

EVALUATION OF A COMMUNITY-BASED NURSE  
RESIDENCY PROGRAM

by

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## ABSTRACT

A secondary data analysis study was conducted to determine if newly graduated nurses benefitted from participation in a 1-year University Health System Consortium/American Association of Colleges of Nursing (UHC/AACN) nurse residency program in a community hospital. The sample included data collected from 121 newly graduated nurses who completed the Casey-Fink Graduate survey at the start of program, 6 months into the program, and again at the end of the year-long program. Data included in the study span 3 years from 2012 to 2015. Participation in a community-based nurse residency provided several benefits to newly graduated nurses. There were statistically significant improvements in participants' level of comfort with communication skills, leadership capacity, ability to organize and prioritize care, and technical skills performance. Most of the participants reported decreased levels of stress and high levels of perceived support. Study participants' professional satisfaction scores did not reach statistical significance but did improve slightly during the program. Turnover of participants in the study site program decreased from 37% prior to program implementation to less than 4% in 2014. Potential cost savings of the nurse residency program for the study site added up to approximately \$5 million. The results of this study contribute to the limited number of studies on this topic.

## DEDICATION

This dissertation is dedicated to my husband and son who continued to encourage me despite all the late nights and stacks of paper and books.

## LIST OF ABBREVIATIONS AND SYMBOLS

|            |  |
|------------|--|
| AACN       | American Association of Colleges of Nursing          |
| AORN       | Association of perioperative(sic.) Registered Nurses |
| ADN        | Associate Degree of Nursing                          |
| BSN        | Baccalaureate of Science in Nursing                  |
| Casey-Fink | The Casey-Fink Graduate Nurse survey                 |
| CHLA       | Children's Hospital of Los Angeles                   |
| CMS        | Center for Medicare and Medicaid Services            |
| CONPS      | Gerber's Control over Nursing Practice Survey        |
| GNRPE      | Graduate Nurse Residency Program Evaluation          |
| HRSA       | Health Resources and Services Administration         |
| IDREF      | Investigator Developed Residency Evaluation Form     |
| IOM        | Institute of Medicine                                |
| LOCF       | Last observation carried forward                     |
| MMSS       | McCloskey-Mueller Satisfaction Scale                 |
| NCSBN      | National Council of State Boards of Nursing          |
| NNLI       | Novice Nurse Leadership Institute                    |
| SCCM       | Society of Critical Care Medicine                    |
| UHC        | University Health System Consortium                  |
| WNRP       | Wisconsin Nurse Residency Program                    |

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## CHAPTER I

### INTRODUCTION TO THE STUDY

Making the transition into the clinical setting has historically been a difficult process for newly graduated nurses. Approximately 87.7% of newly graduated nurses begin their careers in the busy environment of a hospital (Kovner et al., 2007). Most hospitals have orientation programs to help nurses make the transition into the clinical work setting. Hospital orientation for newly graduated nurses usually lasts 1 week to 2 months, depending upon the clinical specialty (Edwards, Hawker, Carrier, & Rees, 2011). For example, orientation for newly graduated nurses employed in a surgical unit lasts 6 months (AORN Transition to Practice Ad Hoc Committee, 2015). Newly graduated nurses employed in medical-surgical units may get as little as 1 week of orientation (Anderson, Hair, & Toderro, 2012; Edwards et al., 2011).

Difficulties with the transition into the clinical work environment have been attributed to an education to practice gap, the growth of medical and nursing knowledge over the last century, and the nursing shortage (Casey, Fink, Krugman, & Prospt, 2004; Edwards et al., 2011; Goode, Lynn, McElroy, & Bednash, 2009; Kramer, 1974; Krsek & McElroy, 2009; Ulrich, Krozek, Early, Ashlock, Africa, & Carman, 2010). All of these factors lead to a complex, intimidating work environment for newly graduated nurses. According to a survey of nurse leaders, newly graduated nurses have difficulty with organizing and prioritizing patient care and recognizing significant clinical signs and symptoms (National Council of State Boards of Nursing [NCSBN],

2009). Nurse leaders also report that newly graduated nurses have difficulty managing the patient's changing condition and lack proficiency in technical skills (Del Bueno, 2005; NCSBN, 2009). Of newly graduated nurses, 40% report making medication errors and nearly 50% fail to recognize life-threatening complications, a consequence of their inexperience (Del Bueno, 2005). New nurses are acutely aware of these issues and experience high levels of anxiety related to fear of making an error which could harm a patient (Dracup & Morris, 2008). All of these factors contribute to higher turnover of newly graduated nurses with more than one-third of newly graduated nurses reported to leave or plan to leave their positions within a year of licensure (Benner, Sutphen, Leonard, & Day, 2010; NCSBN, 2009).

At the start of the new millennium nursing leaders realized that staffing shortages in the United States were a serious threat to the nation's health (Goode et al., 2009; NCSBN, 2009). Factors which contribute to the nursing shortage include a large group of aging baby boomers, shortage of qualified nursing faculty, and stressful work environments for nurses, especially new nurses (Krugman et al., 2006). Nursing leaders began to realize that traditional orientation programs were not effective in preventing newly graduated nurses from leaving their positions in the first year of employment. Two groups of nurse leaders led early efforts to address this problem, the Versant group and the University Health System Consortium (UHC) (Krugman et al., 2006; Ulrich et al., 2010). Both groups developed a new type of transition-to-practice program based on the residency model in other professional disciplines and referred to their programs as nurse residencies (Krugman et al., 2006; Ulrich et al., 2010). Nurse residencies are programs for newly graduated nurses which provide additional support, mentoring, and education during the first year of clinical practice. The focus of these programs is to help newly

graduated nurses make a successful transition into the clinical setting (Krugman et al., 2006; Goode et al., 2009).

### **Significance of the Study**

This study evaluated the outcomes of a nurse residency program that uses a recommended curricular model, the University Health System Consortium/American Association of Colleges of Nursing (UHC/AACN) curriculum in a community hospital setting. Few studies have been done on nurse residency programs in the community hospital setting. Nurse residency programs were originally created to improve retention rates of new nurses and help alleviate the nursing shortage (Goode, Lynn, McElroy, Bednash, & Murray, 2013; Ulrich et al., 2010). Nurse residency programs are considered a research priority by several prominent nursing and medical organizations because of the potential to improve patient care at the bedside (AACN, 2008; Carnegie Foundation study, 2010; Institute of Medicine, 2010; Joint Commission on Accreditation of Healthcare Organizations; NCSBN, 2009; National League for Nursing, 2005). Nurse residency programs improve patient care by providing the newly graduated nurse with an additional year of support, education, and training. For every 1% increase in nurse turnover in an organization, there is a corresponding \$300,000 loss (Pricewaterhouse-Coopers' Health Research Institute, 2012). Increased turnover of newly graduated nurses adds up to an average cost estimate of \$62,000 to \$88,000 per nurse (Poynton, Madden, Bowers, & Keefe, 2007). Trepanier, Early, Ulrich, and Cherry (2012) performed a cost-benefit analysis utilizing turnover rate and contract labor usage data collected from a multi-site healthcare corporation. The total cost benefit of the nursing residency program was estimated to be between \$8.1M and \$41.7M. According to the literature, nurse residency programs are a cost effective strategy that has the potential to improve patient care and retention of newly graduated nurses in the

organization and profession (Hillman & Foster, 2011; Krsek & McElroy, 2009; Trepanier et al., 2012). Additionally, it is important to study the effects of nurse residency programs in community hospitals because these organizations outnumber academic medical centers (>5, 000 versus 126) (American Hospital Association, 2010).

### **Background and History of Nurse Residency Programs**

For most of the 20th century, the nursing profession did not recognize the difficulties faced by nurses during the first year of clinical practice. Kramer (1974) was one of the first to examine these difficulties when she described the experiences of nurses during the first year of practice in her book *Reality Shock: Why Nurses Leave Nursing*. Soon after, healthcare organizations began to develop special orientation programs to help newly graduated nurses make the transition into the practice setting. In the 1980s-1990s, some early nurse residency programs began as a means of recruiting nurses to specialty areas such as psychiatry (Aldrich, 1988), critical care (Hartshorn, 1992), or geropalliative care (Lee, Coakley, Dahlin, & Ford, 2009). In 1999, healthcare organizations became interested in nurse residency programs as a possible solution to the nursing shortage (Kramer, Maguire, Halfer, & Schmalenberg, 2012).

Consistent research on the effectiveness of nurse residency programs began in 2002 when the Versant organization and University Health System Consortium (UHC) each developed nurse residency program models. The UHC/AACN model and the Versant residency model are the most prevalent nurse residency programs in the United States (Edwards et al., 2011; Rush, Adamack, Gordon, Lilly, & Janke, 2013). The Versant Corporation formed by Children's Hospital Los Angeles (CHLA) in May 2004 developed the Versant nurse residency program. UHC is a company based in the United States that started in 2000 as a collaborative effort between several university-affiliated medical centers. UHC provides several types of services



and resources to healthcare organizations including the UHC/AACN nurse residency curriculum product (Krsek & McElroy, 2009). Both organizations established online databases for the purpose of collecting data from nurse residency participants for research and program evaluation (Kowalski & Cross, 2010; Krugman et al., 2006). Other organizations with formal nurse residencies include the Novice Nurse Leadership Institute (NNLI) and the Wisconsin Nurse Residency Program (WNRP) (Bratt, 2009; Dyess & Parker, 2013). Even though all of these organizations investigate many of the same program outcomes, each organization uses different instruments to collect data (Bratt, 2009; Dyess & Parker, 2012; Goode et al., 2013; Ulrich et al., 2010).

The UHC/AACN nurse residency model was originally developed for baccalaureate nursing (BSN) graduates to increase the proportion of BSN prepared nurses working in their healthcare facilities (Krugman et al., 2006). The UHC/AACN committee members were looking for ways to meet the IOM's goal to have 80% of the United States nursing workforce be comprised of BSN prepared nurses (Krugman et al., 2006; IOM report, 1999). The realities of the nursing shortage and other factors such as a large increase in the elderly population and nurse faculty shortages support the need for nurses with associate degree preparation (Edwards et al., 2011; Rush et al., 2013). Baccalaureate nursing programs are developing Registered Nurse (RN) mobility programs as one possible solution to increasing the proportion of baccalaureate prepared nurses in the United States. More healthcare organizations are developing concurrent associate degree nurse residency programs. According to the AACN (2015), there are 679 RN mobility programs currently in existence in the United States. To accommodate the needs of associate degree nurses the UHC/AACN organization began threading leadership and scholarship content into the nurse residency curriculum because this content is not traditionally

included in most associate degree nurse programs (Goode et al., 2013). This trend is also occurring in organizations that use the UHC/AACN nurse residency model. The UHC/AACN nurse residency is the largest program in the United States (Edwards et al., 2011; Rush et al., 2013).

### **Theoretical/Conceptual Frameworks**

The UHC/AACN nurse residencies used Benner's novice to expert theory and the AACN nine *Essentials of Baccalaureate Education for Professional Practice* (2008) to formulate the six general goals of the program and in the framework of the UHC/AACN curriculum. Benner's five stages of expertise in clinical nursing include the novice, advanced beginner, competent, proficient, and expert levels (Benner, 1984). According to Benner's Novice to Expert theory, new nurses move from the advanced beginner stage to the competent stage during the first year of clinical practice (Benner, 1984). Six major UHC/AACN program goals were identified by Krugman and others (2006). One of the major goals of the UHC/AACN curriculum comes directly from Benner's novice to expert theory and states that UHC/AACN nurse residencies are designed to help new nurses progress from the advanced beginner stage to the competent stage by the end of the program (Krugman et al., 2006). In the competent stage, nurses demonstrate: (a) the ability to organize and prioritize patient care, (b) identify significant clinical signs and symptoms, (c) proficiency in technical skills, (d) increased responsibility and involvement (leadership capacity), and (e) a shift in focus to managing the patient's condition versus just accomplishing tasks (Benner, 1984). Nurse residents also begin to successfully formulate plans of care, another indication that they have moved beyond relying on scripted protocols or rules and made the transition to Benner's competent stage (Benner, 1984).

The AACN *Essentials of Baccalaureate Education for Professional Practice* (BSN Essentials) statements serve as an organizational framework and also undergird some of the goals of the UHC/AACN curriculum (AACN, 2008; Goode et al., 2013). The nine BSN essentials statements describe the essential knowledge and skills of a professional baccalaureate nurse. Three out of the six UHC/AACN program goals describe the essential knowledge and skills that professional baccalaureate nurses need including effective decision-making skills, clinical judgment, clinical leadership skills, and evidence-based practice. The nine BSN essentials listed in Table 1 are described in the following paragraph.

Table 1

*Essentials of Baccalaureate Education for Professional Nursing Practice (AACN, 2008)*

|      |   |
|------|---|
| I    | Liberal Education for Baccalaureate Generalist Nursing Practice                         |
| II   | Basic Organizational and Systems Leadership for Quality Care and Patient Safety         |
| III  | Scholarship for Evidence-Based Practice   |
| IV   | Information Management and Application of Patient Care Technology                       |
| V    | Health Care Policy, Finance, and Regulatory Environments                                |
| VI   | Interprofessional Communication and Collaboration for Improving Patient Health Outcomes |
| VII  | Clinical Prevention and Population Health   |
| VIII | Professionalism and Professional Values   |
| IX   | Baccalaureate Generalist Nursing Practice   |

Essential I states that nurses need a solid foundation in a liberal baccalaureate degree program for generalist nursing practice. Essential II states that nurses need knowledge and skills in leadership, quality improvement, and patient safety in order to provide high quality care. Essential III emphasizes the importance of scholarship in translating current evidence into clinical practice. Essential IV states that knowledge and skills in information management and technology are vital for providing high quality care. Essential V emphasizes the importance of healthcare policy, finance, and regulations to nursing practice. Essential VI highlights the importance of interprofessional communication and collaboration in providing quality care.

Essential VII emphasizes the importance of clinical prevention and population health in professional nursing practice. Essential VIII states that professionalism and the professional values of altruism, autonomy, human dignity, integrity, and social justice are part of the foundation of basic nursing. Essential IX states that generalist baccalaureate nurses should be prepared to care for patients, families, groups, and communities across the lifespan in all healthcare settings (Essential IX, AACN, 2008).

### **Conceptual Framework for Evaluation**

Benner's Novice to Expert Theory of Skill Acquisition (1984) is the primary theory undergirding the evaluative measures of the Casey-Fink survey. The Casey-Fink measures the five attributes that characterize Benner's competent stage of skill acquisition (1984). These attributes include support, patient safety, stress, communication/leadership, and professional satisfaction (Casey & Fink, 2004). The support factor examines the experience of the nurse resident with preceptors, other staff nurses, and nurse managers. Components of the support factor include providing encouragement and helpful feedback, positive role modeling, self-confidence building, and investing time helping the nurse resident learn the role of a professional nurse. The patient care factor can be broken down into ability to organize and prioritize care needs, successfully manage patient care responsibilities and workload, and complete patient care assignments within the expected time limit. The stress factor in the Casey-Fink survey is assessed by asking nurse residents about specific sources of stress such as finances, personal life, student loans, personal relationships, living situation, job performance, and child care issues.

The communication and leadership factors are assessed together because of the importance of effective communication to leadership in the clinical setting. The communication factor examines the comfort level of the nurse resident related to communicating with members

of the healthcare team, patients, and families of patients. Nurse to physician communication is also assessed in the technical skills assessment portion of the Casey-Fink. Leadership is closely associated with skilled communication, for example successfully delegating tasks to unlicensed personnel. Other aspects of leadership in the clinical setting include following through on job responsibilities and knowing how to deal with potentially complex situations such as a dying client. Other facets of the communication/leadership factor include feeling comfortable offering suggestions regarding the plan of care. The factor of professional satisfaction is determined by the nurse residents' level of satisfaction with their chosen nursing specialty, feeling excited and challenged by their work, and feeling supported by family/friends in their choice of profession.

### **Problem Statement**

During the first year of clinical practice newly graduated nurses experience high levels of anxiety, stress, and fear of doing harm (Casey et al., 2004). Casey et al. (2004) found that a difficult transition into practice was characterized by lack of confidence, deficiencies in critical thinking and clinical knowledge, and problematic relationships with preceptors and peers. In a difficult transition the nurse feels dependent on others but desires to function independently (Casey et al., 2004). Newly graduated nurses frequently describe feeling overwhelmed by the multiple demands of a complex healthcare environment and feeling intimidated by physicians and other nurses (Goode et al., 2009; Kramer, 1974; Ulrich et al., 2010). During the decade of 1990-2000 many newly graduated nurses did not survive the transition into clinical practice as evidenced by high turnover rates of up to 60% in some healthcare facilities (Bowles & Candela, 2005; Mills & Mullins, 2008; Orsini, 2005). The loss of newly graduated nurses intensified the nursing shortage and prompted nursing leaders to examine the causes behind new nurse attrition (Goode et al., 2009; Ulrich et al., 2010). Nurse residency programs are one possible solution to

help organizations retain newly graduated nurses in healthcare organizations and in the nursing profession. Establishment of best practice in nurse residency program components, structure, and delivery is still developing (Bratt & Felzer, 2011). It is critical that evidence-based strategies to enhance newly graduated nurses' transition into practice be implemented and evaluated.

### **The Purpose Statement**

The purpose of this secondary data analysis study was to determine if participation in a 1-year UHC/AACN nurse residency program for newly graduated nurses in a community hospital influenced outcomes in participants as measured by the Casey-Fink Graduate Nurse survey. Additionally, evaluation of the nurse residency program at the study site included retention statistics for newly graduated nurses participating and not participating in the nurse residency. The study also examined participation requirement as a condition of employment with the organization (mandatory versus voluntary) of newly graduated nurses.

### **Operational Definitions**

This section includes operational definitions that are important in this study. Nurse residency settings are most frequently described in the literature in terms of the type of hospital that houses the program. Nurse residency programs are housed in academic medical centers or community hospitals.

*Academic Medical Center.* The Association of American Medical Colleges (AAMC) (2006) defines an academic medical center as a “university-based” hospital that usually houses a medical school. The Association of Academic Health Centers definition is similar to the AAMC’s but is more specific and states that an academic medical center is usually affiliated with a teaching hospital (Dzau, 2013).

*Benchmark Organization.* The benchmark organization is defined as all of the nurse residency program sites other than the study site that are a part of the University Health System Consortium Nurse Residency Program.

*Burnout.* Burnout is described as “a state of physical, emotional, and mental exhaustion” in which the person’s resources have been used up, limiting their ability to recover (Schaufeli & Greenglass, 2001).

*Community Hospital.* The American Hospital Association defines a community hospital as any “nonfederal, short-term, general hospital” (Health Forum LLC, 2015). Punke (2008) defines a community hospital as one that has less than 550 beds and minimum teaching programs. The definition of a community hospital is further refined in Becker’s Hospital Review as a hospital that is locally governed, an important part of the local economy, and is usually the only acute care provider in the local community (Punke, 2008). The study site fits the definition of a community hospital as described in Becker’s Hospital Review. The study site is the second largest employer in the community it is located in, it is locally governed by a board of community leaders, and it is the sole provider of acute care for a region that spans seven counties.

*Newly Graduated Nurse.* A graduate of an accredited nursing program who has matriculated within a maximum time period of 6 months prior to employment as a registered nurse (Edwards et al., 2011; Goode et al., 2013; Krugman et al., 2006).

*Nurse Residency Program.* A program for newly graduated nurses which provides additional support and training for a longer time period than orientation, usually 12 months. Nurse residency programs are one type of transition to practice programs (Edwards et al., 2011; Krugman et al., 2006; Rush et al., 2013).

*Retention.* The number of newly graduated nurses remaining with the employing organization at the end of a defined time period, usually a year or longer. Retention is usually reported as a percentage figure (Edwards et al., 2011; Rush et al., 2013).

*The 2008 AACN Essentials of Baccalaureate Education for Professional Practice (BSN Essentials) Statements.* Nine statements which describe the professional behaviors and competencies expected of nurses that graduate from baccalaureate nursing programs accredited by the American Association of Colleges of Nursing (AACN, 2008). The AACN's nine baccalaureate essentials statements serve as a framework for baccalaureate nursing curricula and also serve as the framework for the UHC/AACN nurse residency curriculum (Goode et al., 2013; Krugman et al., 2006).

*Transition to Practice Programs.* Programs that provide support and training to newly graduated nurses (Edwards et al., 2011). Transition to practice is a term used for a broad category of programs that vary widely in length of duration and goals (Edwards et al., 2011; Rush et al., 2013). Examples of transition to practice programs include orientation/training programs, mentorships, internships, and nurse residency programs (Edwards et al., 2011).

*Turnover.* The number of newly graduated nurses that left the organization 12 months after the hire date times 100 divided by the total number of newly graduated nurses hired during the same 12-month time period (Y. Daidone, personal communication; Trepanier et al., 2012). Turnover is reported as a calculated percentage.

*University Health System Consortium (UHC).* A company which started out as a collaborative effort between several university-affiliated medical centers/teaching hospitals. In 2002 the University Health System Consortium collaborated with the AACN to produce the



UHC/AACN nurse residency curriculum product offered by UHC for purchase by any hospital interested in offering a nurse residency program (McElroy, 2013).

*Versant Corporation.* Started as a specialty nurse residency program in Children's Hospital of Los Angeles (CHLA). Versant expanded to other pediatric hospitals and then incorporated as Versant in 2004. Versant offers pediatric and general nurse residency curriculum products which are purchased by hospitals interested in starting a nurse residency program (Versant, 2010).

### **Summary**

The first chapter of this dissertation describes the proposed study including the background, significance, and history of nurse residency programs. The UHC/AACN nurse residency program in a community hospital is the focus of the proposed study. A description of the theoretical and conceptual framework of the UHC/AACN nurse residency is included to assist the reader in understanding the UHC/AACN program's goals and objectives for its participants. This section also includes a statement of the problem which describes why nurse residencies are needed. This research will make contributions to nursing theory research and practice. Studies that evaluate nurse residency programs provide valuable information to the practice world in program planning and educating future healthcare workers. Ultimately patient care and the profession of nursing is enhanced by supporting the transition of newly graduated nurses into professional clinical practice.

## CHAPTER II

### REVIEW OF LITERATURE

This section examines the nursing literature for the purpose of describing nurse residency programs including program implementation, setting, evaluation, and outcomes. The last part of this section also describes the use of secondary data analysis in research and examines issues of validity and reliability related to this type of research. Nurse residency programs are just one type of transition to practice program. Other transition to practice models vary according to duration, structure, or focus and in the literature are referred to by different labels such as mentorship, internship, extended orientation, or nurse residency (Anderson et al., 2012; Edwards et al., 2011; Rush et al., 2013). Some programs last less than a month and others are longer than a year. Structural variations in transition programs range from simple mentorships (basically a preceptorship model) to nurse residency programs that use a formal curriculum (Anderson et al.; Edwards et al., 2011; Rush et al., 2013). Nursing researchers have noted a lack of consensus on best practices in nurse residency program components and structure (Edwards et al., 2011; Rush et al., 2013).

Seventy-three studies were located using an online search engine and databases. Studies that met the criteria for inclusion in this literature review were studies on nurse residency programs that use a formal curriculum and last at least 6 to 12 months. Most studies included in this review use a quantitative research design. Many of the studies found in the literature

examined experiences of newly graduated nurses during the transition into clinical practice. Other studies described nurse residency program implementation. There were a limited number of nurse residency studies that reported on quantitative outcomes. Twenty-four studies met the criteria for inclusion in this review. Nine studies were from UHC/AACN nurse residencies, 2 studies came from the Versant program, and 13 studies investigated other nurse residencies. Most UHC/AACN studies examined nurse residencies in academic medical centers. Two UHC/AACN residencies are based in community hospitals but both studies had small sample sizes ( $n < 31$ ), limiting the generalizability of their findings (Holland & Moddeman, 2012; Maxwell, 2009). The data in Maxwell's study were also included in a larger study by Krugman et al. (2006). For clarity and organization the literature review will be divided into sections according to demographics, program components, outcomes, and the use of secondary data analysis in research.

### **Demographics of Nurse Residency Programs**

Not all of the studies included in the literature review reported the demographics of their study samples. In the demographic data reported by nurse residency programs most participants were Caucasian females (75-89%) between 25 to 26 years old with baccalaureate of science (BSN) degrees followed by African American females (5-10%), and 11% were male nurses (Altier & Krsek, 2006; Casey & Fink, 2011; Casey et al., 2004; Goode et al., 2013; Hillman & Foster, 2011; Holland & Moddeman, 2012; Krugman et al., 2006; Setter, Walker, Connelly, & Peterman, 2011; Williams, Goode, Krsek, Bednash, & Lynn, 2007). These percentages are similar to the demographic data reported by the Health Resources and Services administration (HRSA) (2013). According to HRSA (2013) Caucasian females comprised the largest group of registered nurses in the United States at 75.4%. Black/African American females (9.9%) were

the most represented minority group of registered nurses in the United States. Kowalksi and Cross (2010) reported the highest percentage of Asian American participants (16%) of all of the studies. Asian American females comprised 8.3% of registered nurses in the U.S. and most of the studies examined had the same proportion of Asian American participants. Other minority groups represented in the nursing profession of the U. S. include Hispanic/Latino (4.8%), American or Alaskan Indian (0.4%), and multiple-ethnic (1.3%) (HRSA, 2013). Two studies reported participants' grade point averages (GPA), approximately 47-53% had a GPA above 3.5 and 36-51% had a GPA between 3.00-3.49 (Altier & Krsek, 2006; Williams et al., 2007). Six studies reported the clinical units participants were employed in, 57.5% worked in medical-surgical units (Bratt & Felzer, 2011; Friday, Zoller, Hollerbach, Jones, & Knofczynski, 2015; Medas et al., 2015; Parker, Giles, Lantry & McMillan, 2014; Spector et al., 2015; Spence-Laschinger et al., 2016). Goode et al. (2013) did not report on demographics but stated that statistical analysis did not demonstrate any correlations or significant relationships between nurse residents' demographic characteristics and the program outcomes. The Versant nurse residencies and the SPRING internship program did not report ethnicity in their studies (Newhouse et al., 2007; Ulrich et al., 2010). Rural nurse residents were older ( $M = 33.4$ ,  $SD 9.2$ ,  $p < 0.001$ ), all were Caucasian females, and more likely to have an Associate Degree in Nursing (87.1%). Urban nurse residents were younger ( $M = 29.2$ ,  $SD 7.9$ ,  $p < 0.001$ ), more likely to hold a baccalaureate degree in nursing (51.9%), and be Caucasian female (Bratt et al., 2012).

### **Nurse Residency Program Design and Components**

The UHC/AACN nurse residency is a 12-month program that includes (a) a core curriculum, (b) participation in a general orientation, (c) a preceptor-guided clinical experience, (d) access to a resident facilitator with monthly face-to-face meetings, and (e) specific clinical

coursework unique to the nurse resident's practice site and specialty (Altier & Krsek, 2006; Casey et al., 2004; Goode et al., 2009; Goode et al., 2013; Hillman & Foster, 2011; Krugman et al., 2006; Setter et al., 2011; Williams et al., 2007). The 12-month UHC/AACN curriculum is divided into two phases, in phase one the focus of the program is to help newly graduated nurses make a successful transition into the clinical unit. Phase two of the UHC/AACN program focuses on the professional and scholarly development of the graduate nurse, participants develop an evidence based research project and learn clinical leadership skills. Nurse residents frequently expressed feelings of burnout or fatigue with classroom learning (Keller, Meekins, & Summers, 2006; Krugman et al., 2006). Dividing the nurse residency program into two phases gives the nurse residents a break from academia and allows them to focus on learning how to function in the clinical setting during the first 6 months of the nurse residency (Keller et al., 2006). Each nurse residency site develops its own criteria for selecting nurse residency participants. UHC leaders encourage hospitals purchasing the UHC/AACN program to make nurse residency participation an employment requirement for newly graduated nurses. Hospitals may qualify for funding from the Center for Medicare and Medicaid Services (CMS) if the nurse residency program is considered a requirement of employment (Association of American Medical Colleges, 2013; Goode et al., 2009). Cost has been identified as an important barrier to implementing nurse residency programs, especially in smaller community hospitals in rural areas (Krugman et al., 2006). Participation in nurse residency is an employment requirement for most of the UHC/AACN sites.

UHC/AACN authors noted that certain components of the nurse residency affect participant outcomes. For example, the importance of monthly small group meetings was demonstrated by Krugman and others (2006) when scores for nurse residents at one program site

were much lower than scores at the other five sites. The researchers discovered that the program site in question did not have monthly meetings. Monthly small group sessions provide essential support to nurse residents and are recommended by several nurse residency researchers (Casey et al., 2004; Dyess & Parker, 2012; Kowalski & Cross, 2010; Krugman et al., 2006). Determining what nurse residents find most beneficial in monthly small group meetings is essential so nurse educators can design effective nurse residency curricula (Kowalski & Cross, 2010). Effective support strategies commonly used in nurse residency programs include coaching sessions, debriefing, peer support groups, formal classes, computer simulations, clinical coach presentations, interdisciplinary patient care rounds, rehearsed phone calls, and tools such as the SBAR (situation, background, assessment, and recommendations) communication tool (Kramer et al., 2012). Innovative strategies not commonly used included sessions on constructive conflict resolution, conflict resolution workshops such as Crucial Conversations (Maxfield, Grenny, McMillan, Patterson, & Switzier, 2005), Feedback Workshops, and the Generation Pact feedback system (Kramer, et al, 2012). The Feedback Workshop is a program that includes discussions on concepts, forms, and sources of feedback, feedback principles, and mock feedback sessions for practice (Kramer, 2012). The Generation Pact feedback system is an agreement between the newly graduated nurses, the preceptors, and the clinical coaches to provide feedback to each other frequently in a constructive manner (Kramer, 2012).

Standardization of nurse residency program components is a frequent recommendation in the literature. The Commission on Collegiate Nursing Education (CCNE) developed a set of Standards for Accreditation of Entry-to-Practice Nurse Residency Programs (2015). The CCNE standards for nurse residency programs provides a model for program development which nurse residency administrators can use to ensure quality in their programs. Accreditation is voluntary

but recommended. Obtaining CCNE accreditation is a prestigious accomplishment akin to attaining magnet status as a hospital. The key benefit of nurse residency accreditation is standardization of recommended program components. Achieving CCNE accreditation demonstrates to newly graduated nurses and to other stakeholders (patients, physicians, community leaders, state and federal agencies) the healthcare organization's commitment to excellence. Development of the CCNE standards for nurse residency programs is an important step towards standardization of nurse residencies. Most programs use Benner's novice to expert model in the curricular design and goals but vary on additional supporting models and content. UHC and Versant both incorporate Benner's model into their curricula and goals (Goode et al., 2009; Krugman et al., 2006; Ulrich et al., 2010). UHC also uses the BSN essentials statements in their curricular design. Content in nurse residency programs should use evidence-based practice recommendations in order to support safe and effective clinical nursing practice. Nurse residency accreditation encourages standardization of program components and provides a way for hospitals to gauge the quality of their nurse residency.

Components of the Versant program include classes with case studies, structured clinical experiences lead by preceptors, mentoring along with debriefing sessions, clinical rotations, and competency validation (Ulrich et al., 2010). Nurse residency programs of 12 months duration are highly recommended to support nurse residents beyond the critical 6- to 9-month period when reality shock occurs (Bratt, 2009; Dyess & Parker, 2012; Goode et al., 2009; Hillman & Foster, 2011; Holland & Moddeman, 2012; Krugman et al., 2006).

Only one article in the literature described an actual control group study of a nurse residency program. The Social and Professional Reality Integration for Nurse Graduates (SPRING) program was developed in 2001 by Johns Hopkins Hospital, an early adopter of nurse

residency transition to practice programs (Newhouse, Hoffman, Suflita, & Hairston, 2007). Researchers used a quasi-experimental, posttest, control group survey design to evaluate the effects of a 12-month internship program on newly graduated nurses' transition into clinical practice (Newhouse et al., 2007). In addition to the standard orientation, the SPRING program provided newly graduate nurses with 10 seminars, group exercises, mentoring by educators and preceptors, and a dedicated nurse educator for each clinical unit (Newhouse et al., 2007).

SPRING program participants were separated into small groups according to unit or department. A part-time nurse educator was assigned to each small group to follow the participants in their unit orientation during the year-long program (Newhouse et al., 2007). Many of the program components of the SPRING internship are seen in the UHC/AACN program and other nurse residencies. The SPRING internship program was the only program in the literature to assign part-time nurse educators to each small group according to unit or department for the duration of the year-long program; this is one creative solution that hospitals could utilize to improve support of new nurses (Newhouse et al., 2007).

Other programs with similar components to the UHC/AACN residency program include the Wisconsin Nurse Residency Program (WNRP), and the Novice Nurse Leadership Institute (NNLI). The WNRP is a 1-year program that offers a structured preceptor training program, monthly educational sessions, and continued mentoring by clinical coaches. The WNRP program model uses the central themes of knowledge, skills, and professional behaviors with an emphasis on nursing actions and reflection on actions (Bratt & Felzer, 2011). Similar to UHC, WNRP sites each create their own participant selection criteria, some require participation in the nurse residency and others do not (Bratt, Baerholdt, & Pruszynski, 2012).



Nurse residency programs in community hospitals are growing in number. Nearly half of the UHC/AACN nurse residency sites are in community hospitals (UHC website, 2015), yet studies on nurse residency programs in community hospitals were minimal in comparison to studies on residency programs in academic health centers. Three studies on nurse residency programs in community hospitals were found in the literature; two of these studies were from the UHC/AACN nurse residency programs and the other study was from an independent nurse residency (Dyess & Parker, 2009; Holland & Moddeman, 2012; Maxwell, 2009).

The NNLI nurse residency study was the largest study done so far on a nurse residency in a community medical system ( $n = 109$ ; 13 hospitals with 200-500 beds each) (Dyess & Parker, 2012). Central components of the NNLI include nurse educator liaisons (similar to UHC/AACN's facilitators), participant-selected mentors, and content taught by a local university-based school of nursing (Dyess & Parker, 2012). The NNLI differed from the UHC/AACN design in that nurse residency participants met online each month to receive content taught by faculty at a local university. In contrast to the UHC/AACN, Versant, and WNRP residency programs, NNLI sites require all newly hired nurses with less than 12 months of experience (versus 6 months or less) to participate in the nurse residency program (Dyess & Parker, 2012). Further research to determine the most effective nurse residency components is one of the most frequent recommendations made by researchers in this area (Bratt & Felzer, 2011; Casey et al., 2004; Goode et al., 2009; Olson-Sitki, Wendler, & Forbes, 2012; Ulrich et al., 2010).

Holland and Moddeman (2012) evaluated how participation in a 12-month UHC/AACN nurse residency program influenced outcomes on the Casey-Fink survey in 26 newly graduated nurses employed in a community-based regional medical center. Repeated measures analysis of

variance (ANOVA) was used to analyze participants' responses on the Casey-Fink survey. The nurse residency participants reported increased confidence and comfort in their ability to communicate and provide leadership at the bedside ( $p < .001$ ) (Holland & Moddeman (2012). Nurse residency participants also reported increased confidence and comfort with organization and prioritization of patient care ( $p < .001$ ) (Holland & Moddeman, 2012). Holland and Moddeman (2012) observed significant changes in participants' perception of social support ( $p = .050$ ) and professional satisfaction ( $p = .037$ ), which deviated from the nonsignificant results noted on these outcomes in most UHC/AACN studies.

Similar to most of the UHC/AACN studies participants', Likert-type scores on professional satisfaction were high, ranging from 3.389 to 3.653 and declined slightly at the 6- and 12-month survey periods (Holland & Moddeman, 2012). Holland and Moddeman attributed the decline in participants' scores on professional satisfaction to the implementation of a new electronic health records system implemented in the hospital during the study period. Most UHC/AACN researchers have observed the same pattern in participants' scores on the professional satisfaction outcome and have attributed this phenomenon to the realities of the clinical work environment. Holland and Moddeman (2012) did not report participants' technical nursing skills or turnover and retention of newly graduated nurses in their article. A smaller study ( $N = 18$ ) of a UHC/AACN nurse residency in a community hospital reported a 100% retention rate at the end of the first year after implementing the program (Maxwell, 2009). Participants in Maxwell's study reported increased levels of comfort and confidence with their ability to communicate, lead at the bedside, organize, and prioritize patient care. The data analysis from Maxwell's study was reported in Goode et al. (2009).

There is a major gap in the research concerning the effect of program setting on nurse residency outcomes. Several researchers and national nursing organizations have called for further research into nurse residency programs to determine if these programs are effective in settings other than academic medical centers (AACN, 2008; Casey et al., 2004; Krugman et al., 2006; NCSBN, 20004; Williams et al., 2007). Further research into nurse residency program effectiveness in community hospitals is recommended so that the best components to use in this setting can be determined (Bratt et al., 2012). Nurse residencies of 12 months duration were recommended to support nurse residents' during the 6- to 9-month period of vulnerability noted in nurse residents' outcomes (Bratt, 2009; Dyess & Parker, 2012; Goode et al., 2009; Hillman & Foster, 2011; Holland & Moddeman, 2012; Krugman et al., 2006). Monthly small group meetings were an important support component for nurse residents (Goode et al., 2013; Krugman et al., 2006). Further studies of nurse residencies are needed in the area of program design, curricula, and components (Altier & Krsek, 2006). Studies on the best strategies to improve participation in these programs are recommended by Kowalski and Cross (2010).

### **Nurse Residency Program Outcomes**

In the literature, nurse residency program effectiveness has been demonstrated by measuring the influence of these programs on newly graduated nurses through surveys, observations, interviews, and other research tools. This section of the literature review examines the outcomes of the most relevant nurse residency studies. Goode and colleagues (2013) analyzed data from 31,000 nurses in 100 hospitals that participated in a UHC/AACN nurse residency. This cumulative study included data from published UHC/AACN studies in addition to many sites not published in the nurse residency literature. Data were collected from nurse

residency participants at months 1, 6, and 12 using the Casey-Fink Graduate Nurse Experience (Casey-Fink) instrument and the Graduate Nurse Residency Program Evaluation (GNRPE).

Most UHC/AACN studies and some other nurse residency programs reported significant increases in overall confidence and competence (total Casey-Fink;  $p < .001$ ), ability to organize and prioritize care ( $p < .001$ ), communicate effectively, and provide clinical leadership ( $p < .001$ ) (Goode et al., 2013; Holland & Moddeman, 2012; Krugman et al., 2006; Medas et al., 2015; Olson-Sitki, et al., 2012; Williams et al., 2007). Many UHC/AACN studies examined nurse residents' job satisfaction, stress levels, and perceptions of support during and after the nurse residency. The stress and support factors on the Casey-Fink did not achieve significance in some studies; however both scores did increase by the end of the residency (Goode et al., 2013; Kowalski & Cross, 2009; Olson-Sitki, et al., 2012).

Other studies reported significant increases in scores on the Casey-Fink support and stress factors (Krugman et al., 2006; Williams et al., 2007). Kowalski and Cross (2009) observed statistically significant decreases in nurse residents' stress levels on a different instrument, Pagana's Clinical Stress scale. Other authors have used qualitative designs to examine newly graduated nurses' experiences during the first year in clinical practice. High levels of stress are consistently reported by newly graduated nurses during the first year of practice (Spence-Laschinger et al., 2016; Parker et al., 2014; Phillips, Kenny, Esterman, & Smith, 2014). Further studies into nurse residents' personal and financial stress factors are recommended by Krugman and others to improve the transition into practice experience.

Olson-Sitki and colleagues (2012) found that communication/leadership scores on the Casey-Fink did not change significantly over the 12-month program; this finding may be due to a small sample size ( $n = 31$ ) ( $p$  value not reported). UHC/AACN nurse residents were initially less

confident communicating with physicians but gained confidence in their communication skills by the end of the residency (Casey et al., 2004; Holland & Moddeman; 2012; Williams et al., 2007). Bratt and Felzer (2011) used five instruments to evaluate outcomes of 468 nurse residents who participated in the WNRP residency ( $a = 0.87$  to  $0.95$ ). WNRP is a state-wide nurse residency with similarities in structure to the UHC/AACN design except for the instruments. WNRP nurse residents had significant increases in leadership and interpersonal relations/communication scores ( $p = .001$ ) (Bratt & Felzer). Studies using a pretest to posttest design had similar increases in the communication/leadership factors of the Casey-Fink ( $p = 0.022$ ) (Kowalski & Cross, 2010).

One study from the WRNP residencies examined outcomes of nurse residents in different program settings. Bratt and colleagues (2012) compared outcomes of 382 newly licensed nurses participating in an urban nurse residency program to 86 nurse residents participating in a rural-based nurse residency. Rural nurse residents had significantly higher job satisfaction scores and lower job stress compared to the urban nurse residents (Bratt et al., 2012).

Another study compared outcomes of newly graduated nurses participating in a nurse residency according to educational background. Thomson (2011) compared the outcomes of 42 baccalaureate (BSN) prepared nurse residents with 42 associate degree (ADN) nurse residents completing a UHC/AACN nurse residency. The ADN nurse residents had statistically significant higher levels of professional satisfaction and feelings of support than the BSN group (Thomson, 2011). Nurse preceptors and managers suggested in informal discussions with the researcher that ADN nurse residents were more comfortable with technical skills than the BSN nurse residents, a perception not supported by evidence (Thomson). There were no significant differences between the ADN and BSN group in nurse residents' perceptions of stress, ability to organize

and prioritize care, communicate, and provide leadership at the bedside (Thomson, 2011). Research into the effectiveness of nurse residency programs in populations with different demographic characteristics such as associate degree nurses, minorities, and others is recommended (Altier & Krsek, 2006; Casey et al., 2004; Krugman et al., 2006; Thomson, 2011; Williams et al., 2009).

The common element among all successful nurse residencies is support (Bratt, 2009; Dyess & Parker, 2012; Goode et al., 2013; Ulrich et al., 2010). According to the *Conservation of Resources* (COR) theory (Hobfoll, 1989), support can be defined as a “resource” that helps an individual cope with life’s demands and challenges. Hobfoll identified 74 different types of resources that can be separated into two categories, personal resources or environmental resources. Personal resources such as personality traits, values, and self-esteem are examples of internal resources that can influence how a person reacts to stressors. Social support provided by colleagues and the organization are examples of environmental resources that can help individuals cope with stressors encountered in the work setting (Halbesleben, 2006; Hobfoll, 1989).

The importance of support was noted by Krugman et al. (2006) when nurse residency participants at one site (labeled the *egrets*) scored the UHC/AACN nurse residency program much lower than any of the other sites. Krugman et al. discovered that the *egret’s* nurse residency site did not have monthly support meetings with nurse residents. Parker and colleagues (2014) determined that personal and professional support of new nurses was positively correlated with job and career satisfaction. The level and nature of support available to the new nurses was a key factor that impacted new graduate nurses’ transition into clinical practice (Parker et al., 2014). Spence-Laschinger et al. (2016) found that new nurse support (personal and professional)

was positively correlated with job and career satisfaction. Formal programs such as preceptorships and nurse residency programs provided the support necessary for newly graduated nurses to have successful transition experiences (Parker et al., 2014).

The Casey Fink survey measures the social support factor in nurse residency participants in the UHC/AACN programs. Newly graduated nurses often come into the clinical work environment with a mental image of nursing that soon changes by the sixth month of employment (Duchscher, 2008). The disruption of this mental image causes significant stress and frustration in the new nurse, a phenomenon known as reality shock (Duchscher, 2008; Kramer, 1974). Support provided by the nurse residency benefits new nurses during stressful periods in their first year of employment (Goode et al., 2013; Krugman et al., 2006; Williams et al., 2011).

Measurement of the social support factor in the literature has produced inconsistent results. In most studies, participants' perceptions of social support were not statistically significant. Nurse residency participants' scores were high initially and declined slightly when they were surveyed 6 months later and 1 year after starting the nurse residency. Goode et al. (2013) noted small changes in the support score from month 1 ( $T_1 = 3.28$ ) to month 6 ( $T_2 = 3.31$ ) to month 12 ( $T_3 = 3.30$ ) with a  $p = 0.61$  in the support category on the Casey-Fink survey. Other authors (Krugman et al., 2006) noted larger effects that were significant.

Olson-Sitki et al. (2012) found statistically significant results on CF9, one of the items that comprise the category of support on the Casey-Fink survey, support ( $p = .034$ ,  $n = 31$ ), increased from 3.29 at month 1 to 3.48 at month 12. Holland and Moddeman (2012) noted larger changes in the support scores from month 1 ( $T_1 = 3.48$ ) to month 6 ( $T_2 = 3.28$ ), support scores increased only slightly from months 6 to 12 month ( $T_3 = 3.30$ ). Kowalski and Cross found that the cumulative support score on the Casey-Fink survey increased slightly from 27.01 to 28.34,

this was a non-significant result ( $z = 1.28$ ,  $df = 11$ ,  $p = 0.115$ ), which may have been due to a small sample size ( $n = 37$  at pretest and  $n = 14$  at posttest).

Williams et al. (2007) examined results of the Casey-Fink survey given to the first 12 cohorts of the UHC/AACN nurse residency and noted that level of support went up only slightly over time. Williams et al. (2007) divided the 12 study sites into two equal groups (Alpha group and Beta group). The Beta group ( $n = 193$ ) had statistically significant differences ( $p \leq .05$ ) in perceived support from month 1 ( $T_1 = 3.23$ ) to month six ( $T_2 = 3.29$ ) to month 12 ( $T_3 = 3.33$ ), with the largest increase occurring between months 1 and 6. Perceived support scores in the Alpha group ( $n = 486$ ) were not statistically significant but did increase slightly from month 6 to month 12 (Williams et al., 2007).

The source of support made a difference as demonstrated when nurse residents ranked teamwork and relationships with coworkers in the top four reasons for staying with the current employer (Setter et al., 2011). Relationships with the nurse residency facilitators or coordinator were ranked as the least important in their decision to remain with the employing organization. Closer examination of the social support factor is needed to help researchers determine why there are inconsistent results. Additionally, further studies are recommended into the aspects of support that are most important for helping nurse residents make a successful transition into the clinical work setting (Setter et al., 2011).

The Versant nurse residency study by Ulrich and colleagues was the second largest study ( $n = 6,000$ ) in the literature. The Versant nurse residency authors (Ulrich et al., 2010) measured support as part of the Conditions for Work Effectiveness survey by comparing the support nurse residents perceived they have to the support they would like to have. Perceived (“have”) support changed little between measurements, at the end of the residency perceived support was 3.00, at



month 12 was 3.02, and again at month 24 was 3.05. Nurse residents' desired support was 3.89 at the end of the residency, at 12 months was 3.85, and at the 24-month measurement (Ulrich et al., 2010). Nurse residents' support scores indicate that they did not have the support they would like to have (Ulrich et al., 2010). The researchers did not report the significance level, reliability, or validity of the CWE survey outcomes. Ulrich and colleagues (2010) calculated Pearson correlation coefficients between the outcomes of the CWE survey and other surveys used in their study. The CWE was indirectly correlated with the Work Satisfaction survey (0.31,  $p = .0001$ ) and the total score on the Group Cohesion Total Score (0.37,  $p = .0001$ ). Comparisons between the Versant and UHC/AACN nurse residency programs are limited due to the use of different instruments, variations in outcomes measured by each, and variations in how data analyses are conducted.

Newhouse et al. (2007) examined sense of belonging instead of support. The Modified Hagerty-Patusky Sense of Belonging Instrument (SOBI-P,  $\alpha = 0.91-0.93$   $r = 0.84$ ; SOBI-A,  $\alpha = 0.63-0.76$   $r = 0.66$ ) was used to assess and compare SPRING participants' sense of belonging at between baseline, 6-months, and 12-months (Newhouse et al., 2007). Sense of belonging in the SPRING participants dropped at the 6-month mark and rebounded to high levels at 12 months. This pattern has been seen in UHC/AACN and Versant nurse residency outcomes in job satisfaction measurements and is thought to be due to reality shock, which occurs at 6 to 9 months during a new nurse's first year of practice (Goode et al., 2013; Newhouse et al., 2007; Ulrich et al., 2010). Further studies comparing outcomes between newly graduated nurses and experienced nurses are recommended by Casey et al. (2004) to help nurse administrators determine gaps in preparation and how to improve support systems for new graduate nurses.

UHC researchers noted that nurse residents' professional satisfaction scores decreased between months 1 (3.54) and 6 (3.43) of the nurse residency then stabilized between months 6 and 12 (3.39), this decline is also thought to be due to reality shock ( $F = 10.19; p < .001$ ) Goode et al, 2013). Two authors noted that nurse residents' job satisfaction scores did not change significantly with the exception of two subscales on the MMSS (Altier & Krsek, 2006; Setter et al., 2011). The subscales of praise ( $p = .001$ ) and professional opportunities ( $p = .007$ ) decreased from baseline to endpoint measurement ( $n = 111$ , Cronbach's alpha 0.89) (Altier & Krsek). Holland and Moddeman (2012) and Friday et al. (2015) reported a steady decline in professional satisfaction scores from month 1 to months 6 and 12 ( $n = 26, p = .037$ ).

One group of researchers conducted a national study on new graduate nurse transition during the first year of employment in Canada. Their goal was to determine which factors were important for a successful transition experience and determine the predictors of job and career satisfaction and turnover intentions. The final sample included 406 registered nurses with less than 3 years of experience working in clinical settings as staff nurses at the bedside. Spence-Laschinger et al. (2016) used the *New Graduate Successful Transition and Retention Model*, as a framework for their study. The *New Graduate Successful Transition and Retention Model* (Laschinger et al., 2016) describes how certain situational factors, personal factors, and work experiences during the first 2 years of employment can lead to positive or negative transition into practice outcomes. Positive outcomes of the model include improved job and career satisfaction and retention (Laschinger et al., 2012).

Versant measures organizational satisfaction at the end of the residency and annually for up to 3 years (Ulrich, et al, 2010). Organizational satisfaction decreased slightly at the end of the residency then rebounded to the highest level at the 60-month point (Ulrich et al., 2010). Bratt

and Felzer (2011) found that participants' clinical decision making ( $p < .001$ ) and job satisfaction scores ( $p < .001$ ) did not change significantly between months 1 and 6 but demonstrated a sharp increase between months 6 (81.0) and 12 (83.7). One subscale of job satisfaction (enjoyment) declined between 6 and 12 months, no explanation was provided for this phenomenon (Bratt & Felzer, 2011). Work environment issues may be an unanticipated factor in the outcomes of some of the WNRP nurse residency sites. Participants' ( $p < .001$ ) concerns related to confidence, competence, and respect of the clinical team decreased significantly over the 12-month period (Bratt & Felzer, 2011). Further studies into work-related stress in addition to personal stress in newly graduated nurses are recommended so nurse residency programs can address accordingly when developing nurse residency programs (Casey et al., 2004).

Medas and others (2015) examined outcomes of the Casey Fink survey administered to newly graduated nurses who completed a nurse residency designed on-site by nurse educators and administrators. The nurse residency used a 12-month design divided into two phases, similar to the UHC/AACN design, but tailored to fit the organization's goals. The main focus of the study was to examine retention issues in detail. Medas et al. (2015) correlated newly graduated nurses' scores on job satisfaction, confidence, and role transition with their intent to leave at the end of 1 year with the organization. Weekends off each month were positively correlated ( $r = 0.63$ ) with newly graduated nurses' intention to stay with the organization (Medas et al., 2015). The nurse manager encouragement and feedback survey item showed a moderately strong, positive correlation (0.535) with the newly graduated nurses' intention to leave the organization (Medas et al., 2015). All of other factors had weak, positive correlations with intent to leave the organization at 12 months (Medas et al., 2015).

Friday and others (2015) evaluated and compared outcomes on the Casey Fink survey of participants who completed two programs, a pregraduate externship and a postgraduate nurse residency program to participants who completed only one of the aforementioned programs (Friday et al., 2015). The study was done in a 630 bed teaching hospital located in the Southeast (Friday et al, 2015). The pre-graduate externship was a 3-12 week program that uses a preceptorship design in which participants work one on one with a registered nurse preceptor. The nurse residency program was a 12-month program that used the UHC/AACN design. The researchers found no significant differences in scores on the Casey Fink survey of newly graduated nurses' who completed a pregraduate externship and nurse residency program compared to newly graduated nurses who completed only the nurse residency program (Friday et al., 2015). Friday and colleagues reported the summed scores of each Casey-Fink survey item in their article, which limits comparisons to most of the other studies in the literature that reported the mean Casey Fink scores.

A recent study by Spector et al. (2015) examined the transition to practice model (TTP) for nurse residency programs developed by the National Council of State Boards of Nursing. Spector et al. (2015) compared outcomes of the Transition to Practice model with two other program serving as control groups. The control groups were established nurse residencies and limited on-boarding programs. Outcomes examined by Spector et al. (2015) included patient safety, selected competencies (patient-centered care, use of technology, and evidence-based practice/quality), communication and teamwork, work stress, job satisfaction, and turnover. There were significant differences by the end of the 12-month nurse residency in newly graduated nurses level of patient safety ( $N = 535$ ;  $p = .014$ ) and negative safety practices ( $N = 535$ ;  $p = .016$ ). The positive safety practices factor did not achieve statistical significance ( $N =$

535;  $p = 0.52$ ). There were no significant differences in outcomes between the TTP model and the established nurse residencies, and outcomes followed the same pattern of change seen in most of the UHC/AACN nurse residencies (Spector et al., 2015)

Approximately 85% of healthcare organizations in the United States state that retention of employees is a “key strategic imperative,” but only 51% actually include a formal retention strategy in their operational plans (NSI, 2016). The average turnover rate for all nurses in the United States for 2015 was 17.2% (NSI, 2016). Turnover remains highest (29.2%) among the most vulnerable nurses, newly graduated nurses employed for less than 1 year (NSI, 2016). Increased retention of newly graduated nurses was observed in all of the nurse residency literature reviewed. UHC/AACN authors reported 1-year retention rates of 87% to 100%. For the last 10-years, retention rates stabilized at 94-95% (Altier & Krsek, 2006; Goode et al., 2009; Holland & Moddeman, 2012; Krugman et al., 2006; Setter et al., 2011; Williams et al., 2007).

One-year retention rates for other programs varied from 72% to 90% (Bratt, 2009; Dyess & Parker, 2009; Hillman & Foster, 2011). Researchers at the New York University Medical Center nurse residency site, one of the six study sites in Krugman and colleagues first study of the UHC/AACN program, reported a turnover rate of 5.6% compared to the national average of 27.1% (Krugman et al., 2006). UHC/AACN nurse residencies reported average 1-year turnover rates between 5.6 to 12% for newly graduated nurses after their first year of work (Altier & Krsek, 2006; Goode et al., 2009; Krugman, et al., 2006; Williams et al, 2007). The 1-year turnover rate for the Versant nurse residency was 7.1%, which increased to 39.8% five years after program completion (Ulrich et al., 2010).

Newly graduated nurses ( $n = 212$ ) who completed the SPRING program had higher retention in the organization at 88.9% versus 80% for the non-spring group. The SPRING

participants also had higher scores on commitment to the organization survey (0.85) than newly graduated nurses (0.80) in the non-SPRING group. Newhouse et al. (2007) found that SPRING participants had significant differences in their scores for anticipated turnover between baseline, 6-month, and 12-month scores ( $F^2, 513 = 3.86, p = .022$ ).

Few studies reported on outcomes related to nurse residents' technical skills. Most studies were from UHC/AACN researchers and used basic descriptive analysis. The top four most uncomfortable skills to perform were code/emergency response, chest tube care (placement, pleurovac), vent care/management, and blood product administration (Goode et al., 2013). Further research into why nurses choose to stay or leave an organization is recommended by Setter et al. (2011). The lack of studies examining nurse residents' acquisition of technical skills suggests that further research into this area is warranted.

Despite the noted benefits of nurse transition programs in the healthcare setting, there are barriers to implementing these programs. Cost is one of the main barriers to implementation of new graduate nurse residencies in many acute care facilities (Dracup & Morris, 2008; Goode et al., 2009). A select number of nurse residency programs have been supported by Health Resources and Services Administration (HRSA) grants but most acute care organizations cover the costs of a nurse residency program within an already strained budget. Physician residency programs, pharmacy, and pastoral care training are all supported through payments to hospitals from the Center for Medicare and Medicaid Services (CMS) (Association of American Medical Colleges, 2013; Goode et al., 2009). To secure funding from CMS, the program must be an employment requirement and the program must be accredited by a nationally certified body (Goode et al., 2009). More research studies are needed to provide evidence of the benefits and

cost effectiveness of nurse residency programs in all settings, especially in community hospitals (Goode et al., 2013; Krugman et al., 2006; Ulrich et al., 2010).

### **Summary**

Chapter 2 of this study described major research findings in the literature on nurse residency programs. Recommended components of nurse residency programs include the following: (a) the 12-month design, (b) monthly small group meetings, (c) formally trained, consistent preceptors, and (d) curricula based on evidence-based program content (Dyess & Parker, 2012; Goode et al., 2009; Goode et al., 2013; Krugman et al., 2006; Williams et al., 2007). The UHC/AACN program design was the most represented in the literature. Because most nurse residencies were based in academic medical centers further studies of nurse residencies in other settings are recommended (Altier & Krsek, 2006; Bratt & Felzer, 2011; Williams et al., 2007). Comparative studies of different nurse residency models, curricula, and delivery modalities are needed to help organizations make the business case for allocation of resources to nurse residency program development (Bratt & Felzer, 2011).

Most nurse residency participants were 25- to 26-year-old White females with a BSN degree and employed in the hospital setting. In most of the literature, nurse residents' scores on the Casey-Fink factors of support, organization/prioritization, communication/ leadership, and job satisfaction improved (Goode et al., 2013; Krugman et al., 2006). Nurse residents' stress scores peaked at the 6-month point of the residency while their job satisfaction scores dipped, a reflection of reality shock (Hillman & Foster, 2011; Holland & Moddeman, 2012; Goode et al., 2013; Krugman et al., 2006). Studies that examined nurse residents' comfort with technical skills were limited, these studies reported improvements in this area (Goode et al., 2013). Retention rates of nurses who completed a nurse residency increased while their turnover rates declined in

all of the studies (Bratt & Felzer, 2010; Dyess & Parker, 2009; Goode et al., 2013; Ulrich et al., 2010). There was wide variation in instruments used by nurse residency programs making it more difficult to compare outcomes. Further studies into nurse residency program effectiveness are recommended into (a) different populations and settings, (b) program outcomes, (c) why nurses choose to stay or leave an organization, and (d) stress reduction/management for nurse residents (Altier & Krsek, 2006; Casey et al., 2004; Krugman et al., 2006; Williams et al., 2009). Best practice has not been established, further studies into nurse residency program design, components, and outcomes are recommended by most researchers (Bratt & Felzer, 2011; Olson-Sitki et al., 2012; Ulrich et al., 2010).



## CHAPTER III

### METHODOLOGY

The methodology of this study is described in this section and includes (a) the research design, (b) research questions, (c) sample and selection criteria, (d) data collection procedures, (e) ethical considerations related to human subjects, (f) instruments and (g) data analysis procedures. This type of social research problem called for a quantitative approach using a survey design (Creswell, 2009). The purpose of survey research is to draw data from a sample in order to generalize findings to a select population (Rudestam & Newton, 2007). A well-designed survey is an efficient, convenient means of anonymously collecting data from the participants who have had the same set of experiences.

The sample used in this study was secondary data from the University Health System Consortium (UHC) database, which contained 3 years of data collected from nurse residency participants who had completed the Casey-Fink survey. The effectiveness of the University Health System Consortium/American Association of Colleges of Nursing (UHC/AACN) nurse residency program was determined from an evaluation of participants' responses on the Casey Fink survey collected within the UHC database from August of 2011 up to August of 2015. Additionally, retention and turnover data on participants in the organization and in the nursing profession 1 year after hire date and nurse residency program completion were used to determine effectiveness of the study site program.

## Research Questions

There were nine research questions in this study. The first six questions evaluate the outcomes of the nurse residency program on the Casey Fink survey. Questions seven, eight, and nine evaluate statistics and data gathered from the nurse residency coordinator at the study site and other sources including local/regional hospitals and state and national agencies. Research questions 1 through 6 examined the effects of participating in a nurse residency program on newly graduated nurses' comfort with or perception of the following: (a) support, (b) patient safety (also described as the ability to organize and prioritize care, (c) ability to manage stress, (d) communication and leadership skills, (e) job satisfaction, and (f) technical skills. The first six research questions were as follows:

Does participation in a nurse residency program influence newly graduated nurses reported:

1. Level of social support?
2. Ability to manage personal stress?
3. Level of comfort with communication skills and leadership capacity in the clinical work setting?
4. Ability to organize and prioritize patient care (also referred to as patient safety)?
5. Professional satisfaction?
6. Level of comfort with performing technical skills?

Research questions 7 and 8 examined the effects of nurse residency program participation on turnover and retention of newly graduated nurses in the study site versus the nursing profession. Research question 8 compared retention and turnover rates of nurses working in hospitals with nurse residency programs to hospitals without these programs.

Research questions 7 and 8 were as follows:

7. Does participation in a nurse residency program influence retention and turnover of newly graduated nurses 1 year later in the organization and the nursing profession?
8. Do nurse residency programs result in higher retention and lower turnover rates of nurses compared to hospitals that do not have nurse residency programs?

Research question 9 examined interaction effects from type of participation at the study site (voluntary versus compulsory). The goal of research question 9 was to determine whether participants' scores on the Casey-Fink survey are influenced when newly graduated nurses participate in the study site nurse residency voluntarily:

9. Does type of participation (voluntary versus compulsory) in a nurse residency program influence the outcomes of the program?

### **Research Design**

A secondary data analysis design was used to determine the change in nurse residents' perceptions over a 12-month period. The collected data represented 4 years--August, 2012 to August, 2015. The independent variable in this study is participation in the UHC/AACN nurse residency program. The dependent variables include nurse residents' (a) perceptions of support, (b) ability to provide, organize and prioritize patient care (also referred to as patient safety), (c) levels of stress, (d) professional satisfaction, and (e) communication skills and leadership abilities. Data were gathered on turnover and retention of newly graduated nurses from records maintained by the nurse residency coordinator at the study site. Data on retention and turnover of nurses were also sought from hospitals in Alabama with similar bed size and attributes to the study site (public, community-based hospitals with 500-800 beds).

## **Secondary Data Set Analysis**

Secondary data analysis is a method of research that uses existing data to answer research questions (Coyer & Gallo, 2005). For the novice, this method of research can be particularly useful for investigating high impact questions that otherwise would be too expansive to examine (Coyer & Gallo, 2005; Smith et al., 2011). According to Smith et al. (2011), secondary data analysis is a well-established research methodology that requires the same rigor as other research methodologies (Castle, 2003; Coyer & Gallo, 2005; Magee, Lee, Giuliano, & Munro, 2006). The data set used in this study comes from a UHC/AACN nurse residency. The study used the same theoretical framework and variables as other studies on the UHC/AACN nurse residency program.

According to Magee et al. (2006), ensuring a conceptual match between the data and research questions can reduce threats to the validity, reliability, and generalizability of the results. External validity is threatened when the data set does not adequately represent the target population in the proposed study. To avoid this problem, Magee et al. emphasize careful selection of the study variables and data to be included in the study. The study variables and data included in this study are the same variables examined in other studies of the UHC/AACN nurse residency program. The data set for the proposed study was collected using the same instrument (Casey-Fink survey) as the data in the other UHC/AACN studies. Internal validity may be threatened if the researcher obtains the data set and then formulates the research questions (Magee et al., 2006). Careful consideration of any possible moderating variables that can influence the data set is essential (Magee et al., 2006; Rudestam & Newton, 2007). No studies have been conducted using this specific data set at this time.

### **Sample and Setting**

The sample was obtained using non-probability, convenience sampling of 4 years of data collected with the Casey-Fink survey from participants in a UHC/AACN nurse residency program within a moderate size community medical center in the Southeastern United States. The population of interest included newly graduated nurses with less than 1 year of clinical experience that matriculated within 6 months of employment. The convenience sample includes data collected from approximately 121 study participants in five cohorts. The study site was a nurse residency program in a 583-bed community hospital in the Southeastern region of the United States.

### **Inclusion/Exclusion Criteria**

Participation in this study was limited to registered nurses with less than 1 year of experience who had completed a UHC/AACN nurse residency program. Data from respondents who had not completed the Casey-Fink survey all three data collection times were excluded from the study.

### **Description of the Program**

The hospital uses the UHC/AACN curriculum and pays a fee to participate in the UHC database. Forty-five nurse residents are admitted to the program each year (Y. Daidone, nurse residency coordinator, personal communication, April 15, 2015). Onboarding of nurse residents occurred primarily in August and January. Participation was a requirement of employment for the first nurse residency cohort (August 2012 to July 2013). Beginning with the second cohort, participation in the nurse residency program was changed to voluntary. In the first year of the nurse residency all participants were graduates of baccalaureate nursing programs. The demographics of the sample began to change in the second year when the hospital administration decided to add graduates of associate degree nursing programs to the nurse residency. Eventually

the largest proportion of participants in the nurse residency changed to graduates of associate nursing degree programs. The hospital encountered difficulties recruiting baccalaureate degree nurses, possibly due to competition from hospitals in a larger city nearby.

At the first meeting, the nurse residency participants were assigned to small groups that met monthly for the duration of the 12-month program. These small group sessions, referred to as “Tales at the Bedside,” were facilitated by nurse educators, academic liaisons (faculty), and staff nurses. Nurse Managers and administrators were not selected as facilitators to avoid conflicts of interest. Each monthly session lasted 4 to 6 hours, depending upon the schedule. In each session new nurses were encouraged to share their triumphs as well as their frustrations. The rest of the session was dedicated to (a) delivery of selected content, (b) focused discussions, (c) complex case studies, (d) simulation, and (e) inter-professional exercises. The nurse residency was divided into two phases: in Phase I the program content focused on transition of the new nurse into the clinical setting. The second phase began at month 6 of the residency when nurse residents developed their evidence based practice projects. The program concluded in the 12th month when nurse residents presented their evidence-based practice projects at a graduation celebration.

All groups submitted abstracts to the UHC conference committee and competed for an opportunity to participate in the UHC/AACN nurse residency annual conference. The curriculum was comprised of three core areas: (a) leadership/management of resources for patients and inter-professional teams, (b) patient safety and outcomes, and (c) professional role. The curricular content was developed from care guidelines from the following agencies: (a) the Institute for Patient and Family-Centered Care, (b) Quality and Safety Education for Nurses, and (c) the Inter-professional Education Collaborative (Goode et al., 2013). Program content was delivered

face to face during the monthly sessions by the nurse residency coordinator, hospital educators, and guest lecturers. The nurse residency at the study site has not obtained CCNE accreditation. UHC updated the nurse residency curriculum every three years. A copy of the topical outline from the UHC nurse residency site is included in Appendix A.

### **Procedures**

After institutional review board approval was granted from The University of Alabama (see Appendix E) the researcher met with the nurse residency coordinator and program administrators to describe the study. Institutional review board approval was granted by the study site (Appendix D). Access to the UHC database was obtained with assistance from the nurse residency coordinator at the study site and the UHC nursing leadership staff. A letter granting permission to proceed with this study was provided by the study site and was sent electronically to the UHC nursing leadership contact person (see Appendix C). Contact was made over a secure telephone connection with one of the UHC nursing leadership representatives and a user identification code and password were provided by the UHC program administrators.

Casey-Fink survey data collected from the study site were de-identified and included data for the time period of August 2012 to August 2015. The data were contained within Microsoft Excel documents and saved on a password protected computer that used McAfee security and Malwarebytes anti-malware software. The UHC database was accessed by entering the UHC nurse residency program database link into the internet browser on any computer and entering a username and password provided by the nurse residency coordinator or program administrator.

The Casey-Fink scores were reported as a set of means for each time period and separated into cohorts by year beginning in 2012 and ending with 2015. Processed data are not appropriate for performing statistical tests to determine differences and statistical significance so

the UHC organization was contacted for assistance. A formal request was made by the researcher and the nurse residency coordinator via letter to the UHC nurse leadership staff for the Casey-Fink unprocessed, individual Likert-type scores for the time period of June 1, 2012 to August 30, 2015. The data files were emailed to the nurse residency coordinator and released to the researcher on April 22, 2016.

### **Data Collection**

Data were collected for research questions 1 through 6 from the UHC central office and consisted of Microsoft 2010 Excel documents. Each of the Microsoft 2010 Excel files contained study participants' scores on a unique line and were randomly assigned a unique four-digit code by a UHC data analyst. No information contained within these Excel documents could be used to trace the files back to a study participant or identify study participants. The Excel file contained 1141 lines/rows and 83 columns of data, which represents 223 study participants' Casey-Fink survey responses and null (non-responses). Most of the "null" lines represented survey periods not used by the study site, some of the UHC nurse residency sites survey participants up to 3 years after they complete the nurse residency program. The study site surveyed participants three times during the 12-month nurse residency program. All of the null response lines in the Excel file were removed to prepare the data for analysis.

The original file was retained in a folder named "NRP," a duplicate was made of the original, and the duplicate file was the one processed and prepared for analysis. After the null lines were removed, the remaining data included 206 study participants' Casey-Fink survey responses. This document was compared against the original file to ensure that errors were not made during the culling process. The data were then sorted into cohorts one (2012), two (2013), three (February 2014), four (August 2014), and five (2015). Data from cohort six were also in



the file provided by UHC but were excluded from the study because the third measurement period will not occur till August 2016. Data (N = 17) were missing from cohort two for the 6-month collection period. Further inquiry determined that the Casey-Fink surveys were not taken during the 6-month period. This issue is further discussed in the analysis section of this paper.

The files were examined for completeness during the cleaning process and it was noted that a large portion of the data from the 2012 cohort was missing. The UHC nurse leadership contact person was notified of this issue and the data for the 2012 cohort were received on May 2, 2016. The second data file (cohort 2012) contained 96 total lines of data, lines of null-only responses were also part of this file. The same data preparation process described above was also used with the 2012 cohort data. The total number of participant responses in the first file combined with the 2012 cohort files was 223.

The data files contained nurse residency participants' Likert-type scores and text responses on all of the Casey-Fink items in the survey only. The files did not include demographic data that presented an issue when trying to determine which participants in the data files held a baccalaureate degree (BSN) versus an associate degree in nursing (ADN). After further discussion with the nurse residency coordinator and the UHC contact person it was determined that demographic data of this nature is kept in a different database in the UHC server. The 2012 cohort of participants were exclusively BSN holders, all of the succeeding cohorts have progressively become composed of mostly ADN holders. The final sample included data from 121 participants in the study.

The UHC database contained other data relevant to this study and permission was granted by the study site and the UHC nursing leadership to use information described in this paragraph. Turnover and retention data for the study site were available in the UHC online database and

were downloaded into a Microsoft Excel file and saved in a file on a password protected computer. In addition to turnover and retention data, the UHC online database contained respondents' reasons for leaving their position with the study site organization. Additional turnover data on the newly graduated nurses who did not participate in the program were provided by the nurse residency program. Demographic information and descriptive data (responses to Section IV of the Casey-Fink) were downloaded from the online database because this information was not included in the Excel files provided by the UHC organization. No personal identifiers were associated with the information in the Microsoft Excel files provided by the UHC nursing leadership or in the UHC online database. To answer research question 7, data on retention and turnover were obtained from the UHC database and the nurse residency coordinator.

To address research question 8 overall retention rate of nurses in community hospitals with nurse residency programs and overall retention rate of nurses in hospitals without nurse residency programs was requested from hospital human resource departments in the study region. A list of regional hospitals was downloaded from the Alabama Hospital Directory website to help identify hospitals of similar attributes and bed size to the study site. The hospital directory list included all 92 hospitals in Alabama according to city, number of staffed beds, total discharges, and gross patient revenue. Hospitals of similar size (500-800 staffed beds) and characteristics (public, nonprofit, community hospitals) to the study site facility were selected from the list for contact.

Telephone contact was made with hospital human resource departments located in the study site region. Additionally, the following online sites were searched for retention and turnover data on nurses working in Alabama: the Alabama Hospital Association, the Alabama

Health Action Coalition, the Alabama Board of Nursing, and other national nursing organizations. Data on retention and turnover of nurses in the United States and Southeastern region were located within surveys performed by Nursing Solutions, Inc. (2016). Turnover of nurses in Alabama was obtained from the *State of the Workforce Report IX: Alabama* (University of Alabama, 2015).

### **Instrument**

The Casey-Fink Graduate Nurse (Casey-Fink) survey is a self-administered, online questionnaire developed by Casey and Fink in 1999 and revised in 2002 and 2006. The Casey-Fink survey is composed of five sections that evaluate nurse residents' confidence and comfort with (a) performing skills, (b) professional practice, (c) satisfaction with work environment and job, and (d) difficulties with role transition (Casey et al., 2004). Section I includes a list of 21 skills. Respondents are asked to select the top three skills or procedures they are most uncomfortable performing independently. Section II contains 24 items; each item uses a 4-point Likert-type scale (1-4) and asks respondents to rank their comfort with various clinical activities and with interactions with staff, peers, physicians, and others. The Likert-type scale is numerically ranked from 1 to 4 and uses the following descriptors: *strongly disagree*, *disagree*, *agree*, and *strongly agree*. Respondents select one descriptor that best fits their perception of comfort. Item 25 in section II is a two-part question that asks respondents to rank their stress level using the same 4-point Likert-type scale. The second part of item 25 includes a list of six factors (finances, childcare, student loans, etc.) and asks respondents to circle the factors that are causing stress in their life.

Section III assesses job satisfaction and asks respondents to rank nine employment related factors (i.e., salary, vacation, benefits, positive feedback) using a Likert-type scale

containing five descriptors (*very dissatisfied, moderately dissatisfied, not satisfied/nor dissatisfied, moderately satisfied, and very satisfied*). Section IV assesses respondents' transition experience and includes five assessment items. Questions 1 through 4 use a "select all that apply" format and the fifth item is an open response box that allows respondents to enter a comment. Section V contains 15 questions that assess respondents' demographic and professional profile.

***Validity and Reliability of the Casey-Fink.*** The Casey-Fink was piloted on more than 250 new graduate nurses and revised in 2005. The Casey-Fink reliably discriminates between nurses with different levels of experience in the clinical setting (Casey et al., 2004). Approximately 31,000 nurses have taken the Casey-Fink while participating in a UHC/AACN nurse residency program resulting in a reliability estimate (Cronbach's alpha) of 0.89 (Goode et al., 2013). Further statistical testing using exploratory factor analysis and varimax rotation was used by Lynn (2013) to determine reliability estimates for the five constructs measured by the subscales of the Casey Fink. The reliability estimates for each factor were (a) support, 0.82; (b) organizing and prioritizing, 0.76; (c) stress, 0.73; (d) professional satisfaction, 0.76; and (e) communication/leadership, 0.74.

Exploratory factor analysis can help reveal the underlying structure in phenomena and frequently is used when a researcher is attempting to determine the relationship between specific variables and the respondent (Lani, 2014). Exploratory factor analysis with Principle Axis Factoring with Varimax © rotation helps the researcher examine the maximum amount of variance in the variables. This statistical technique requires a sample size of 200. Primarily, researchers use exploratory factor analysis for psychometric analysis of survey instruments. Psychometric analysis confirmed that the five factors measured by the Casey-Fink included

Support, Patient Safety, Stress, Communication/Leadership, and Professional Satisfaction (Casey et al., 2004). Reliability estimates ranged from .71 to .90 on these factors. A specific breakdown of the factors and the magnitude of their corresponding loadings are provided with the tool. The table below provides a summary of the reliability estimates for each factor.

Table 2

*Reliability Estimates of the Casey-Fink Graduate Nurse Experience Survey*

| Factor                    | Cronbach's alpha $\alpha$ | Survey Items                                     |
|---------------------------|---------------------------|--|
| Support                   | .90                       | CF4, CF6, CF7, CF9, CF10, CF13, CF18, CF19, CF23 |
| Patient Safety            | .79                       | CF5, CF8, CF12, CF16, CF17                       |
| Stress                    | .71                       | CF 24, CF 25A, CF25B, CF25C, CF25D, CF25F        |
| Communication/Leadership  | .75                       | CF1, CF2, CF3, CF11, CF14, CF15                  |
| Professional Satisfaction | .83                       | CF20, CF21,CF22                                  |

Summing all of the items in the Casey-Fink instrument, including the stress items, gives an internal consistency estimate of  $\alpha = .89$ . Content validity was determined by having a group of expert nurse directors and educators in academic and private medical centers examine the content of the Casey-Fink tool.

**Analysis of Data**

Inferential and descriptive data analyses were used to analyze the data. The participants' data were entered into IBM Statistical Package for the Social Sciences (SPSS) Windows version 21 program. Frequency calculations were used to analyze the demographic data. An alpha level of .05 was set for all of the analysis of variance tests. Repeated measures analysis of variance (ANOVA) and Welch one way analysis of variance was used to answer research questions 1, 2, 3, 4, and 5. Welch one way ANOVA was used in addition to repeated measures ANOVA to limit the risk of making a Type I or II error due to unequal groups of the dependent variable.

Welch one way ANOVA procedures were performed, which included Levene's test of normality followed by the Games-Howell posthoc test for group between group comparisons when the results were in doubt. Some statistical experts recommend using one way ANOVA or *t* tests to analyze data when the groups are unequal, others advise caution if there is a large difference in the size (N) of the groups (Lomax, 2007; Sirkin, 2005). The advantage of using repeated measures ANOVA is power and a reduction of error variance (Mills, 2013). The results of each ANOVA, including means and statistical significance of each of the following Casey-Fink factors (support, stress, patient safety or organize/prioritize, and the communication/leadership factor), were confirmed with Welch ANOVA procedures and post-hoc testing when required.

Section one of the Casey-Fink survey includes a list of 21 skills and asks participants to select the top three skills they are most uncomfortable performing. To answer research question 6, participants' responses to the skills inventory in Section one were uploaded into a Microsoft Excel document and a mean score for each skill was calculated. Mean scores on the skills inventory were then ranked from lowest to highest, lower scores represent technical nursing skills that participants felt most uncomfortable with performing.

For research question 7, data on turnover were reported as a percentage. Retention was calculated by subtracting turnover percentage from 100. Retention and turnover data obtained for research question 8 data were reported in percentages and did not require any manipulation.

To answer research question 9, a factorial ANOVA, the two-factor design, was used to check for interaction effects from type of nurse residency participation (voluntary versus compulsory) on the dependent variables of social support, personal stress, communication/leadership, patient safety, and professional support. Post-hoc analysis was used for within and

between group comparisons. Prior to performing the factorial ANOVA, the data were segregated into two Excel spreadsheets within the master data file. One spreadsheet was labeled “Voluntary” and contained data from the voluntary group (cohorts two through five). The second spreadsheet was labeled “mandatory” and contained the data from the mandatory participation group (cohort one). The data within both spreadsheets were organized into groups according to cohort and survey data. The data from both spreadsheets were uploaded into the IBM SPSS 21 statistical software. Mauchly’s test of sphericity was performed prior to each factorial ANOVA to verify that the assumptions and requirements of these analyses were met. The Greenhouse-Geisser correction row in the ANOVA summary table was used for the final interpretation of the results of each analysis.

Missing data (N = 17) from the 6-month measurement in cohort two (2013) were identified during the collection phase. Missing data can reduce power in statistical analysis which can impact study results. A review of statistical literature was conducted into problems of missing study data to determine the possible options for managing this issue. The last observation carried forward method (LOCF) was selected to compensate for the missing data (N = 17) in the repeated measures ANOVA. Researchers using the LCOF method should examine the results of their statistical analyses for possible bias and keep in mind the increased risk of Type I or II errors when accepting or rejecting hypotheses (Kang & Schafer, 2007)).

### **Ethical Considerations**

Consent to participate in research is obtained immediately after the nurse resident logs in to the database at the study site, a password protected database. Expedited review was granted for this study from The University of Alabama on January 27, 2016. Data were de-identified after being entered into the computer when the participants took the surveys. A unique numeric

identifier was assigned to each participants' data by computer software housed within the UHC database and managed by computer programmers and data analysts employed by UHC. The data from each nurse residency site were then added to the larger database pool, which contains all of the data from the nurse residency participants from all of the participating sites. According to study site representatives and UHC officials, the data are owned by the study site and permission to access and use the data must be obtained from the facility. There are no risks to the participants in this study. While there are no benefits for participants, the hospital will receive valuable information about the nurse residency program.

### **Limitations**

The generalizability of the findings of this study will be limited to newly graduated nurses with less than 1 year of experience. The nursing population in the United States is mostly Caucasian female, this is also true of the study sample and limits the findings of this study to this demographic. The generalizability of this study will also be limited to newly graduated nurses working in community hospitals in the Southeastern region of the United States. Other limitations relate to the independent variable, the UHC/AACN curriculum, study findings are limited to newly graduated nurses completing an UHC/AACN nurse residency program.

### **Summary**

Chapter 3 described the methodology for this study, the UHC/AACN curriculum, the Casey-Fink instrument, and how the dependent variables were measured. Nine research questions were included in this study which examined outcomes and effects of participating in a nurse residency program. A discussion of secondary data analysis methodology was included to help readers understand this methodology and the responsibilities of the researcher using this method. The data collection section described the steps used to obtain the data for this study. The



analysis of data section also included a discussion on options for managing missing data. Additionally this chapter also included a description of the sample, setting, procedures, inclusion/exclusion criteria, ethical considerations, and study limitations.

## CHAPTER IV

### RESULTS

Chapter IV describes the results of this study. It begins with a description of the population sample followed by the results of the data analysis necessary to answer the research questions that guided this inquiry.

#### **Description of the Sample**

The sample was comprised of data collected from 121 newly graduated nurses from the following ethnic classifications: 103 Caucasian (82.5%), 16 African American (12.7%), 2 Hispanic (1.6%), 1 Pacific Islander (0.8%), and 1 identified as “Unknown.” Most of the participants were Caucasian females (74.4%). Forty-eight percent of Caucasian females held baccalaureate of science in nursing (BSN) degrees and 52.2% were associate of nursing (AND) degree holders. There were 18 males in the total sample and most were Caucasian (14) and held BSN degrees (9). Only three males from ethnic minority groups were in the total sample, two were African American and one was Hispanic. One male participant described his ethnicity as “unknown.” All ethnic minority groups and males of all ethnicities were underrepresented in the study site nurse residency program. Table 3 provides a summary of participants’ demographic distribution based upon gender, ethnic group, and type of nursing degree obtained.

Table 3

*Demographics of the Total Sample*

| Ethnic group              | Male | Female |
|---------------------------|------|--------|
| Caucasian                 |      |        |
| ADN                       | 5    | 47     |
| BSN                       | 9    | 43     |
| African American          |      |        |
| ADN                       | 0    | 11     |
| BSN                       | 2    | 3      |
| Hispanic                  |      |        |
| *ADN                      | 1    | 1      |
| Pacific Islander/Hawaiian |      |        |
| *ADN                      | 0    | 1      |
| Unknown                   |      |        |
| BSN                       | 1    | 0      |

\*There were no Hispanic or Pacific Islander/Hawaiian participants with BSN degrees.

Of the 78 (62%) participants who reported their age on the survey, 59 were aged 21 to 29, 12 were in the 30 to 39 age group, and 7 were in the 40 to 49 age group. The mean age of study participants was 27 years. Participants had a median age of 23, which was also the most frequently occurring age reported (mode). Of the 41% of study participants who reported their grade point average (GPA), 21% had a GPA above 3.5 and the remaining 20% had a GPA between 3.0-3.49. The largest percentage (34.1%) of study participants worked in adult critical care units and mixed medical-surgical units (27.8%) followed by the emergency department (6.3%) and obstetrics (6.3%). Table 4 lists the percentage and frequency of study participants according to clinical unit assignment.

Table 4

*Clinical Unit Assignment of Study Participants.*

| Clinical Unit       | Percentage |
|---------------------|------------|
| Adult Critical Care | 34.1       |
| Cardiac             | .8         |
| Emergency           | 6.3        |
| General Med-Surg    | 5.6        |
| Heme-Oncology       | 2.4        |
| Mixed Med-Surg      | 27.8       |
| Neonatal ICU        | 1.6        |
| Obstetrics          | 6.3        |
| Orthopedics         | 5.6        |
| Rehab/Ortho         | 1.6        |
| Perioperative OR    | 3.2        |
| Stroke              | 1.6        |
| Well baby           | 3.2        |
| Total               | 100.0      |

The first cohort (2012) to complete the nurse residency program at the study site was comprised entirely of baccalaureate degree holders (BSN) (N = 28). When the study site implemented the first nurse residency program, only BSN degree holders were admitted to the program because the University Health System Consortium/American Association of Colleges of Nursing (UHC/AACN) curriculum was originally designed for baccalaureate educated nurses. The study site encountered difficulties recruiting a sufficient supply of BSN nurses to meet their staffing needs. A greater supply of ADN nurses in the region where the study site is located has led to a shift in the proportion of ADN to BSN nurses hired by the facility. The educational background of study participants shifted in the 2014 cohort from mostly BSN degree holders to nurse residency participants with ADN degrees. Seventy-three percent of the 2014 cohort were ADN prepared nurses compared to 26% who were BSN degree holders. The 2014 cohort also contained the largest number of participants over the age of 30 (22%). The rise in average age of nurse residency participants is reportedly due to an increase of older, previously degreed adults

seeking nursing degrees. In the total sample, 49.5% of the participants were BSN degree holders and 50.4% were ADN degree holders. No other ethnic minorities were represented in the final study group.

### **Data Analysis Results**

This section describes the results of the data analysis and begins with a brief description of reliability testing and testing assumptions. The results of the statistical analysis are presented with each research question. Graphic presentation will follow each discussion where relevant.

#### **Reliability Testing and Analysis Issues**

A major concern with using repeated measures ANOVA involves how the test handles unequal group sizes in the SPSS program. Repeated measures ANOVA uses the smallest N in the groups entered into the program, which is accomplished by a reduction of the number in each group until all N's are equal. Study participants' Casey Fink Likert-type responses were separated into three groups according to survey period (first month, 6 months, or 12 months) when the data were entered into an IBM SPSS 21 statistical software program. Study attrition reduced the size of the groups, especially the 6th and 12th month measurements. The first month included Likert-type responses from 121 participants. The 6-month measurement period included Likert-type responses from 93 participants and the 12-month measurement included 79 Likert-type responses from study participants.

All three groups were entered into the SPSS 21 software program and a repeated measures ANOVA test was selected. During the repeated measures ANOVA calculations the program adjusted the size of each group until all three groups were equal, leaving an N of 79. Repeated measures ANOVA discards data during the calculation process which can affect the results of the test. Sample size is an important consideration when choosing repeated measures

ANOVA, errors in significance testing increase the closer the sample size gets to 50. Repeated measures and factorial analysis of variance (ANOVA) procedures are reportedly robust and tolerate most violations of normality as long as differences in dependent variable group size are not excessive. For sample sizes greater than 50 it is usually safe to relax the normality assumption.

Shapiro-Wilk tests were performed to reduce the risk of committing a Type I or II error. If the data for any of the dependent variables (Casey-Fink factors) violated the assumption of normality on the Shapiro-Wilk ( $p < .05$ ), then a one way ANOVA with Welch tests (Welch ANOVA) and the Games-Howell method for group comparisons were performed to verify the results of the repeated measure ANOVA. The Welch one way ANOVA does not discard any of the data in an attempt to “equalize” the sizes of the groups. Some statisticians consider this a more appropriate test for repeated measures where the groups are unequal in size (Lomax, 2007).

Another concern that arises when using within-subjects factors repeated measures ANOVA procedure is the requirement of sphericity. Sphericity is a condition in which all combinations of the variances of the differences of related groups (or levels) are equal. The assumption of Sphericity (in within-subjects factors) is a requirement of repeated measures ANOVA procedures that helps ensure the analysis will not return a result that is too liberal and increase the risk of committing a Type I error (incorrectly rejecting the null hypothesis). Sphericity is a concept that is similar to homogeneity of variances required for between-subjects ANOVA procedures.

Sphericity was tested with each repeated measure ANOVA including the two-way (factorial) ANOVA. The Greenhouse-Geisser correction was used instead of Mauchly’s test for sphericity due to the reported sensitivity of repeated measures ANOVA to violations of

sphericity (Maxwell & Delaney, 2004). Two-way (factorial) repeated measures ANOVA procedures were used to examine participation requirement (voluntary versus mandatory) over time. Study participants' scores on the Casey-Fink factors of personal stress, patient safety (organize/prioritize), and professional satisfaction were not normally distributed when analyzed by the Shapiro-Wilk test. Only the scores on the Casey-Fink support factor  $\{F(2,273) = 3.51; p = .031\}$  and the initial (month 1) scores for Casey-Fink communication and leadership factor  $\{F(2,273) = 43.07; p < .005\}$  were normally distributed. The Shapiro-Wilk and Games-Howell statistics can be found in Appendix C.

### **Results of the Research Questions**

This section includes the results of the statistical tests and other investigative methods used to determine if nurse residency programs influence the transition of newly graduated nurses into clinical practice. Each research question will be presented first followed by the results of the analysis. To answer research questions 1 through 5, repeated measures ANOVA were used to determine if nurse residency participation influenced newly graduated nurses' scores on the Casey-Fink survey. To determine where differences occurred between groups, multiple paired-samples *t* tests with a Bonferroni adjustment were performed as part of the repeated measures ANOVA procedure. Welch one way ANOVA procedures with Games-Howell post-hoc tests were used to confirm results where required (see Analysis of Data in Chapter 3). Descriptive statistics (frequencies and percentages) were used to analyze participants' comfort performing technical skills to answer research question 6. Research questions 7 and 8 were answered by obtaining data on turnover of nurses from study site personnel, nursing organizations, and other agencies. To answer research question 9, factorial ANOVA and independent *t* tests were used to determine if participation requirements have any influence on participants' transition experience.

## Research Question 1

*Does participation in a nurse residency program influence newly graduated nurses' perception of social support?*

Study participants' scores in social support overall were analyzed first with repeated measures ANOVA and were not statistically significant  $\{N = 79; F(2, 156) = 1.77; p = 0.173\}$ , there was a small effect ( $\text{Eta}^2 = .014$ ) size noted. Participants' scores on the total social support factor were highest at program start (3.27), declined at 6 months (3.14), and rebounded slightly at the end of the 12-month program (3.16). None of the pairwise comparisons using Bonferroni's procedure were statistically significant, the  $P$  values were all  $>.05$ . A Welch one-way ANOVA was used to check the accuracy of the results and differed in one group comparison, a statistically significant difference in scores was detected between program start (3.32) and program end (3.16)  $\{N = 121; F(2, 273) = 3.51; p = .028\}$ . The 6-month score produced by the Welch ANOVA calculation was 3.20,  $N = 121$ .

One of the individual Casey-Fink subscales (CF23, manager encouragement and feedback) had a statistically significant decrease between program start (3.11) and end (2.70), CF23  $[N = 79; F(2, 156) = 5.5333, p = .005]$ . Social support scores were all above 3 out of the 4-point Likert-type scale, with the exception of two subscales (CF23 and CF13). CF23 (manager encouragement and feedback) and CF13 (realistic expectations of me/participant) were the lowest scoring subscales and the only subscales below 3. Participants' scores on the subscales CF6 (preceptor encourages) and CF19 (preceptor helps me develop confidence) followed the same trends, both declined with each measurement period and the scores were similar. Participants' scores on the other subscales remained above 3.0 and were stable over the 12 months.



Based upon the data analysis, participation in a nurse residency program significantly influenced newly graduated nurses' overall perception of social support between the start and end of the program. Participants felt most supported at the beginning of the nurse residency and least supported 6 months into the nurse residency.

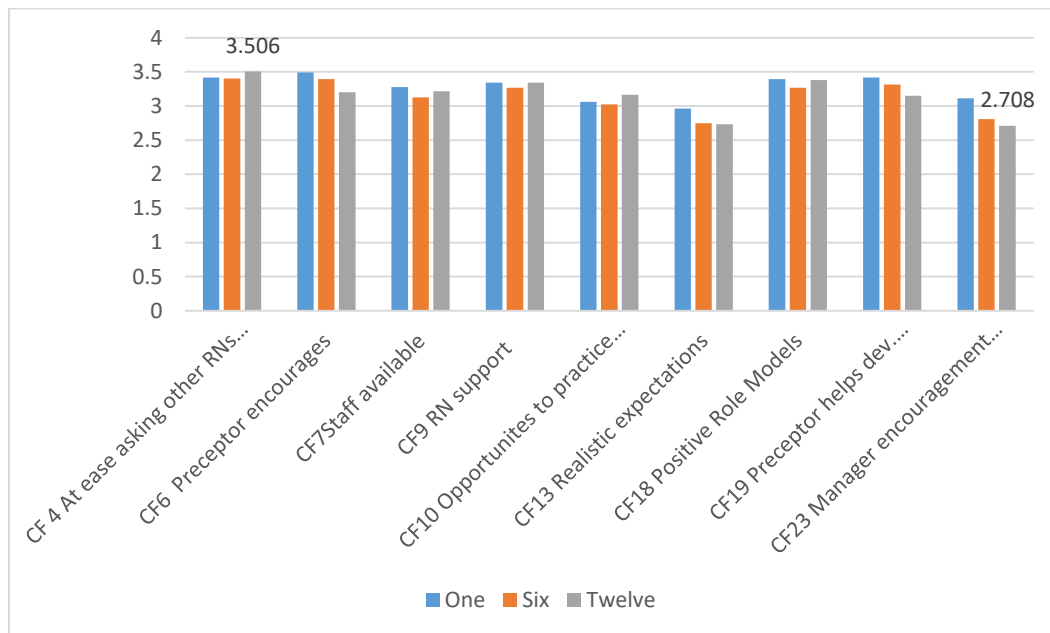


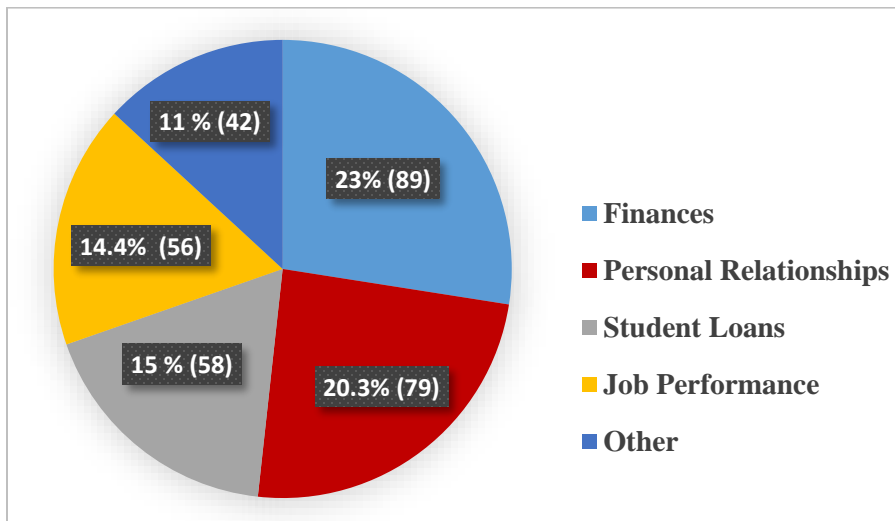
Figure 1. Study participants' scores on individual Casey Fink social support factors.

## Research Question 2

*Does participation in a nurse residency program influence newly graduated nurses' reported ability to manage personal stress?*

Results of the repeated measures ANOVA  $\{N = 79; F(2, 156) = 0.754, p = .472\}$  and Welch one-way ANOVA ( $N = 121$ ) found that participants' scores in the Casey-Fink personal stress factor did not change significantly between measurements. The stress factor contains only one survey item, CF24. The complete results of both ANOVAs are reported in Appendix C. Participants' mean scores were highest at program start (2.48) and decreased some to 2.38 six months later and 2.33 at program ending. Nurse residency participants' personal stresses were

assessed with one Likert-type scale item on the Casey-Fink survey (CF 24) and one item (CF 25) that was analyzed using descriptive statistics. Item 25 included seven choices that represented possible sources of personal stress for nurse residents to select in the survey. Finances (23%) and personal relationships (20.3%) were the biggest sources of personal stress for study participants followed by student loan issues (15%) and job performance (14.5%). The frequencies and percentages for each source of personal stress are listed below in Figure 2.



*Figure 2.* Sources of personal stress in study participants.

Participation in the nurse residency program did not significantly influence study participants' ability to manage personal stress. Despite not reaching significance level, study participants' scores declined steadily throughout the 12 months of the nurse residency. The scores were consistently below 3.0 out of 5.0, an indication that participants did not experience high levels of stress.

### Research Question 3

*Does participation in a nurse residency program influence newly graduated nurses' reported level of comfort with communication skills and leadership capacity in the clinical work setting?*

Participants' scores on the Casey-Fink communication and leadership factor were analyzed with a repeated measures ANOVA and multiple paired-samples *t* tests with a Bonferroni adjustment for multiple comparisons. There were statistically significant improvements [ $N = 79$ ;  $F(2, 156) = 38.3$ ;  $p = .000$ ] in participants' self-perceived comfort with communication and leadership between all measurements periods. All pairwise comparisons using Bonferroni's procedure were statistically significant ( $p = .000$ ), which indicates that participants' level of comfort with communication and leadership in the clinical setting increased with each measurement period. Participants' scores in the communication and leadership factor improved steadily throughout the 12-month nurse residency from 2.58 at program start, to 2.87 at 6 months, and 3.14 at program end. The communication and leadership capacity factor is composed of six items (CF 1, 2, 3, 11, 14, and 15) in the Casey-Fink survey. Each factor ( $N = 79$ ) was analyzed separately to look for outliers and trends within the data. The results are summarized in Table 5.

Table 5

*Results of Communication/Leadership Casey Fink Items*

| Casey Fink Item                                    | Repeated Measures ANOVA |      |
|--|-------------------------|------|
|  | *F value                | Sig. |
| CF1. Confident communicating with physician.       | 24.025                  | .000 |
| CF2. Comfort with caring for dying patient.        | 24.025                  | .000 |
| CF3. Comfortable delegating tasks                  | 9.644                   | .000 |
| CF11. Comfort with patient & family communication. | 4.854                   | .009 |
| CF14. Prepared to complete job responsibilities    | 13.589                  | .000 |
| CF15. Comfort suggesting change to plan of care.   | 18.484                  | .000 |

Note: \*df = (2,156); N = 79.

Based upon the data, analysis participation in the nurse residency program at the study site significantly influenced study participants' level of comfort with communication skills and leadership capacity in the clinical work setting. The newly graduated nurses in the study felt much more confident communicating with physicians and caring for a dying patient by the end of the nurse residency. By the end of nurse residency, the study participants felt more prepared to complete their job responsibilities, delegate tasks, and were more comfortable suggesting changes to the plan of care by the end of the program. Study participants also felt significantly more comfortable communicating with patients and families.

**Research Question 4**

*Does participation in a nurse residency program influence newly graduated nurses' reported ability to organize and prioritize patient care (also referred to as patient safety)?*

The patient safety (organize and prioritize) factor is composed of five survey items in the Casey Fink survey. Four of the items are written with negative language and one item is written with positive language. Each statement asked the participants to rank their level of agreement on a 4-point Likert-type scale. A score of "1" indicates that the study participant *strongly disagreed* with the statement and a score of "4" indicates *strong agreement* with the statement. The

negatively phrased items include CF5, CF8, CF16, and CF12. Participants were asked to rank the following concerns: (a) CF5-difficulty prioritizing care, (b) CF16-difficulty organizing care, (c) CF8-feeling overwhelmed, and (d) CF17-fear of harming the patient. The one positively phrased item in the patient safety construct (item CF12) asked participants to rank their agreement with the statement “I am able to complete my patient care assignments on time.” To fully understand the meaning of results on the patient safety factor requires examining results on the individual items in addition to the overall score for the patient safety factor.

A Welch one-way ANOVA with Games-Howell post-hoc group comparisons was selected to analyze the data to answer research question 4. Participants’ scores on the Casey-Fink patient safety factor overall were not normally distributed (the Shapiro-Wilk Statistic ranged from .932-.948;  $p = .000$ ). There was homogeneity of variances, as assessed by Levene’s test for equality of variances ( $p = .531$ ). Newly graduated nurses had statistically significant changes in their ability to organize and prioritize care (patient safety) overall ( $N = 121$ ;  $F(2,273) = 13.92$ ;  $p = .000$ ). Participants’ scores decreased significantly between months 1 ( $N=121$ ; 2.43) and 6 ( $N = 93$ ; 2.25;  $p = .001$ ) and months 1 and 12 ( $N=79$ ; 2.19;  $p = .000$ ) of the nurse residency. A decrease in scores on the overall patient safety scores indicates that participants’ feelings of anxiety and lack of confidence in their ability to provide safe patient care decreased while participating in the 12-month program. Participants’ overall scores in the Casey-Fink patient safety factor were not statistically significant between 6 and 12 months (2.19;  $p = .531$ ).

Participants’ scores on each item (CF5, 8, 12, 16, and 17) were analyzed using Welch ANOVA procedures. Statistically significant changes between months 1 and 6, and months 6 and 12 were observed in study participants’ scores on items CF5, CF12, CF16, and CF 17. Participants had significantly less difficulty prioritizing patient care between the 1st, 6th, and

12th months of the nurse residency [ $CF5 \{F(2,156) = 11.046, p = .000\}$ ]. Participants' ability to complete their patient care assignment on time improved significantly between months 1, 6, and 12 of the nurse residency program [ $CF12 \{F(2,156) = 7.813, p = .001\}$ ]. Participants' ability to organize patient care improved significantly between the first month of the program and months 6 and 12 [ $CF16 \{F(2,156) = 5.327, p = .006\}$ ]. Because study participants were less fearful of causing harm to patients, their scores on the CF17 item decreased significantly between months one, 6, and 12 of the nurse residency, [ $CF17 \{F(2,156) = 7.313, p = .001\}$ ]. Although participants' scores on item CF8 (feeling overwhelmed) did not achieve statistical significance, their scores decreased from 2.63 in the first month of the nurse residency to 2.49 six months later, and finally to 2.44 twelve months into the program. Participants felt less overwhelmed with their patient care responsibilities and workload.

Participation in the nurse residency program at the study site significantly influenced newly graduated nurses' reported ability to organize and prioritize patient care between the first and sixth months of the program. There was not a significant influence on participants' reported ability to organize and prioritize patient care between the 6th and 12th month of nurse residency.

### **Research Question 5**

*Does participation in a nurse residency program influence newly graduated nurses' reported professional satisfaction?*

The Welch one-way ANOVA with Games-Howell comparisons was used to answer this question. There was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .181$ ). Participants' scores ( $N = 121$ ) on the Casey-Fink professional satisfaction factor were not statistically significant ( $p = .075$ ). There were slight decreases in study participants' professional satisfaction scores between months 1 (3.47) and 6 (3.33) of the nurse

residency. Participants' scores were stagnant between the 6- and 12-month measurements. Three items in the Casey-Fink survey comprise the professional satisfaction factor, CF20 ( $p = .521$ ), CF21 ( $p = .181$ ), and CF22 ( $p = .753$ ); participants' scores on each factor were analyzed with Welch ANOVA procedures. Participants' scores on these three items did not demonstrate statistically significant changes. Despite not reaching the .05 level, scores remain on the higher end of the Likert-type scale with most of the scores being above 3.0 on a 1-4 scale, an indication that participants have above average levels of professional satisfaction.

Participation in the nurse residency program did not significantly influence newly graduated nurses' professional satisfaction. Although participants' scores did not change significantly during the 12 months in the nurse residency, they did experience high levels of professional satisfaction as indicated by high Likert-type scale scores (above 3.0 out of 4.0).

### **Research Question 6**

*Does participation in a nurse residency program influence newly graduated nurses' reported level of comfort with performing technical skills?*

Section one of the Casey-Fink survey includes a list of 21 skills and asks participants to rank skills according to their level of discomfort performing each skill on a scale of 1 to 4 (1 = most uncomfortable performing and 4 = greatest comfort performing). Average scores for each skill were calculated and ranked from lowest to highest with lower scores representing technical nursing skills participants felt most uncomfortable performing. Overall, study participants' scores over the 12-month program showed increased levels of comfort with technical skills. Participants' average scores during the first month of the program was 2.87, this increased to 3.17 at 6 months into the program and finally to 3.28 at program end. Study participants consistently ranked emergency (ER) code response (1.91), managing chest tubes (2.29);,

tracheostomy care (2.42);, and ventilator care as the skills they felt most uncomfortable performing. These skills were identified across all three survey periods, although some skills changed in the order of ranking. Communicating with a physician/MD (2.35) scored higher than ventilator care in the first month of the nurse residency and then dropped out of the top four list. Managing a patient at the end of life was the fifth most uncomfortable skill for the study participants at the start of the program (2.43) and at the 6-month point (2.78). At 12 months, participants felt most uncomfortable caring for clients with a chest tube (2.45) followed by tracheostomy care (2.55), Code Emergency Response (2.68), and ventilator care (2.82). Table 6 lists study participants’ top four most uncomfortable skills according to survey period during the nurse residency.

Table 6

*Top Four Most Uncomfortable Technical Skills To Perform*

| Technical Nursing Skills       | Mean Scores |
|--------------------------------|-------------|
| Program Start (First month)    |             |
| Code (ER) Emergency Response   | 1.91        |
| Managing Chest Tubes           | 2.29        |
| MD (physician) Communication   | 2.35        |
| Tracheostomy care              | 2.42        |
| Midpoint (Six months)          |             |
| Tracheostomy Care              | 2.37        |
| Managing Chest Tubes           | 2.39        |
| Code Emergency (ER)Response    | 2.54        |
| Ventilator care and Management | 2.75        |
| Program End (Twelve months)    |             |
| Chest Tubes                    | 2.45        |
| Tracheostomy Care              | 2.55        |
| Code ER Response               | 2.68        |
| Ventilator care                | 2.82        |

Study participants were more uncomfortable with tracheostomy care than blood product administration. The following chart presents a graphic of how study participants’ skills changed



over the 12-month program. Scores represent the level of comfort participants had with the skill. The scores increase as the participants' level of comfort performing the skill increases.

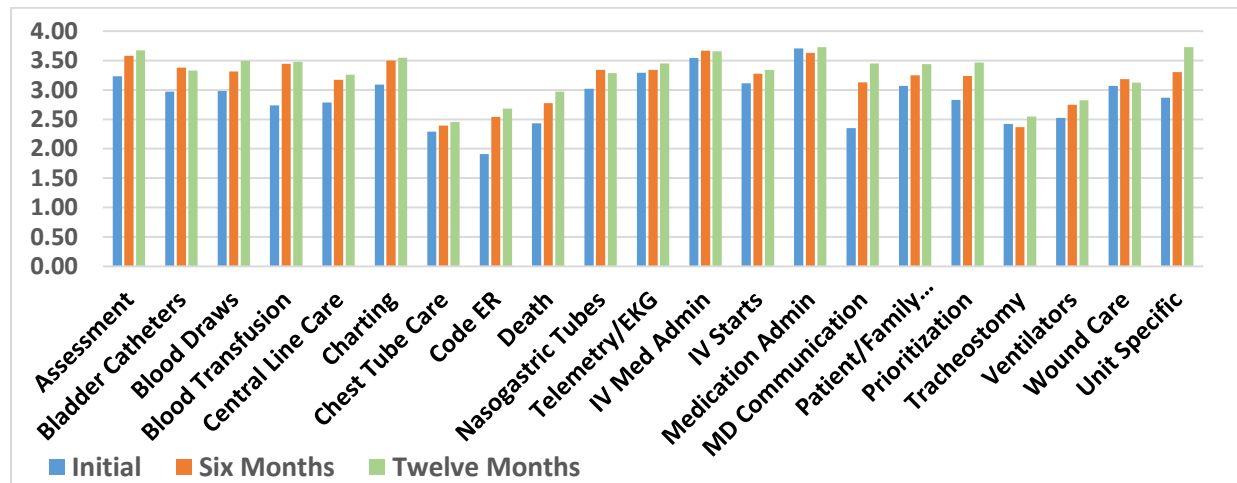


Figure 3. Technical skills scores for months 1, 6, and 12.

Newly graduated nurses' level of comfort with technical nursing skills performance improved significantly while participating in the nurse residency. Newly graduated nurses were more comfortable performing all of the 21 skills listed in Figure 3 by the 6th month in the program. Newly graduated nurses' level of comfort with technical nursing skills performance continued to improve up to the 12th month of the program.

### Research Question 7

*Does participation in a nurse residency program influence retention and turnover of newly graduated nurses one year later in the organization and the nursing profession?*

Nurse residents who remained with the organization after completing the nurse residency also continued to work as nurses. Onboarding of nurse residents into the program at the study site occurred in August and January. The August cohorts graduated from the nurse residency at the end of July and the January cohorts graduated in December. The first cohort

of nurse residents ( $n = 28$ ) were hired during the time period of May to August of 2012. The turnover rate for the first cohort at the end of July, 2012 was 37.93%, which was much higher than the turnover rate of 6.17% for the whole University Health System Consortium (UHC) nurse residency program during 2012. Turnover rate for the first cohort was higher than the 2013 national nurse turnover rate of 16.5% (NSI, 2016) and the 2013 total southeastern region nurse turnover rate of 14.2% of the United States.

Due to a technical issue with data entry at the study site, the turnover calculations listed in the UHC database for 2013 through 2015 are not accurate. However, representatives at the study site maintained their own records on turnover of newly graduated nurses between 2012 and 2015. The data set indicates a total of 402 newly graduated nurses were hired from January 2012 to 2015; 119 participated in the nurse residency and 283 did not participate (Y. Daidone, 2015). The total turnover rate of newly graduated nurses who declined participation in the nurse residency from January 2012 to 2015 was 29.3% (Y. Daidone, 2015). The turnover of nurse residency participants at the study site during the same time period (January 2012-2015) was 15.9%. Nineteen nurse residency participants left the organization between August 2012 and December 2015, the greatest loss occurred in 2013 and 2014. Ten participants left the study site organization to relocate due to marriage or family needs, the other nine reported job dissatisfaction.

Participation in the nurse residency was mandatory for the first year (2012) and voluntary for years two, three, and four (2013-2015). The higher total turnover rate (29.3%) for non-nurse residency participants prompted the organization to shift to a policy of mandatory nurse residency participation for all newly graduated nurses hired by the facility

going forward. The turnover rate for all nurse residency participants in the UHC program was 3.48%, the lowest rate so far for the last 10 years.

Based upon the findings reported above, participation in a nurse residency program strongly influenced retention and turnover of newly graduated nurses. Specifically, retention rates of newly graduated nurses increased with each year of nurse residency while turnover rates decreased to almost zero by the end of the fourth year. No newly graduated nurses left the nursing profession after participating in the nurse residency program.

### **Research Question 8**

*Do nurse residency programs result in higher retention and lower turnover rates of nurses compared to hospitals that do not have nurse residency programs?*

According to the resources currently available and the literature, participation in nurse residency programs resulted in higher retention and lower turnover of nurses, especially newly graduated nurses. Turnover rates of nurses employed in hospitals in the United States increased from 13.5% to 17.2% between 2011 and 2015 (Nursing Solution, Inc. 2015 survey) and remains at 17.2% (Budden, Moulton, Harper, Brunell, & Smiley, 2016). There are UHC/AACN nurse residency programs in 225 hospitals, representing 38 states (Vizient, Inc., 2016). Turnover for the UHC/AACN nurse residencies remained below 10% from 2004 to 2016 and was 3.48% for 2015.

The last reported turnover rates of nurses working in all settings in Alabama was 42.7% in 2009 (American Health Care Association, 2014). There are two hospitals in Alabama that have UHC/AACN nurse residency programs, the study site which is a community hospital, and the other is an academic medical center. The academic medical center reported a 100% retention rate (Lynn, 2013). The study site also reported a 100% retention rate for nurse

residency participants for 2015 (UHC website, 2016). The researcher requested data on retention and turnover of nurses from hospitals with similar characteristics to the study site (500-800 beds, community-based). Out of the four hospitals contacted by the researcher only one in the state provided their turnover rates to the researcher. Retention rates of nurses in the area community hospital that responded were 88% for 2013, 81% for 2014, and 97% in 2015. The hospital representative reported that they developed a 12-month nurse residency program which began in 2015. The goals of the hospital administrators were to increase retention of nurses in the organization and recruit newly graduated nurses of baccalaureate programs.

Based upon the findings and literature, participation in nurse residency programs resulted in higher retention and lower turnover rates of newly graduated nurses especially when compared to hospitals that do not have nurse residency programs. Increased retention of newly graduated nurses was observed in all of the nurse residency literature reviewed. UHC/AACN authors reported retention rates of 87% to 100% with rates stabilized at 94-95% for the last 10 years (Altier & Krsek, 2006; Goode et al., 2009; Holland & Moddeman, 2012; Krugman et al., 2006; Setter et al., 2011; Williams et al., 2007). Turnover rates for the UHC/AACN nurse residency programs are currently 3.48% (UHC website, 2016), much lower than the national nursing turnover rate of 17.5% (NSI, 2015). Retention rates for other nurse residency programs were 72% to 90 % (Bratt, 2009; Dyess & Parker, 2009; Hillman & Foster, 2011).

## Research Question 9

*Does type of participation (voluntary versus compulsory) in a nurse residency program influence the outcomes of the program?*

There were no statistically significant two-way interactions between the type of participation in the nurse residency program (mandatory or voluntary) and participants' scores on the Casey-Fink factors. A two-way repeated measures, factorial ANOVA was used to determine if participation requirement had an effect on study participants' scores in each Casey-Fink factor (dependent variables). The Greenhouse-Geisser adjusted statistics were interpreted for all of the Casey-Fink factors included in the analyses.

The results of the participation interaction analyses should be viewed with caution because of the large difference in group size ( $N$ ) between the mandatory ( $N = 60$ ) and voluntary ( $N = 216$ ) groups. The level of error increases as group sizes ( $N$ ) become more unequal.

Mauchly's test of sphericity indicated that the assumption of sphericity was met for all but one of the Casey-Fink factors. Mauchly's assumption of sphericity was violated for the two-way interaction in the communication/leadership factor,  $X^2(2) = 8.653$ ,  $p = .013$ . There were no statistically significant two-way interactions between participation requirement and time on participants' scores on communication and leadership capacity ( $p = .27$ ), personal stress ( $p = .263$ ), support ( $p = .459$ ), or patient safety (organize/prioritize),  $p = 0.418$ . There were no statistically significant two-way interactions between the study participants' scores on the professional satisfaction and participation requirement,  $p = 0.365$ .

Main effects in statistical analysis can be described as the effect that an independent variable has on the dependent variables in a study. Statistical analysis detected a main effect

from nurse residency program participation on study participants' scores in professional satisfaction. The main effect of participation showed a statistically significant difference in participants' professional satisfaction scores between the mandatory (3.458) and voluntary groups (3.216),  $F(1, 16) = 7.140$ ;  $p = .017$ . Of interest, participants in the mandatory group had higher levels of professional satisfaction than the voluntary group. There were more BSN degreed nurses in the mandatory group, a possible moderating factor. Further investigation is needed to determine the reason for this phenomenon. Post-hoc tests with the Bonferroni adjustment found a mean difference of 0.242 in the level of professional satisfaction between the mandatory and voluntary groups, which was also statistically significant,  $p = .017$ . Pairwise contrasts of the voluntary versus mandatory participation groups did not find any statistically significant differences between the two groups overall,  $p = 1.00$ .

Type of participation (voluntary versus compulsory) in the nurse residency program did not influence newly graduated nurses' outcomes on the Casey-Fink survey. Participation in the nurse residency program (versus non-participation) had a strong, positive influence on newly graduated nurses' outcomes on the Casey-Fink survey.

### **Summary**

This chapter presented the results of a secondary data analysis gathered over the last 4 years from study participants in a nurse residency program. There were no significant changes in participants' scores in professional satisfaction and personal stress. There were statistically significant improvements in participants' communication, leadership skills, and social support between start and end of the program. Scores in the patient safety (organize/prioritize) factor decreased, an indication that study participants became more confident and less fearful the longer they were in the nurse residency ( $p = .000$ ). Time in the clinical work setting may have been a

moderating factor. Study participants scores on professional satisfaction and personal stress did not change significantly during the 12-month program. Participants' scores on social support and professional satisfaction were all above 3 on the 4-point Likert-type scale, an indication that the participants felt supported and had high levels of professional satisfaction. By the end of the 12-month nurse residency study, participants' scores on social support, communication/leadership, and professional satisfaction were all above 3 on the 4-point Likert-type scale. Participants' level of comfort with technical skills performance improved with each measurement period. Turnover rates of nurse residency participants at the study site improved with each cohort. Requiring newly graduated nurses to participate in the study site nurse residency program did not affect their scores on the Casey-Fink.

## CHAPTER V

### DISCUSSION

The purpose of the study was to determine if participation in a nurse residency program influenced the transition of newly graduated nurses into clinical practice in a community hospital. The study used secondary data from participants' Casey Fink survey responses obtained from the University Health Systems Consortium (UHC) central office. The Casey Fink survey data were analyzed with repeated measures and Welch one-way analysis of variance procedures. Retention and turnover data on newly graduated nurses employed at the study site were obtained from the study site nurse residency coordinator to help the researcher determine if nurse residency program participation kept newly graduated nurses from leaving their jobs. Additionally, retention and turnover data were requested from hospitals in the same geographic region as the study site and also obtained from national and state nursing organizations. Furthermore, other data on nurses in the workforce were obtained from state labor organizations and research institutes.

The study determined that participation in a nurse residency program positively influenced newly graduated nurses' communication and leadership skills, ability to organize and prioritize patient care, technical nursing skills, and perceptions of social support. Participants were less fearful of causing harm and became more confident overall in the nursing role. Participants reported high levels of professional satisfaction, which remained stable and did not change significantly throughout the 12 months of the nurse residency. Personal stress levels in



the participants were moderate at the beginning of the program and did not change significantly during the 12-month program.

Turnover rates of participants at the study site dropped with each cohort and were half the turnover rate of newly graduated nurses who did not participate in the nurse residency program. The study site retained most (85%) of the nurses who completed the nurse residency program. Requiring newly graduated nurses to participate in the nurse residency program did not influence participants' scores on the Casey-Fink. Both groups showed a statistically positive effect (main effect) just from completing the program. The impact of demographic characteristics on outcomes in the study was not examined due to limitations within the data set from the de-identification process. Overall, the nurse residency program at the study site was beneficial for newly graduated nurses. The following sections of chapter five provide a discussion of these findings and how the study informs current knowledge of the nurse residency topic.

## **Findings**

### **Social Support**

The Casey Fink survey assesses participants' perceptions of social support provided by preceptors, nursing staff, peers, and nurse managers. In the study, the social support factor did not achieve significant levels when repeated measures analysis was used to evaluate participants' responses ( $N = 79$ ;  $p = 0.173$ ). Social support in the participants was significant when a Welch one-way analysis of variance test (ANOVA) was used ( $N = 121$ ;  $p = .028$ ). Most of the University Health System Consortium/American Association of Colleges of Nursing (UHC/AACN) nurse residency literature also reported no significant differences in participants' scores on social support using repeated measures analysis of variance (Goode et al., 2013; Kowalski & Cross, 2009; Olson-Sitki, 2012) except for two studies (Holland & Moddeman,

2012; Williams et al., 2007). In most of the literature, nurse residency participants' scores on social support were consistently above 3 on the 4-point Likert-type scale (Goode et al., 2013; Holland & Moddeman, 2012; Setter et al., 2011; Williams et al., 2007). Study participants' scores on the social support factor were also consistently above 3 on 4-point Likert-type scale with the exception of two subscales (CF23 and CF13). Most nurse residency authors interpret a 3 or above on the 4-point Likert-type scale as a high score, an indication that participants in their studies perceived high levels of support in the nurse residency programs (Goode et al., 2013; Holland & Moddeman, 2012; Setter et al., 2011; Williams et al., 2007).

Some studies reported statistically significant results on some subscales of social support even though the overall scale was not significant. In some situations, it may be helpful in nurse residency program evaluation to examine the results of subscales for trends and patterns. Study participants scored lowest on the subscales of manager encouragement (CF23) and "others" realistic expectations of me--the newly graduated nurse (CF13). The study found that the subscale for manager encouragement and feedback (CF23) had a statistically significant decrease between program start (3.114) and end (2.709), CF23 {N = 79;  $F(2,156) = 5.533, p = .005$ }. This finding suggests that newly graduated nurses did not feel they received adequate feedback and encouragement from nurse managers. Medas et al. (2015) also obtained similar results. The nurse manager encouragement and feedback survey item showed a moderately strong, positive correlation at 0.535 with the newly graduated nurses' intention to leave the organization (Medas et al., 2015).

The support of coworker nurses was important to newly graduated nurses in the study as implied by anecdotal comments in the survey. Participants' scores on the subscales CF6 (preceptor encourages) and CF19 (preceptor helps me develop confidence) both declined some

with each measurement period, an indication that the study participants felt less supported by their preceptors in the last 6 months of the nurse residency. Olson-Sitki and colleagues (2012) also noted statistically significant results on the Casey Fink factor--CF9--unit nurse support, an indication of the importance of coworker support to newly graduated nurses. Participants' scores on the other subscales were high at the start of the nurse residency, declined at 6 months and rebounded by the end of the program. This same "v" shaped pattern was observed in some UHC/AACN studies and is thought to be due to reality shock (Goode et al., 2009; Williams et al., 2007).

Participation in nurse residency programs improves newly graduated nurses' perceptions of social support as demonstrated by the study results and the literature. Providing support for newly graduated nurses can help them cope better in an environment where they encounter many stressors. For example, newly graduated nurses who experienced bullying, yet were well supported in their work, had significantly lower scores in intention to leave and depression scales when compared to nurses who experienced bullying but did not have adequate work support (Rush et al., 2013). The literature and findings of this study show that social support in the clinical work setting is important to newly graduated nurses. Social support in the clinical setting needs to be provided by trained preceptors, experienced nurses, and nurse managers. The literature and study findings also show that nurse managers need to provide positive feedback, role modeling, and assistance to newly graduated nurses.

### **Personal Stress**

Excessive stress is one the most frequently reported issues for newly graduated nurses in the first year of practice (Gardiner & Sheen, 2016; Krugman et al., 2006; Maxwell, 2011; Parker et al., 2014; Phillips et al., 2014; Spence-Laschinger et al., 2016; Williams et al., 2007).

Excessive stress can lead to decreased job satisfaction and increase turnover of nurses (Altier & Krsek, 2006; Rush et al., 2013). UHC/AACN nurse residency authors measured *personal stress*, other authors measured *work stress* (Spector et al., 2015) and *clinical stress*, which is similar to *work stress* in definition (Kowalski & Cross, 2009). The variety of stress constructs in the literature limits comparisons of outcomes across nurse residency programs. However, some patterns can be delineated in nurse residency participants' stress levels in the literature.

Study participants' scores on the personal stress factor did not achieve significant levels but did decline between months 1 (2.481), 6 (2.379), and 12 (2.329) of the nurse residency. The decrease in scores was not large but it is important to note that study participants' level of personal stress did decline. Finances (23%) and personal relationships (20.3%) were the biggest sources of personal stress for study participants followed by student loan issues (15%) and job performance (14.5%), in the overall analysis. Personal stress in the study participants exhibited the same pattern of decline noted in most of the UHC/AACN nurse residency outcomes reported in the literature (Goode et al., 2009; Goode et al., 2013; Krugman et al., 2006). Personal stress in participants in most UHC/AACN nurse residencies decreased to the lowest level by program completion (Goode et al., 2009; Goode et al., 2013; Krugman et al., 2006). Similar to the larger studies in the literature, personal stress in the study participants was not statistically significant (Goode et al., 2013; Kowalski & Cross, 2009; Olson-Sitki et al., 2012).

Work related stress is not measured quantitatively with the Casey Fink survey but is included in the descriptive section of the survey. The items that comprise the Casey Fink stress factor assess for personal causes of stress including financial issues, personal life, student loans, personal relationships, child care issues, and job performance (yes or no format). Other work related issues not assessed in the quantitative portion of the Casey Fink were identified by the

study participants in the descriptive portion of the transition section (Section IV of the Casey Fink survey). Study participants listed workload as the number one challenge at the 6- (45-48%) and 12-month survey periods (58-100%). Approximately 30% to 50% of the study participants listed unrealistic ratios, tough schedules, and frustrations due to futility of care in the transition issues section of the Casey Fink. Improved work environment and orientation were the most frequent suggestions of participants. These same trends were also noted in most of the other UHC nurse residency sites as described in the most recent UHC Nurse Residency Outcomes report (2013).

Participation in nurse residency programs has been shown to decrease personal and work related stress in newly graduated nurses. The Casey-Fink survey assesses nurse residency participants' level of personal stress and the causes but uses only descriptive methods to analyze work related stress. Nurse residency program designers and researchers should assess work related and personal stress levels in nurse residency participants. Determining the causes of work related and personal stress in nurse residency participants can help hospital administrators and nurse residency program designers create appropriate interventions and support.

### **Communication/Leadership**

Effective communication and leadership skills at the bedside are essential competencies (AACN, 2008) for all nurses and one indication that the newly graduated nurse has made the transition to Benner's (1984) competent stage. The Casey Fink communication/leadership factor examines newly graduated nurses' confidence and comfort levels with communication skills and leadership at the bedside. Study participants' scores on the communication and leadership factor increased significantly at each measurement period at months 1, 6, and 12 of the nurse residency program { $F(2,273) = 43.272; p = .000$ }, this was also seen in nearly all of the literature on

UHC/AACN nurse residencies (Casey et al., 2004; Goode et al., 2009; Goode et al., 2013; Holland & Moddeman; 2012; Krugman et al., 2006; Williams et al., 2007).

Study participants were less confident and comfortable initially when communicating with physicians, patients, or family members (CF1:  $p = .000$ ; CF11:  $p = .009$ ), but gained confidence in their communication skills by the end of the residency (3.146). Study participants became more confident and comfortable delegating tasks (CF3:  $p = .000$ ), suggesting changes to the plan of care (CF15:  $p = .000$ ), completing job responsibilities (CF14:  $p = .000$ ), and knowing what to do for a dying patient (CF2:  $p = .000$ ). This same pattern was identified in most UHC/AACN nurse residency studies (Casey et al., 2004; Goode et al., 2009; Goode et al., 2013; Holland & Moddeman; 2012; Krugman et al., 2006; Williams et al., 2007).

Olson-Sitki et al. (2012) were the only UHC/AACN study that did not find significant changes in participants' communication and leadership scores over the 12-month program, possibly due to small sample size ( $N = 31$ ). Studies of nurse residency programs outside of the UHC/AACN program also reported significant increases in participants' scores on communication and leadership using different instruments (Bratt & Felzer, 2011; Dyess & Parker, 2012; Kowalski & Cross, 2010). The Casey Fink communication/leadership outcome had the highest  $F$  value (38.3) of all of the Casey Fink variables measured in the study. Study participants improved the most in their confidence and comfort with communication and leadership during the 12-month nurse residency program.

Based upon the literature and findings of the study, participating in a nurse residency program improves newly graduated nurses' communication and leadership skills. According to reports reviewed by JCAHO, communication failures were implicated in over 70% of sentinel events (Dingley, Daugherty, Derieg, & Persing, 2014). This report and others by the IOM (1999)

and AHRQ (2014) emphasized the importance of effective communication skills in the healthcare setting. Healthcare organizations should strongly consider implementing nurse residency programs as a way to reduce potential communication errors.

### **Patient Safety (Organization/Prioritization)**

Study participants' scores on the Casey Fink patient safety (organize/prioritize) outcome followed the same pattern as most of the literature. Study participants had significantly less difficulty organizing patient care ( $p = .003$ ) and were less fearful of causing harm ( $p = .000$ ) to their patients by the end of the program. Most UHC/AACN studies reported significant increases in newly graduated nurses' overall confidence and competence (total Casey-Fink;  $p < .001$ ) and ability to organize and prioritize care ( $p < .001$ ) (Goode et al., 2013; Holland & Moddeman, 2012; Krugman et al., 2006; Medas et al., 2015; Olson-Sitki et al., 2012; Williams et al., 2007). Between the first and sixth month of the study, participants' scores on organization of care and fears of doing harm decreased but did not reach significant levels, possibly due to reality shock or an unidentified issue specific to the study site. This same pattern was observed by Olson-Sitki and colleagues and Bratt and Felzer (2011) who both found significant differences between the 6th and 12th month in newly graduated nurses' ability to organize and prioritize patient care ( $p = .022$ ) and clinical decision-making skills ( $p < .001$ ).

Most studies reported significant increases in ability to organize and prioritize care between all survey periods at months 1, 6, and 12 of the program (Goode et al., 2010; Krugman et al., 2006; Holland & Moddeman, 2012; Medas et al., 2015; Thomas, 2011; Williams et al., 2009). Overall, study participants became more confident and comfortable with their ability to organize, prioritize, and complete patient care on time. Participants were less overwhelmed and less fearful of causing harm by the end of the program  $\{N = 121; F(2,273) = 13.92; p = .000\}$ .

Nurse residency participation is an effective intervention for improving newly graduated nurses' comfort with organizing and prioritizing patient care. Nurse residency participants in the literature and in the study felt more confident with their ability to complete patient care on time. Clinical experience or time in the clinical work setting may be a moderating or confounding factor in nurse residency studies. More control group studies could bring clarity to this issue. Despite these issues, healthcare organizations should consider implementing these programs to help their newest employees develop confidence in the clinical setting.

### **Professional Satisfaction**

Job satisfaction in the healthcare setting can significantly influence work behavior and is a reflection of how an organization is functioning (Bhatnagar & Srivastava, 2012). Nurse residency literature frequently uses the terms *job satisfaction* and *professional satisfaction* interchangeably as both are related to work. Professional satisfaction outcomes varied across the literature. UHC/AACN researchers measured professional satisfaction and Versant's researchers measured job (work) satisfaction. Professional satisfaction scores in the UHC/AACN studies were essentially opposite of the job satisfaction scores measured by the Versant studies.

In the study, participants' level of professional satisfaction did not change significantly during the 12 months in the program. Professional satisfaction scores of the study participants were highest at program start (month 1), decreased slightly at the 6-month survey then stabilized between months 6 and 12 of the nurse residency. This pattern was also observed in most of the UHC/AACN studies (Friday et al., 2016; Goode et al., 2013; Holland & Moddeman, 2012; Maxwell, 2011; Olson-Sitki et al., 2012). In contrast, job satisfaction scores increased in the Versant studies between months 1 and 6, and reached the highest level by the 12th month (Ulrich



et al., 2010). Versant used different instruments to measure job satisfaction in newly graduated nurses (Work Satisfaction, Nurse Satisfaction, and Conditions for Work Effectiveness surveys).

Two UHC/AACN researchers assessed job satisfaction with the McClosky/Mueller Job Satisfaction scale and observed that job satisfaction was not significantly related to nurse residency participation (Altier & Krsek, 2011; Setter et al., 2011). Job satisfaction scores significantly influenced newly graduated nurses' intention to stay with their current position (Altier & Krsek, 2011; Setter et al., 2011). One UHC/AACN study reported different results, participants' professional satisfaction scores were high initially, dropped at 6 months and rebounded to nearly original levels at 12 months (Williams et al., 2007). The researchers attributed the 6-month decline in scores to reality shock which was also observed in the personal stress and social support factors in the UHC/AACN literature.

In contrast to the study and to most of the UHC/AACN and Versant studies, job satisfaction scores in Bratt and Felzer's (2011) study did not change significantly between the 1st and 6th months of the nurse residency but increased significantly between the 6th and 12th months of the program. Bratt et al. (2012) were the only researchers to examine job satisfaction in rural nurse residents. Rural nurse residents had significantly higher job satisfaction scores compared to the urban nurse residents (Bratt et al., 2012).

Professional satisfaction scores of the study participants consistently remained above 3.3 out of a 4 on a 4-point Likert-type scale. Similar results have been observed in the literature. This finding has been interpreted by other nurse residency researchers (Goode et al., 2013; Krugman et al., 2006) as an indication of high levels of professional satisfaction in newly graduated nurses participating in nurse residency programs. Comparing the professional satisfaction scores of nurse residency participants from the studies currently available in the literature is difficult due

to the variations in (1) terminology used by researchers (professional satisfaction versus job or work satisfaction), (2) conceptualization of the professional/job/work satisfaction constructs, and (3) conflicting results of analyses in the literature.

Despite the lack of consistency in the literature, it can be concluded that nurse residency programs help newly graduated nurses maintain high levels of professional satisfaction. Newly graduated nurses are more likely to stay employed when they feel a sense of satisfaction in their profession and the employing organization. This provides an added incentive for healthcare organizations to consider implementing these programs.

### **Technical Skills**

The 2002 NCSBN survey of chief nursing officers nationwide revealed that most newly graduated nurses were not proficient in psychomotor/technical skills performance and had difficulty responding appropriately to emergencies, essential nursing skills (Krugman et al., 2006; Smith & Crawford, 2002). Most new nurses graduate from nursing school with limited experience in technical skills and require a transition period in which to develop these skills. Proficiency in technical nursing skills indicates that the newly graduated nurse has transitioned into Benner's competent stage and met one of the goals of the UHC/AACN nurse residency program. At the study site participants in the nurse residency were given opportunities to practice technical skills with the guidance of nurse educators in the simulation laboratory. The participants transferred their learning into the clinical setting and performed technical skills with the guidance of their preceptors.

Overall, study participants' scores over the 12-month program showed increased levels of comfort with technical skills. Similar findings were noted in most of the UHC/AACN studies (Casey et al., 2004; Goode et al., 2013; Maxwell, 2009). Casey et al. (2004) found that 41% of

newly graduated nurses were uncomfortable performing epidural care after 1 year of experience. Participants in Maxwell's (2009) study found central line care challenging. Few studies outside of the UHC/AACN program reported on outcomes related to nurse residents' technical skills. Technical skills competency was not reported in the Versant studies (Ulrich et al., 2010).

Study participants consistently ranked emergency (ER) code response, managing chest tubes, tracheostomy care, and ventilator care as the skills they felt most uncomfortable performing. Goode et al. (2013) reported that the top four most uncomfortable skills for nurse residents to perform were code/emergency response, chest tube care (placement, pleurovac), ventilator care/management, and blood product administration. At the beginning of the program, study participants listed communicating with a physician/MD in the top five list of most challenging technical skills, this was also reported by Goode and others (2013). By the sixth month of the nurse residency study participants were more confident with physician communication. Overall, study participants were more confident and comfortable with technical skills performance by the end of the nurse residency program. Improvement in newly graduated nurses' confidence and comfort with technical skills performance meets one of the goals established by UHC/AACN nurse residency designers and indicates successful transition into Benner's competent stage.

Nurse residency participants in the literature and the study demonstrated increased confidence and comfort performing 21 technical skills. Clinical work experience is a possible confounding or moderating variable which may also explain the improvement in newly graduated nurses' technical nursing skills. Improving newly graduated nurses' technical skills provides better trained employees for healthcare organizations.

## **Participation Requirements**

Participation in the nurse residency program at the study site was an employment requirement for the first two groups of participants (2012 and 2013). The 2014 and 2015 (February and April) groups were voluntary participants in the study site nurse residency. There were no significant differences in participants' scores based on participation requirements. The 2012 and 2013 groups actually had higher scores on the Casey Fink support factor than the voluntary groups. No other studies were found in the literature that examined this issue. Requiring newly graduated nurses to participate in the nurse residency does not diminish the effectiveness of the program. This information can be used to guide chief nursing officers and human relations departments in decision making as they determine the best way to implement nurse residency programs in their organizations.

## **Retention and Turnover**

The study site reported increased retention and decreased turnover of nurse residents, especially in comparison to newly graduated nurses that decided not to participate in the study site nurse residency. From January 2012 to January 2015, the turnover rate was 29.3% for newly graduated nurses at the study site that declined nurse residency participation versus 15.9% for participants. Yearly turnover rates for study site participants have dropped to almost zero. Increased retention of newly graduated nurses was observed in all of the nurse residency literature reviewed. UHC/AACN authors reported 1-year retention rates between 87% to 100%; for the last 10 years retention rates stabilized at 94-95% (Altier & Krsek, 2006; Goode et al., 2009; Holland & Moddeman, 2012; Krugman et al., 2006; Setter et al., 2011; Williams et al., 2007). UHC/AACN nurse residencies reported average 1-year turnover rates between 5.6 to 12% for newly graduated nurses after their first year of work (Altier & Krsek, 2006; Goode et al.,

2009; Krugman, et al., 2006; Williams et al, 2007). The 1-year turnover rate for the Versant nurse residency was 7.1%, which increased to 39.8% five years after program completion (Ulrich et al., 2010).

Nurse residency programs are successful in keeping newly graduated nurses from leaving. Improved retention of newly graduated nurses in hospitals and in the nursing profession have been observed most often in the literature of the nurse residency topic. Reducing the turnover of newly graduated nurses is a strong incentive for healthcare organizations to implement nurse residency programs.

### **Limitations**

In the study data there was not a way to separate participants' scores according to demographic characteristics, this is due to the de-identification process. Comparisons between the cohorts was limited due to the sample sizes of some of the cohorts. Sample size and study attrition (35%) were a threat to the study. The size of the study cohorts were reduced to the point where comparisons of demographic characteristics were not statistically reliable. Study attrition had the greatest effect on the 2013 cohort due to its small size. The cohort began as a small group of 15 participants and ended as a group of 9 at the end of the program. Study attrition and data limitations presented major obstacles to some portions of this study and in other studies in the literature on nurse residency programs. Time in the clinical work setting may be a confounding or moderating variable in the study and other studies of nurse residency programs.

### **Recommendations**

Nurse residency programs are effective in community hospitals for reducing turnover in newly graduated nurses, improving quality of patient care, and saving money. The outcomes of the study and the literature show that nurse residency programs are efficient and effective and are

a worthwhile investment. The following recommendations are made based upon the findings and conclusion from this study:

1. The Centers for Medicare and Medicaid Services (CMS) should support increased implementation of nurse residency programs by developing financial incentives to help hospitals provide these programs. State legislators and members of congress need to be made aware of the benefits of nurse residency programs. State and national organizations that support healthcare quality and improvement have an interest in supporting nurse residency programs and should be included in the conversation on how to incentivize these programs. Nurse leaders can bring attention to this cause by increasing the visibility of these programs in the media and through lobbying efforts using political action committees.

2. Hospital executives need to be made aware of the cost savings that other organizations have achieved from implementing nurse residency programs. This information needs to be disseminated through publications, presentations at meetings or conferences, and through other media sources. Nurse residency representatives at the study site determined that the cost savings of retaining nurses in the organization far outweigh the total costs of the program. The estimated cost of replacing one staff nurse at the study is \$53,235 (Y. Daidone, personal communication). There were 138 nurse residency participants from August 1, 2012, to August 1, 2015 and 19 left the organization prior to their 1-year anniversary. Approximately 283 newly graduated nurses did not participate in the nurse residency between August 1, 2012 to August 1, 2015 and 83 of the non-participants left before their 1-year anniversary date at the organization. The calculated cost of replacing one registered nurse at the study site is \$53,235. The nurse residency program costs the study site approximately \$1,000 per nurse resident per year (Y. Daidone, personal communication). This adds up to a savings of \$52,235 for each nurse retained by the study site.

The average costs of turnover for a bedside nurse in the United States are \$37,700 to \$58,400 per year which adds up to a saving of \$36,700 to \$57,400 per year (Nursing Solutions, Inc., 2016).

The cost savings of the nurse residency program at the study site provide compelling evidence to support implementation of these program in community hospitals.

3. Partnerships between community hospitals and academic nursing programs confer several benefits. Schools of nursing can help defray the costs of implementing nurse residency programs. Community hospitals can support the academic partner by collaborating with nurse faculty on research projects. Academic nursing programs have a moral obligation to support the successful transition of newly graduated nurses into the clinical work setting, especially graduates of their programs.

4. There was difficulty obtaining retention and turnover data of nurses from hospitals without nurse residency programs, especially in the Southeast region of the United States. This makes it difficult to determine the actual effect these programs have on retention and turnover of nurses. Organizations like the Alabama Hospital Association or the Alabama Board of Nursing (ABN) could collect retention and turnover data from nurses or from healthcare organizations. In 2009 the ABN collected these data from nurses and calculated total turnover percentages for nurses working in healthcare facilities in the state. Annual retention and turnover rates would further state leaders' understanding of the nursing workforce, which could guide healthcare policy making.

5. Improve nurse manager involvement with newly graduated nurses and the nurse residency program. The results of the study and in the literature show that nurse manager feedback and involvement is important to newly graduated nurses. Nurse managers need to be included in the nurse residency where feasible and to feel a sense of ownership in the onboarding

process. One way to increase interaction between newly graduated nurses and their unit managers is to schedule interaction time during the later months of the nurse residency. Both would benefit by gaining insight into each other's concerns. This interaction period could be included as a regular component of the nurse residency curriculum.

6. More studies using a variety of statistical procedures are needed to provide a more comprehensive evaluation of nurse residency outcomes and to determine the best approach to analysis of these programs. The study used two statistical methods to analyze the social support factor. Repeated measures analysis of variance was used first to analyze participants' responses on the social support factors in the Casey Fink survey and the results were not significant. Significant differences between the 1st month and 12th month of the study site nurse residency were found when Welch one way analysis of variance was used. Most UHC/AACN studies in the literature used repeated measures procedures to analyze nurse residents' outcomes on the Casey Fink. This may reveal a methodological issue with the type of statistical tests used by nurse residency authors. Unequal group sizes can lead to a loss of data when using repeated measures analysis of variance. Study attrition can further reduce group sizes leading to less reliable results, especially in repeated measures analysis of variance, which are reportedly less reliable when sample sizes drop below 50.

7. The results of the technical nursing skills inventory from the study need to be disseminated to schools of nursing that supply nurses to the study site. The results of the study can be used to improve the curricula of nursing programs and provide better prepared graduates.



## **Recommendations for Future Research**

Gaining support for nurse residency programs requires demonstrating to healthcare leaders in state and national arenas the potential benefits of these programs for improving patient care and safety at the bedside. The following recommendations for future research are made:

1. Further research is needed to demonstrate the effects of these programs on patient care. Longitudinal studies will be required to demonstrate the effectiveness of nurse residency programs on patient care. Rosenfeld, Glassman, and Capobianco (2015) observed long-term improvements in graduates of nurse residency programs in the areas of professional development, retention, and intention to stay with the organization. Studies that focus on the influence of nurse residency participation on quality and safety of patient care are needed.

2. Studies that use larger samples and investigate more outcomes are needed. Approximately half of the studies in the literature had small sample sizes or only investigated one or two outcomes of nurse residency programs.

3. More studies are needed in community hospitals to help nurse residency program administrators determine if the program meets the needs of newly graduated nurses in these settings. Most studies examined the UHC/AACN nurse residency program in an academic medical center. There are more community hospitals (4,926) in the United States than academic medical centers (~120) (AHA, 2016), which supports the importance of research into this issue.

4. Studies on minority ethnic groups in nurse residency programs are needed. These studies have not been done but may be possible using data collected by a large organization such as the University Health System Consortium. Some changes would be required to connect the outcome data to the demographic data of interest. Another approach is to do qualitative studies, which can yield rich data from small samples.

5. More studies using quasi-experimental design and control groups are needed. Only one quasi-experimental, control group study (Newhouse, 2011) was found in the literature. Control group studies could help researchers determine whether newly graduated nurses' scores on the Casey Fink survey and other instruments are due to nurse residency participation or clinical work experience or both.

Additional recommendations:

6. Standardization of nurse residency program components has been called for in the literature (Anderson et al., 2012; Edwards et al., 2011; Rush et al., 2013). The Commission on Collegiate Nursing Education (CCNE) recently began to accredit nurse residency programs in an effort to support standardization of program components. Some of the recommended components include nurse residencies that are 12 months in duration and monthly peer group meetings. Evidence-based practice (EBP) projects are another valuable component of the UHC/AACN nurse residencies and should be a standard component of all nurse residencies. Evidence-based practice projects have been reported to improve nursing practice at the bedside (Goode et al., 2013). According to nurse manager reports, the EBP projects improved teamwork and fostered professional development in clinical nursing units (Goode et al., 2013; Lynn, 2012). The EBP projects also encourage innovation, promote a spirit of inquiry, and give the newly graduated nurses a sense of ownership in their clinical practice. Newly graduated nurses need recognition for their work on the EBP projects. Presentation of the EBP projects to fellow employees in the hospital can be accomplished with poster and podium sessions. Formal recognition of newly graduated nurses for completing the EBP projects and the nurse residency instills a sense of accomplishment and ownership in the newly graduated nurse. Inviting all stakeholders in the organization to the recognition ceremony also increases awareness of these programs.

In summary, this study evaluated the effectiveness of nurse residency program participation in a community hospital by examining outcomes on the Casey Fink Graduate Nurse Experience Survey. Five groups of newly graduated nurses participated in the program and all benefitted from the program, according to the study results. By the end of the program many of the participants achieved the goals of the nurse residency program and demonstrated many of the attributes of a nurse in Benner's competent stage. The study site benefitted by retaining most of the newly graduated nurses (85%) that participated in the program and from the evidence-based practice projects that led to innovations at the bedside.

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APPENDIX A  
NURSE RESIDENCY PROGRAM SCHEDULE

### Nurse Residency Program Schedule

|                    |            |   |
|--------------------|------------|---|
| August 22, 2012    | 8:30-4:00p | Introduction to Program<br>Stress Management, Self-Care<br>Outcomes Data  |
| September 26, 2012 | 8:30-12:30 | Organization of Data/Shift Report/Resource<br>Management/Communication b/t RN, Care Team, and<br>Physician  |
| October 24, 2012   | 8:30-12:30 | Managing Delivery of Care   |
| November 21, 2012  | 8:30-12:30 | Fall Prevention/Medication Administration   |
| December 19, 2012  | 8:30-12:30 | Management of Changing Patient Condition/Patient &<br>Family Teaching   |
| January 23, 2012   | 8:30-12:30 | Evidence Based Practice/Professionalism-Research<br>Report Critique/Evidence Based Practice in Action-<br>Determining Issues/Topics for Final Reports |
| February 27, 2012  | 8:30-12:30 | End of Life Care/Patient Pain Management  |
| March 27, 2012     | 8:30-12:30 | Cultural Competence in the Nursing Care<br>Environment/Ethical Decision Making  |
| April 24, 2012     | 8:30-12:30 | Evidence Based Skin Care Practice/Infection Control   |
| May 22, 2012       | 8:30-12:30 | Professional Development/Goal Setting and Evaluation  |
| June 26, 2012      | 8:30-12:30 | Professional Development/Professional Organizations<br>& Certification/Presentation of Final Project  |
| July 24, 2012      | 8:30-12:30 | Program Outcomes Data/Program Improvement/Group<br>Discussion Presentation of Final Projects<br>****Celebration****                                   |

Appendix A. Nurse Residency Program Schedule provided by Y. Daidone MSN,  
RN, Nurse Residency Coordinator.

APPENDIX B

PERMISSION TO USE THE CASEY-FINK GRADUATE NURSE  
EXPERIENCE SURVEY AND THE INSTRUMENT

Permission to use the Casey-Fink Graduate Nurse Experience Survey

January 2014

Dear Colleague:

Thank you for the inquiry regarding the *Casey-Fink Graduate Nurse Experience Survey*♥ (revised, 2006) instrument. The survey was originally developed in the spring of 1999, initially revised in June 2002, and revised a second time in 2006. Since that time, it has been used to survey over 250 nurses in hospital settings in the Denver metropolitan area, and has been further validated by over 10,000 graduate nurse residents participating in the University Health System Consortium/AACN Post Baccalaureate Residency program and elsewhere nationally and internationally. Psychometric analysis has been done using these data and is reported in the summary included with this letter. We have published a report of the research we conducted in the development of this instrument:

Casey K, Fink R, Krugman M, Propst J: The graduate nurse experience. *Journal of Nursing Administration*. 2004; 34(6):303-311.

Fink RM, Krugman ME, Casey K, Goode CM. The Graduate Nurse Experience: Qualitative Residency Program Outcomes. *Journal of Nursing Administration*. 2008;38(7/8):341-348.

We are granting you permission to use this tool to assess the graduate nurse experience in your setting. Please note that this tool is copyrighted and should not be changed in any way. We have enclosed a copy for you to use for reproduction of the instrument.

We hope that our tool will be useful in your efforts to enhance the retention, professional development, and support of graduate nurses in your practice setting. Please email us if you have further questions. We would be interested in being informed as to your results or publications related to the use of our instrument.

Sincerely,

Kathy Casey, RN, MSN  
Manager, Clinical Education Programs, Exempla Lutheran Medical Center Adjunct  
Faculty, University of Colorado, College of Nursing [kathy.casey@sclhs.net](mailto:kathy.casey@sclhs.net)

Regina Fink, RN, PhD, AOCN, FAAN  
Research Nurse Scientist, University of Colorado Hospital Associate  
Professor, University of Colorado, College of Nursing  
[regina.fink@uchealth.org](mailto:regina.fink@uchealth.org)



# Casey-Fink Graduate Nurse Experience Survey

## Reliability and Validity Issues

This tool has been developed over several years and consists of five sections. Items in the first section relate to skills and procedures the graduate nurse is uncomfortable performing independently. Items in section three relate to job satisfaction. Items in sections four and five are either demographic in nature (e.g., “How many primary preceptors have you had during your orientation?”) or are open-ended (“List the top skill you are uncomfortable performing independently”) so that neither section can be quantitatively summarized.

The second section is composed of 24 questions responded to using a 4point balanced response format (Strongly Disagree to Strongly Agree) and an additional question where the respondent answers "yes" or "no" to a series of stressors. All but the stress items appear to address the respondents’ professional comfort, expectations or supports. The stress item addresses the respondent’s personal life and does not appear to be conceptually similar to the other items.

All items were subjected to exploratory factor analysis – Principal Axis Factoring with Varimax<sup>▼</sup> rotation. Principal Axis Factoring was selected to decrease the likelihood of overestimating the explained variance and item factor loadings common with Principal Components analysis.

In the analysis a 5-factor solution was found, accounting for 46% of the variation in total scores. The factors were labeled Support, Patient Safety, Stress, Communication/Leadership and Professional Satisfaction. Reliability estimates for the factors ranged from .71 to .90.

Specific constitution of the factors follows. Items on each factor are listed in the order of the magnitude of their corresponding loadings, highest to lowest.

### **Support ( $\alpha = .90$ )**

CF19 My preceptor is helping me to develop confidence in my practice CF9

I feel supported by the nurses on my unit

CF6 I feel my preceptor provides encouragement and feedback about my work CF7

I feel staff is available to me during new situations and procedures

CF18 There are positive role models for me to observe on my unit

CF10 I have opportunities to practice skills and procedures more often than once CF4

I feel at ease asking for help from other RNs on the unit

CF13 I feel the expectations of me in this job are realistic

CF23 I feel my manager provides encouragement and feedback about my work

Content validity has been established by review of expert nurse directors and educators in both academic and private hospital settings. The content of this tool is derived from a substantial and comprehensive literature review. This instrument was identified as discriminating between nurses with varied amounts of experience during the first year of practice.

### **PatientSafety ( $\alpha = .79$ )**

CF16 I am having difficulty organizing patient care needs CF5

I am having difficulty prioritizing patient care needs

CF8 I feel overwhelmed by my patient care responsibilities and workload CF12

I am able to complete my patient care assignment on time

CF17 I feel I may harm a patient due to my lack of knowledge and experience

## **Stress ( $\alpha = .71$ )**

- CF25A Finances causing stress
- CF24 I am experiencing stress in my personal life
- CF25C Student Loans causing stress
- CF25E Personal relationship(s) causing stress CF25D  
Living situation causing stress
- CF25F Job performance causing stress
- CF25B Child care causing stress

## **Communication/Leadership ( $\alpha = .75$ )**

- CF1 I feel confident communicating with physicians
- CF3 I feel comfortable delegating tasks to the nursing assistant
- CF15 I feel comfortable making suggestions for changes to the nursing plan of care CF14 I  
feel prepared to complete my job responsibilities
- CF11 I feel comfortable communicating with patients and their families CF2  
I am comfortable knowing what to do for a dying patient

## **Professional Satisfaction ( $\alpha = .83$ )**

- CF22 I feel my work is exciting and challenging CF21 I  
am satisfied with my chosen nursing specialty CF20 I am  
supported by family/friends

If the instrument is scored by summing all of the items, including the stress items, the internal consistency estimates is  $\alpha = .89$ .

## Casey-Fink Graduate Nurse Experience Survey (revised)

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**I. List the top three skills/procedures you are *uncomfortable performing* independently at this time? (please select from the drop down list) list is at the end of this document.**

1. \_\_\_\_\_skill\_1
2. \_\_\_\_\_skill\_2
3. \_\_\_\_\_skill\_3
4. \_\_\_\_\_I am independent in all skills indep\_skill

For all items above on this page run frequencies. Can also import the last item (II) into excel and sort on responses to get responses with similar starting word alphabetized.

**II. Please answer each of the following questions by placing a mark inside the circles:**

Assuming using 1 to 4 for the responses (or 4 to 1) for the following 24 items

|   | STRONGLY              |                       |                       | STRONGLY              |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
|   | DISAGREE              | DISAGREE              | AGREE                 | AGREE                 |
| 1. I feel confident communicating with physicians.          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. I am comfortable knowing what to do for a dying patient. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

3. I feel comfortable delegating tasks to the Nursing Assistant.
4. I feel at ease asking for help from other RNs on the unit.
5. I am having difficulty prioritizing patient care needs.
6. I feel my preceptor provides encouragement and feedback about my work.
7. I feel staff is available to me during new situations and procedures.
8. I feel overwhelmed by my patient care responsibilities and workload.
9. I feel supported by the nurses on my unit.
10. I have opportunities to practice skills and procedures more than once.

11. I feel comfortable communicating with patients

and their families.

**STRONGLY**

**DISAGREE**

**DISAGREE**

**AGREE**

**STRONGLY**

**AGREE**

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12. I am able to complete my patient care assignment

on time.

13. I feel the expectations of me in this job are

realistic.

14. I feel prepared to complete my job

responsibilities.

15. I feel comfortable making suggestions for

changes to the nursing plan of care.

16. I am having difficulty organizing patient care

needs.

17. I feel I may harm a patient due to my lack of knowledge and experience.
18. There are positive role models for me to observe on my unit.
19. My preceptor is helping me to develop confidence in my practice.
20. I am supported by my family/friends.
21. I am satisfied with my chosen nursing specialty.
22. I feel my work is exciting and challenging.
23. I feel my manager provides encouragement and feedback about my work.
24. I am experiencing stress in my personal life.

25. If you chose agree or strongly agree, to #24, please indicate what is causing your stress. (You may circle more than once choice.)

The following items can be scored as yes=1/no=0 (frequencies)

- a. Finances
- b. Child care
- c. Student loans
- d. Living situation
- e. Personal relationships
- f. Job performance
- g. Other\_\_\_\_\_

**III. How *satisfied* are you with the following aspects of your job:**

The following items (IV) are not used in the residency evaluation – would suggest scoring 1 to 5 and either summing for a total score or reporting frequencies on each item.

|                               | VERY<br>DISSATISFIED  | MODERATELY<br>DISSATISFIED | NEITHER<br>SATISFIED<br>NOR<br>DISSATISFIED | MODERATELY<br>SATISFIED | VERY<br>SATISFIED     |
|-------------------------------|-----------------------|----------------------------|---|-------------------------|-----------------------|
| Salary                        | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/>                       | <input type="radio"/>   | <input type="radio"/> |
| Vacation                      | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/>                       | <input type="radio"/>   | <input type="radio"/> |
| Benefits package              | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/>                       | <input type="radio"/>   | <input type="radio"/> |
| Hours that you work           | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/>                       | <input type="radio"/>   | <input type="radio"/> |
| Weekends off per month        | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/>                       | <input type="radio"/>   | <input type="radio"/> |
| Your amount of responsibility | <input type="radio"/> | <input type="radio"/>      | <input type="radio"/>                       | <input type="radio"/>   | <input type="radio"/> |



|  |                       |                       |                       |                       |                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Opportunities for career advancement   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Amount of encouragement and feedback   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Opportunity for choosing shifts worked | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

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**IV. Transition (please circle any or all that apply) For the following 5 items run frequencies on responses**

**1. What difficulties, if any, are you currently experiencing with the transition from the "student" role to the "RN" role? Difficulties**

- a. role expectations (e.g. autonomy, more responsibility, being a preceptor or in charge)
- b. lack of confidence (e.g. MD/PT communication skills, delegation, knowledge deficit, critical thinking)
- c. workload (e.g. organizing, prioritizing, feeling overwhelmed, ratios, patient acuity)
- d. fears (e.g. patient safety)
- e. orientation issues (e.g. unit familiarization, learning technology, relationship with multiple preceptors, information overload)

**2. What could be done to help you feel more supported or integrated into the unit? Support**

- a. improved orientation (e.g. preceptor support and consistency, orientation extension, unit specific skills practice)

- b. increased support (e.g. manager, RN, and educator feedback and support, mentorship)
- c. unit socialization (e.g. being introduced to staff and MDs, opportunities for staff socialization)
- d. improved work environment (e.g. gradual ratio changes, more assistance from unlicensed personnel, involvement in schedule and committee work)

**3. What aspects of your work environment are most satisfying? [Most\\_satis](#)**

- a. peer support (e.g. belonging, team approach, helpful and friendly staff)
- b. patients and families (e.g. making a difference, positive feedback, patient satisfaction, patient interaction)
- c. ongoing learning (e.g. preceptors, unit role models, mentorship)
- d. professional nursing role (e.g. challenge, benefits, fast pace, critical thinking, empowerment)
- e. positive work environment (e.g. good ratios, available resources, great facility, up-to-date technology)

**4. What aspects of your work environment are least satisfying? [Least\\_satis](#)**

- a. nursing work environment (e.g. unrealistic ratios, tough schedule, futility of care)
- b. system (e.g. outdated facilities and equipment, small workspace, charting, paperwork)
- c. interpersonal relationships (e.g. gossip, lack of recognition, lack of teamwork, politics)
- d. orientation (inconsistent preceptors, lack of feedback)

**5. Please share any comments or concerns you have about your residency program:**

**[Comments](#)**

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V. **Demographics:** Circle the response that represents the most accurate description of your individual professional profile.

1. Age: \_\_\_\_\_ years [Age](#)

2. Gender:

a. Female

b. Male

3. Ethnicity:

a. Caucasian (white)

b. Black

c. Hispanic

d. Asian

e. Other

f. I do not wish to include this information

4. Area of specialty:

a. Adult Medical/Surgical

b. Adult Critical Care

c. OB/Post Partum

d. NICU

e. Pediatrics

f. Emergency Department

- g. Oncology
- h. Transplant
- i. Rehabilitation
- j. OR/PACU
- k. Psychiatry
- l. Ambulatory Clinic
- m. Other: \_\_\_\_\_

**5. School of Nursing Attended (name, city, state located):** \_\_\_\_\_

**6. Date of Graduation:** \_\_\_\_\_

**7. Degree Received:** AD: \_\_\_\_\_ Diploma: \_\_\_\_\_ BSN: \_\_\_\_\_ ND:  
\_\_\_\_\_

**8. Other Non-Nursing Degree (if applicable):** \_\_\_\_\_

**9. Date of Hire (as a Graduate Nurse):** \_\_\_\_\_

**10. What previous healthcare work experience have you had:**

- a. Volunteer
- b. Nursing Assistant
- c. Medical Assistant
- d. Unit Secretary
- e. EMT
- f. Student Externship
- g. Other (*please specify*): \_\_\_\_\_

**11. Have you functioned as a charge nurse? [Charge\\_nurse](#)**

- a. Yes [1](#)

b. No 0

**12. Have you functioned as a preceptor? Preceptor**

a. Yes 1

b. No 0

**13. What is your scheduled work pattern? Work\_pattern**

a. Straight days 1

b. Straight evenings 2

c. Straight nights 3

d. Rotating days/evenings 4

e. Rotating days/nights 5

f. Other (*please specify*): 6 \_\_\_\_\_

**14. How long was your unit orientation? Orient**

a. Still ongoing 1

b. ≤ 8 weeks 2

c. 9 – 12 weeks 3

d. 13 – 16 weeks 4

e. 17 - 23 weeks 5

f. ≥ 24 weeks 6

**15. How many *primary* preceptors have you had during your orientation?**

**Primary\_preceptors**

\_\_\_\_\_ number of preceptors

**16. Today's date:** \_\_\_\_\_

## **Drop down list of skills**

Assessment skills

Bladder catheter insertion/irrigation

Blood draw/venipuncture

Blood product administration/transfusion

Central line care (dressing change, blood draws, discontinuing)

Charting/documentation

Chest tube care (placement, pleurovac)

Code/Emergency Response

Death/Dying/End-of-Life Care

Nasogastric tube management

ECG/EKG/Telemetry care

Intravenous (IV) medication administration/pumps/PCAs

Intravenous (IV) starts

Medication administration

MD communication

Patient/family communication and teaching

Prioritization/time management

Tracheostomy care

Vent care/management

Wound care/dressing change/wound vac

Unit specific skills \_\_\_\_\_

APPENDIX C  
RESULTS TABLES

*Repeated Measures ANOVA for Casey-Fink Factors*

| Casey-Fink Factor                    | Time in months | Mean  | N  | Std. Deviation | F      | df     | Sig. |
|--------------------------------------|----------------|-------|----|----------------|--------|--------|------|
| *Social Support                      |                |       | 79 |                | 1.777  | 2, 156 | .173 |
|                                      | One            | 3.270 |    | 0.432          |        |        |      |
|                                      | Six            | 3.145 |    | 0.491          |        |        |      |
|                                      | Twelve         | 3.156 |    | 0.455          |        |        |      |
| Personal Stress                      |                |       | 79 |                | 0.754  | 2, 156 | .472 |
|                                      | One            | 2.481 |    | 0.845          |        |        |      |
|                                      | Six            | 2.379 |    | 0.704          |        |        |      |
|                                      | Twelve         | 2.329 |    | 0.729          |        |        |      |
| Communication and Leadership         |                |       | 79 |                | 39.378 | 2, 156 | .000 |
|                                      | One            | 2.582 |    | 0.401          |        |        |      |
|                                      | Six            | 2.878 |    | 0.397          |        |        |      |
|                                      | Twelve         | 3.145 |    | 0.404          |        |        |      |
| Patient Safety (Organize/Prioritize) |                |       | 79 |                | 7.421  | 2, 156 | .001 |
|                                      | One            | 2.400 |    | 0.333          |        |        |      |
|                                      | Six            | 2.286 |    | 0.321          |        |        |      |
|                                      | Twelve         | 2.197 |    | 0.314          |        |        |      |
| Professional Satisfaction            |                |       | 79 |                | 1.396  | 2, 156 | .251 |
|                                      | One            | 3.426 |    | 0.536          |        |        |      |
|                                      | Six            | 3.299 |    | 0.435          |        |        |      |
|                                      | Twelve         | 3.337 |    | 0.510          |        |        |      |

\*See Welch ANOVA Table.



*Tests of Normality for Repeated Measures ANOVA*

| Social Support factor |                                 |    |       |              |    |      |
|-----------------------|---------------------------------|----|-------|--------------|----|------|
|                       | Kolmogorov-Smirnov <sup>a</sup> |    |       | Shapiro-Wilk |    |      |
|                       | Statistic                       | df | Sig.  | Statistic    | df | Sig. |
| T1                    | .082                            | 79 | .200* | .980         | 79 | .240 |
| T2                    | .097                            | 79 | .064  | .972         | 79 | .078 |
| T3                    | .089                            | 79 | .186  | .980         | 79 | .250 |

| Personal Stress factor |                                 |    |      |              |    |      |
|------------------------|---------------------------------|----|------|--------------|----|------|
|                        | Kolmogorov-Smirnov <sup>a</sup> |    |      | Shapiro-Wilk |    |      |
|                        | Statistic                       | df | Sig. | Statistic    | df | Sig. |
| T1                     | .237                            | 79 | .000 | .871         | 79 | .000 |
| T2                     | .300                            | 79 | .000 | .826         | 79 | .000 |
| T3                     | .277                            | 79 | .000 | .810         | 79 | .000 |

| Communication and Leadership factor |                                 |    |      |              |    |      |
|-------------------------------------|---------------------------------|----|------|--------------|----|------|
|                                     | Kolmogorov-Smirnov <sup>a</sup> |    |      | Shapiro-Wilk |    |      |
|                                     | Statistic                       | df | Sig. | Statistic    | df | Sig. |
| T1                                  | .115                            | 79 | .012 | .971         | 79 | .069 |
| T2                                  | .202                            | 79 | .000 | .930         | 79 | .000 |
| T3                                  | .198                            | 79 | .000 | .943         | 79 | .002 |

| Patient Safety (Organize/Prioritize) |                                 |    |      |              |    |      |
|--------------------------------------|---------------------------------|----|------|--------------|----|------|
|                                      | Kolmogorov-Smirnov <sup>a</sup> |    |      | Shapiro-Wilk |    |      |
|                                      | Statistic                       | df | Sig. | Statistic    | df | Sig. |
| T1                                   | .356                            | 79 | .000 | .731         | 79 | .000 |
| T2                                   | .370                            | 79 | .000 | .694         | 79 | .000 |
| T3                                   | .329                            | 79 | .000 | .756         | 79 | .000 |

| Professional Satisfaction |                                 |    |      |              |    |      |
|---------------------------|---------------------------------|----|------|--------------|----|------|
|                           | Kolmogorov-Smirnov <sup>a</sup> |    |      | Shapiro-Wilk |    |      |
|                           | Statistic                       | df | Sig. | Statistic    | df | Sig. |
| T1                        | .441                            | 79 | .000 | .598         | 79 | .000 |
| T2                        | .415                            | 79 | .000 | .605         | 79 | .000 |
| T3                        | .421                            | 79 | .000 | .599         | 79 | .000 |

Notes: \*. This is a lower bound of the true significance. a. Lilliefors Significance Correction.

*Welch One Way ANOVA for Casey-Fink Factors*

| Casey-Fink Factor                    | Time in months | Mean  | N   | Std. Deviation | F      | df     | Sig. |
|--------------------------------------|----------------|-------|-----|----------------|--------|--------|------|
| Social Support                       |                |       |     |                | 3.510  | 2, 273 | .031 |
|                                      | One            | 3.321 | 121 | .037           |        |        |      |
|                                      | Six            | 3.205 | 76  | .058           |        |        |      |
|                                      | Twelve         | 3.156 | 79  | .051           |        |        |      |
| Personal Stress                      |                |       |     |                | 1.874  | 2, 273 | .156 |
|                                      | One            | 2.541 | 121 | .844           |        |        |      |
|                                      | Six            | 2.395 | 76  | .732           |        |        |      |
|                                      | Twelve         | 2.329 | 79  | .728           |        |        |      |
| Communication and Leadership         |                |       |     |                | 43.272 | 2, 273 | .000 |
|                                      | One            | 2.642 | 121 | .394           |        |        |      |
|                                      | Six            | 2.985 | 76  | .374           |        |        |      |
|                                      | Twelve         | 3.146 | 79  | .404           |        |        |      |
| Patient Safety (Organize/Prioritize) |                |       |     |                | 13.927 | 2, 273 | .000 |
|                                      | One            | 2.428 | 121 | .345           |        |        |      |
|                                      | Six            | 2.247 | 76  | .311           |        |        |      |
|                                      | Twelve         | 2.197 | 79  | .315           |        |        |      |
| Professional Satisfaction            |                |       |     |                | 2.619  | 2, 273 | .075 |
|                                      | One            | 3.474 | 121 | .512           |        |        |      |
|                                      | Six            | 3.333 | 76  | .462           |        |        |      |
|                                      | Twelve         | 3.337 | 79  | .510           |        |        |      |

*Tests of Normality for Welch One Way ANOVA.*

*Test of Homogeneity of Variances*

| Casey Fink Factor            | Levene Statistic | df1 | df2 | Sig. |
|------------------------------|------------------|-----|-----|------|
| Social Support               | 2.159            | 2   | 273 | .117 |
| Personal Stress              | 1.940            | 2   | 268 | .146 |
| Communication and Leadership | 0.736            | 2   | 273 | .480 |
| Patient Safety               | .635             | 2   | 273 | .531 |
| Professional Satisfaction    | 1.721            | 2   | 273 | .181 |

*Robust Tests of Equality of Means*

| Casey Fink Factor            | Welch Statistic | df1 | df2     | Sig. |
|------------------------------|-----------------|-----|---------|------|
| Social Support               | 3.737           | 2   | 157.098 | .026 |
| Personal Stress              | 1.841           | 2   | 165.263 | .162 |
| Communication and Leadership | 41.995          | 2   | 165.699 | .000 |
| Patient Safety               | 13.570          | 2   | 169.337 | .000 |
| Professional Satisfaction    | 2.595           | 2   | 167.608 | .078 |

*Welch ANOVA Results: Voluntary versus Mandatory Participation.*

| Factor                                      | Group     | N   | Mean  | SD   | S.E. | F      | Sig. |
|---|-----------|-----|-------|------|------|--------|------|
| <b>Social Support</b>                       |           |     |       |      |      |        |      |
|   | Voluntary | 60  | 2.43  | .831 | .107 | 9.15   | .000 |
|   | Mandatory | 216 | 3.20  | .461 | .031 |        |      |
| <b>Personal Stress</b>                      |           |     |       |      |      |        |      |
|   | Voluntary | 60  | 2.34  | .309 | .039 | 1.01   | .315 |
|   | Mandatory | 216 | 2.44  | .775 | .053 |        |      |
| <b>Communication and Leadership</b>         |           |     |       |      |      |        |      |
|   | Voluntary | 60  | 3.364 | .417 | .054 | 56.37  | .000 |
|   | Mandatory | 216 | 2.875 | .454 | .031 |        |      |
| <b>Patient Safety (Organize/Prioritize)</b> |           |     |       |      |      |        |      |
|   | Voluntary | 60  | 2.89  | .434 | .056 | 118.46 | .000 |
|   | Mandatory | 216 | 2.31  | .351 | .024 |        |      |
| <b>Professional Satisfaction</b>            |           |     |       |      |      |        |      |
|   | Voluntary | 60  | 3.52  | .439 | .057 | 4.82   | .029 |
|   | Mandatory | 216 | 3.36  | .513 | .035 |        |      |

*Number of Preceptors*

| Total number<br>of Preceptors | Freq. | Percent | Cumulative<br>Percent |
|-------------------------------|-------|---------|-----------------------|
| .00                           | 27    | 15.1    | 15.1                  |
| 1.00                          | 36    | 20.1    | 35.2                  |
| 2.00                          | 66    | 36.9    | 72.1                  |
| 3.00                          | 25    | 14.0    | 86.0                  |
| 4.00                          | 13    | 7.3     | 93.3                  |
| 5.00                          | 8     | 4.5     | 97.8                  |
| 6.00                          | 4     | 2.2     | 100.0                 |
| Total                         | 179   | 100.0   | ----                  |

APPENDIX D

PERMISSION LETTER FROM THE STUDY SITE

*Permission Letter from Study Site*



December 14, 2015

University of Alabama Institutional Review Board

Clara Owings, a doctoral student at the University Of Alabama Capstone College Of Nursing will begin the final stages of a doctoral dissertation this month. The focus of her research is nurse residency programs in community hospitals. Ms. Owings has been involved as an Academic Liaison with the DCH Nurse Residency Program since the inception of the program in 2011 from its earliest stages and has served as a facilitator in the program. She has also provided other types of assistance to me as the program coordinator. The DCH Nurse Residency is the first UHC/AACN Nurse Residency program in a community hospital and has a special position in nurse residency history for this reason. Ms. Owings' research focuses on the benefits of the nurse residency program in the community setting. For this study she would like to use the dataset collected by the program coordinator from August 2011 to 2015, specifically focusing on the data collected using the Casey-Fink Graduate Nurse survey. Participants give consent when they log in to the UHC database prior to taking the survey. The research methodology does not include any contact with the participants and they are identified by participant number not name.

Per Dr. J. Grier Stewart with the DCH IRB Committee, since nothing is being done at DCH, with DCH records or (actively) with DCH staff, DCH has no jurisdiction or need to be involved. In Dr. Grier's opinion, if it's just survey material that DCH residents and others may have done in the past, DCH IRB does not need to be involved.

Sincerely,

*Yvette Daidone, MSN, RN*

Yvette Daidone, MSN, RN  
DCH Nurse Residency Coordinator  
205-759-7156  
ydaidone@dchsystem.com

APPENDIX E  
IRB APPROVAL



Office for Research  
Institutional Review Board for the  
Protection of Human Subjects

THE UNIVERSITY OF  
**ALABAMA**  
R E S E A R C H

January 27, 2016

Clara Owings, MSN, RN, FNP-BC  
Instructor  
Capstone College of Nursing  
The University of Alabama  
Box 870358

Re: IRB # EX-16-CM-006 "Effectiveness of Nurse Residency Programs"

Dear Ms. Owings:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your protocol has been given exempt approval according to 45 CFR part 46.101(b)(4) as outlined below:


*(4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.*

Your application will expire on January 26, 2017. If your research will continue beyond this date, complete the relevant portions of Continuing Review and Closure Form. If you wish to modify the application, complete the Modification of an Approved Protocol Form. When the study closes, complete the appropriate portions of FORM: Continuing Review and Closure.

Should you need to submit any further correspondence regarding this proposal, please include the assigned IRB application number.

Good luck with your research.

Sincerely,

  
Carpanato T. Myles, MSML, CIM, CIP  
Director & Research Compliance Officer  
Office for Research Compliance



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