduction to the NNP role, how interest in the role developed, and what kind of encouragement, support, and barriers were encountered along the way. Questions were also asked about the participant's experiences with selecting, applying to, and entering a graduate program. In addition participants were asked if the DNP proposal for entry-level practitioners had an influence on their decision-making process.

### **Transcript Analysis**

Constant comparison is a technique that uses a crisscross method of reviewing data so each interview is compared to each of the other interviews (a pattern similar to an argyle sock). This back and forth comparison was used to evaluate for similarities and differences in the experiences of the participants. Similarities and differences were coded and then sorted into categories and the process repeated until no new codes or categories were identified. Categories

were written on note cards and sorted into themes using a large table and note cards (Figure 1) as described by Glaser (2012).



*Figure 1.* Sorting using note cards and a large table

Sorting was repeated a number of times during the interview and analysis process. Once the emerging patterns were stable and no new information was being added by subsequent interviews, a thematic table was constructed that lists the main themes to help define paradigms (Figure 2). Paradigms (conditions; interactions; actions, strategies, and consequences) helped sort and map relationships between the categories and themes.

## **Results**

The main categories were identified and grouped into themes, including the central theme of deciding to become an NNP. These were diagramed using a table format (Figure 2) for closer examination and consideration of relationships among the themes.



Conditions→	Actions and Strategies→	Consequences
Worked in NICU	Observed and interacted with NNPs	Recognized NNP role
Liked NICU	Developed confidence through experience and expanded roles	Decided to stay in NICU
Desire for <ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Autonomy</li> <li>• Make a difference</li> </ul>	Considered career options Developed support system <ul style="list-style-type: none"> <li>• Family</li> <li>• Friends</li> <li>• NNPs (mentors)</li> </ul>	Chose to become an NNP (Central theme)
Timing <ul style="list-style-type: none"> <li>• Family</li> <li>• Finances</li> </ul> Schedule <ul style="list-style-type: none"> <li>• Online program</li> </ul>	Gathered program information Selected NNP program Applied to program Completed prerequisites Obtained letters of recommendation	Enrolled in graduate school

Figure 2. Thematic diagram

### Recognizing the NNP Role

Before a nurse decides to become an NNP the existence of the role must be recognized. The participants did not know about the NNP role before working in an NICU that employed NNPs. In this study this was a necessary condition for each of the steps to take place. Recognition of the NNP role is the first step in the process. Before deciding to become an NNP the nurse must be aware of the role. The participants were asked to describe how they became aware of and interested in becoming an NNP. All of the participants were introduced to the NNP role while working in an NICU that employed NNPs.

Participants reported little exposure to the NICU during school. One participant had heard of the advance nurse practitioner role; the role of the NNP, however, was not discovered until working in the NICU. Another participant reported discovering a love for the NICU while in an externship.

While in nursing school I applied for the nurse externship...the first one I worked in was the NICU. I loved it. I fell in love with the atmosphere, the critical care aspect of it, and working with the babies. So I did my externship there through my nursing program. When I graduated, I just stayed there.

A third participant said she discovered the NICU during an internship.

When I did my internship I had thought I wanted to do labor and delivery at the community hospital where I worked. They had maternal newborn services and I rotated to the newborn nursery, postpartum, and labor and delivery. My preceptor, at the time, was the head nurse of the nursery. She had such a love of the nursery that it was contagious and after that I knew that was where I wanted to be.

It is important to realize that working in the NICU was not the first choice of employment for the majority of the participants. Only three of the nurses interviewed reported being exposed to the NICU during their nursing program. Other participants reported accepting a position in the NICU because it was available. Some had intended to transfer once another position once a more

desirable position became available. They discovered they enjoyed working in the NICU and decided to stay. As one participant said,

I applied to a labor and delivery unit and was hired into an NICU instead and I was actually hoping to get to a labor and delivery unit, but, I fell in love with the NICU instead.

Another chose work in the NICU because that was where a job opening was.

When I graduated I got offered a couple of job interviews and the first one was in the NICU. And I fell in love with the NICU and I got the opportunity to start my career in the NICU.

In addition to limited exposure during their undergraduate education, some of the participants worked in units that did not employ NNPs. Until they worked in an NICU that did employ NNPs, awareness of the NNP role was limited. One participant described her discovery of the NNP role.

There were a lot of PAs, but no neonatal nurse practitioners. So I wasn't really that familiar with the role. And then I moved here ...with just one year of experience and I was on an NNP team. That's when I was introduced to the role, and I thought that's something I really want to do.

Another participant described her first encounter with a nurse practitioner in the NICU.

I didn't know who she was. I didn't know what the role of an NNP was.

She came to write orders: she was going to do an LP. I didn't understand why she was writing the orders for my patient. I didn't understand because

she was a nurse. I didn't quite get how we were supposed to work together, but she was nice. She was very willing to teach and overlook my newness and not knowing what she was. I've gotten to know her since and she loves to teach. She loves to teach the residents, the parents, and other nurses. She does want to teach really. That was my first experience with the nurse practitioner.

### **Deciding to Stay in the NICU**

Deciding to stay in the NICU was necessary to the decision-making process. While the decision to stay in the NICU was sometimes independent of the recognition of the NNP role, this decision was vital to the decision-making process. Without this decision, there would be no reason to spend the time, effort, and money to obtain a master's degree as an NNP.

Liking the NICU was a condition necessary to making the decision to stay in the NICU. The participants expressed a love for the NICU and a desire to make a lifetime career in the NICU. The decision to stay in the NICU is a commitment, some would say a calling. NICUs tend to be in population dense areas. The role of NNP is even more restrictive in that all NICUs do not employ NNPs. The term cul-de-sac has been used to describe the NNP role (Smith & Hall, 2003). Rasmussen and colleagues (2005) found the lack of upward mobility limited NICU nurses' interest in the role (Rasmussen et al., 2005). Therefore a decision to stay in the NICU is essential to making the decision to become an

NNP. One participant described her decision to stay in the NICU after discovering that she really did not want to work in another area.

I realized I didn't want to leave the NICU. I learned this when I moved...and I was looking for an NICU job and it was really hard to find one. Then I realized I didn't want to apply for another job because that wasn't my niche and it wasn't what I loved. So I think at that point I opened up to the possibility. I don't want to leave the NICU.

Actions for this step included gaining professional experience through leadership and expanded nursing roles within the NICU. Experience in the NICU is a prerequisite to entering a graduate program to prepare for the NNP role and some think it is the strength behind the success of the NNP program (Cusson et al., 2008; Reynolds & Bricker, 2007; Smith & Hall, 2003).

The participants reported that as they gained in experience and expertise in the NICU they took on more responsibility. Progressing to expanded nursing roles within the NICU provided the opportunity to learn new skills and to view themselves in leadership roles. They expressed pride in their accomplishments in this aspect of NICU nursing. This was an important step in gaining the confidence to consider entering an NNP program. The development of self-confidence through experience is congruent with Bandura's theory of self-efficacy (Bandura, 1977). One participant described gaining confidence while working as an NICU nurse.

As I got more comfortable in my role as a nurse, I started thinking about going back to school for my masters and wondered if this is really what I wanted to do for the next thirty years or should I go to the PNP program and build on that? It wasn't that much longer after that I decided to stick with the nursery.

One of the expanded roles available to NICU nurses is that of transport nurse. Neonatal transport requires critical thinking, knowledge, and clinical skills. The NNP role started as a transport role. Transport nurses practice with a certain amount of autonomy. They are usually the team leaders and are responsible for the well-being of the infant and the functioning of the team. The participants in this study recognized the value of the transport role. Training and experience gained in this role promotes confidence in the ability to become an NNP. One participant discussed the opportunity to develop critical thinking and advanced skills through the transport role.

It took me a couple of years to really decide that is what I wanted to do.

Then my career as a staff nurse advanced. I became, I got on the transport team and we did a higher level of skills. As a transport nurse I liked the high level of skills part, I liked the critical thinking. Being able to transport, being the one to make decisions. I think that is really what prepared me and made me think of being more than a transport nurse.

Another describes developing the confidence to decide to become an NNP through her work as a transport nurse.

The transport role kind of gives you that. That role, that lead role. And so I thought I could handle the situations at transport and referring hospitals. I kind of do that then. Now when I'm at work, I kind of think if I were that person what would I do? Does it correlate with school? I think whether I would come up with the same thing they did.

### **Deciding to Become a Neonatal Nurse Practitioner**

Participants expressed a desire to develop in their career as they learned more and were able to do more in the NICU. They listed clinical skills, knowledge, critical thinking, and autonomy as important considerations. These characteristics are consistent with those found in studies that looked at characteristics of advanced practice nurses (Callaghan, 2008; Jones, 2005; Mantzoukas & Watkinson, 2006; Nurses, 2010; Waugaman & Lu, 1999). The goal to move forward was a personal goal for these participants. The participants expressed a desire for knowledge, autonomy, and wanting to make a difference. As one put it,

I love to learn and want to know the whys of the NICU. And understanding them myself so I thought that a good way to do that and have a different role and continue to grow was to become a nurse practitioner and continue caring for babies the best I can.

Another described the desire for autonomy

The autonomy. The autonomy you have although you are still a nurse. I like the fact that you have the experience of being a nurse and you know

what things you would like the NNP or MD to do when you have a concern and what you would like to see done better.

And another participant described the desire to make a difference as, “Everything I’ve done has really been about NICU learning and my ability to help my patients.”

The participants in this study chose the NNP role to meet these personal goals. When they were asked if they had considered other options before deciding to become an NNP, many said yes. The roles considered tended to be clinically oriented rather than a role in management or education. Participants considered roles such as medical doctors or nurse practitioners who practiced in other fields. One nurse described how she considered the role of a CRNA before choosing that of an NNP.

After I was a nurse I decided that I wanted to be a CRNA, until I worked with practitioners. Yeah, that kind of influenced me. You know. I thought that I would work for a few years and then go into anesthesia but after working with a few of the practitioners, I decided, you know, that wasn’t for me. This is something that I love and I knew I would enjoy it.

Another participant described changing from a family nurse practitioner program to a program to become an NNP.

I had actually started the family nurse practitioner program last year...I found it very interesting but I could not really feel myself doing that. I like the fact that other roles have hours that are set, their holiday schedule is



probably better. I guess I could not see myself working with adults or working in that kind of environment. I found myself wishing it were a baby when I was examining a 45-year-old man or a woman.

Participants sought advice on how to best meet these personal goals. Influence, encouragement, and the ability to develop a support system were important considerations in their choice of career options. The ability to interact with people within the society of the NICU and to see oneself in alternate roles are tenets of grounded theory and are important conditions and strategies for this decision.

**Influence and encouragement.** The participants reported being influenced by the NNPs they encountered more often than by others. The majority of the participants reported that positive impressions and interactions with the NNPs they worked with were the catalyst for considering the role. The NNPs served as role models, provided information about the role, and acted as mentors to the participants as they entertained thoughts of becoming an NNP and entering an NNP program. Participants also reported observing nurses who were going to school to become NNPs and evaluating their progress and experiences. One participant spoke about the influence an NNP had on her decision to become an NNP.

I think when I graduate and once I can get comfortable in my new role that one of my objectives is to be to the nurses the way she [NNP] was to me. Seeing people ask questions, and the smartest person you seek out for

answers. I think that is a role for any nurse practitioner. When you get that education you can easily step into that role.

Another described watching a coworker become an NNP.

There is one nurse that when I first started working there, who was going to school to become a nurse practitioner. I loved working with her; she has such a love for the profession and was such a warm person. She showed me that that was a possibility.

Another participant described the encouragement she received from practitioners she worked with.

I started talking to the practitioners that I work with. I realize that a lot of them started off young. I didn't think I had enough experience to become an NNP. I wasn't really sure. And they said that they had come back to school after a couple of years' experience and you could just slip into the role, it was an easy transition. So I said, "I want something I can do with my life right now." And, that I wanted to do it while I am still young. I don't have a family so I can go through school without distractions.

In contrast, negative impressions of NNPs, though rare, were more likely to inhibit interaction and discourage consideration of the role. Negative impressions also influenced school selection for those who decided to pursue a career as an NNP. One participant still recalled her disappointment in an interaction with an NNP.

Earlier in my career when I approached the nurse practitioner who I knew was a nurse. I was very curious to understand why things were done, not just do them. I asked a question about bilirubin or phototherapy and how it was calculated or what it means and I did not get a straight answer. I kind of had a negative response. It was not very informative; it was more like “this is what I am doing because I am doing it.” I did try for a while to understand. This was me with 2 years experience. I was kind of discouraged because I felt kind of like this was me becoming a nurse practitioner, you would be more sympathetic and you would understand where nurses are coming from, and if there were a concern you would be more likely to address it. I think I was not really motivated at that point to be a nurse practitioner.

**Support.** Participants reported seeking and gathering support for the decision to become an NNP. Developing a support system was a problem-solving strategy used by the participants to anticipate and circumvent obstacles to the decision to become NNPs. For this study, support includes anything that promotes personal, professional, institutional, and financial stability while considering, applying, and attending graduate school.

Taking on a new role requires both the desire and confidence to commit to the time and cost of preparation for that role. Nurses who choose to become NNPs are required to have 2 years’ clinical experience in an NICU before being admitted to a graduate program. The participants in this study all continued to

work while going to school. Participants found support in their families, friends, NNPs, and the medical staff. Support was found in nurse coworkers, but some also reported resistance and discouragement of the role from fellow nurses.

Supervisors were mentioned as giving verbal support. When it came to more substantial support such as arranging a schedule, they were not as helpful. Securing a schedule that was conducive to attending class was a concern for the participants. One of the reasons given for looking for an online course was the ability to do school work around the work schedule. A participant describes her perception of her supervisor's attitude towards nurses who are going to school.

They were not very supportive of it. They refused to make any extra help if you're in school, "You work when we say to work." It is very up and down on the support.

Another participant described a similar impression.

In fact, I'm not doing the education role anymore because my boss wanted me to continue to work 60-hour weeks while I was going to school. And so I just laughed and said no I can't do that. But you know our hospital doesn't use them so they don't see a reason. As far as they're concerned it is not an advantage to have me go through school.

Financial support from institutions was minimal for the most part. In general tuition reimbursement was the only financial incentive offered and the amount varied from institution to institution. Financial support often came with contractual agreements that included working at the institution for a period of

time following graduation. This was something each person considered individually. One participant said she did not want to be limited by the tuition reimbursement requirements.

No, no, I don't plan on getting it. Tuition reimbursement. If you take it you have to pay it back if you don't stay for two years. I don't know if I am going to be here for two years. I don't want to have that stress on me.

Support of family and friends was important in arranging schedules and in feeling encouraged and empowered to return to school to become an NNP. The participants mentioned husbands, parents, and siblings in regard to childcare assistance. The decision to go to school was impacted by the family's needs and the ability to balance work, school, and family. One participant described the importance of family support.

First of all the support from my husband. He's amazing. We have kids. We have young kids and so I still had to work and I need him to be able to support me in that. That was one of the main things that allowed me to go back to finally do it. He gave me the support I need.

Neonatologists were spoken of as motivators and supporters within the workplace. Neonatologists wrote letters of recommendation and the participants valued their input. One participant reported that a neonatologist's suggestion that she become an NNP initiated consideration of the role. One participant described the support she received from the neonatologists at her hospital.

The nurse practitioner we have up there, and the neonatologist we have up there are very supportive. They looked into getting me funding to go back to school.

Another had a similar experience.

Our neonatologist has been really supportive. Our head of neonatology, of course he wrote my letter of recommendation. He and a couple of the neonatologists are trying to encourage the hospital to completely pay for my education. That's still up in the air, they haven't agreed to it quite yet. And then in general, administration, from the clinical aspect, they are very supportive but insist they don't have the money.

Another participant credited the neonatologist with the initial suggestion that she become an NNP.

The physicians on the floor had encouraged me. "Have you ever thought about being a nurse practitioner? Then you should do it." I thought, yeah, you are right. I ought to. I think this was a great opportunity. Because it made me think that I could go ahead and do it now.

Nurse coworkers were mentioned less often than NNPs as being supportive. Participants reported that nurses questioned why they would go to the trouble of becoming an NNP, a role of increased responsibility with little increase in monetary compensation. Participants mentioned nurse coworkers not understanding the desire to become an NNP.

You always get those people who say, “Why do you want to be a nurse practitioner when you could make as much money as a nurse if you work an extra day? Uh, the pressure, the responsibility: not worth it.

and

Lots of people offer opinions and advice. Most are positive but there are negative opinions out there as far as people not understanding why you’d want to continue your education or why you’d want to move on up to a role with a higher stress level or higher responsibilities. Yeah, always lots of advice (laughs).

**Visualization.** One premise of symbolic interactionism is that one can visualize oneself in other roles. Participants were asked about this and reported that they could see themselves in the role. Participants reported taking a broader interest in their patients and looking at trends, participating more in daily patient rounds, and trying to think through the decisions made by the medical team. Bandura calls this visualization of oneself in the position of others vicarious experience (Bandura, 1977). Participants described seeing themselves in the NNP role.

I saw myself in the role and I thought I saw some different ideas in the role. I’m fascinated with deliveries, and I am excited that nurse practitioners now are so accustomed to going to it. I think of myself as having a role in making the calls and everything. I think it’s a cool kind of

thing but I just have to know the information, to know the babies, to know enough to make the calls.

and

I think I'm pretty vocal during rounds here, and with the team always asking for your input and what you think? I just said oh, let me tell them what I think and you know if I get more education then I would know what to do even better. Yeah, but I could definitely picture myself in that role.

### **Applying to Graduate School**

Enrollment in graduate school is the follow through step. Selecting, completing the application, and enrolling in graduate school demonstrate the completion of the decision-making process. A number of considerations affect the completion of this process. Selection was influenced most by interactions with NNPs. Follow through and timing of enrollment were dependent on finances, addressing family needs, and completing prerequisites. The effect of proposed DNP program was equivocal, perhaps because the decision is still in flux.

**School selection.** Participants reported gathering information from the Internet and evaluating local programs. They asked NNPs about the programs they attended and asked for advice. They also observed NNPs at work and NNP students as they progressed in their studies. The participants expressed a goal to be good at the role when they finished. They also did not want to be overstressed by trying to manage school, work, and home and maintain a family at the same time. One participant described an influential NNP as a mentor.



As far as our neonatal nurse practitioners go, one of them was very influential in the decision-making process for me to go on to school. She was my preceptor when I was in nursing school and she, at the time, was in NNP school. I kind of just watched her and watched how she was able to improve her skills and her knowledge once she completed her NNP education. She's been kind of a mentor to me.

Another told of both a practitioner and a coworker who became NNPs as influencing her decision to become an NNP.

The nurse practitioner who worked there was a fantastic influence. I think she would be one of the main reasons I chose to go into it. Actually also, the mentor I had when I started up there, ended up going to school to become an NNP.

**Finances.** Finances were a consideration. Participants continued to work while in school and reported little financial support from their institutions other than tuition reimbursement.

**Family.** Family needs were listed most often as being a deciding factor. Although other relatives were mentioned, children were especially important in considering returning to school. The desire for work-life-school balance was mentioned as an important consideration. Watching NNP students handle school and life was mentioned as an influence on the selection of NNP programs. One participant described waiting until her husband finish his degree before starting school.

I like school. I enjoy learning. I always wanted to take that next step. My husband was finishing his degree. So it didn't seem like I should to school until he finished his degree. That was done this past May. So now I could go back to school. I felt like it was a great time to go.

Another described having to arrange childcare in order to go to school.

It is something I talked to my husband really closely about, would he? It is definitely not going to be easy. Would he support me? He definitely said he would support me. My sister said she would help with childcare. I had to know.

Another postponed going to school until a family illness had resolved.

I had initially been accepted two years ago ... my mom and everything. I had to wait and I had to reapply this year when everything was better for me to start the program and be successful.

### **Prerequisites**

Participants were asked about preparations for school. Completing a BSN program and taking statistics were mentioned most frequently. Other actions included obtaining letters of recommendation and completing the application and enrollment process. One participant reported giving up her education position to return to the bedside in order to minimize her time commitment at work. One moved to the area the school was in. Participants described having to obtain prerequisites in order to apply to an NNP program.

I have been out of school too long and I had to retake a class in statistics and I just had to get everything ready. And then I applied to a couple of programs and then I had to reapply before I started.

Another said she had to obtain a bachelors degree before she could apply.

Probably about 8 years ago I decided I wanted to advance my education and get my bachelors. And it took about 4 more years until I actually got the nerve to do it. And I completed my bachelors in April this year at...when I finished my education, I applied to grad school.

### **Doctorate of Nursing Practice**

Participants were also asked about the DNP program. A doctorate in nursing has been proposed for entry into practice as a nurse practitioner. This is in line with other disciplines such as pharmacy and physical therapy. While the proposal has not been adopted for practitioners in neonatology, the suggestion has not gone away. With a current shortage of NNPs and concern for an aging NNP population, it makes sense to start considering the impact implementation of this proposal would have on NICUs.

The participants were asked if the proposed DNP as entry level for the role had an impact on their decision in any way. Their answers were equivocal. Some decided to go to school before the proposal moved forward. Some participants thought they might be interested in pursuing a doctorate in the future, but chose a master's degree program with the understanding that they would graduate before the doctorate for entry-level practice was mandated. One

participant described her efforts to complete school before the proposed date the DNP would have gone into effect had it been implemented.

I really kicked it up so that I could get my bachelors in time because I knew that 2015 or whatever was looming and I just did not feel like that was something, at least at this point, something that I was willing to take on. I had been going to school for 4 years. And at least plan on 2½ for the master's and I do know I'm getting older and I don't want to be in school forever.

Another suggests that the proposed DNP program has stimulated enrolment in school by those who desire to be grandfathered in without the doctoral degree.

There are people on the floors going into nurse practitioner programs. There are more now than there've ever been before. So I guess the scare of the DNP by 2015, nobody wants to get stuck in that. So they're all going to school now. While the master's is still available.

### **Validation**

The thematic diagram was sent to 6 participants via email for review and feedback. Initially, two participants responded. While both agreed that the diagram was consistent with their experience, one questioned the "buddy" strategy that was originally included in the diagram. The participant reported speaking with others about going back to school at the same time, but did not find anyone who wanted to enter a program at that time. The diagram was

revised to exclude “buddy” as a strategy and then sent to a seventh participant who agreed with that the findings reflected her experiences.

### **Conclusion**

The decision-making process described by NNP students occurred within the milieu of the NICU. Interactions with coworkers including neonatologists, staff nurses, and managers were overall supportive. The key influence in the decision-making process were the NNPs employed there. Gaining respect as a clinician, presenting a positive outlook, interacting in a positive manner, and serving as a mentor are important factors in promoting the decision-making process.

## CHAPTER V

### CONCLUSIONS, DISCUSSION, AND SUGGESTIONS FOR FURTHER RESEARCH

This qualitative study illustrates the experiences of 11 NNP students as they decided to become neonatal nurse practitioners (NNPs) and describes the process used to decide to return to school to become NNPs. Student NNPs were asked to participate as they had firsthand experience in this process. The purpose of the study was to determine issues that affect the decision-making process.

There is currently an NNP shortage, an aging population of NNPs, and an increased need for NNPs due to improved survival of premature and sick infants. Residents have traditionally provided coverage for patients in the NICU. Recent reductions have been made in the workload and hours of residents in order to improve their learning experience. Neonatal nurse practitioners are being asked to fill the gap left by these reductions.

Enrollment in NNP programs has not increased to meet the need for a larger pool of qualified NNPs. Understanding the decision-making process used by nurses who decide and enroll in NNP programs can be utilized by managers, educators, and practicing NNPs to support nurses as they consider career development opportunities, including advancement to NNP.

## Career Decision Model

A model was developed to illustrate the decision-making process in career advancement and is shown in figure 3. Information gained through interviews with NNP students who had recently made the decision to become NNPs was used in constructing this model.

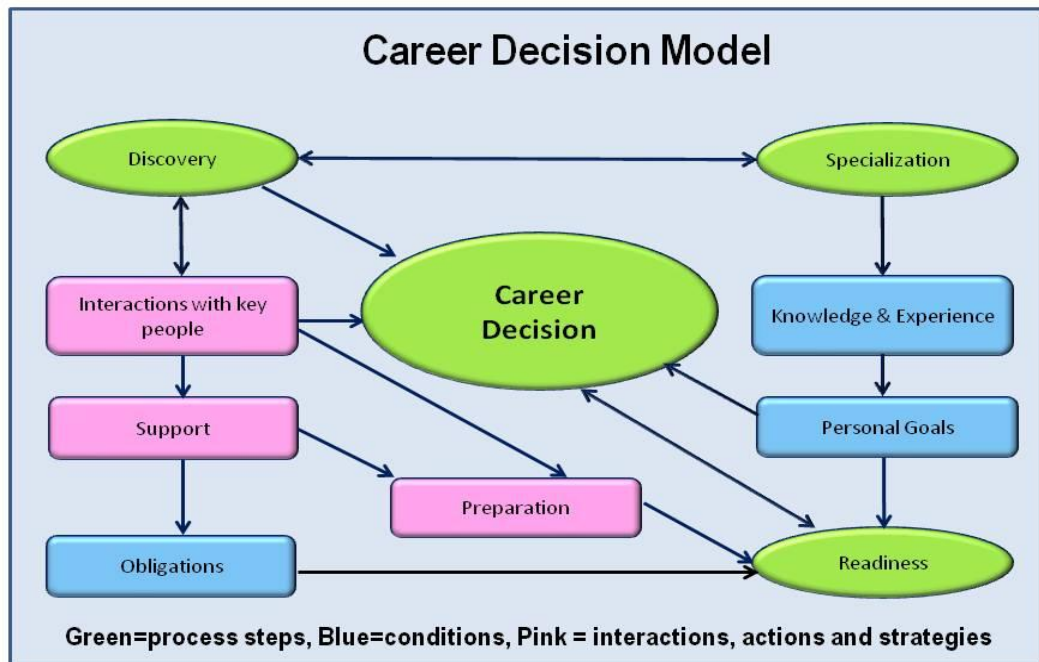


Figure 3. Career Decision Model

### Discovery

The first step in the process for career choice or career advancement is to discover what options are available. Possible career choices may be portrayed in media such as television or movies or described in educational or recreational print material. Observations and interactions with people who are in these roles

can also be the means of discovery. Discovery of potential career options can be made prior to initial career choice or can prompt changes in career field or in career trajectory. Options for career advancement might not be apparent until working in a field that employs people in specialized roles.

For the participants in this study, the discovery of the NNP role was a necessary condition for the decision to become an NNP to take place. Participants in this study discovered the role while working as nurses in an NICU that employed NNPs. Work as a nurse in the NICU is also a prerequisite to enroll in educational programs to become NNPs. Some think this experience contributes to the success of the NNP role (Cusson et al., 2008; Hall & Wilkinson, 2005; Reynolds & Bricker, 2007; Smith & Hall, 2011).

Interactions and observations with NNPs were important in discovering and becoming interested in the NNP role. The participants reported that NNPs served as role models and sources of information. Participants also reported being influenced by NNP students. Seeing a fellow staff nurse go through a program and develop the knowledge and skills and learning how he or she had managed work-life balance while working and going to school provided information that affected the decision-making process. This is consistent with the assumptions of grounded theory in that the participants were able to interact through verbal and nonverbal communication. Some participants reported becoming friends with NNPs and others reported NNPs as mentors, which are



also consistent with grounded theory assumptions in that adaptation occurs through interactions with others.

In the model of career advancement, the discovery theme affects specialization in that nurses who become interested in the NNP role must choose to stay in the field of neonatology in order to pursue that interest. The arrow also show a relationship between specialization and discovery, as some of the participants first chose neonatology and discovered the NNP role later as NNPs were added to the team or in changing jobs and then encountering NNPs. Discovery is also affected by interactions and relationships with key people. All but one of the participants had positive encounters with NNPs. The one participant who related a negative encounter did not initially consider the role of NNP because of that encounter. This negative case strengthens the argument that NNPs have a major impact on the decision to choose career advancement to the NNP role.

### **Specialization**

Like other healthcare professions, nurses become specialized in specific areas. Specialization implies increased knowledge and experience in the field of interest. Knowledge of the field would imply awareness of possible career opportunities in the specialty. The flip side of this is that knowing career possibilities might direct one to focus on a specialty as a step toward achieving a desired position. Knowledge and experience form a good basis for advancement in any given field.

Participants reported that they liked working in the NICU. Some of the participants had taken a position in the NICU with the intent of transferring to another unit in the future but found they liked the NICU. Placing their career focus on the field of neonatology promoted seeking learning opportunities and increased responsibilities in the NICU arena. Many participants reported practicing in leadership and expanded nursing roles within the NICU. Functioning in expanded roles, in particular the transport role, provided participants with the confidence that they would be successful as NNPs. This is consistent with grounded theory in that these participants were able to develop an identity within the society of the NICU.

Whether before or after discovering the role of the NNP, participants in this study decided to place their career focus on the field of neonatology. Without this decision, there would be no reason to spend the time, effort, and money to obtain a master's degree as an NNP.

### **Career Decision**

As individuals gain experience and knowledge and move forward in their chosen field, they are often motivated to evaluate personal goals and career options for the best fit. Determining to seek an advanced position in the field of focus and to act on that decision is an important step in the process of career development.

Career decision is the central category or theme of the model and is depicted by a slightly larger and darker circle near the center. The choice is

supported by the discovery of possible roles, the development of personal goals, and readiness. Price (2008) calls these personal, situational, and organizational factors. Personal factors include the motivation to achieve a role at a higher level. Situational factors include knowledge of the existence of the role and readiness refers to one's personal circumstances and having the qualifications required by the role.

Participants in the study were motivated by personal goals to become NNPs. They expressed a desire for knowledge, autonomy, and wanting to make a difference. After weighing other options the participants chose to become NNPs. The participants reported that they were able to see themselves in this role, which is consistent with the grounded theory assumption that individuals are able to visualize themselves in other roles. The desire for knowledge, autonomy, and wanting to make a difference has been reported by other authors in reference to NNPs and healthcare workers seeking advanced education (Mantzoukas & Watkinson, 2006; Newton, Cabot, Wilson, & Gallagher, 2011; Waugaman & Lu, 1999; Williamson, Webb, Abelson-Mitchell, & Cooper, 2006).

### **Readiness**

Advanced career options require preparation to meet qualifications for the position. For some careers extensive experience may be required. Some positions require specialized training programs in addition to experience. Other positions require additional educational preparation. Readiness to obtain the training and education is dependent on the availability of the program, financial

resources, and obligations to work and family. Readiness to advance to a chosen position requires obtaining the appropriate qualifications.

Advanced nursing roles generally require education in order to qualify for the role. Enrolling in graduate school is the follow through step in preparing for the NNP position. Selecting, applying, and enrolling in a graduate school demonstrate determination in the decision-making process. A number of conditions affect the timing of this step. Family obligations were reported most often. Rasmussen et al. (2005) reported that one reason NICU nurses were not interested in pursuing the NNP role was because of family obligations. Needs of other family members, particularly children, were considered before enrolling in school. Finances were also a consideration. Although participants were not asked direct questions about finances, this was a major concern among participants of the pilot project completed on the same subject. Participants in this study continued to work while in school and reported little financial support from their institutions other than tuition reimbursement.

**Problem-solving strategies.** By developing a support system, participants were able to gain information, secure mentors, and manage obligations. All participants reported developing a support system that enabled them to work through the barriers and become ready to enroll in graduate school, which in turn readied them for the NNP role.

Discovering problem-solving strategies is one goal of grounded theory methodology. Participants developed support groups as a strategy to meet

personal obligations and to be able to attend graduate school. Support groups were developed through the problem-solving process in order to overcome barriers to returning to school. Family members were asked to help with child care, NNPs were secured as mentors, supervisors were queried about institutional support and support for preferential scheduling, and information on graduate schools was obtained prior to applying for graduate school.

The primary influence in choice of schools was information obtained from NNPs. Some participants went to school with friends. Online programs were sought by participants in this study to accommodate the participant's schedule. All participants in this study continued to work while they were in school. Once enrolled, students developed support groups among fellow students.

### **Discussion**

A number of interesting premises surfaced during the interview and analysis process. Some ideas that have emerged include:

- The NICU functions as a social system.
- Developing a support system is a strategy used in the decision-making process.
- NNPs play a key in the decision-making process as role models and mentors.
- Developing confidence occurs through experience.
- The proposed DNP program did not have an overall influence on the decision-making process of the participants.

- Lack of institutional support was perceived by nurses considering NNP role.

### **The NICU as a Social System**

The participants in this study did not know about the NNP role until they worked in an NICU and in particular one that employed NNPs. Only 4 of the 11 participants reported having NICU exposure before hiring into an NICU position. One of these had worked as a unit secretary while enrolled in an undergraduate nursing program, while the others became familiar with the NICU during school through internships or externships.

Neonatology is a very specialized area of medicine. In the workplace, the NICU functions as a society. NICU nurses seldom float to other floors and nurses in other disciplines seldom work in the NICU due to the specialized training required to care for these infants. High acuity and frequent emergent events require physicians, nurses, respiratory therapists, NNPs, and other NICU personnel to work closely together. Interactions occur among the people who work there, and social behavior and expectations are determined by the people who work in the NICU. Hall (2005) mentions this in reference to the Ashington experience. The concentration of care in time and place and the intensity of teamwork resulting in mutual trust and respect that occurs in an NICU contributed to the success of the NNP service (Hall & Wilkinson, 2005).

The participants reported their first experiences with an NNP were in an NICU that employed NNPs and these experiences were mostly positive. In the

view of social interactionism, adaptation to the social world occurs through social interactions (Bielkiewicz, 2002; Charon, 2010; Strauss, 1997). Exposure to both the NICU and advanced nursing roles during undergraduate studies might encourage nurses to consider work in the NICU. Knowing about the NICU and being aware of advanced career opportunities in the NICU might steer more nurses into the nursery and increase the pool of nurses with the characteristics needed to become successful NNPs. Showing NNPs in practice in public media might be another way to increase awareness of the role (Bellflower & Carter, 2006; Cusson et al., 2008).

### **Developing a Support System**

Building a support system was a strategy reported by all the participants. All participants developed a support system that met their individual needs. The ability to development a support system surrounded the decision to become an NNP and act on that decision. Family and friends provided emotional support, encouragement, and childcare. Neonatologists provided encouragement, letters of recommendation, and worked with administration to obtain financial and clinical support. Coworkers provided a sounding board as well as support. Neonatal nurse practitioners were mentioned most often as part of the support system. Becoming friends with NNPs is one way of socializing into the role. Securing NNPs as mentors provided reassurance of success. One participant even suggested that choosing who to ask for opinions was a part of the support system. Perhaps this represented confirmation rather than true advice.

The ones that did want to offer an opinion without being asked were the ones with the negative things to say. One particular nurse practitioner said, "Why do you want to do that? You could work as a staff nurse and work a couple of extra days and make the same money without all the extra responsibility and headaches." This was a person who I did not really ask for their advice. I think that particular person is a negative person anyway. Kind of bitter. The people I picked out to ask only had positive things to say.

Participants mentioned going to school before having children, delaying school until children were older, or gathering promises of help with childcare from family members. Gaining the promise of support from family members was important in building a support system, especially when children were involved.

Classmates are included in support group members. Some of the participants talked about going to school together while others developed close alliances with someone who has recently been through a program.

Neonatologists are generally considered supportive. The promise to provide letters of recommendation conveyed encouragement and support. One neonatologist was credited with the suggestion that first started a participant thinking about the role. One neonatologist asked administration to help with funding. One offered to pay for the participant's education in exchange for a promise to work in the NICU for a period of time. Neonatologists also offered support by promoting clinical contracts between the hospital and universities to



help participants arrange practice sites for the clinical components of their program.

Although participants reported support from coworkers, more negative feedback was reported from staff nurses than from family, physicians, or NNPs. Staff nurses were more likely to urge the participants to continue as a staff nurse or to become a different type of practitioner. Lack of significant financial compensation for the increased responsibility was the argument against becoming an NNP and is consistent with Rasmussen and colleagues' (2005) study on why NICU nurses are not interested in the role. Two participants reported keeping their enrollment in an NNP program secret from their coworkers.

I keep it a secret that I'm in school. Because the opinions I get from people that know me is "no you can't leave the bedside." That kind of makes me feel like I am a good candidate for it. The fact that my peers think I am good at the bedside. The fact that my colleagues don't want me to leave the bedside is kind of a hint that I will do well.

and

No one's really given me their opinion. We have kept quiet about it. Between me and the other girl, we didn't really tell anyone. I only told the nurse practitioners that went to the school I am going to. Until I get a feel for it. Of course the head of neonatology knew. He wrote my letter of

recommendation. I wanted to wait until I had applied and been accepted before I told people.

### **NNPs as Role Models and Mentors**

Observations and interactions with NNPs were a major influence in the decision to become NNPs. Interactions occurred at every level of the process. The NNPs served as role models, sources of information on the role, and as friends and mentors to the participants. They influenced the decision to become an NNP as well as which schools were considered by the participants. Practicing NNPs have a responsibility to put forward a positive role model and to encourage nurses to consider NNP as a career goal. Recruiting nurses from within the NICU into a role and mentoring them as they complete graduate school and orient to the role as well has been used successfully by one institution to ensure that NNPs were available to meet the needs of their NICU (Evanochko, 2011). Including mentoring in NNP programs and developing mentorship programs in the workplace might be one way to promote this aspect of the NNP role.

### **Developing Confidence**

The participants wanted to be successful in the NNP role. Role experimentation through expanded nursing roles occurred prior to deciding to apply to school. Developing the confidence to apply to graduate school was done through experience at the bedside and in expanded roles. Acknowledgment and appreciation for clinical expertise or skill was seen as a sign that the participant would be successful.

The role of transport nurse was mentioned most often as a practice arena where the participant could develop leadership skills, critical decision-making skills, and expertise in performing clinical procedures. This skill set is important in the NNP role, and the ability to perform these skills provided the confidence to make the decision to become an NNP and to apply to graduate school. Plunkett et al. (2010), calls this self-efficacy, which is developed through personal success, social interaction, and identification with role models. This is consistent with Bandura's theory of self-efficacy, which is important in a person's belief that a specific goal can be achieved. The belief develops as one accomplishes skills and shares experiences with others (Bandura, 1977).

### **Impact of the DNP Proposal**

The proposed DNP program had an equivocal influence on the decision to become an NNP as participants considered it optional for them. Some were interested in the DNP role as a future goal. Others said they would not have gone to school if the only option was a doctorate. The timing of returning to school before the proposal could move forward was mentioned by some of the participants.

### **Institutional Support**

Institutional support seldom went beyond verbal encouragement and tuition reimbursement. Financial support tended to be limited to tuition reimbursement, although one participant mentioned getting a paid day off each week to attend school and to study. Another participant mentioned getting credit

for school on the yearly evaluation, which possibly affected the yearly wage increase. The participants expressed appreciation for the assistance they did get.

A Scottish study found discrepancies between continuing professional development and institutional actions. While institutions have a responsibility for encouraging professional development, they do not fully support higher education but are more likely to focus on the work at hand and meeting mandated educational requirements. The study found that work schedules, anxiety, the learning climate, and support of learning were found to present barriers to individuals desiring professional development. Individuals have to overcome these barriers with personal attributes such as motivation and a positive outlook. Munro (2008) calls this the charity paradigm. The charity paradigm requires individuals to contribute personal resources to the organizations while the organization relies on outside donations to pay for or subsidize learning. There is little investment in individuals either in terms of funding or time for learning and instead education is posed as an individual's responsibility. They also found that advanced roles did not necessarily receive financial compensation, creating uncertainty as to the benefit of pursuing a higher degree (Munro, 2008). Munro's study seems to mirror the experience of participants in this study.

Recruiting and retaining NNPs is an expensive and time-consuming process. Currently there are estimated to be 300 to 500 posted positions for NNPs (J. Lincous, personal communication, November 30, 2012; T. Mattis,

personal communication, November 29, 2012). Positions are sometimes vacant for 6 to 18 months (Cusson et al., 2008). Costs of recruiting include advertising, exhibiting at conferences, costs for travel and expenses of the interviewee, and the cost of the interviewer's time. Additional costs are involved if a recruiting service is used, which can be as much as 30-35% of the yearly salary for the new hire; as much as 30,000 to 40,000 dollars (S. Fassino, personal communication, February 24, 2013). Once the participant is hired, there are costs for relocation and orientation. Orientation is considered nonproductive time. If the newly hired NNP is experienced this may only require a few weeks. However, if the newly hired NNP has recently graduated, orientation can take weeks to months to develop proficiency as an NNP. Suggestions that recruiting into a role from within the institution and mentoring nurses through that role as well as providing financial support has been used by one institution to ensure that NNPs were available to meet the needs of the NICU (Evanochko, 2011). A cost-benefit study of the costs of educating nurses who work in the unit to recruiting NNPs from outside the institution can be useful information to encourage institutions to consider supporting education for nurses already working in the NICU as part of a plan for sustaining an NNP service.

An interesting phenomenon is that role transition begins when the participant starts school. Participants reported that they began to think of patient care in broader terms. They mentioned looking at trends, paying more attention during rounds, trying to answer questions during rounds, and applying what they

were learning in class to what they were seeing in the NICU. Using knowledge gained during the graduate program in their role as staff nurse benefits patient care. In addition many programs require students to do projects and present case studies and in-services that can benefit the institution. These activities can be seen as value added. In addition, retention of experienced nursing staff can be expected for the duration of the educational program. One participant describes changing nursing practice as she gains knowledge in the NNP program.

I find myself and I don't know if it's the fact that I have started graduate school and it's the way I think is a little bit different. When I have a patient now I tend to look for trends more, sugar trends or wondering if we are following electrolytes. I wonder if it is a different way I looked at it. Before I started in the program I looked at the feeds for the day, the results for the day. Now I find myself looking back on my own to see if there is an improvement or not an improvement so I can report that better to the physician or the nurse practitioner.

Retention and job satisfaction among practicing NNPs is important, as NNPs are role models for NICU nurses. Observation is an important aspect of gathering information about the role. NNPs that are stressed, tired, and overworked do not provide incentives for nurses to become NNPs. In a survey on job satisfaction among NICU nurses that included NNPs, a number of suggestions were made to promote job satisfaction. These included the

development of collaborative relationships and team building, improved education, and changes in work routine, as well as improving the pay scale (McDonald, Rubarth, & Miers, 2012). NNP workloads and schedules should be evaluated critically to ensure that the work is reasonable.

### **Study Limitations**

This is a small study of NNP students who are attending online programs at two major universities. While responses are consistent with the literature and with social interaction theory, it is important to consider whether there are age or regional differences in the interest of nurses in becoming NNPs. NNP students in traditional classroom settings might offer different perspectives than students who specifically sought online programs.

### **Suggestions for Future Research**

This study describes the process used by NNP students in deciding to become NNPs while a staff nurse in the NICU. There are a number of research topics that might further support the recruitment and enrollment of NNP students.

These include:

- The impact of mentorship programs
- A cost-benefit analysis of institutional support
- Improving accessibility of educational programs
- Continued analysis of the NNP workforce

### **The Impact of Mentorship Programs on Enrollment**

NNPs were recognized as mentors by study participants. This aspect of the role should be included in NNP programs. A study on the introduction and impact of mentorship programs on interest in the NNP role among staff nurses would be beneficial.

### **A Cost-Benefit Analysis of Recruitment and Retention**

Study participants did not articulate seeking or receiving administrative support, and some felt the administration was oblivious to the value of the role. A study on the cost of recruiting an NNP might persuade administrators to change this attitude and be more receptive to provide stipends, accommodative scheduling, and clinical support to NICU nurses who are attending graduate school. Educating experienced NICU staff already employed in the NICU may be a cost effective strategy to ensure adequate NNP coverage in the NICU. Added value may be improved delivery of care at the bedside and sharing of knowledge with coworkers while attending NNP classes. Projects, case presentations, and research projects required during coursework may also benefit the hospital.

### **Efforts of Schools to Make Courses Accessible**

The need for NNPs continues to increase. Addressing the faculty shortage would be needed to increase the educational opportunities for NNPs.

Collaborative programs among universities might be used to facilitate the provision of NNP education, and simulation might help standardize clinical experience. Collaborative education would increase opportunities for nurses to



attend graduate education programs, and simulation would increase the opportunity to acquire the skills needed to function in the role (Cates & Wilson, 2011; LeFlore et al., 2011; Siewert et al., 2011).

A study of dental students in the UK found that a number of factors including personal concerns influenced students to enter graduate level education. As adult learners, students brought forward a wealth of experience, knowledge, and skills to the classroom as well as personal considerations such as family life, a job, and the desire for work-life balance. Overall the students felt more consideration should be given to prior experience and present concerns (Newton et al., 2011). Asking students what they expect in education should be considered in developing educational programs for adult learners.

The impact of the DNP proposal needs to be studied for efficacy as NNPs graduate from these programs. Studies on the availability of faculty, preceptors, and clinical practice sites as well as the impact on enrollment and research should be critically evaluated before instituting the DNP as an entry-level requirement. Financial compensation for advanced degrees should also be reviewed.

### **Continued Analysis of the NNP Workforce**

The state of the workforce must be monitored in order to anticipate the number of NNPs who must be educated in order to meet the needs of NICU patients. While a number of studies have been conducted to try to clarify the scope of practice, the venues of practice, and the number and distribution of

NNPs in the United States, the results are representative rather than conclusive. It is telling that in the 2011 NANN survey 70% of NNPs have second jobs. A better understanding of the NNP workforce is still needed to plan for the present and future needs. (Hampel, Procter, & Deuter, 2010).

### **Conclusion**

There is a shortage of qualified NNPs to meet current demands in NICUs across the country. The shortage is expected to worsen as more experienced NNPs retire if the number of qualified nurses entering graduate courses to become NNPs does not increase. There is also a concern that the DNP proposal will impact the number of nurses considering advanced practice.

The role of an NNP has low visibility outside of the NICU arena. Engaging undergraduate nursing students in a discussion of advanced practice opportunities might be an initial step in garnering interest in NICU practice and the NNP role. Nurses who decide to become NNPs tend to seek roles that provide autonomy. Recruiting this type of nurse into the NICU would prove advantageous in increasing the number of qualified nurses available to recruit into an NNP program. It is possible that informing these nurses of the existence of the role while in undergraduate nursing courses would pique their interest and encourage them to look for a position in an NICU following graduation.

The NNP role is long-standing and important in providing clinical coverage in NICUs across the nation. The role is not highly visible and is not threatening to physicians. NNPs are supported by the AAP. Physicians tend to view NNPs as

replacements or substitutes for residents while NNPs see themselves as obtaining personal goals (Williamson et al., 2006).

While many think career development revolves around money, this did not appear to be the main motivator for these participants. The NNP students in this study were interested in knowledge, autonomy, and making a difference in the lives of the patients they were caring for. One participant described her journey as a personal goal.

It is more of a personal goal for me. I have always wanted to get my masters and I would rather get it in something I am interested in as opposed to just getting an M.S.N. or something. That doesn't appeal. It is more of a personal goal than just making more money.

Currently NNPs are recruited from available NICU nurses. These nurses are goal oriented and seek positions that provide opportunities for autonomy and personal growth. Critical to the decision-making process are awareness of the role, observations and interactions with practicing NNPs, the decision to stay in the NICU, activities and strategies related to building a support system, finalizing the decision to become an NNP, and taking the next steps to apply to and enter a graduate program to become qualified to become an NNP.

Finding ways to recruit, encourage, and support nurses as they make this decision and work towards the goal of becoming an NNP is crucial. Practicing NNPs play a major role in the development of interest in the role. Neonatal nurse practitioners serve as role models, sources of information, and mentors.

Including education on how to do this effectively should be considered. Hospitals with a vested interest in employing NNPs should consider ways of recruiting and supporting interested nurses in this endeavor.

## REFERENCES

- American Academy of Pediatrics Committee on Fetus & Newborn. (2012). Levels of neonatal care. *Pediatrics*, 130(3), 587-597. doi: 10.1542/peds.2012-1999
- American Medical Association (AMA). (2009). Nurse practitioners. Retrieved from [http://api.ning.com/files/TFd2SeJkQVKB8Dfdb5lvPQoR1\\*17SLgILZG-s-11g4VpXNbrJ4Z4xgB\\*k2U08AEgeo6cTPZ78SK5u8rQwQTT4A\\*Arlbpoke7/AMA080424SOPNurseRevised1009.pdf](http://api.ning.com/files/TFd2SeJkQVKB8Dfdb5lvPQoR1*17SLgILZG-s-11g4VpXNbrJ4Z4xgB*k2U08AEgeo6cTPZ78SK5u8rQwQTT4A*Arlbpoke7/AMA080424SOPNurseRevised1009.pdf)
- Ashington Audit, G. (2004). Evaluating a nurse-led model for providing neonatal care. *J Adv Nurs*, 47(1), 39-48. doi: 10.1111/j.1365-2648.2004.03063.x
- Aubrey, W. R., & Yoxall, C. W. (2001). Evaluation of the role of the neonatal nurse practitioner in resuscitation of preterm infants at birth. *Arch Dis Child Fetal Neonatal Ed*, 85(2), F96-99.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychol Rev*, 84(2), 191-215.
- Beal, J. A., Maguire, D., & Carr, R. (1996). Neonatal nurse practitioners: Identity as advanced practice nurses. *J Obstet Gynecol Neonatal Nurs*, 25(5), 401-406.
- Bellflower, B., & Carter, M. A. (2006). Primer on the practice doctorate for neonatal nurse practitioners. *Adv Neonatal Care*, 6(6), 323-332. doi: 10.1016/j.adnc.2006.08.001

- Bellini, S. (2012). State of NNP education programs 2012. *Adv Neonatal Care*, 12(6), 366-368. doi: 10.1097/ANC.0b013e31827610c1
- Bielkiewicz, G. (2002). Theories from the sociologic sciences. In M. McEwen & E. M. Wills (Eds.), *Theoretical basis for nursing* (pp. 229-249). Philadelphia: Lippincott, Williams & Wilkins.
- Bissinger, R. L., Allred, C. A., Arford, P. H., & Bellig, L. L. (1997). A cost-effectiveness analysis of neonatal nurse practitioners. *Nurs Econ*, 15(2), 92-99.
- Callaghan, L. (2008). Advanced nursing practice: An idea whose time has come. *J Clin Nurs*, 17(2), 205-213. doi: 10.1111/j.1365-2702.2006.01881.x
- Carzoli, R. P., Martinez-Cruz, M., Cuevas, L. L., Murphy, S., & Chiu, T. (1994). Comparison of neonatal nurse practitioners, physician assistants, and residents in the neonatal intensive care unit. *Arch Pediatr Adolesc Med*, 148(12), 1271-1276.
- Cates, L. A., & Wilson, D. (2011). Acquisition and maintenance of competencies through simulation for neonatal nurse practitioners: Beyond the basics. *Adv Neonatal Care*, 11(5), 321-327. doi: 10.1097/ANC.0b013e31822a34a0
- Chan, L. C., & Hey, E. (2006). Can all neonatal resuscitation be managed by nurse practitioners? *Arch Dis Child Fetal Neonatal Ed*, 91(1), F52-55. doi: 10.1136/adc.2004.069013

- Charmaz, K. (2006). Coding in grounded theory. In K. Charmaz (Ed.), *Constructing grounded theory* (pp. 42-71). Los Angeles: Sage.
- Charon, J. M. (2010). Symbolic interactionism as a perspective. *Symbolic Interactionism: An introduction, an interpretation, an integration* (10th ed., pp. 27-41). Boston: Prentice Hall.
- Common Program Requirements. (2010). Retrieved from <http://acgme-2010standards.org>
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research* (3rd ed.): Thousand Oaks, CA: Sage.
- Cusson, R. M., Buus-Frank, M. E., Flanagan, V. A., Miller, S., Zukowsky, K., & Rasmussen, L. (2008). A survey of the current neonatal nurse practitioner workforce. *J Perinatol*, *28*(12), 830-836. doi: 10.1038/jp.2008.106
- Cusson, R. M., & Strange, S. N. (2008). Neonatal nurse practitioner role transition: The process of reattaining expert status. *J Perinat Neonatal Nurs*, *22*(4), 329-337. doi: 10.1097/01.JPN.0000341365.60693.39
- Educational Standards for Neonatal Nurse Practitioner Programs. (2009). National Association of Neonatal Nurses. Retrieved from [http://www.nann.org/pdf/09educational\\_prep.pdf](http://www.nann.org/pdf/09educational_prep.pdf).
- Evanochko, C. (2011). "Growing your own"... Creating a neonatal nurse practitioner team. *Neonatal Netw*, *30*(5), 289. doi: 10.1891/0730-0832.30.5.289

- Freed, G. L., Dunham, K. M., Moran, L. M., Spera, L., on behalf of The Research Advisory Committee of the American Board of Pediatrics. (2012). Resident work hour changes in children's hospitals: Impact on staffing patterns and workforce needs. *Pediatrics*, *130*(4), 700-704. doi: 10.1542/peds.2012-1131
- Furlong, E., & Smith, R. (2005). Advanced nursing practice: Policy, education and role development. *J Clin Nurs*, *14*(9), 1059-1066. doi: 10.1111/j.1365-2702.2005.01220.x
- Gardner, A., Hase, S., Gardner, G., Dunn, S. V., & Carryer, J. (2008). From competence to capability: A study of nurse practitioners in clinical practice. *J Clin Nurs*, *17*(2), 250-258. doi: 10.1111/j.1365-2702.2006.01880.x
- Geiss, D. M., & Cavaliere, T. A. (2003). Neonatal nurse practitioners provide quality, cost-effective care. *Pediatr Ann*, *32*(9), 577-583.
- Glaser, B. G. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New Brunswick, NJ: Aldine Transaction.
- Glaser, B. G. (2012). Sorting memos. In B. G. Glaser, *Stop, write: Writing grounded theory* (pp. 31-56). Mill Valley, CA: Sociology Press.
- Hall, D., & Wilkinson, A. R. (2005). Quality of care by neonatal nurse practitioners: A review of the Ashington experiment. *Arch Dis Child Fetal Neonatal Ed*, *90*(3), F195-200. doi: 10.1136/adc.2004.055996



- Hampel, S., Procter, N., & Deuter, K. (2010). A model of succession planning for mental health nurse practitioners. *Int J Ment Health Nurs*, 19(4), 278-286. doi: 10.1111/j.1447-0349.2010.00668.x
- Hoffman, J. (2009). Results of the NANNP membership survey. *NANN Central*, 25(3), 2.
- Honeyfield, M. E. (2009). Neonatal nurse practitioners: Past, present, and future. *Adv Neonatal Care*, 9(3), 125-128. doi: 10.1097/ANC.0b013e3181a8369f
- Johnson, P. J. (2008). The DNP\* storm. *Neonatal Netw*, 27(5), 297-298.
- Jones, M. L. (2005). Role development and effective practice in specialist and advanced practice roles in acute hospital settings: Systematic review and meta-synthesis. *J Adv Nurs*, 49(2), 191-209. doi: 10.1111/j.1365-2648.2004.03279.x
- Juretschke, L. J. (2003). New standards for resident duty hours and the potential impact on the neonatal nurse practitioner role. *Adv Neonatal Care*, 3(4), 159-161.
- Karlowicz, M. G., & McMurray, J. L. (2000). Comparison of neonatal nurse practitioners' and pediatric residents' care of extremely low-birth-weight infants. *Arch Pediatr Adolesc Med*, 154(11), 1123-1126.
- Kelle, U. (2005). "Emergence" vs. "forcing" of imperical data? A crucial problem of "grounded theory" reconsidered. 6. Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/467>

- Lee, T. W., Skelton, R. E., & Skene, C. (2001). Routine neonatal examination: Effectiveness of trainee paediatrician compared with advanced neonatal nurse practitioner. *Arch Dis Child Fetal Neonatal Ed*, 85(2), F100-104.
- LeFlore, J., Thomas, P. E., Zielke, M. A., Buus-Frank, M. E., McFadden, B. E., & Sansoucie, D. A. (2011). Educating neonatal nurse practitioners in the 21st century. *J Perinat Neonatal Nurs*, 25(2), 200-205. doi: 10.1097/JPN.0b013e318218137a
- Mantzoukas, S., & Watkinson, S. (2006). Review of advanced nursing practice: The international literature and developing the generic features. *Journal of Clinical Nursing*, 16, 28-37.
- McDonald, K., Rubarth, L. B., & Miers, L. J. (2012). Job satisfaction of neonatal intensive care nurses. *Adv Neonatal Care*, 12(4), E1-8. doi: 10.1097/ANC.0b013e3182624eb1
- Mills, J., Bonner, A., & Francis, K. (2006). Adopting a constructivist approach to grounded theory: Implications for research design. *Int J Nurs Pract*, 12(1), 8-13. doi: 10.1111/j.1440-172X.2006.00543.x
- Mitchell-DiCenso, A., Guyatt, G., Marrin, M., Goeree, R., Willan, A., Southwell, D., . . . Baumann, A. (1996). A controlled trial of nurse practitioners in neonatal intensive care. *Pediatrics*, 98(6 Pt 1), 1143-1148.
- Munro, K. M. (2008). Continuing professional development and the charity paradigm: Interrelated individual, collective and organisational issues

about continuing professional development. *Nurse Educ Today*, 28(8), 953-961. doi: 10.1016/j.nedt.2008.05.015

Nagle, C. W., & Perlmutter, D. F. (2000). The evolution of the nurse practitioner role in the neonatal intensive care unit. *Am J Perinatol*, 17(5), 225-228. doi: 10.1055/s-2000-9991

National Certification Corporation (2012). About NCC. Retrieved from <http://www.nccwebsite.org/about-ncc.aspx>

Neonatal Nurse Practitioner (MSN). (2012). Retrieved from <http://nursing.umkc.edu/graduate-degrees/nnp.asp>

Neonatal Nurse Practitioner Program (NNP). (2012). Retrieved from <http://son.utmb.edu/programsofstudy/nnp/home.cfm>

Newton, P., Cabot, L., Wilson, N. H., & Gallagher, J. E. (2011). The graduate entry generation: A qualitative study exploring the factors influencing the career expectations and aspirations of a graduating cohort of graduate entry dental students in one London institution. *BMC Oral Health*, 11, 25. doi: 10.1186/1472-6831-11-25

Nicolson, P., Burr, J., & Powell, J. (2005). Becoming an advanced practitioner in neonatal nursing: A psycho-social study of the relationship between educational preparation and role development. *J Clin Nurs*, 14(6), 727-738. doi: 10.1111/j.1365-2702.2005.01137.x

- Nurses, I. C. o. (2010). Definition and characteristics of the role. Retrieved from <http://icn-apnetwork.org/>
- Plunkett, R. D., Iwasiw, C. L., & Kerr, M. (2010). The intention to pursue graduate studies in nursing: A look at BScN students' self-efficacy and value influences. *Int J Nurs Educ Scholarsh*, 7, Article23. doi: 10.2202/1548-923X.2031
- Pollack, L. D., Ratner, I. M., & Lund, G. C. (1998). United States neonatology practice survey: Personnel, practice, hospital, and neonatal intensive care unit characteristics. *Pediatrics*, 101(3 Pt 1), 398-405.
- Pressler, J. L., & Kenner, C. A. (2009). The NNP/DNP shortage: Transforming neonatal nurse practitioners into DNPs. *J Perinat Neonatal Nurs*, 23(3), 272-278. doi: 10.1097/JPN.0b013e3181b0bd79
- Price, S. (2009). Future directions for career choice research in nursing: A discussion paper. *Int J Nurs Stud*, 46(2), 268-276. doi: 10.1016/j.ijnurstu.2008.07.011
- Pulcini, J., Jelic, M., Gul, R., & Loke, A. Y. (2010). An international survey on advanced practice nursing education, practice, and regulation. *J Nurs Scholarsh*, 42(1), 31-39. doi: 10.1111/j.1547-5069.2009.01322.x
- Rasmussen, L. B., Vargo, L. E., Reavey, D. A., & Hunter, K. S. (2005). Pilot survey of NICU nurses' interest in the neonatal nurse practitioner role. *Adv Neonatal Care*, 5(1), 28-38. doi: 10.1016/j.adnc.2004.10.004

- Reynolds, E. W., & Bricker, J. T. (2007). Nonphysician clinicians in the neonatal intensive care unit: Meeting the needs of our smallest patients. *Pediatrics*, *119*(2), 361-369. doi: 10.1542/peds.2006-1084
- Samson, L. F. (2006). Perspectives on neonatal nursing: 1985-2005. *J Perinat Neonatal Nurs*, *20*(1), 19-26; quiz 27-28.
- Siewert, R. C., Rasmussen, L. B., Lofgren, M. A., & Clinton, P. (2011). Innovative university partnership meets neonatal nurse practitioner program need amid faculty shortage. *J Nurs Educ*, *50*(3), 159-162. doi: 10.3928/01484834-20101230-11
- Smith, S. L., & Hall, M. A. (2003). Developing a neonatal workforce: Role evolution and retention of advanced neonatal nurse practitioners. *Arch Dis Child Fetal Neonatal Ed*, *88*(5), F426-429.
- Smith, S. L., & Hall, M. A. (2011). Advanced neonatal nurse practitioners in the workforce: A review of the evidence to date. *Arch Dis Child Fetal Neonatal Ed*, *96*(2), F151-155. doi: 10.1136/adc.2009.168435
- Srivastava, N., Tucker, J. S., Draper, E. S., Milner, M., & Study, U. P. S. (2008). A literature review of principles, policies and practice in extended nursing roles relating to UK intensive care settings. *J Clin Nurs*, *17*(20), 2671-2680. doi: 10.1111/j.1365-2702.2008.02481.x
- Strauss, A. L. (1997). *Mirrors and masks: The search for identity*. New Brunswick, NJ: Transaction.

- Timoney, P., & Sansoucie, D. (2012). Neonatal nurse practitioner workforce survey executive summary. *Adv Neonatal Care, 12*(3), 176-178. doi: 10.1097/ANC.0b013e3182598d15
- Ulmer, C., Wolman, D. M., & Johns, M. M. E. (2008). Recourses to implement improvements for patient safety and resident training. In C. Ulmer (Ed.), *Resident duty hours: Enhancing sleep, supervision and safety* (pp. 295-328).
- Wallman, C., & Committee on the Fetus and Newborn. (2009). Advanced practice in neonatal nursing. *Pediatrics 123*, 1606-1607.
- Ward Platt, M. P., Brown, K., & Ashington Evaluation, G. (2004). Evaluation of advanced neonatal nurse practitioners: Confidential enquiry into the management of sentinel cases. *Arch Dis Child Fetal Neonatal Ed, 89*(3), F241-244.
- Waugaman, W. R., & Lu, J. (1999). From nurse to nurse anesthetist: The relationship of culture, race, and ethnicity to professional socialization and career commitment of advanced practice nurses. *J Transcult Nurs, 10*(3), 237-247.
- Weinstein, D. F. (2002). Duty hours for resident physicians--tough choices for teaching hospitals. *N Engl J Med, 347*(16), 1275-1278. doi: 10.1056/NEJMSb022065

- Williams, E. N., & Morrow, S. L. (2009). Achieving trustworthiness in qualitative research: A pan-paradigmatic perspective. *Psychother Res, 19*(4-5), 576-582. doi: 10.1080/10503300802702113
- Williamson, G. R., Webb, C., Abelson-Mitchell, N., & Cooper, S. (2006). Change on the horizon: issues and concerns of neophyte advanced healthcare practitioners. *J Clin Nurs, 15*(9), 1091-1098. doi: 10.1111/j.1365-2702.2005.01462.x
- Witt, C. L. (2009). Neonatal nurse practitioners: A value to nursing. *Adv Neonatal Care, 9*(3), 91-92. doi: 10.1097/ANC.0b013e3181a8375b
- Woods, L. (2006). Evaluating the clinical effectiveness of neonatal nurse practitioners: An exploratory study. *J Clin Nurs, 15*(1), 35-44. doi: 10.1111/j.1365-2702.2005.01246.x
- Zukowsky, K., Swan, B. A., Powell, M., Frisby, T., Lauver, L., West, M. M., & Marsella, A. (2011). Implementing an MSN nursing program at a distance through an urban-rural partnership. *Adv Neonatal Care, 11*(2), 114-118. doi: 10.1097/ANC.0b013e318210d075

APPENDIX A  
Interview Guide



## Guided Interview Questions

### Demographic Information

1. Participant #: \_\_\_\_\_
2. Gender: \_\_\_\_\_
3. Age: \_\_\_\_\_
4. Years RN: \_\_\_\_\_
5. Years NICU experience: \_\_\_\_\_

### Interview Questions

1. Tell me about your background...
  - a. Where did you go to school?
  - b. What kind of work experience did you have?
  - c. How did you get interested in working in an NICU?
2. Tell me about deciding to become an NNP...
  - a. When did you become aware of the NNP role?
  - b. What or who influenced your decision to become an NNP?
  - c. Were there other roles you considered?
  - d. How did you see yourself in the role of an NNP?
  - e. Did you seek advice? Did others offer it?
  - f. What kind of encouragement did you receive?
  - g. What kind of support did you receive?
3. Tell me about entering school...

- a. How long was it from the time you made your decision to become an NNP until you entered a program?
- b. Did anything influence your decision as to when to go to school?

APPENDIX B

Faculty Letter from University of Missouri-Kansas City



September 9, 2009

Melinda Colleen Brand RN, MSN, NNP-BC  
Doctoral Student, College of Nursing  
Texas Woman's University  
Institute of Health Sciences-Houston Center  
6700 Fannin Street  
Houston, TX 77030

Dear Ms. Brand:

On behalf of the University of Missouri Kansas City, I am pleased to support the research project titled "What is the process NICU nurses follow to decide to become Neonatal Nurse Practitioners". I understand the research project is a qualitative study that includes voluntary and confidential interviews of Neonatal Nurse Practitioner students. UMKC is committed to supporting nursing research. Melinda Colleen Brand, a doctoral student at Texas Woman's University, has permission to invite Neonatal Nurse Practitioner Students at UMKC to participate in this pilot study once IRB approval is granted from TWU.

Sincerely,

A handwritten signature in black ink that reads "Lynn Rasmussen". The signature is written in a cursive style.

Lynn Rasmussen Ph.D., RN, NNP-BC  
Program Director  
Cooperative Neonatal Nurse Practitioner Program  
University of Missouri- Kansas City  
2464 Charlotte  
Kansas City MO 64108  
[rasmussenl@umkc.edu](mailto:rasmussenl@umkc.edu)

816-235-1704

APPENDIX C

Faculty Letter from University of Texas Medical Branch



The University of Texas Medical Branch at Galveston

School of Nursing

---

Melinda Colleen Brand RN, MSN, NNP-BC  
Doctoral Student, College of Nursing  
Texas Woman's University  
Institute of Health Sciences-Houston Center  
6700 Fannin Street  
Houston, TX 77030

Dear Ms. Brand,

On behalf of the University of Texas Medical Branch, School of Nursing, I am pleased to support the research project titled "Journey to Advanced Practice: Exploring the Process Used by Neonatal Nurse Practitioner Students in Choosing to Enter Graduate School". I understand the research project is a qualitative study that includes voluntary and confidential interviews of Neonatal Nurse Practitioner students. The University of Texas Medical Branch, School of Nursing is committed to supporting nursing research. Melinda Colleen Brand, a doctoral student at Texas Woman's University, has permission to invite Neonatal Nurse Practitioner Students at UTMB to participate in this pilot study once IRB approval is granted from Texas Woman's University and from UTMB.

Sincerely,

A handwritten signature in cursive script that reads "Debra Armentrout".

Dr. Deb Armentrout

Debra Armentrout, RN, NNP-BC, PhD  
Associate Professor  
NNP Track Administrator  
Office: 409-772-8226  
FAX: 409-772-3770  
E-mail: dcarment@utmb.edu  
School of Nursing  
3.626 Allied Health Sciences/Nursing Bldg  
301 University Boulevard  
Galveston, TX 77555-1029

APPENDIX D

Recruitment Email Message

To NNP students:

You are invited to participate in a research study to explore the decision-making process used by NNP students in deciding to become a neonatal nurse practitioner. The study will be conducted through personal interviews. The goal is to enroll approximately 20 NNP students. The maximum interview time will be 60 minutes. The initial interview will last approximately 40 minutes and some interview time may be needed to verify findings through a follow-up interview. Participation is voluntary and participants may withdraw at any time.

This study is being conducted to fulfill the dissertation requirements for the degree of Doctor of Philosophy in the graduate school of the Texas Woman's University School of Nursing. If you are interested in participating, please email or call Colleen Brand at [mbrand@twu.edu](mailto:mbrand@twu.edu) or 832-824-6250.

Thank you for your attention

Colleen Brand RN, MSN, NNP-BC



## APPENDIX E

### Assessment of Neonatal Nurse Practitioner Workforce in the United States

---

Assessment of Neonatal Nurse Practitioner Workforce in the United States

---

	Pollack* 1996	Cusson 2008	Hoffman 2008	Freed 2010	NANN 2011
Return/Number	420/675	271/372	342/844	457/650	617
Return	62.2%	72.8%	41%	77.1%	
M.S.N.		79%	80%		80%
DNP			2%		3%
PhD			4%		1%
DSN			0.9%		
Female	94.8%	95%	96%	96%	
Average Age		46			
Age 50-59 Years			44%		
Age 46-49 Years			33%		
Practice >25 Years				25%	
Practice >20 Years		9.6%			23%
Practice 16-20 Years		12.6%			17%
Practice 11-15 Years		29.1%			18%
Practice 6-10 Years		23.8%			15%
Practice <5 Years		24.9%		17%	27%
Perceived NNP Shortage		yes	yes	yes	yes
Employs NNPs	55.3%				
Plan to Increase	66%				
Community Hosp	52.9%	50%		54%	26%
Academic Hosp	46.3%	59%		37%	74%
NICU				96%	
NBN (Level I)				8%	3%
Level IIIC					37%
Level IIIB					59%
Level IIIA					27%
Level IIB					27%
Level IIA					17%

Geographic Concentration	California Colorado Florida Illinois North Carolina Pennsylvania Texas (32%)	Midwest South Mid-Atlantic  Population density >50,000		
States with <100 NNPs			31	
Full Time (35+ Hours/Week)			80%	86%
Part Time (<35 Hours/Week)			53%	14%
Second Job				70%
High Job Satisfaction				54%
Low Job Satisfaction				4%
Plan to Continue Hours			71%	
Plan to Reduce Hours			17%	
Patient Management Education	15.1%		98%	
Procedures	31.7%		95%	
Transport	12.2%		61%	
Maternal Consults	21.4%		69%	
Attends Deliveries			85%	
Research		<20%		

- Pollack's survey regarded neonatology practices rather than NNPs specifically.
- Freed's estimates of 80% of NNPs in full-time employment and 53% in part-time employment may be explained by NANNP's survey results that 70% of NNPs surveyed have second jobs.

APPENDIX F

IRB Letter from Texas Woman's University



**Office of Research**  
6700 Fannin Street  
Houston, TX 77030-2343  
713-794-2480 Fax 713-794-2488

October 17, 2011

Ms. Melinda Colleen Brand  
College of Nursing - S. Cesario Faculty Advisor  
6700 Fannin Street  
Houston, TX 77030

Dear Ms. Brand:

Re: *"Journey to Advanced Practice: Exploring the Process Used by Neonatal Nurse Practitioner Students in Choosing to Enter Graduate School"* (Protocol #: 16332)

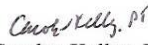
Your application to the IRB has been reviewed and approved.

This approval lasts for one (1) year. The study may not continue after the approval period without additional IRB review and approval for continuation. It is your responsibility to assure that this study is not conducted beyond the expiration date.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

The signed consent forms, as applicable, and final report must be filed with the Institutional Review Board in the Office of Research, IHS 10110, at the completion of the study.

Sincerely,

  
Carolyn Kelley, PT, DSc, NCS  
Institutional Review Board - Houston

APPENDIX G

IRB Letter from University of Texas Medical Branch

29-Sep-2011

**MEMORANDUM**

TO: Debra Armentrout, PhD/Melinda Brand, MSN  
Master's Program 1029

*Andrea McKee*

FROM: Richard Rupp, MD  
Director  
Institutional Review Board 0158

SUBJECT: IRB # 11-241 - **Final Approval** of Expedited Protocol.  
Journey to Advanced Practice: Exploring the Process Used by Neonatal Nurse Practitioner  
Students in Choosing to Enter Graduate School

Having met the requirements set forth by the Institutional Review Board by an expedited review process on **September 19, 2011**, your research project is now approved, effective **September 29, 2011**.

This project will require **annual** review and will expire on September 19, 2012. **Research that has not received approval for continuation by this date may not continue past midnight of the expiration date.**

The Research Consent form with the date of the IRB approval has been uploaded in InfoEd. Please use this consent form with the IRB approval date and make additional copies as they are needed. **In accordance with amendments to 21 CFR Parts 50, 312 and 812 effective 12/5/96, consent forms must be dated when consent is obtained.**

RR/ak

Document Uploaded: Research Consent Form

