

# NURSE RESIDENCY PROGRAMS: AN EVIDENCE-BASED REVIEW OF THEORY, PROCESS, AND OUTCOMES

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Nursing shortages exist worldwide while job stress, dissatisfaction, lack of peer support and limited professional opportunities still contribute to attrition. The aim of this systematic review is to describe and evaluate the quality of the science, report recommendations and lessons learned about implementing and evaluating nurse residency programs (NRPs) designed to improve new graduate transitioning. Databases were searched between 1980 and 2010 using five search terms: nurse, intern, extern, transition and residency programs. Twenty studies reporting programs for new RNs fit the inclusion criteria. Three major discoveries include: 1. Wide variation in content, teaching and learning strategies make comparison across programs difficult; 2. Lack of theory in designing the educational intervention has limited the selection and development of new instruments to measure program effectiveness; and 3. Well designed quasi-experimental studies are needed. As a major nursing education redesign, NRPs could be used to test the principles, concepts and strategies of organizational transformation and experiential-interactive learning theory. By focusing on fiscal outcomes, current administrators of NRPs are missing the opportunity to implement an organizational strategy that could improve workplace environments. Healthcare organizations need to envision NRPs as a demonstration of positive clinical learning environments that can enhance intra- and interprofessional education and practice. (Index words: Education; Systematic review; Clinical practice; Residency programs; Transition). *J Prof Nurs* 28:203–212, 2012. *Published by Elsevier Inc.*

**W**HEN ENTERING THE profession, new graduate RNs face high patient acuity and complex situations, nursing shortages, high RN turnover, burnout, excessive overtime demands, reduced new RN orienta-

tions, and heavy use of agency or traveling nurses to fill gaps in service ([Joint Commission on Accreditation of Healthcare Organizations, 2002](#); [Jones & Gates, 2007](#)). Nurse graduates from bachelor of science in nursing (BSN) and associate degree in nursing programs have described many difficulties in transitioning from a nursing student to a professional RN role ([Fink, Krugman, Casey, & Goode, 2008](#)). Their concerns include workplace stress ([Casey, Fink, Krugman, & Propst, 2004](#); [Zinsmeister & Schafer, 2009](#)), role transition, a general lack of confidence, struggles organizing and managing workload, fears related to giving medications and harming the patient, ([Dyess & Sherman, 2009](#); [Fink et al., 2008](#)), lack of ability to complete comprehensive assessments or ability to interpret and act on laboratory values, difficulties in communicating with doctors ([Owens et al.,](#)

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2001), and uncertainties about task delegation and conflict resolution (Keller, Meekins, & Summers, 2006).

Dracup and Morris (2007) claim that these difficulties are occurring because of accelerated education programs. However, the need for mentoring new RNs was recognized as early as the 1980s (Aldrich, 1988; Caroselli-Karinja, McGowan, & Penn, 1988; Kasprisin & Young, 1985; Schempp & Rompre, 1986; Woodtli, Hazzard, & Rusch, 1988). The first new graduate nurse internship or extern programs were pilot tested as early as 1982 (Dear, Celentano, Weisman, & Keen, 1982) when they were begun as marketing strategies to attract new RNs into specialty or hard-to-recruit clinical areas such as neuroscience (Aldrich, 1988), psychiatric nursing (Caroselli-Karinja et al., 1988), critical care (Hartshorn, 1992), and now geropalliative care (Lee, Coakley, Dahlin, & Ford, 2009). Since 1982 more than 36 published research reports have described effects of nurse extern, internship, transition, or nurse residency programs (NRPs). Most authors claimed that their program promoted a smooth and efficient transition from beginner to competent nurse in the first 12 months of employment. Lack of consistency in the label and the definition of NRPs has made comparison across programs difficult.

Declining RN graduate retention worldwide is a critical issue that is having a major negative impact on health care (Buchan & Calman, 2005). From an international perspective, the challenges, stresses, and need for support during an RNs' transitioning from new graduate to a competent nurse are addressed by only a handful of nurse authors outside of the United States. The Canadians (Ellerton & Gregor, 2003; Morrow, 2009), Swedes (Björkström, Athlin, & Johansson, 2008), and Norwegians (Begát & Severinsson, 2006) are attempting to understand the nursing shortage by exploring factors related to new graduates' experience of high job stress, dissatisfaction with their working conditions, and changes over time in their perceived competence in key nursing behaviors. In Australia, the need to support transitioning programs is well recognized (Cowin & Hengstberger-Sims, 2006; Johnstone, Kanitsak, & Currie, 2008). Lack of positive learning environments is raised as the fundamental problem by some Australian scholars who claim that greater attention to workplace environments might avert the need for new NRPs (Levett-Jones & FitzGerald, 2005) except in highly specialized hard-to-recruit areas. In the U.S. academic service, partnerships are moving ahead to obtain Commission on Collegiate Nursing Education (CCNE) accreditation of NRPs (Christofferson, 2010; JCAHO, 2002; PR Newswire, 2010; Spector, 2009; CCNE, 2008).

## Methods

The purpose of this systematic review was to describe the evidence behind NRPs. The approach used to guide and conduct this systematic review was described by Pai et al. (2004, p. 87) as five general steps for evidence-based medicine: "(i) formulation of a focused review question;

(ii) a comprehensive, exhaustive search and inclusion of primary studies; (iii) quality assessment of included studies and data extraction; (iv) synthesis of study results (meta-analysis); and (v) interpretation of the results and report writing."

The literature search began with two questions, what is the best design for a new NRP and what variables have been used to measure the efficacy of this educational intervention? We conducted a comprehensive search of the literature using the EBSCO host with full text, CINAHL plus with full text, and PubMed from 1980 to 2010, then screening the reference lists in identified studies. The objective of the search was to identify English-language research reports about nurse intern, extern, transition, and residency programs. Key search terms included a combination of the following words in the subject heading and the abstract fields: *intern program*, *extern program*, *nurse residency*, *transition*, *new RN program*, *RN clinical education*, *RN perceptions*, *nursing faculty*, *turnover costs*, and *return on investment (ROI)*. The articles in this systematic review were included if they were a research report about a nurse residency, intern, extern, or transition program for the purpose of facilitating transition of new graduates to professional nursing. Inclusion criteria required the researchers to report information about five criteria used to compare the studies: (a) new RN graduate characteristics, (b) program goals and theoretical perspectives, (c) program components and processes, (d) program outcome measures, and (e) lessons learned (or recommendations).

## Search Outcome

Thirty-five potentially relevant research reports were identified. Seven publications were excluded because the subjects were senior nursing students rather than newly graduated nurses, and eight studies were missing one or more of the selection criteria. Studies were included in this review even if they did not include an academic affiliation or if they included associate degree or baccalaureate new graduates. Twenty studies met the above-mentioned criteria and were reviewed.

## Quality Appraisal

Quality assessment and scoring of the studies were based on a system for rating the hierarchy of evidence described by Melnyk and Fineout-Overholt (2005). A classification rubric was developed to evaluate the studies using eight criteria: (a) research question identified, (b) sample size and characteristics described, (c) study design/methods described, (d) study variables described including the educational intervention, (e) data collection instruments identified, (f) reliability coefficients stated for the instruments and validity addressed, (g) statistical analysis reported with tests of significance, and (h) qualitative data collection included both method and results. The strengths and weaknesses of each study were scored sorting studies into three categories: high (5), medium (4), and low quality (3).

### Data Abstraction

Data abstraction consisted of reading each research study, isolating content related to each inclusion criterion, and transcribing specific passages of the text into a single data extraction template relevant to the aforementioned eight criteria.

### Data Synthesis

Programmatic components of each NRP were compared across studies using content analysis and other data display methods including conceptual maps of the research design and the concepts studied. A table was created to describe the quantitative instruments and frequency of use in all the studies. Comparative summaries of similarities and differences between programs were evaluated.

### Results

Of the 20 studies, 15 used a quasi-experimental one-group design, and two studies used an ex post facto two-group design. Three studies explored the lived experience of new RNs and reported qualitative data. Two studies also used simulation education strategies. RN self-image was assessed in 9 studies using seven different tools (Table 1). The Casey-Fink (2004) Graduate Nurse Experience Survey was the most frequently used tool to measure successful RN transitioning and professional satisfaction in seven studies. RN performance behaviors were measured in 3 studies using four instruments. Organizational impact was measured in 11 studies using seven tools. Organizational commitment was measured using two instruments, and three studies calculated ROI. Recruitment, retention, and turnover rates were used most frequently to measure program success in eleven studies.

The quality scoring system resulted in 2 of 20 studies receiving a high score, eight studies a medium score, and 10 studies a low score. Of the 20 studies, seven reported on the American Association of Colleges of Nursing (AACN) and the University Health System Consortium (UHC; <https://www.uhc.edu/12443.htm>) NRPs, and three studies reported on specialty care residencies in mental health, critical care, or pediatrics. All of the studies reported positive outcomes, and no negative outcomes related to completing a NRP were reported.

#### Similarities and Differences Across New RN Residency Programs

There appears to be two kinds of NRP interventions: the standard model (3 to 4 month orientation) and the comprehensive model (12–24 months). The type of model depends on four distinguishing features: (a) whether a new RN actually gets assigned to a consistent preceptor; (b) the number, type, and quality of learning activities; (c) the opportunity to get experience with marker events (Schoessler & Waldo, 2006) or simulation scenarios (Anderson et al., 2009) in a variety of practice settings and in skills laboratories; and (d) whether the program is affiliated with a university, thus eligible for CCNE accreditation.

Most programs include a reduced clinical workload, didactic classroom content of 4–8 hours a month, and a new RN being precepted using a supportive experiential clinical learning approach ranging from 12 weeks to 12 months (Anderson et al., 2009; Beecroft et al., 2001; Krugman et al., 2006; Newhouse, Hoffman, & Hairston, 2007; Meyer Bratt, 2009; Rosenfeld, Smith, Iervolino, & Bowar-Ferres, 2004; Williams, Goode, Kresk, Bednash, & Lynn, 2007). A preceptorship could vary from 1 day per month to every shift for the first 6 months, then a mentor (or leadership sponsor) assigned for another six months to promote critical thinking and decision making. A preceptor helps new graduates reflect on clinical experiences and promotes professional growth, leadership, and future career planning. Some NRPs incorporate scheduled meeting times for socialization and sharing experiences within the same cohort to foster peer support and commitment to the organization and to nursing (Altier & Kresk, 2006; Anderson et al., 2009; Herdrich & Lindsay, 2006; Schoessler & Waldo, 2006). The content and structure of the programs ranged from detailed and replicable to vague in terms of operating procedures and faculty qualifications and preparation. Very few residency programs included a simulation component (Anderson et al., 2009; Beyea, von Reyn, & Slattery, 2007). Because of great variation in these rapidly multiplying programs, Goode and Williams (2004) and Herdrich, & Lindsay, (2006) called for a national standardized accredited RN residency program.

#### Theory Guiding Educational Content, Strategies, and Evaluation Measures

RN residency programs have evolved out of three major initiatives: (a) national leadership in professional nursing organizations; (b) for-profit corporate companies that market evidence-based NRPs with nursing experts to implement them; and (c) a system-wide pilot test of NRPs at eight US Veterans Administration hospitals. The impetus for change occurred in 2002 when the Joint Commission (<http://www.jointcommission.org/>) recommended clinical residency education for new nurses similar to the residency programs in place for medical student graduates. The AACN and the UHC teamed up to design and pilot test a standardized BSN NRP (<http://www.aacn.nche.edu/Education/nurseresidency.htm>) in six locations in 2002 and another six sites in 2003. All three NRP initiatives—the AACN/UHC, the Versant/Meti, and the Veterans Health Administration—rely on Benner's (1984) model of transitioning nurses along a five-stage continuum of knowledge and skill acquisition from novice to expert. Benner's stages were based on the notion that nurses advance to higher levels of performance with experiential and situated learning. Only two nurse clinical educators, Schoessler & Waldo, (2006) and Herdrich & Lindsay, (2006), looked beyond Benner's theory by incorporating the principles of organizational learning theory into program development.

Schoessler & Waldo (2006) combined Benner's model with Schön's (1987) organizational theory of learning

systems (or continuously transforming organizations) and Kolb's (1984) theory of experiential learning. New RNs live experiential learning as a continual spiral of repeatedly "grasping information from theory and practice and integrating information through reflection and active experimentation" (p. 287). Kolb describes reflective observation as, "watching others or developing observations about one's own experience" (p. 29). This cycle of reflection-in-action enables individuals and groups to transform themselves and their social network when the reflective observer shares observations, raises questions, and makes recommendations. Flexibility, feedback, and "praxis (defined as reflection and action upon the world in order to transform it)" (Kolb, 1984, p. 30) are known methods of creating social change and transformation in health care organizations.

Herdrich & Lindsay, (2006) applied Kolb's principles of action-reflection learning theory inside interprofessional practice learning communities. A learner could be anyone in the health care learning community, including experienced nurses. Understanding that transitioning from novice to expert can be promoted inside a community of practice (Edgecombe & Bowden, 2009) is important because it honors a high degree of collegiality, trust, and collaboration within and across disciplines. This has a direct positive impact on nursing skill development and professional growth while building organizational intellectual capital. Learning in a community environment where others participate in reflective and deliberative conversations contributes to the new RNs' engagement with experienced nurses and other professionals. Creating safe, trusting, and collaborative learning environments develops autonomy for new RNs who work in teams. In focus groups, when asked, 7 RN students and 30 new nurses said they valued learning in professional communities of practice (Andrews et al., 2006). "The clinical learning environment consists of the ward culture (for example, the atmosphere produced by the nursing team), a context of nursing care and the basic ideas and principles of teaching and learning on the ward" (Saarikoski & Leno-Kilpi, 2002, p. 260).

This holistic theoretical approach clarifies why it is important to measure the effects of NRPs, from the standpoint not only of NRP residents, faculty, and preceptors, but also organizational culture and patient safety. Organizational learning theory takes the notion of improving the situation for one group of learners, such as new RNs or preceptors, and expands the positive impact to other professionals, including the unit and the organization as separate and collective communities of practice. Applying transitioning and organizational learning theories to guide NRPs supports two American Nurses Credentialing Center's (n.d. a, n.d. b) initiatives to improve safe patient outcomes, evidence-based practice, staff development, healthy work environments, organizational culture, and transformational leadership: The Pathway to Excellence designation and the Magnet Recognition Program. NRPs can have a positive organizational impact on health care organizations that

are working to achieve work environments where nurses can flourish.

### Content of NRPs: Teaching and Learning Strategies

Program quality and three specific curricular content requirements reflect the priorities of the original AACN/UHC pilot program. These programs concentrate on three content areas: leadership, patient outcomes, and professional roles (Poyton, Madden, Bowers, & Keefe, 2007). However, there is great diversity in the content in other specialty and nonspecialty NRPs. Curricular concepts range from leadership, teamwork, collaboration, communication, research-based practice, patient safety, critical thinking, nursing skills, delegation, time management, and professional development.

The best teaching and learning strategies used in NRPs include (a) pairing residents with "trained" preceptors or "sponsors"; (b) building cohort relationships among new graduates, unit staff (Krugman et al., 2006; McHugh, Duprat, & Clifford, 1996; Williams et al., 2007), and clinical nurse experts (Schoessler & Waldo, 2006); (c) scheduling time for discussions among new graduates, clinical experts, and nurse managers to promote critical thinking, problem solving, and decision making about clinical situations that new graduates actually encounter (Krugman et al., 2006; McHugh et al., 1996); and (d) using complex simulation scenarios to foster communication among coworkers and interprofessional team members in a wide variety of high-risk, low-frequency, and high-frequency clinical events (Anderson et al., 2009; Beyea et al., 2007). Other learning strategies promoted in this research literature, but not yet formally evaluated, are journaling (Anderson et al., 2009), participating in off unit experiences (Poyton et al., 2007; Rosenfeld et al., 2004), attending social events that foster relationships (Newhouse et al., 2007), completing a professional portfolio (Anderson et al., 2009), supporting group meetings in person or via e-mail communications (Anderson et al., 2009), and interacting with executive level nurse leaders (Williams et al., 2002, McHugh et al., 1996). Strategies that promote intra- and interprofessional practice learning communities (Herdrich & Lindsay, 2006) are poorly described but warrant further pilot testing and evaluation.

### RN Residency Program Costs

A resource-intensive NRP can only be sustained by hospital administrators and nursing leaders who see quantitative evidence of economic ROI over time. Consequently, retention rate, turnover rates, turnover costs, and ROI are the most frequently used outcome measures (Altier & Kresk, 2006; Goode & Williams, 2004; Herdrich & Lindsay, 2006; Kowalski & Cross, 2010; Krugman et al., 2006; Meyer Bratt, 2009; Owens et al., 2001; Pine & Tart, 2007; Schoessler & Waldo, 2006). Currently, the costs and benefits of NRPs are weighed against nurse turnover rates, RN replacement costs (which are somewhere between 75% and 125% of a nurse's salary), and recruitment costs. In an organization's financial analysis, the benefit of NRPs is often

avoidance of these costs. It is estimated that organizations in the United States spend \$300,000 annually for every 1% increase in nurse turnover (Jones, 2008). In calculating the costs of nurse turnover, an organization must take into account costs of recruitment, lost productivity for the unit, replacement overtime, lower customer satisfaction (Pine & Tart, 2007), pre-turnover decreased productivity, hiring and termination costs, and vacancy costs such as bed closures, patient deferral costs, consultation for new staffing plans, and new employee benefits including orientation (Jones, 2004). The costs of operating an NRP are subtracted from these, yielding total cost savings, or ROI. The costs of cross-training staff nurses in all areas of the organization for teaching and precepting are difficult to calculate and often not counted in assessing costs of NRPs. The finding that NRPs substantially shorten the time needed for a new graduate nurse to reach a 90% productivity level is an important cost-saving indicator of program effectiveness (Beecroft et al., 2001, Jones, 2005).

### Evaluating the Efficacy of RN Residency Programs

Most researchers compare performance at the beginning and at the end of a NRP using a single cohort pre- and post-test design. Program evaluators tend to analyze aggregated data from multiple-year cohorts to achieve a sample size large enough to use Student *t* test to compare means, standard deviation, and confidence intervals, as well as statistical significance.

Numerous instruments are used to demonstrate the efficacy of NRPs (Table 1). Three broad categories of key concepts/outcomes were identified in the studies reviewed (Figure 1): RN self-image, nurse performance behaviors, and health care organization outcomes. A variety of self-reported and observer-rated tools were used to assess self-image, professional growth, critical thinking, and performance of clinical skills.

Most program evaluators reported a positive impact on the new RN graduates' performance and job satisfaction, control over practice, autonomy, (Altier & Kresk, 2006; Anderson et al., 2009), sense of belonging, professional identity, intent to stay (Beecroft et al., 2001), improved behavioral performance, critical thinking, nursing skill competency (Beecroft et al., 2001; Herdrich & Lindsay, 2006), improved self-confidence (Beecroft et al., 2001, Beecroft, Dorey, & Wenten, 2007; Cleary et al., 2009; Kowalski & Cross, 2010; Poyton et al., 2007), reduced stress (Herdrich & Lindsay, 2006; Krugman et al., 2006), and greater autonomy or control over practice (Krugman et al., 2006).

Program administrators reported a decrease in the amount of time needed for new RN orientation (Beyea et al., 2007), quicker advancement through stages of transition from beginner to competent nurse (Beecroft et al., 2001), increased performance and productivity for not only new graduates but also the entire nursing unit (Beecroft et al., 2001, Poyton et al., 2007), improved safe patient care, patient satisfaction (Jones & Gates, 2007), organizational commitment (Anderson et al., 2009), and a

dramatic improvement in RN retention rates (Altier & Kresk, 2006; Herdrich & Lindsay, 2006, Kowalski & Cross, 2010; Owens et al., 2001; Pine & Tart, 2007, Meyer Bratt, 2009) in health care organizations because of NRPs.

Retention and turnover rates were the most commonly used measures of the impact of NRPs on health care organizations. Turnover rates contribute to soaring health care costs and reduced quality of patient care (Newhouse et al., 2007). How this variable is measured is not consistent across studies; some researchers measure 1- and 2-year employment rates at the institution, whereas others measure leaving the system, transferring within the system, or remaining employed at the original hire unit.

RN self-concept (Cowin & Hengstberger-Sims, 2006), RN satisfaction (Altier & Kresk, 2006), autonomy (Beecroft et al., 2001), and anxiety (Kowalski & Cross, 2010) scores remain stable across time and show no statistically significant difference in pre- and post-residency scores with the exception that satisfaction with professional opportunities and with praise shows higher scores post-residency (Altier & Kresk, 2006). These are important measures because anxiety and dissatisfaction are precursors of anticipated and actual turnover (Newhouse et al., 2007). Statistically significant results show differences between Caucasians and African Americans who reported lower satisfaction with co-workers, as well as lower interaction and professional opportunities (Altier & Kresk, 2006). Control over practice is a variable that shows a V-shaped pattern with the mean at entry and at 12 months higher than the mean at 6 months. These results indicate perceived growth in clinical leader abilities despite lower scores on perceived ability to be a skillful team member (Krugman et al., 2006; Williams et al., 2007).

Current and relevant competency rating scales to measure nursing behaviors such as critical thinking, communication and collaboration skills, and knowledge application are scarce or perhaps not developed for assessing new graduates. This finding indicates an urgent need to find or create appropriate behavioral competency scales to observe and evaluate new graduates. Lack of these scales may diminish our ability to reliably evaluate simulation education in residency programs and effectiveness of RN staff competency training.

The most frequently used qualitative method of evaluation to obtain formative and summative feedback from RN staff, clinical educators, nurse managers, and new graduate residents is focus groups. New graduates describe their fears, perceived inadequacies, lack of comfort, and confidence. Peer support was described as one of the most valuable components of a residency program.

Beecroft et al. (2007) are the only researchers to conceptually model predictors of RN turnover intention in follow-up of a large cohort of 889 new pediatric nurses who participated in residency programs between 1999 and 2006. Turnover intention is correlated with RN seeking social support, quality of work environment, and organizational characteristics. Measuring a sense of belonging, organizational commitment, and intent to

**Table 1.** Concepts and Tools Used to Demonstrate the Efficacy of NRPs

Authors	Name of tool, concepts, and subscales	Reliability
RN self-image		
Beecroft, Kunzman, & Krozek, 2001; Beecroft, Dorey & Wenten, 2007	Skills Competency Self-confidence Survey, a self-rating (low, medium, and high) of performance on 36 generic nursing skills	Not reported
Williams, Sims, Burkhead, & Ward, 2002	Control Over Practice Scale (Gerber et al., 1990), used to measure autonomy or the “perceived freedom to evaluate and modify nursing practices, to make autonomous decisions related to a patient’s care, and to influence the work environment and staffing at the unit level of analysis”	$\alpha = .96$
Newhouse, Hoffman, & Hairston, 2007	Hagerty-Patusky (1995) Sense of Belonging Instrument (SOBI) is a 27-item, self-report instrument consisting of two separately scored scales, SOBI-P (psychological state) and SOBI-A (antecedents). Content validity was assessed by a panel of experts. Construct validity, internal consistency, and retest reliability were examined through a series of studies with three subject groups: community college students, patients in treatment for major depression, and Roman Catholic nuns. Results suggest that SOBI-P is a valid and reliable measure of sense of belonging. SOBI-A appears to reflect an individual’s motivation for sense of belonging but requires additional study regarding its construct validity and internal consistency.	Alpha value for the psychological domain ranged from .63 to .76, and test–retest reliability measured with <i>r</i> ranged from .66 to .84
Altier & Kresk, 2006; Anderson, 2009; Fink et al., 2008; Goode & Williams, 2004; Kowalski & Cross, 2010; Williams et al., 2007	Casey Fink Graduate Nurse Experience Survey (Casey et al., 2004). This survey consists of five sections: demographic information, skills, procedure performance including assessment of comfort/confidence, organizing–prioritizing ability, perceived support, patient safety, personal stress, communication leadership, professional satisfaction, and job satisfaction	Alpha value ranges from .71 to .90
Altier & Kresk, 2006; Krugman et al., 2006; Goode & Williams, 2004	The McCloskey–Mueller Satisfaction Survey (1990) is a 31-item scale that includes eight domains of satisfaction: intrinsic rewards, scheduling, the balance between work and family life, coworkers, interaction opportunities, professional opportunities, praise and recognition, control and responsibilities	$\alpha = .89$ and $.82$
Meti Nurse Residency Program	Self-Efficacy for Professional Nursing Competencies Instrument (Babenko-Mould et al., 2004). This 53-item survey measures self-reported readiness for independent practice	$\alpha = .98$
Kowalski & Cross, 2010	Pagana Clinical Stress Questionnaire (1989) Spielberger’s State-Trait Anxiety Inventory (1983)	Alpha value ranges from .84 to .85 $\alpha = .90$
RN performance behaviors		
Beecroft et al., 2001; Beecroft et al., 2007	Schutzenhofer’s Nursing Activity Scale to measure professional nurse autonomy Slater Nurse Competencies Rating Scale	Test–retest reliability using a <i>r</i> coefficient = .79 Not reported
Beecroft et al., 2001; Cleary, Matheson, & Happell, 2009	The Professional subscale from Corwin’s Nursing Role/Self-Conception Scale assesses independence of practice, standards of excellence, membership in professional	<i>r</i> coefficient = .59 in 2009, $\alpha = .82$ –.95

Table I. (Continued)

Authors	Name of tool, concepts, and subscales	Reliability
Herdrich & Lindsay, 2006	organizations, credentialing, continuing education interest in research Schwirian's Six-dimensional Scale of Nursing Performance Measures performance on 52 nurse behaviors grouped into 6 performance subscales: leadership (5 items); critical care (7 items); teaching/collaboration (11 items); planning/evaluation (7 items); interpersonal relations and communication (12 items); professional development (10 items)	$\alpha = .95$
Organizational outcomes Newhouse et al., 2007	The Organizational Commitment Questionnaire (Mowday, Steers, & Porter, 1979) includes acceptance of organizational goals and values, willingness to exert effort for the organization, and a desire to maintain membership	Alpha value ranged between .82 and .93
Beecroft et al., 2001; Beecroft et al., 2007	Organizational Commitment Questionnaire, Meyer and Allen (1997)	Alpha value ranged from .82 to .93
Anderson et al., 2009	Halfer-Graf (2006) Job/Work Satisfaction Environment Nursing Satisfaction Survey	Test-retest reliability at 3rd, 6th, and 12th months = .92
Williams et al., 2002; Meyer Bratt, 2009 Altier & Kresk, 2006; Herdrich, & Lindsay, 2006, Goode & Williams, 2004; Kowalski & Cross, 2010; Krugman et al., 2006; Meyer Bratt, 2009; Owens et al., 2001; Pine & Tart, 2007; Schoessler & Waldo, 2006; Poyton, Madden, Bowers & Keefe, 2007 Meyer Bratt, 2009; Newhouse et al., 2007; Pine & Tart, 2007	The Anticipated Turnover Scale Recruitment, Retention and Turnover Rates	$\alpha = .84$ Not reported
	Return on investment	Not reported

stay are interrelated concepts that could be useful to any health care organization engaged in succession planning. However, these concepts have seldom been measured in relation to NRPs. ROI is a commonly used indicator of efficacy in terms of cost avoidance and cost savings due to RN retention; however, new factors in this equation should be identified to better understand the long-range impact of NRPs on the entire organization.

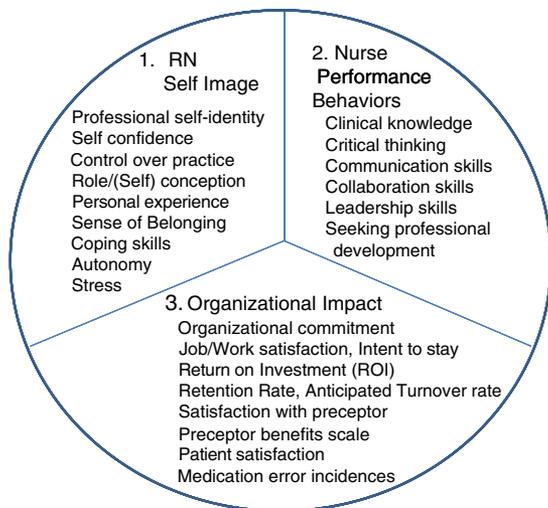


Figure I. Concepts assessed in NRPs using a variety of tools, subscales, and feedback.

The NRP educational intervention is the least described and consequently the most unstable variable that introduces measurement and statistical error in all of these studies. Determining which educational program is in fact better than another is difficult when there is wide variation in program curriculum, methods of delivery, and qualifications of clinical educators and preceptors. Consistency in the intervention and addition of matched or true comparison groups will add much needed rigor and control over confounding variables that now go unchecked.

### Recommendations or Lessons Learned From Investing in New Graduate Residency Programs

Directors of NRPs point out very specific recommendations. Williams et al. (2002) suggested standard operating procedures (SOPs) and a preceptor leadership council (PLC) to sustain the program over time as educators, clinical nurse specialists, managers, and preceptors come and go from the program. They claim that relationship building must be the primary focus in all levels of the organization to sustain the PLC, the SOP, and the NRP. A business case for the NRP is needed to obtain support from nurse managers and chief nursing officers (CNOs). Administrative leaders need to recognize that NRPs are a way to change the organizational culture by emphasizing relationship building and collaborative practice.

Consistent communication about the concepts, goals, activities, and expected outcomes of these programs to administrators, nurse managers, and unit staff was necessary to keep everyone interested and motivated so that the benefits are visible to everyone. Recently, hired nurses were able to understand why NRPs are important despite the fact that they did not have the luxury of participating in such a program. Communication is considered foundational to understanding the benefits of NRPs for promoting change in organizational culture.

Leaders of the AACN/UHC programs recommended two levels of program leadership. The NRP coordinator performed key functional activities such as scheduling, arranging social events, tracking paperwork, and coordinating speakers for didactic content that are essential activities for program success. The coordinator role could be from academia or clinical practice. A resident facilitator is charged with following up with and supporting graduates as they learn and develop in both seminars and clinical practice. This person provided feedback, encouraged self-assessment, and supported professional development and advancement (Krugman et al., 2006). This person may well be vital for continued tracking of past attendees of NRPs for long-range evaluation.

Lessons learned from the AACN/UHC programs about delivering didactic content were simple and to the point: (a) customize the content so that it is relevant to the clinical population and to nursing practice situations; (b) avoid repeating content from academic courses and offer the content in a variety of teaching styles like games, case studies, role plays, and evidence-based practice projects; new RNs need practical examples of how to use the evidence-based practice process and best practice guidelines with emphasis on application and implementation in practice (Poyton et al., 2007); (c) support intraprofessional socialization by including discussion sessions aimed at sharing strategies and stories about how to manage work stress, balance sleep habits, and assimilate the emotional labor of nursing.

One important discovery in most NRPs is the need for evidence-based high-quality training for staff nurse preceptors; they are essential to new RN success (Rosenfeld et al., 2004). This echoes Brasler's (1993) finding in a survey of 65 new graduates and their preceptors. They found the three best predictors of clinical performance included support provided by other nurse friends, preceptor skills, and emotional support provided by preceptors. To prevent burnout, it is essential to use competent and expert preceptors because each has an important role to play. Less experienced preceptors have greater empathy for new graduates (Beecroft et al., 2007). Day-to-day support and mentoring from trained preceptors should be done for a minimum of six months and preferably for one year. Numerous NRP evaluators drew attention to the need to carefully plan and routinely update professional development for preceptors in ongoing training sessions, as well as the need to recognize the role of precepting in a staff nurse's job description, evaluation and promotion criteria. Preceptors need some kind of meaningful incentive to keep

them motivated and to prevent burnout. Excellent preceptors should be encouraged to teach in the classroom because engaging a variety of clinical expert preceptors gives new RNs clinical resources they can call upon in the future (Schoessler & Waldo, 2006). The challenge of matching new RNs with compatible preceptors in a time of increasing nursing shortages and tightening health care resources is a relevant question for administrators (Rosenfeld et al., 2004).

The new RNs recognized the positive impact of sustained monthly support sessions to help foster and grow relationships among each new graduate cohort (Krugman et al., 2006). This strategy is critical for sustaining commitment to the profession. As new RNs transition from beginners to competent practitioners, they commiserated with and consoled new graduates who need advice and strategies to cope with balancing professional work and personal life stressors (Altier & Kresk, 2006).

## Discussion

One apparent oversight in these research reports is the lack of a clear description of the theoretical framework actually being applied and tested by the NRP (intervention). The logical coherence and theoretical integrity between the concepts or topics included in the NRP intervention and the interrelationship between the variables being used to measure program outcomes should be clearly described. Why particular content/variables are selected for teaching and evaluation and how they match the measurement tools should be based on theory.

It is difficult to compare quality across programs because there is a lack of consistency in the tools being used (Table 1). For the most part, use of repeat measures in single cohort designs prevents true comparison groups as used or as used for comparison in quasi-experimental designs. Only two programs report efficacy of their NRP by comparing the progress of NRP residents to that of new RNs who did not participate in an NRP. Correlational studies would help program directors understand best predictors of success and financial effectiveness. Identifying predictors of the most highly valued outcomes of NRPs such as faster new RN transition, increased professional commitment, high-quality performance, enhanced patient safety, and satisfaction may be correlated to teaching and learning strategies, or nurse educator/preceptor preparation, or positive and supportive clinical learning environments, or the style of leadership in the clinical learning organization.

Any research consumer might ask, do new NRPs apply only to new graduates or would these programs be beneficial to any RN who is transitioning or learning new roles or changing career tracks? Will the theory behind these programs advance redesign of academic and clinical education along with acquisition of clinical skills and knowledge? How might academia use the knowledge from NRPs to redesign academic and clinical nursing education so that there is a smooth and efficient flow from pre-RN to post-RN transition programs? Should pre-RN residency programs precede NRPs or is that redundant or duplicative?

A number of questions about the long-range impact of NRPs on health care organizations could be addressed by future researchers. Is there adequate consideration of predictors of dissatisfaction that might derail long-term retention, career advancement, or RN commitment to a nursing career after the initial 12 to 24 months of NRPs? For example, if organizational culture and workplace climate are important to new RNs intent to stay, then are these concepts and interventions emphasized in NRPs and preceptor training? What organizational support is necessary to ensure sustainability of NRPs and successful RN transition? Are program designers embedding NRPs inside a theoretical framework that will promote the 14 forces of the Magnet Recognition Program, Pathways to Excellence, or goals set forth by The Joint Commission?

### Conclusion

Residency programs provide a unique opportunity for hospital administrators “to guide and oversee the development of novice practitioners in ways that reinforce the vision, values and preferred culture of the organization” (Keller et al., 2006, p. 596). “New graduates will stay and participate in a system that supports excellence in nursing and invests in their future” (Altier & Kresk, 2006, p. 75). One opportunity appears to have been missed, NRPs could be used by health care leaders as demonstration projects that role model supportive interprofessional learning environments. We suggest that greater emphasis is needed on developing NRPs that promote positive clinical learning environments that apply to learners who collaborate across disciplines. The use of the residency learning model for all levels of RNs and conceptualizing interprofessional clinical learning organizations would enhance human capital and improve quality of care throughout the entire health care organization. Collaborative learning relationships are necessary to build healthy workplace environments that support experiential–interactive clinical learning and ongoing organizational transformation.

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