

Beth Ulrich
Charles Krozek
Sean Early

Cherilyn Hipps Ashlock
Larissa Marquez Africa
Michael L. Carman

Improving Retention, Confidence, And Competence of New Graduate Nurses: Results from a 10-Year Longitudinal Database

EXECUTIVE SUMMARY

- ▶ Developing competent and confident new graduate nurses who remain with their hospitals is a major challenge.
- ▶ A structured evidence-based RN residency was developed and implemented in hospitals across the United States.
- ▶ Outcomes data were collected from over 6,000 new graduate nurses who completed the RN residency over a 10-year period.
- ▶ The results indicate an accelerated increase in competence and self-confidence and a significant decrease in turnover intent and actual turnover.
- ▶ This study provides persuasive evidence that both new graduate nurses and their organizations benefit from the implementation of a structured, clinical immersion RN residency.

IN 1999, CHILDREN'S HOSPITAL Los Angeles (CHLA) found itself in the position of many hospitals today; despite much effort and expense to provide an inhouse internship for new graduate nurses, the results were disappointing. Turnover was high; 36% of the new graduates hired at CHLA were leaving in less than a year and 56% within 2 years. The resulting cycle of hire-educate-replace was negatively impacting nursing and patient care. A visionary chief nursing officer, a nursing education director, and a small group of committed nurses embarked on a quest to find a better way to bring new graduate nurses into the profession of nursing and into CHLA. Ten years of development, evaluation, and improvement have resulted in a RN residency with documented

evidence of positive outcomes for hospitals, new graduates, and patient care that is now provided in hospitals across the United States. The evolution of the RN residency, the lessons learned along the way, and the outcomes achieved are described, and a model for successfully recruiting, onboarding, engaging, and retaining new graduate nurses is presented.

Background

The nursing shortage – past and future. When the RN residency began in 1999, the United States was at the beginning of the most recent nursing shortage. Registered nurse (RN) vacancy rates were up across the country and enrollments in schools of nursing were down (Buerhaus, Auerbach, & Staiger, 2009). In the

BETH ULRICH, EdD, RN, FACHE, FAAN, is Senior Vice President, Versant, Houston, TX.

CHARLES KROZEK, MN, RN, FAAN, is Managing Partner, Versant, Los Angeles, CA.

SEAN EARLY, PhD, is Director, Versant, Los Angeles, CA.

CHERYLYN HIPPS ASHLOCK, MSN, RN, is Director, Versant, Fayetteville, GA.

LARISSA MARQUEZ AFRICA, MBA, BSN, RN, is Assistant Vice President, Versant, Los Angeles, CA.

MICHAEL L. CARMAN, JD, MBA, AB, is Managing Partner, Versant, Ithaca, NY.

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ensuing years, the nursing shortage persisted and worsened. The enrollments in schools of nursing increased, but not enough to offset the shortage. It was not until the economic downturn that the shortage began to abate. Experienced nurses came back into the workplace in large numbers and they increased the number of hours worked. Buerhaus and colleagues (2009) reported that in 2007 and 2008, hospital RN employment increased by 243,000, the largest 2-year increase in the last 4 decades. This influx of nurses coupled with the negative effect the recession had on the economic health of many health care organizations resulted in low RN vacancy rates in many hospitals and lulled many hospital executives into relaxing their efforts to recruit and retain RNs.

Buerhaus (2009) described the often repeated econometric model of RN labor market participation; when the national unemployment rate rises, RNs re-enter the labor market and those already in the market increase their work hours. When the unemployment rate declines, RNs withdraw from the labor market. The recent positive economic indicators suggest that such withdrawal will begin to happen again in the near future. In addition, baby boomer nurses are closer to aging out of the workforce and the recently enacted health reform laws are predicted to increase the demand for health care and the opportunities and need for nurses (Institute of Medicine [IOM], 2010). "Unless there is significant progress in expanding the size of the future nursing workforce, realizing the goals of health care reform will be difficult" (Buerhaus et al., 2009, p. w667). The decreased supply of and increased demand for nurses is a recipe for another even more intense nursing shortage in the coming years.

Preparing new nurses. While increased enrollment in schools of nursing is positive, the schools

continue to be hard pressed to fit everything new graduate nurses need to begin their careers into the limited time and limited clinical opportunities available. The readiness of new graduates to function as RNs continues to be in question. Del Bueno (2005), in reviewing 10 years of data for new nurses on the performance-based development system, found that 65%-76% of inexperienced RNs did not meet the expectations for entry-level clinical judgment and the majority had difficulty translating knowledge and theory into practice. In developing the Quality and Safety Education for Nurses (QSEN) program, Smith, Cronenwett, and Sherwood (2007) found that neither QSEN faculty and advisory board members or queried nursing school faculty and new graduates felt that quality and safety competencies and their accompanying knowledge, skills, and attitudes were being developed by nursing students while in school.

Berkow, Virkstis, Stewart, and Conway (2008), in a study for the Advisory Board Company, surveyed nursing school leaders and hospital nurse executives. When asked for their degree of agreement with the statement "overall, new graduate nurses are fully prepared to provide safe and effective care in the hospital setting," 89.9% of the nursing school leaders agreed versus only 10.4% of the hospital nurse executives. Results from a national survey of new graduate nurses conducted in 2004-2005 further supported the existence of a gap in the readiness of new graduate nurses to practice (Kovner et al., 2007; Pellico, Brewer, & Kovner, 2009). Most recently, Benner, Sutphen, Leonard, and Day (2010, p. 4) found "a significant gap exists between today's nursing practice and the education for that practice, despite some considerable strengths in nursing education," and further noted "Even if nursing and nursing education were to receive an immedi-

ate influx of appropriately designated resources to address the shortages, along with appropriate policy changes, it would take many years to yield results" (p. 7).

RN turnover cost. RN turnover is costly to organizations in terms of quality of patient care, sustainability of the professional nursing organization, and in both direct and indirect financial costs. Jones (2008) calculated the replacement cost of each new nurse in 2007 as \$82,000 to \$88,000 each. Price Waterhouse Coopers, in 2007, estimated that every percentage point increase in nurse turnover costs an average hospital about \$300,000 annually. Replacing new graduate nurses who require additional resources and non-productive time to onboard can be especially costly.

In addition, the churn created by excessive turnover and the resulting number of newly hired staff, part-time staff, and temporary (agency) staff has also been identified as a detriment to organizations and patients. Duffield, Roche, O'Brien-Pallas, & Catling-Paull (2009) found downstream effects of churn included adverse outcomes for patients, lack of continuity of care, additional time required to manage employees, and loss in staff productivity.

The need for RN residencies. The need to assure an ongoing supply of competent RNs who are prepared to practice in acute care settings and who will remain in those settings requires a change in how new graduate nurses are transitioned into professional nurses. The National Council of State Boards of Nursing (2009) has been diligent in developing and documenting an evidence base on the need for a transition to practice model. In addition, the need for nurse residencies has recently been supported by the Carnegie study on nursing education (Benner et al., 2010) and the IOM/RWJF study on the future of nursing (IOM, 2010).

Development of the Versant® RN Residency

The RN residency began in 1999 as a 1-year pilot with an average of 716 hours of guided clinical experience with a one-on-one preceptor, a mentor for each new graduate, debriefing and self-care sessions to discuss issues new graduate nurses face and strategies to deal with them, looping that involved clinical experiences in other areas of the hospital along the care continuum pertinent to the new graduate's patient population, and an average of 225 hours of classroom time with hands-on skills training laboratories. The goals of the pilot were to facilitate transition of new graduate nurses to professional RNs, prepare beginning-level staff nurses who are confident and provide competent and safe patient care, and increase the commitment and retention of new graduate nurses within the organization (Beecroft, Kunzman, & Krozek, 2001).

A number of measures were used to evaluate the pilot. These included self-report and observation instruments whose reliability and validity had been established previously as well as demographic and evaluation instruments developed for the pilot. The pilot, the measures used, and the results have been described in detail in a previous publication (Beecroft et al., 2001). Results indicated the graduates of the pilot residency program had equal or better results on all measures when compared to a comparison group of new graduates hired by CHLA in the 2 years prior to implementing the residency. In the following year, the pilot was continued with an additional 56 graduates and some modification of measurement instruments, notably adding direct observations of a sample of the new graduates in each cohort using the Slater Nursing Competencies Rating Scale (Wandelt & Stewart, 1975).

Following the pilot, three

additional children's hospitals in California participated in the beta phase of the research. By July 2003, 118 new graduates completed the residency at the beta sites. The results from that phase indicated the RN residency was scalable to other hospitals, but it also became clear that deploying the residency on a national basis would require a business model and the addition of a way to easily collect, access, and share data and information. CHLA created Versant® in 2004 and launched a web-based management system, Voyager®, which included access to the RN residency curriculum components, measurement instruments, and individual resident information on competency achievement and progression toward goals. In 2004, the RN residency was beta tested in general acute care hospitals with successful results. The RN residency was then offered to both children's hospitals and general acute care hospitals across the United States.

The development of the RN residency was initially treated as a research endeavor and all participating organizations obtained institutional review board approval prior to implementing the RN residency. As the RN residency was deployed in hospitals throughout the country, the research focus continued. Beginning in 2009, with 10 years of evidence-based outcomes showing the success of the RN residency, Versant moved the RN residency out of traditional research status; however, essential attributes of the research protocol have been retained. Data collection protocols continue to be followed including confidentiality of resident responses in measurement instruments and evaluations. Data are only included in the Versant National Database if they meet established criteria.

RN Residency: Overview

Curricula. The Versant RN Residency curriculum includes

classes with case studies, structured clinical immersion experiences with team precepting, structured mentoring and debriefing/self-care sessions, looping to related departments, and competency validation. The initial development of the RN residency curriculum has been documented previously (Beecroft, Kunzman, Taylor, Devenis, & Guzek, 2004). Briefly, the evidence-based curriculum initially was based on Benner's novice-to-expert framework (Benner, 1984); stakeholder interviews including nurse managers who had hired and worked with new graduates, preceptors who had worked with new graduates, and new graduates themselves; and on a standardized job analysis procedure – the Develop A CURriculuM (DACUM) competency-based analysis (Norton, 1997). The RN residency continues to be based on Benner's framework, emphasizing the novice to expert progression for residents as well as for preceptors, mentors, debriefers, and subject matter experts. Additional competency analyses have been completed as new specialties have been added to the RN residency. There is a core curriculum for all new graduates and specialty curricula have been developed in medical-surgical nursing, critical care, emergency nursing, perinatal nursing, neonatal ICU, perioperative services, and pediatrics. The curricula are reviewed and updated on a routine basis and more often if indicated to remain current with practice standards, new clinical evidence, and feedback from RN residency participants and stakeholders.

Clinical immersion. Clinical immersion is vital to the success of new graduates. A critical aspect of the new graduate's clinical immersion is dedicated preceptors. Preceptors are educated in working with new graduates. The RN residency began by using the traditional model of precepting – assigning a preceptor and an alternate preceptor, and using the same

expert RNs over and over as preceptors. Within the first year, it became apparent the traditional model was ineffective for residents and frustrating for preceptors. Interviews with residents, preceptors, and managers, coupled with observations of the first RN residency cohorts, resulted in a major overhaul of the precepting component of the RN residency (Beecroft, Hernandez, & Reid, 2008). Team precepting was implemented and has become a practice standard of the RN residency. In team precepting, the new graduate begins with a novice preceptor who has an experience level closer to that of the new graduate. As the new graduate gains expertise and knowledge, a preceptor with more clinical experience takes over. Critical to this team precepting model is transparency, accountability, and communication between preceptors that allows all involved to be up-to-date on residents' strengths, needs, and individual performance goals. In the Versant RN Residency, this occurs in Voyager, the online RN residency information system.

As a part of the clinical immersion component, each resident rotates or "loops" to other areas outside of the resident's home unit during guided clinical experiences. These structured looping experiences allow the residents to understand what their patients experience in other areas of the hospital and offer them opportunities to meet and begin to form relationships with staff in these areas.

Mentoring and debriefing. Providing support to new graduate nurses through structured mentoring is very important to their success. Structured mentoring includes scheduled meetings, guidelines for conducting mentoring sessions, and providing specific content as well as discussions geared to individual needs. In evaluating the mentor component of the RN residency after 6 years of

experience, Beecroft, Santer, Lacy, Kuntzman, and Dorey (2006) found that when residents met with their mentors regularly, guidance and support were provided and resident stress was reduced. However, the study also found topic areas which needed to be improved including commitment, time, and role inadequacy. As a result, the mentoring component of the RN residency has been improved in recent years. Mentoring session topics and guidelines have been developed. A new mentoring model, mentor circles, has been provided as an option and has been successfully implemented by several organizations that provide the RN residency. In mentor circles, two to three mentors assume responsibility for a group of residents. Residents also participate in scheduled, facilitated, structured debriefing/self-care sessions which provide opportunities for residents to safely voice and share their feelings about their experiences (death of a patient, personal life balance, dealing with disruptive behavior).

Implementing the Versant RN Residency. Implementing the RN residency requires the engagement and active participation of people from throughout the hospital organization including nurses in management, education, administrative and direct care roles; hospital administration; other health care professionals (physicians, pharmacists, social workers); human resource professionals; etc. This engagement and active participation is facilitated and accomplished through an RN residency architecture that delineates specific roles as well as structures and systems for the implementation and ongoing management of the RN residency.

Each organization designates an RN residency manager, executive sponsor, and administrative support. An RN residency leadership group including the chief nursing officer (CNO) and/or executive sponsor, RN residency man-

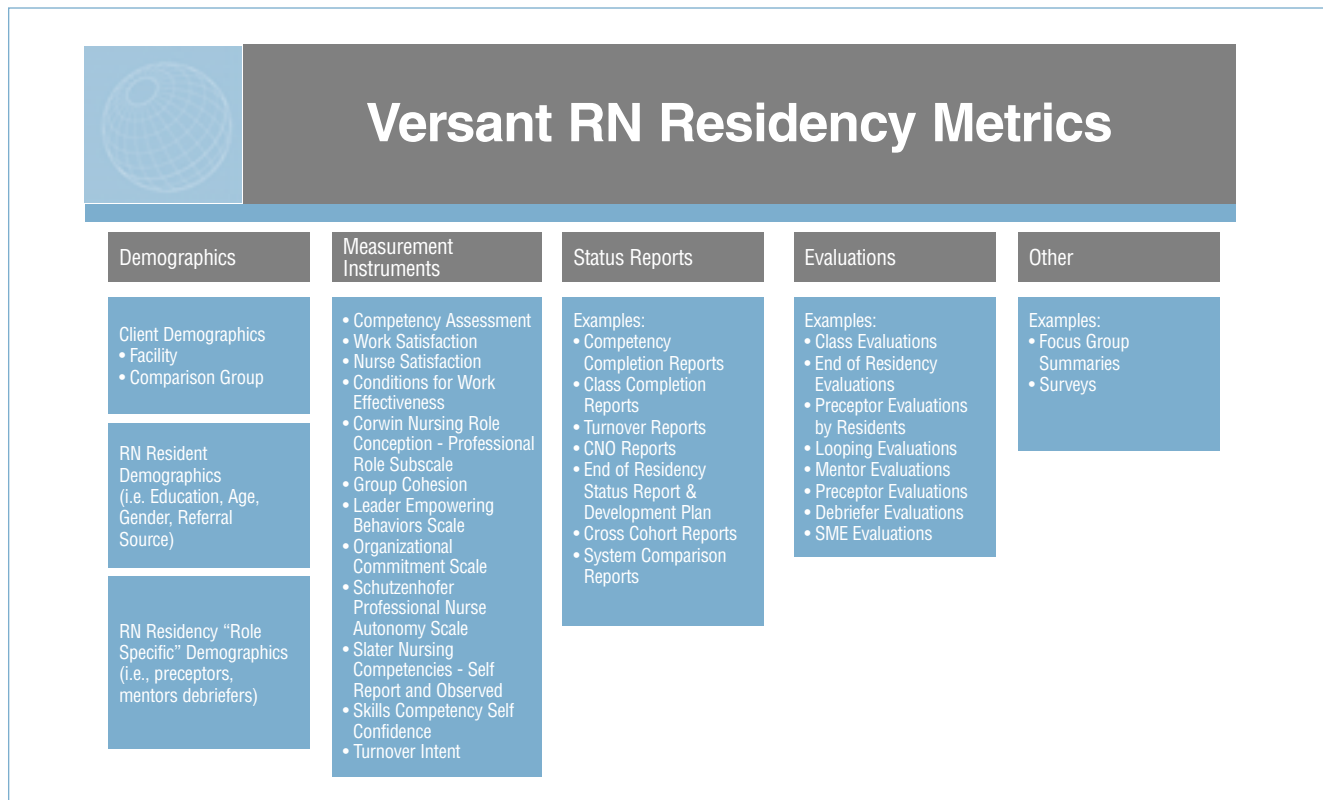
ager, nurse managers, educators, recruiters, and task force subcommittee chairpersons oversees the RN residency for each organization. The RN residency 12-week start up begins with an all-day kick-off event which includes a variety of stakeholders and provides an overview of various aspects of the RN residency (such as mentoring, debriefing, teaching), and encourages opportunities for engagement and participation by many of the organization's employees (nurses, physicians, social workers, etc.). The start up period includes train-the-trainer sessions for all roles, a step-by-step review of all curriculum components and competencies, and extensive work with the RN residency leadership group subcommittees. Implementing a structured RN residency requires the organization to review the competencies and knowledge required of RNs and to review the related processes and systems so they can be effectively communicated to new graduate nurses. Quality improvement occurs based on measurement data and evaluations from each cohort of residents and on trends identified across multiple cohorts. New instructional media and teaching strategies are developed and incorporated.

Each client organization has a Versant Performance and Outcomes Manager assigned to it to provide education, guidance, and support (onsite and via telephone and email) on the implementation, management, quality assurance, and performance and outcomes measurement of the RN residency. Best practice information is disseminated at the annual Versant Client Conference and through webinars and individual organization consultation with Versant staff.

RN Residency Metrics

Outcomes of the RN residency are analyzed using a wide variety of metrics including, but not limit-

Figure 1.
RN Residency Metrics



ed to, turnover monthly from months 12 to 60; organization return on investment; demographic information; reliable and validated measurement instruments; individual, component, and RN residency evaluations; residency status reports; focus groups; and surveys (see Figure 1). To measure new graduate progress within each organization, data are also collected from a comparison group comprising new graduates employed by the organization 2 years prior to the implementation of the RN residency. Data are collected at specified time points throughout each RN residency cohort and up to 60 months after the start of each cohort. All data are housed in the Versant National Database.

Measurement instruments are used to obtain information concerning RN resident progress, to

allow the organization to compare cohorts of residents, and to improve the RN residency. The information can also be used to compare RN residency outcomes from hospitals within a system. Concepts measured are selected based on evidence of relationships with outcomes related to individual new graduates, organizations, and patient care. The concepts measured include, but are not limited to:

- Competency
- Satisfaction
- Confidence
- Empowerment/Autonomy/Role dissonance
- Group cohesion/Organizational commitment
- Turnover intent

Measures are selected based on their ability to provide information related to RN residency outcomes. Measurement instru-

ments have been validated and many have been used in numerous nursing research studies. Feedback on individual resident, unit, organization, and health system performance is provided in real time via Versant's web-based RN residency management system (Versant Voyager) and through periodic data reports that compare results of each RN residency cohort to the organization's comparison group, aggregate data, and the Versant National Database.

RN Residency Outcomes

Methodology. Analyses performed for the Versant National Database included data reduction and multiple imputation, correlation matrix analysis, generation and inspection of descriptive statistics for demographic variables as well as each scale and subscale and regression analysis. With two

Table 1.
Instrument Reliabilities

Instrument	Cronbach's alpha
Conditions for Work Effectiveness	0.81
Group Cohesion	0.89
Leader Empowering Behavior (LEB) Total Scale	0.97
LEB Meaning subscale	0.96
LEB Decision subscale	0.94
LEB Confidence subscale	0.94
Nurse Satisfaction (NS) Total Scale	0.90
NS Quality subscale	0.80
NS Enjoyment subscale	0.87
NS Time to Work subscale	0.78
Organizational Commitment Total Scale	0.89
Organizational Job (Work) Satisfaction (OJS) Total Scale	0.87
OJS Administration subscale	0.79
OJS Interaction subscale	0.81
OJS Pay subscale	0.88
OJS Professional Status subscale	0.70
OJS Task subscale	0.77

Table 2.
Demographics

	Comparison Groups	Versant – All	Children's Hospitals	General Acute Care Hospitals
Education				
Diploma	2%	1%	1%	1%
Associate degree	49%	45%	39%	51%
Baccalaureate degree	47%	51%	58%	45%
Master's degree	2%	2%	2%	3%
Age				
Less than 23 years	6%	15%	20%	12%
23-30 years	57%	52%	58%	47%
31-40 years	23%	21%	16%	26%
41-50 years	11%	9%	5%	12%
Over 50 years	3%	2%	1%	3%

outcome variables of interest, employment status and turnover intention, and a wide range of possible predictor variables of interest, three models of the data were developed and analyzed. Pre-

liminary exploratory regression analysis produced a set of significant predictor variables for use in subsequent analyses. Ordinary Least Squares regression analysis was performed with turnover

intention as the outcome variable and measurement instrument data collected as predictor variables with separate analyses performed for each time period of data collection (start of program, last week of program, month 12, month 24, etc.). Logistic regression analysis was then performed with employment status (a binary, employed/not employed, categorical variable) as the outcome variable and the measurement instrument data as predictor variables. Because of loss of cases due to "missingness" on one or more of the subscales, multiple imputation was performed on variables of interest using SAS 9.2. This form of imputation provides robust imputed values for missing data using multi-chain regression-based imputation of the data including error term estimates. Identical regression analyses were run using this imputed data set with results presented separately from the raw data set. Using SAS 9.2, a correlation analysis was performed to obtain the five most significant correlations between the range of input variables of interest and the outcome variable Turnover Intent (TOI). Reliability measures were calculated for this data sample and are shown in Table 1.

Results. At the 10-year mark, over 6,000 new graduates completed the Versant RN Residency. The organizations in which they worked ranged from small, rural hospitals to large health care systems with cohort sizes from 4 to 110 residents. The descriptive statistics are provided in Table 2.

Turnover. Turnover was measured monthly from months 12 to 60. The results are shown in Figure 2. The cumulative turnover rate for the Versant RN Residency was 7.1% at 12 months, 19.6% at 24 months, 28.6% at 36 months, 34.2% at 48 months, and 39.8% at 60 months. Of note, the turnover rates decreased across the 10-year period as the best practice of having new graduate nurses pass the

Figure 2.
Cumulative Turnover
1999-2009

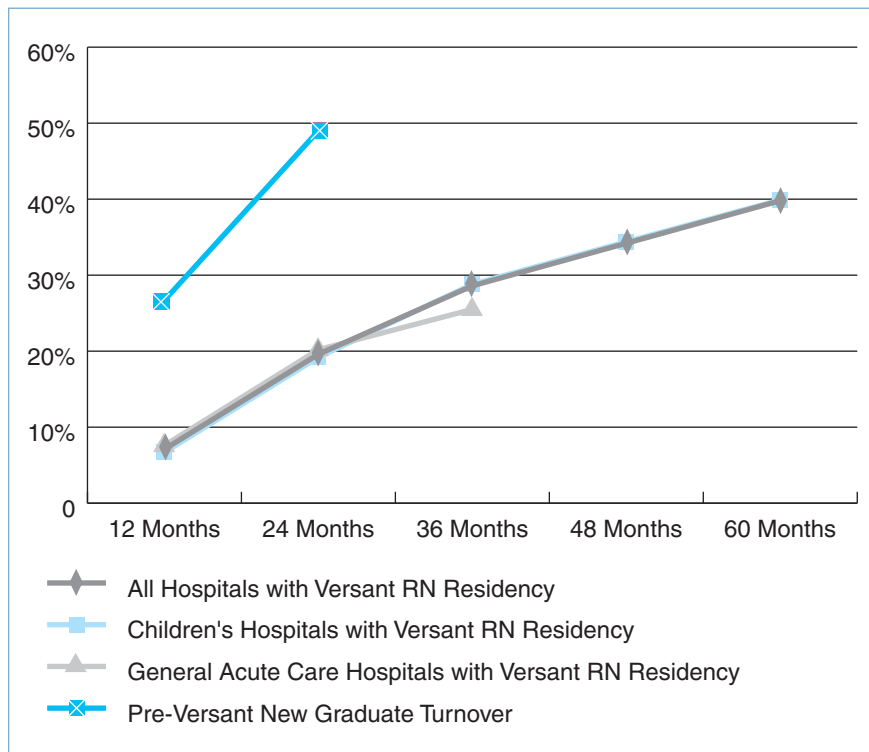
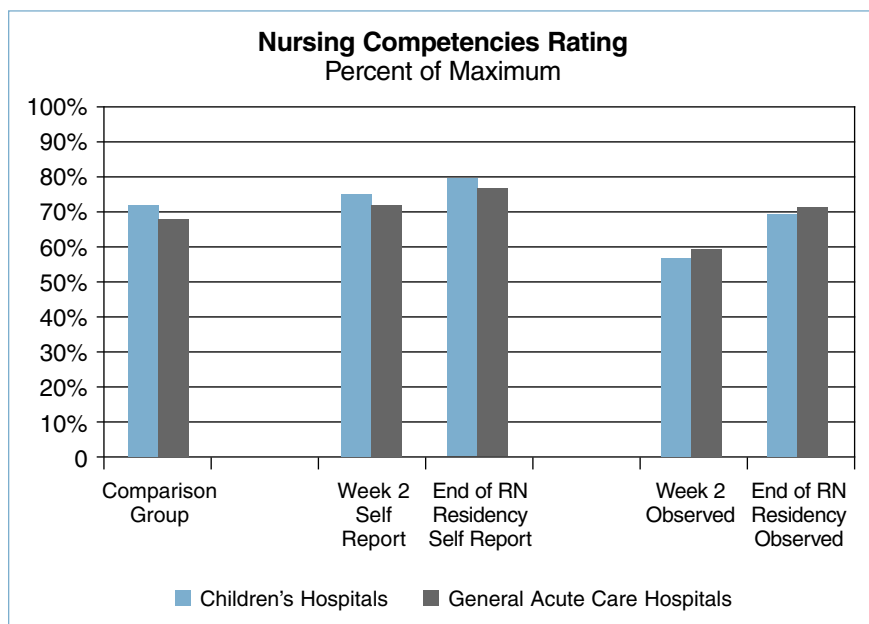


Figure 3.
Competency



NCLEX prior to starting the RN residency was identified and progressively implemented. The turnover rate was also found to decrease with the number of RN residency cohorts completed within an organization. By the fifth cohort, the overall 12 month turnover was 4.3%. The turnover rate for bachelor's degree graduates was slightly lower than associate degree graduates at 12 months (6.6% vs. 7.4%), but slightly higher in all subsequent years.

A comparison of actual turnover after implementation of the Versant RN Residency to the pre-Versant turnover data was also made, but with caution. Hospitals who engage Versant are asked to report their new graduate turnover in the years immediately preceding implementation of the Versant RN Residency. In the early years of the Versant RN Residency, hospitals were inconsistent in their internal measurement of new graduate turnover; therefore, given the importance of establishing an accurate baseline, Versant has implemented standardized reporting to Versant in recent years. For the purposes of this study, only the data from hospitals that reported both 12 and 24 month pre-Versant new graduate turnover were compared to the actual turnover data. The average pre-Versant new graduate turnover for these hospitals at 12 months was 27% (with some organizations reporting a 12-month turnover of up to 75%) and another 30% in months 13 to 24, resulting in an average cumulative turnover of 49% at 24 months (see Figure 2).

Competency. Individual competencies were validated by preceptors for each resident. In addition, the Nursing Competencies Rating Scale developed by Slater (Wandelt & Stewart, 1975) was used for resident self-assessment and trained observers performed observations on a random sample of nurses from each organization's comparison group and on a sample of residents from each cohort.

Figure 4.
Nurse Satisfaction

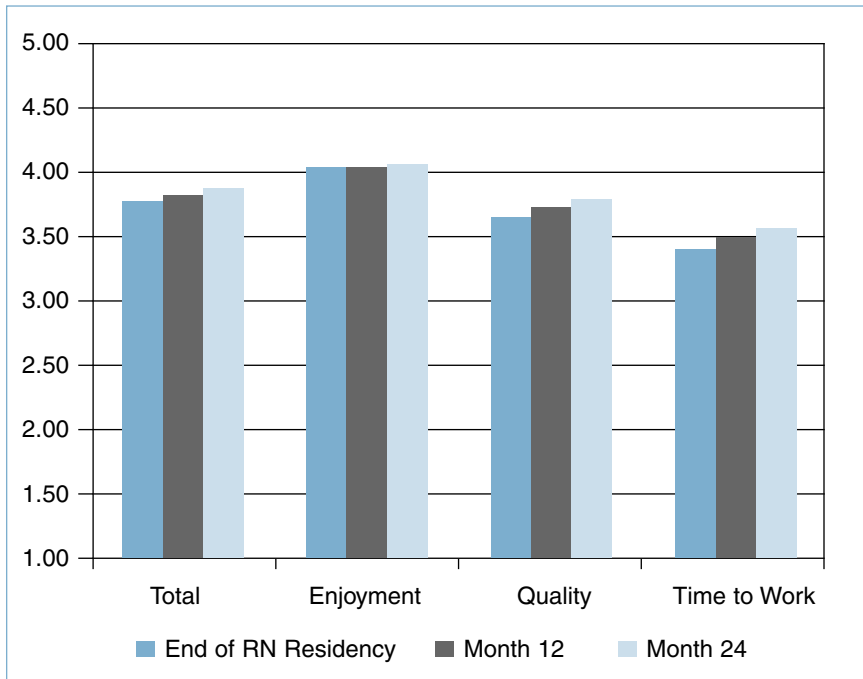
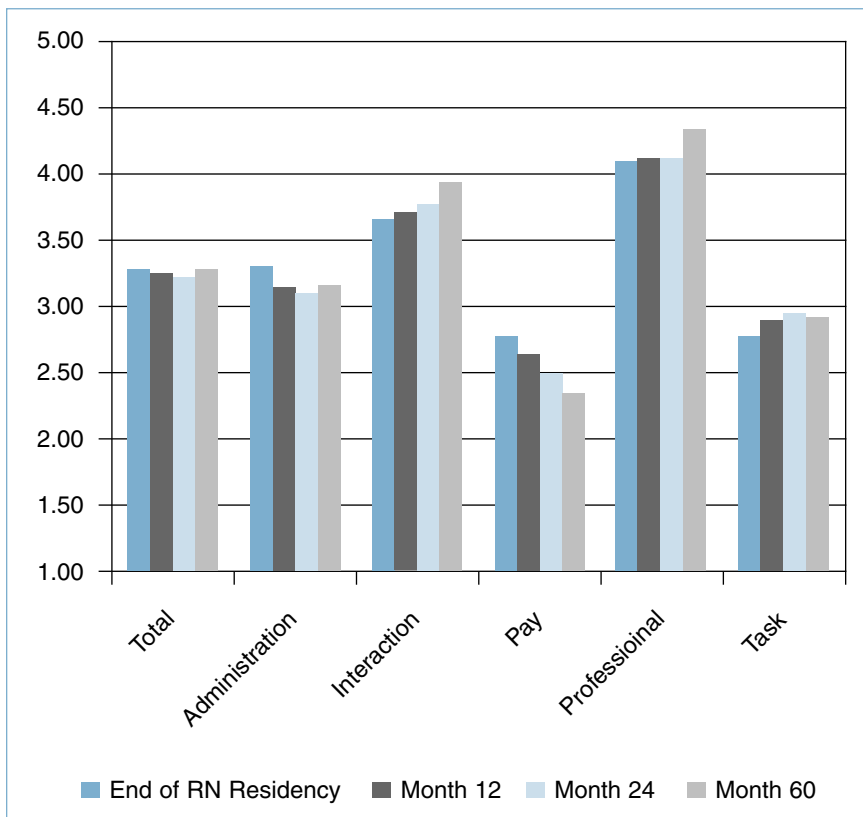


Figure 5.
Organizational Job Satisfaction



The results from the observations are shown in Figure 3. Because the rating scale allows for the possibility of some items not being applicable to or able to be observed in a specific encounter, the scores are reported as a percentage of the maximum score attainable. In the self-assessments, residents rated themselves higher than the observers rated them at both week 2 and at the end of the RN residency. Observers found significant progress from the beginning to the end of the RN residency. At the end of the RN residency, the average observed rating was equal to or higher than the observed rating of the comparison groups, who have an average experience of 17.1 months.

Satisfaction. Satisfaction was measured using both work satisfaction (also called organizational job satisfaction) and nurse job satisfaction measures (Beecroft et al., 2001). The Nurse Job Satisfaction Scale includes elements that are pertinent to nurses' work and includes the subscales of satisfaction with enjoyment, quality, and time to work. As shown in Figure 4, the enjoyment subscale is rated highest followed by quality and time to work, with satisfaction with the latter two increasing in stepwise fashion from the end of the RN residency to months 12 and month 24.

The Work (Organizational Job) Satisfaction Scale includes general items and includes subscales for administration, interaction, pay, professional, and task (see Figure 5). Satisfaction with pay is rated the lowest and declines progressively across time.

Self-confidence. The Skills Competency Self-Confidence Survey is a self-rating completed by the RN residents at weeks 2, week 16, the last week of the RN residency, and at months 12, 24, and 60. It includes core skills that each resident is expected to possess at the conclusion of the RN residency. Results are reported as a percentage of maximum score. Because

Figure 6.
Self-Confidence

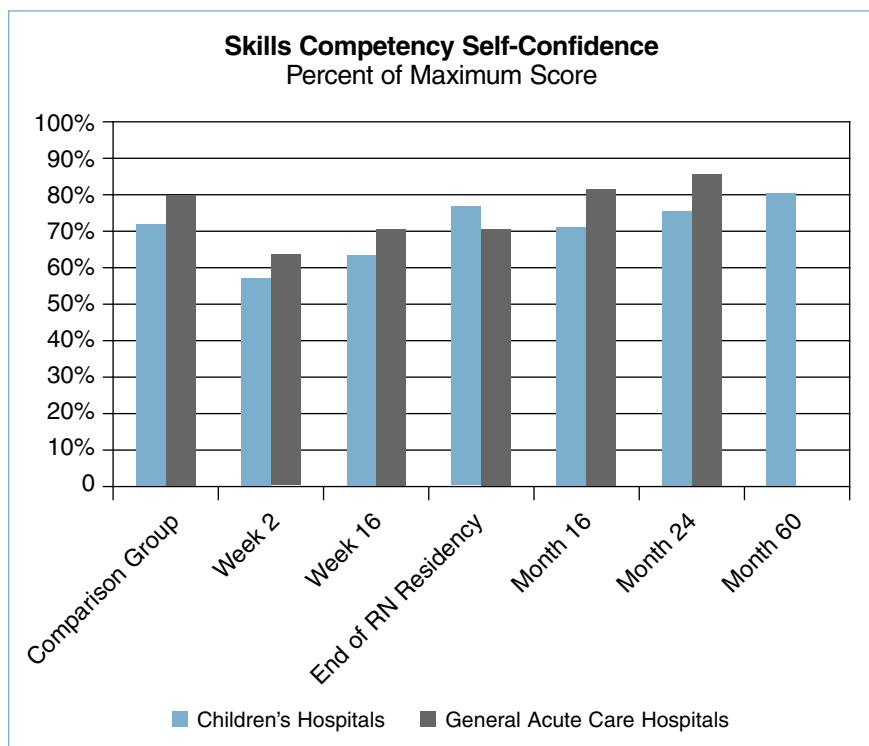
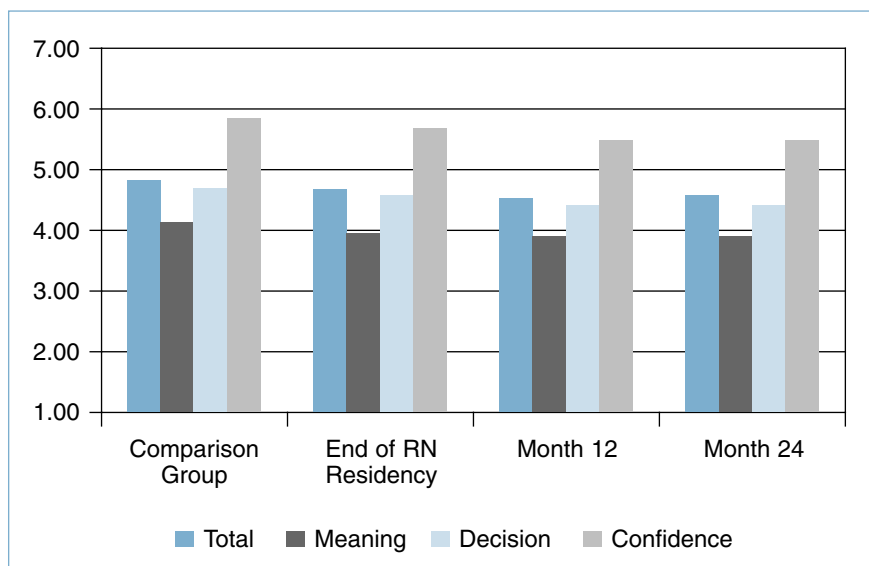


Figure 7.
Leader Empowering Behavior



the scale includes a broad spectrum of nursing skills, it is not expected residents will be confident in all skills. Results are interpreted in terms of improvement over time. As can be seen in Figure 6, self-confidence grew across time.

Empowerment. Empowerment is measured using the Leader Empowering Behavior Scale and three subscales of the Conditions for Work Effectiveness measure. The Leader Empowering Behaviors Scale comprises subscales that include the degree to which the leader is perceived by the resident as enhancing the meaningfulness of work, fostering participation in decision making, and expressing confidence in high performance. As shown in Figure 7, enhancing the meaningfulness of work was rated lowest at all time points and expressing confidence was rated the highest. The resident ratings were very similar to those of the comparison group.

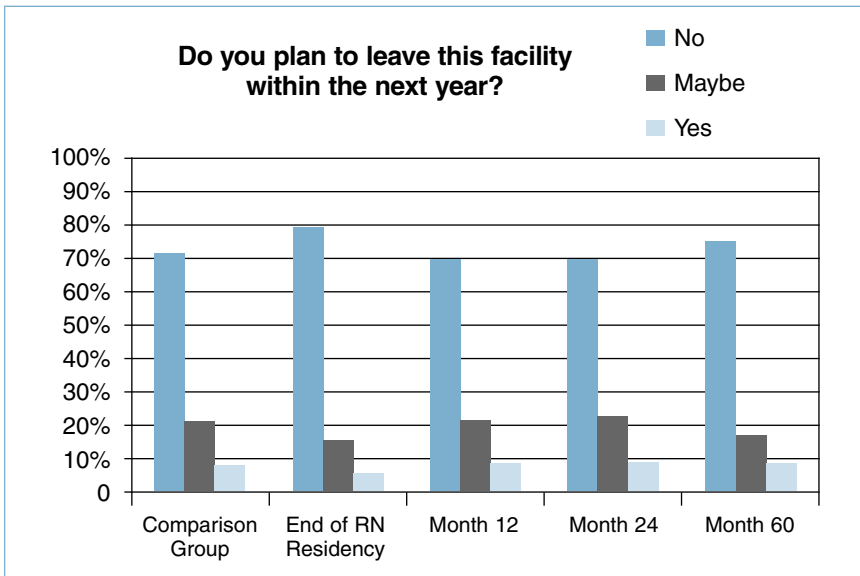
The Conditions for Work Effectiveness Questionnaire (CWEQ) measures nurses' perceptions of workplace effectiveness. The questionnaire incorporates specific structural factors that influence work behaviors. Three of the CWEQ subscales were measured and respondents are asked to indicate what they have now (currently have) and what they would like (would like to have) in opportunity, access to information, and support. The results are shown in Table 3.

Group cohesion and organizational commitment. The Group Cohesion Scale evaluates perceptions of the nursing unit or department in terms of productivity, efficiency, morale, "belongingness," and working together. The Group Cohesion Scale asks the respondents' opinions about the colleague group (nursing staff) with whom they work. Each item is rated on a 1-7 scale. The mean total Group Cohesion score was 5.77 at the end of the RN residency, 5.68 at 12 months, and 5.74 at

Table 3.
Conditions for Work Effectiveness

	Versant Comparison Group	End of RN Residency	Month 12	Month 24	Laschinger (2004) Staff Nurses - Mean (Range)
Opportunity-Have	3.21	3.34	3.21	3.16	3.29 (2.35-4.14)
Opportunity-Would Like	3.67	3.55	3.62	3.63	
Info Access-Have	2.76	2.84	2.87	2.88	2.81 (2.20-3.02)
Info Access-Would Like	3.91	3.93	3.88	3.85	
Support-Have	3.06	3.00	3.02	3.05	2.85 (2.21-3.07)
Support-Would Like	3.86	3.89	3.85	3.81	

Figure 8.
Turnover Intent



24 months. The Comparison Group mean was 5.55.

The Organizational Commitment Questionnaire is a scale that measures the relative strength of an individual's identification with and involvement in a particular organization. Commitment is characterized as (a) a strong belief in and acceptance of the organization's goals and values, (b) a willingness to exert considerable effort on behalf of the organization, and (c) a strong desire to maintain membership in the organization (Porter, Steers, Mowday, & Boulian, 1974). Each item is rated on a 1-7

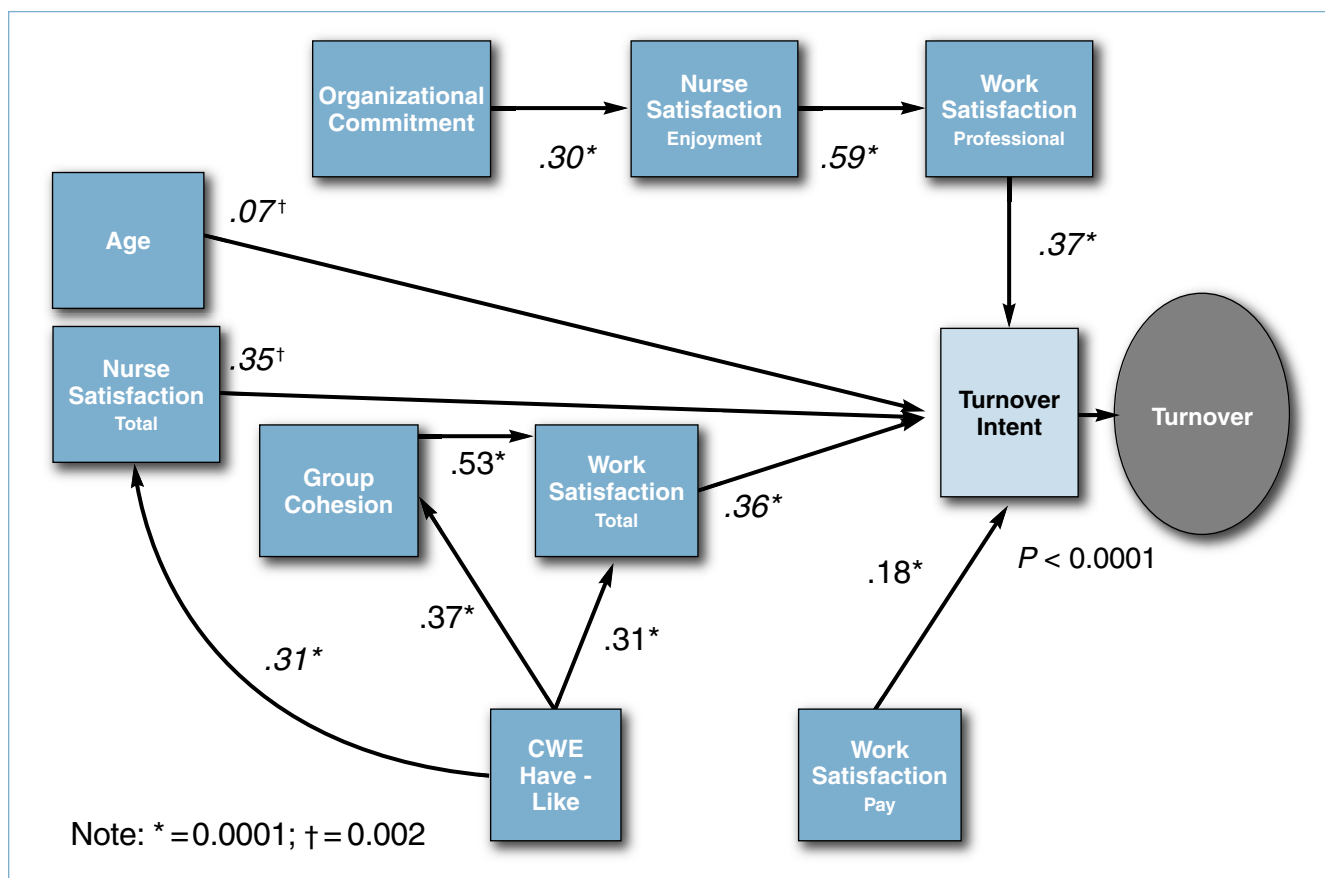
scale. The mean total Organizational Commitment score was 4.59 at 16 weeks, 4.84 at the end of the RN residency, 4.74 at 12 months, and 4.72 at 24 months. The Comparison Group mean was 5.00.

Turnover intent. Turnover intent is measured by a single item which asks "Do you plan to leave this facility in the next year?" and offers a six-point continuum of responses from "Not at all" to "I surely do." Results are shown in Figure 8. Turnover intent was a meaningful predictor of employment status ($p < 0.0001$) at the end

of the RN residency, at month 12, and at month 24.

Correlations. As can be seen in the spider diagram in Figure 9, a number of significant correlations were found. Higher levels of satisfaction significantly correlate with lower intent to leave the facility. The Work Satisfaction Total Score and TOI have a 0.36 Pearson correlation coefficient ($p < 0.0001$), with two of the subscales of Work Satisfaction - Professional Status (0.37, $p < 0.0001$) and Work Satisfaction - Satisfaction with Pay (0.18, $p < 0.0001$) also demonstrating significant correlations. Similarly, the Nursing Satisfaction Total Score (0.35, $p < 0.0001$) and one of its subscales, Enjoyment (0.39, $p < 0.0001$) was also significantly correlated with TOI. Second order (indirect) correlations of interest were also identified between the difference between present and observed summary scores for the Conditions of Work Effectiveness (CWE) scale (have vs. would like to have - "Have-Like") and Work Satisfaction (0.31, $p < 0.0001$) and Nurse Satisfaction (0.31, $p < 0.0001$) scales. The CWE Have-Like gap also was significantly correlated with the Group Cohesion Total Score (0.37, $p < 0.0001$). Larger gaps between the work conditions residents would like to have and what they perceive they have correlate with lower levels of satisfaction and group cohesion. The Group Cohesion score, in turn, had a strong correlation (0.53, $p < 0.0001$)

Figure 9.
Correlations with Turnover Intent and Turnover



with the Work Satisfaction Total Score. Organizational Commitment was positively correlated with the Nurse Satisfaction Enjoyment subscale (0.30, $p < 0.0001$), which in turn was positively correlated with Work Satisfaction - Professional Status (0.59, $p < 0.0001$). Finally, the age group demographic variable was significantly correlated with TOI, although with a small correlation coefficient (0.07, $p = 0.002$).

Organizational impact. In addition to the metric data collected, a qualitative study on the organizational impact of the RN residency was conducted in 2009. Respondents included CNOs, executive sponsors, and RN residency managers. The results indicated positive organizational outcomes of the RN residency in the areas of improved communication and col-

laboration between new graduates and experienced nurses; patient and physician satisfaction; preceptor role definition, engagement, and accountability; the quality and the number of applicants; and new graduate engagement and advancement.

Discussion

The results of this 10-year longitudinal study of new graduate nurses from Versant RN Residency in hospitals across the United States supports its advantages to both the individual new graduates and organizations which have been reported previously (Dyess & Sherman, 2009; National Council of State Boards of Nursing, 2009).

Competence development and self-confidence were accelerated. In addition to the basic concept of

assuring new graduate competency to assure patient safety, validated competency decreases the chance of preventable adverse events, thereby decreasing the hospital's exposure to decreased reimbursement and liability claims. Accelerating the competency and confidence development further decreases this exposure. Hospitals rely on nurses as a critical component of error prevention. A study by Leape et al. (1995) found nurses intercepted 86% of all medication errors by physicians, pharmacists, and others who are part of the medication delivery system before the errors reached the patients. The application of competence, however, requires self-confidence. Competence without self-confidence is insufficient. As Bandura (2001, p.

10) noted in studies of efficacy, “Unless people believe they can produce desired results and forestall detrimental ones by their actions, they have little incentive to act or to persevere in the face of difficulties.” The acceleration of confidence development in new graduates assures their accelerated competence acquisition is applied.

The correlations between turnover intent and organizational commitment, work satisfaction, nursing satisfaction, group cohesion, and conditions for work effectiveness support the results of other research (Larrabee et al., 2003; Noguera, 2006; Stone et al., 2006; Tourangeau & Cranley, 2006). Employee satisfaction has also been previously correlated to customer satisfaction and loyalty, profitability, productivity, and safety outcomes (Harter, Schmidt, & Hayes, 2002). The relationship found in our study between turnover intent and actual turnover is similar to that found by Griffith, Hom, and Gaertner (2000) and Harris and Boonthanom (2005).

Decreasing actual new graduate turnover provided substantial savings to the Versant RN Residency hospitals. In one example, a general acute care hospital had a 35% new graduate turnover rate at 12 months prior to implementing the RN residency. The 12-month turnover rate in the first 3 years of the RN residency at that hospital was 5.36% (6 of 112 residents). Had the previous 35% 12-month turnover continued, the hospital could have expected to lose 39 new graduates – a net loss of 33. Using Jones’ (2008) calculation of the replacement cost of each new nurse to be between \$82,000 to \$88,000, the cost to the hospital for replacing the 36 new graduates would have been estimated to be \$2,706,000 to \$2,904,000. Because the range of new graduate turnover varies from hospital to hospital, to effectively measure the return on investment related to turnover, hospitals must have accurate information on their own

new graduate turnover prior to implementing an RN residency.

Equally and perhaps more important than decreasing turnover costs is adding the value of the organizational impact of the RN residency. Improvements in communication, patient and physician satisfaction, employee engagement, such as those reported to result from the RN residency, positively impact nurse satisfaction, patient outcomes, and organization success (Gallup, 2006; Kalisch, Curley, & Stefanov, 2007; Maxfield, Grenny, McMillan, Patterson, & Switzler, 2005).

Lessons Learned

Based on 10 years experience and evidence for the Versant RN Residency, we found that in order to achieve successful outcomes on an individual and organizational level, an RN residency must:

- Define a set of standards based upon an outcomes-validated set of competencies.
 - Teach to those standards.
 - Monitor and manage adherence to those standards.
 - Objectively evaluate – by use of quantitative and qualitative outcomes measures – success in achieving the demonstrated competencies expected of a competent nurse.
- We also identified the key characteristics of a successful RN residency.
- Structure and standardization.
 - An evidence base for content and RN residency practices.
 - Educational content management.
 - Clinical immersion experience with dedicated preceptors.
 - Support systems for RN residency roles (preceptors, subject matter experts) and for residents.
 - Transparency and accountability.
 - Communication.
 - Active stakeholder engagement and organization-wide commitment.
 - Rigorous evaluations.

- Performance and outcomes management.
- Research and development.
- Continuous improvement.
- A delivery system with a disciplined structural framework to manage a fully integrated RN residency at individual hospital and health care system levels.

Our results support the need for the 18-week clinical immersion component with dedicated preceptors. In addition, our experience and extensive followup of our RN residents has shown us their need for ongoing support and guidance through their first year of practice. As a result, we will soon begin incorporating additional structured supportive components (mentoring and debriefing) throughout the residents’ first year of practice and developing additional evaluation and coaching activities designed to further focus everyone involved with residents on their long-term success.

Conclusion

Versant’s mission is to help hospitals and health systems develop and sustain nursing organizations. The Versant RN Residency contributes to this mission through facilitating the transition of new graduate nurses into the professional RN role, accelerating the development of their competence and confidence, and increasing their retention within the organization.

The results of this longitudinal 10-year study present persuasive evidence that both new graduate nurses and their organizations benefit from the implementation of a structured, immersion RN residency that includes classroom instruction, guided opportunities to develop hands-on mastery of nursing skills, support, professional guidance, and engagement of stakeholders. Formal RN residencies with measured outcomes should become the norm for all new graduate nurses. \$

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ADDITIONAL READINGS

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