



Evaluation of The Robert Wood Johnson Wisdom at Work: Retaining Experienced Nurses Research Initiative

Final Report

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Prepared by:
The Lewin Group, Inc.

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I. EXECUTIVE SUMMARY

A. Introduction

Recognizing the wealth of clinical expertise, organizational knowledge and judgment that experienced nurses bring to the patient bedside, the Robert Wood Johnson Foundation (RWJF) is collaborating with hospitals, health systems and nursing leaders to develop and disseminate “best practice” programs designed to improve retention of experienced hospital nurses.

In 2006, RWJF commissioned a white paper, *Wisdom at Work: the Importance of the Older and Experienced Nurses in the Workplace* that identified strategies intended to contribute to the retention of experienced nurses, and recommended that resources be invested to test those strategies.¹ The Foundation supported that recommendation by funding the “Wisdom at Work: Retaining Experienced Nurses Research Initiative.”

Under the initiative, RWJF provided grants averaging about \$75,000 each to 13 pre-existing hospital-based initiatives largely focused on improving experienced RN retention. The primary purpose of these grants was to evaluate the outcomes of each initiative through the collection and analysis of key performance data. In addition to trends in experienced RN turnover rates, other nursing-related outcomes examined included the average direct costs of RN turnover and trends in RN patient handling injuries and hospital disability costs for hospitals with ergonomic initiatives.

The Lewin Group (Lewin) was commissioned by RWJF to serve as the National Coordinating Center and evaluator for the initiative. Responsibilities included coordinating and conducting the evaluation, providing technical assistance to grantees in data collection, conducting data analysis to identify program outcomes, success factors and lessons learned that influenced those outcomes and coordinating the 2007 and 2008 annual convening’s of grantees at the Foundation.

This evaluation was carried out between January, 2007 and December, 2008. The first 18 months (January, 2007-June, 2008) focused on providing evaluation coordination and technical assistance services to participating organizations and collecting and analyzing performance data. The final six months (July-December, 2008) focused on data synthesis and development and presentation of evaluation findings.

B. Key Evaluation Findings

Findings are briefly summarized below. A more comprehensive presentation of all evaluation findings is provided in the main body and appendices of the evaluation report.

Trends in Pre- and Post-Intervention Experienced RN Turnover

Grantee initiatives focused on three types of work place adaptations intended to improve experienced RN retention: 1) Those testing evidence-based ergonomic workplace redesign

¹ White paper sources included published literature and interviews with individuals with expertise in health care systems design, executive leadership and management, patient-centered care and safety and labor relations.

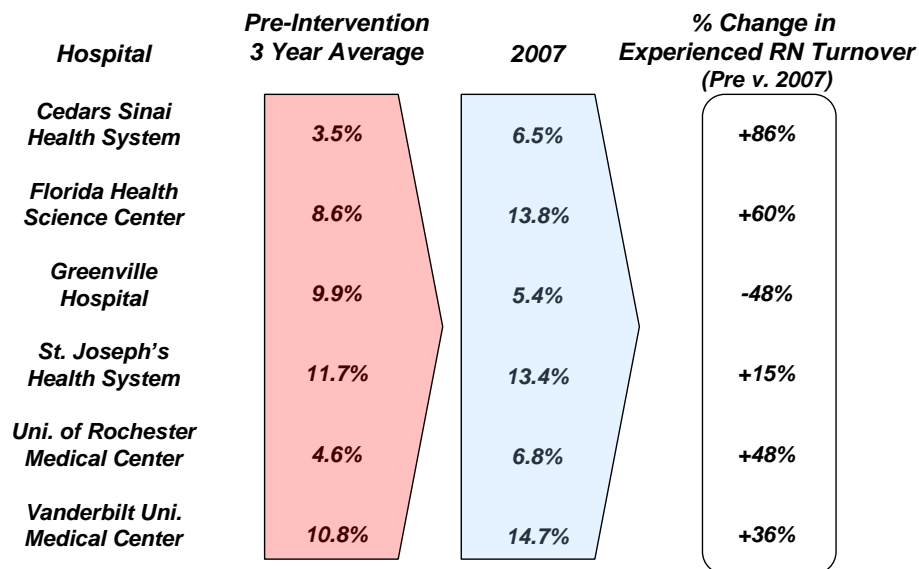
approaches; 2) Those testing the impact of new clinical information technologies; and 3) Those testing the impact of human resource-related strategies, including staffing models, leadership development and other initiatives designed to transform organizational culture. To assess the impact of these initiatives, grantee turnover rates were tracked for all RNs and for experienced RNs (age 45 and older) for the three years prior to each intervention and compared to 2007, the most recent period for which post-intervention data was available.

When examined across the board, the 13 grantee initiatives appeared to have little positive impact on RN turnover. Experienced RN turnover rose from a pre-intervention average of about 8.0% to 8.6% in 2007, while turnover across all RNs grew slightly from about 12.1% to 12.3%. However, turnover varied greatly across the three types of grantee retention initiatives, as follows:

Ergonomic initiatives (n=6): Six grantees focused on ergonomic work place redesign programs, such as patient lift teams and equipment designed to reduce physical practice burdens. Among these initiatives average experienced nurse turnover increased from 6.8% to 10.3% (Figure 1). These findings suggest that although improved retention may be a goal, it may not be a primary outcome of many ergonomic initiatives. Since their implementation, the primary outcomes of these six ergonomic initiatives also included reducing the number of RN days lost due to work related injuries by 89% and lowering hospital disability costs associated with patient handling injuries by 28%. These outcomes were consistent across grantees and speak to the effectiveness of this model in improving hospital performance in areas other than experienced RN retention.

Greenville Hospital System’s safe patient handling initiative was a notable exception to these findings by reducing its experienced RN turnover by almost half.

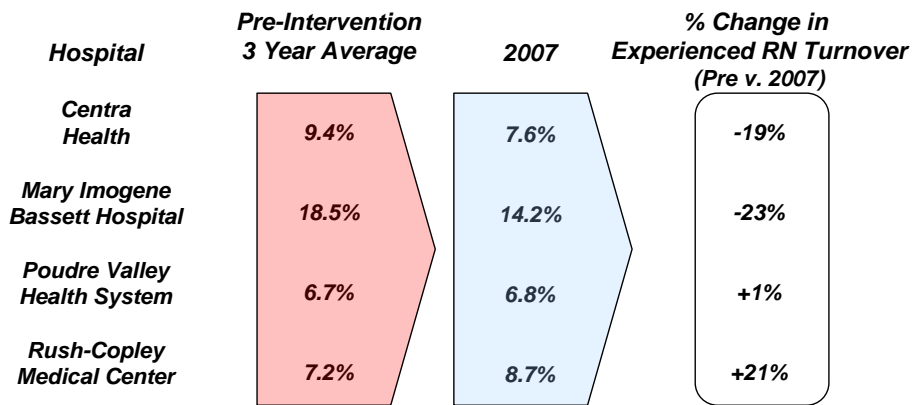
Figure 1
Grantee Ergonomic Initiatives: Changes in Experienced RN Turnover Rates



Greenville’s major program success factors included: 1) Consistent senior leadership support and a dedicated program champion; 2) Beginning with a small-scale pilot program to better control for implementation challenges; and 3) Maximizing success potential by targeting a health system hospital with an older RN workforce (average age of 54) that houses a bariatric unit.

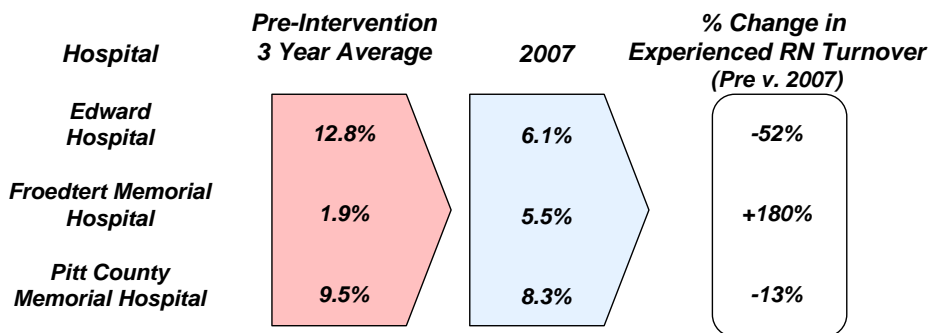
Staffing initiatives (n=4): On average, experienced RN turnover dropped from 8.2% to 7.7% among grantees implementing staffing initiatives (Figure 2). Interventions tested included hospital-wide closed staffing and base staffing models, and the creation of unique positions intended to relieve stress on experienced bed side nurses.

Figure 2
Staffing Initiatives: Changes in Experienced RN Turnover Rates



“Other” retention initiatives (n=3): Including wellness, leadership development and clinical technology programs, experienced RN turnover at hospitals conducting these initiatives fell from about 8.1% to 6.6% (Figure 3). Notably, since its implementation in 2003, over 97% of experienced nurses participating in Pitt County Memorial Hospital’s leadership development program “Fanning the Flame” remain at the hospital.

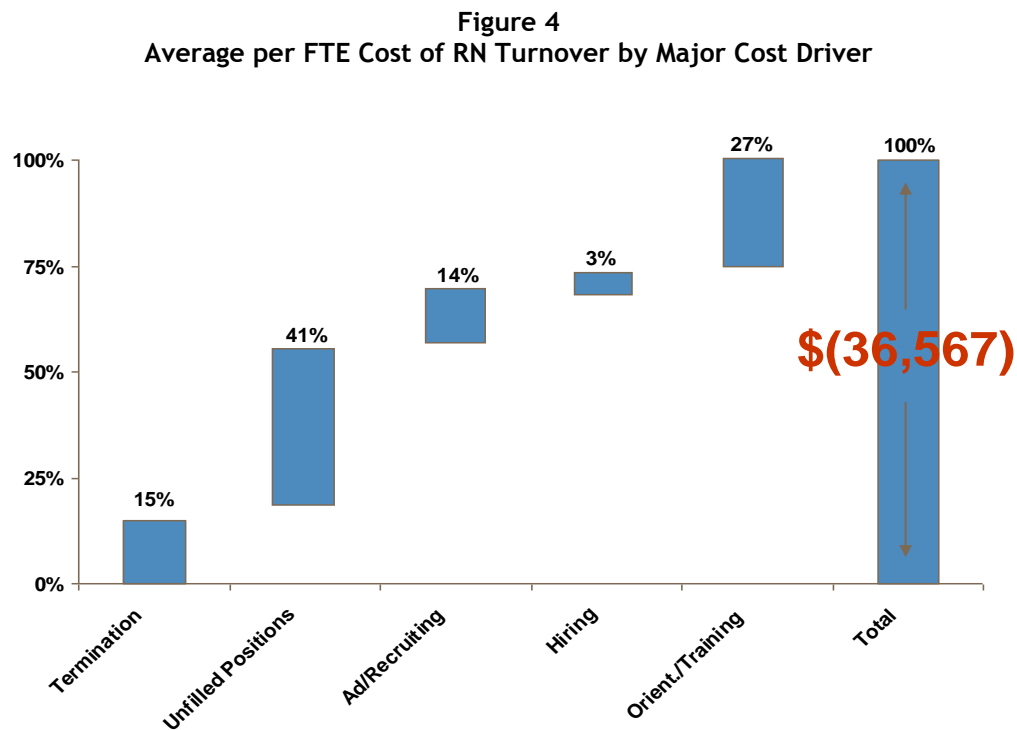
Figure 3
Other Initiatives: Changes in Experienced RN Turnover Rates



Estimating the Direct Costs of RN Turnover

Retaining experienced nurses has important implications for the nation's hospitals beyond the considerable impacts of lost knowledge and experience on staff effectiveness, patient outcomes and other measures of organizational performance. With estimated national annual turnover rates for RNs ranging between 8.4% and 13.9%, the economic costs of losing and replacing a bedside nurse can be significant and adversely affect hospital's financial health.^{2,3}

Highlighting the importance of controlling RN turnover, using 2007 cost data furnished by the 13 grantees, Lewin estimated that the average replacement cost for a full-time equivalent RN was about \$36,567 (Figure 4). About two-thirds of RN replacement costs stem from temporarily filling vacant RN positions and conducting new RN training and orientation. Other costs included advertising and recruiting and termination expenses such as payments for unused vacation time.



Generally in line with several national studies, grantee RN replacement costs ranged from a low of about \$14,225 to a high of \$60,102. Grantee hospital characteristics (size, staffing models and complexity of service mix) together with external market factors (local labor costs and competition for available RNs) helped drive differences in RN replacement costs.

² PricewaterhouseCoopers' Health Research Institute. *What Works: Healing the Healthcare Staffing Shortage*. July 2007

³ Bernard Hodes Group. *The 2006 Aging Nursing Workforce Survey*. March 2005.

Wisdom at Work Evaluation Lessons Learned

This evaluation tested the ability of selected strategies identified by the *Wisdom at Work* white paper to improve retention of experienced nurses at 13 hospitals and health systems who received grants from RWJF to evaluate their initiative outcomes. After two years of providing program coordination, technical assistance and analyzing performance data, the following “Lessons Learned” emerged regarding the ability of the interventions tested to improve retention of experienced nurses.

- ***There is no single silver bullet to improve experienced RN retention:*** No single program will likely achieve sustainable improvements in experienced RN retention. Success builds on supportive organization-wide factors, such as sustained leadership commitment, a corporate culture valuing nursing, a structured approach to talent management and retention and ongoing performance measurement and evaluation.
- ***Retention is a focused goal, but frequently not the only one sought by grantees:*** Although improving experienced RN retention was a goal of all grantee initiatives, it often was not the sole focus and desired outcome. Many initiatives sought also to address other important organizational issues such as patient handling injuries, inefficient patient flow and leadership development.
- ***Single initiatives are often one piece of a larger puzzle:*** Many grantees have implemented multiple programs/strategies to retain nurses, often making it hard to disentangle and measure the specific impact of these grantee interventions.
- ***Unplanned internal and external events occur with the passage of time that confound the ability to isolate and measure the impact of grantee initiatives:*** Examples include:
 - Significant expansions of inpatient capacity at several grantee hospitals required the hiring of many new nurses. This placed stress on experienced RNs as they tried to balance bed side care with training and monitoring new staff, resulting in rising turnover.
 - Growing expectations and accountability for RNs in quality and patient safety on top of other responsibilities reportedly resulted in experienced RNs self selecting out of the workforce.
 - Changing hospital Human Resource and compensation practices negatively influenced experienced RN retention at several grantee hospitals.
- ***Hospital data systems are often challenged to collect performance measures of interest.*** Challenges were initially encountered collecting selected performance measures from some grantees. These included staff exit interview data and staffing and turnover data by age cohort that had never previously been collected and analyzed. An unexpected outcome of this evaluation was reports by several grantees that this initiative has helped raise awareness of the need to collect this data to a higher priority level at their organizations.

Conclusion

As a complement to this evaluation, the WAW Coordinating Center is conducting eight in-depth case studies of healthcare and non-healthcare organizations that have been publicly recognized for achieving high levels of success in retaining experienced RNs and other mature workers. A common message from these organizations that applies to this evaluation is that success in retaining experienced staff relies less on specific programs and more on organization-wide factors. These include:

- Consistent leadership commitment through effective communication, transparency and support for a culture valuing nursing.
- Consistent organization-wide focus on talent management and development as a retention strategy.
- Focus on metrics to rapidly identify retention issues and target interventions.
- Aligning benefits to support retention objectives. Examples for experienced RNs include:
 - Phased retirement options
 - Flexible work scheduling options
 - Eldercare benefits
 - Transfers from bedside nursing to clinical mentoring roles

These findings suggest that achieving and sustaining success in retaining experienced RNs is dependent on far more than individual programs. Therefore, the Foundation might wish to consider broadening the focus of future research to explore “Best Practices” in system effectiveness among organizations whose goals include becoming a career destination for talented nurses.

C. SUMMARY DESCRIPTION OF GRANTEE INITIATIVES

Listed below is a brief description of each grantee initiative organized by type of work place adaptation, including: 1) Those testing evidence-based ergonomic workplace redesign approaches; 2) Those testing the impact of human resource-related strategies; and 3) Those testing the impact of other approaches including employee wellness, leveraging of technology, and leadership development. Detailed descriptions of program design, outcomes and lessons learned can be found in the full evaluation report.

Ergonomic Initiatives

Impact of Reducing Physical Practice Burdens on Retention of Experienced Nurses at Cedars-Sinai Medical Center in Los Angeles, California

In 2004 Cedars-Sinai Medical Center started a lift team initiative to decrease the number of back injuries, lost work days, costs related to patient handling injuries and improve RN satisfaction and retention. The lift team initiative included two teams operating at all times. Since implementing the lift team initiative, numbers of days of work lost due to patient handling injuries and disability costs have declined. Challenges encountered include uneven use of the lift team by some inpatient units and the physical size of the organization which reportedly increases response time by lift teams.

Impact of a Lift Team on the Recruitment and Retention of Experienced Nurses at Florida Health Science Center in Tampa, Florida

In the face of rapid growth in patient volume and a growing local nursing shortage, retention of nurses with clinical experience became a strategic driver at this magnet-designated hospital. A hospital-wide lift team initiative was implemented early in 2002 to help improve retention by reducing RN injuries related to patient handling and improving job satisfaction. Outcomes to date are mixed. While turnover among less experienced RNs fell along with the number of patient handling injuries, experienced RN turnover trended upward. Contributing factors appear to be driven by both the local market, including growing opportunities beyond hospital bedside nursing, and the hospital's staffing model which included required 12 hour shifts in some units. A positive outcome of the intervention has been a large drop in the number of days lost by experienced RNs due to patient handling injuries.

Addressing Retention of Experienced Nurses While Promoting Safe Patient Handling at Greenville Hospital System in Greenville, South Carolina

A 2004 risk analysis found that experienced RNs at a small system hospital housing a bariatric surgery program had increased rates of physical injuries due to patient handling. In response, a safe patient handling program was implemented. Minimal lift equipment was purchased, staff was provided ergonomics training and a new role of Nurse Ergonomist was created to oversee and "roll out" the program. Results included sharp declines in experienced RN turnover, fewer experienced RN days lost due to patient handling injuries, cost savings and improved job satisfaction. Lessons learned included the need to clearly define and reinforce the role of Nurse Ergonomist for staff, the importance of consistent support by senior management and managing culture change during the transition from project planning to full implementation. In 2007, the program was rolled-out to the system's rehabilitation and long term acute care hospitals.

The “Smooth Moves” Initiative to Retain Experienced Nurses at the Bedside at Saint Joseph’s Hospital in Atlanta, Georgia

St. Joseph’s Hospital believes that an optimal work environment will enhance recruitment and retention of experienced nurses. As a result, St. Joseph’s Hospital implemented the “Smooth Moves” Minimal Lift Program initiative hospital wide in 2005. Through education and promotion about the available lift teams and ergonomic equipment, St. Joseph’s achieved nurse buy in for the program. Within a year of implementation the hospital saw a reduction in patient movement related injuries for experienced nurses from 22 to 4. Experienced RN turnover has remained relatively unchanged, while turnover among other nurses rose sharply, reportedly influenced by an unanticipated 2007 layoff due to financial issues. Despite challenges, St. Joseph’s parent system, Catholic Health East is now reportedly considering replicating the Smooth Moves program nationally at 31 of its affiliated hospitals.

The Minimum Lift Program Initiative to Reduce Lost Staff Time Due to Patient-Related Injuries at Strong Memorial Hospital at The University of Rochester Medical Center

Strong Memorial Hospital’s experienced nurses had concerns about work load and work demand issues. To address these issues, the hospital implemented a Minimum Lift Team Program in 2005. Utilizing best practices in the industry, this program was intended to reduce the daily stress on experienced nurses and alleviate their concerns about the physical aspect of their jobs. Due to an expansive implementation approach and turnover of staff within the program, the initiative did not initially achieve its desired impact. However, the hospital has used the lessons learned to refine and improve the program.

A Comprehensive Evaluation of the “Smooth Moves” Safe Handling Program at Vanderbilt University Medical Center in Nashville, Tennessee

After a successful pilot, in 2006 the medical center implemented “Smooth Moves”, a hospital-wide safe patient handling program designed to improve staff safety and reduce costs associated with work-related injuries and turnover. The initiative coincided with a hospital expansion that required hiring additional RNs. Although post-intervention patient handling injuries fell sharply, an unexpected outcome of the expansion was increased turnover among experienced RNs. Factors reportedly contributing to experienced RN turnover included nurse preceptor “burn out” from orienting large numbers of new RNs and wage compression resulting from salary increases awarded to younger RNs that exceeded those awarded to their more experienced colleagues.

Staffing Initiatives

Implementing a Closed Staffing Model as a Nursing Retention Strategy at Centra Health at Lynchburg General Hospital, Lynchburg, Virginia

Following the recommendations of a Task Force of Nurse Managers, Lynchburg General Hospital implemented a Closed Staffing model. This model seeks to increase nurse job satisfaction and decrease turnover by keeping nurses on their home units. Since program implementation, Lynchburg General has seen a decline in experienced nurse turnover and absenteeism and improved patient outcomes.

Impact of the Admission Nurse Initiative on Recruiting and Retaining Wisdom at Mary Imogene Bassett Hospital in Cooperstown, New York

In 2001 Mary Imogene Bassett launched the “Admissions Nurse” program. The program is an easily replicated approach to improve the operational efficiency of the admissions process and targets the experienced nurse. A thorough patient admissions process is a key to good outcomes and relieves the staff nurse of the added burden of the admission function. Though this program is not the only factor effecting experienced nurse turnover, the hospital has seen a reduction in this metric since implementation.

Impact of the Base Staffing Model on Retention of Experienced Nurses at Poudre Valley Health System in Ft. Collins, Colorado

Following a 2001 discussion with senior management, the recruitment and retention committee at Poudre Valley Health System suggested a staffing model to address nursing concerns with safe patient care and a better work environment. Senior Nursing Leadership implemented the Base Staffing Model to address the nurse dissatisfaction and high nursing costs. This model staffs for peak patient occupancy, rather than average occupancy. The resulting reduction in overtime and turnover repaid the cost of implementation within six months. In addition to positive financial outcomes, the Base Staffing Model helped maintain consistently low turnover rates and improved RN satisfaction levels. However, given the current health system inpatient volume fluctuations and changing financial environment, PVHS is facing the challenge of continuing to justify the return on investment of this staffing model.

Impact of the ACT Nurse Program on Experienced Nurse Retention at Rush-Copley Medical Center in Aurora, Illinois

Rush-Copley is committed to retention and recruitment of clinical professionals and highlights these as part of its 2010 Vision. The hospital’s ACT (Admission, Coordination, Transfer) nurse program is an attempt to realize this vision. The program utilizes experienced nurses to manage patient admittance and placement. Designed by nurses, the initiative intends to improve retention through increased job satisfaction of both the ACT nurse and those nurses that are relieved of the stress of admitting and placing patients. Since implementation in 2005 the program has grown to include ACT nurse “winter challenge” to address bottlenecks associated with high volume during fall and winter month. Early staff satisfaction surveys show improvements and the goal is to reduce staff turnover as the program continues to mature and evolve.

Other Retention Initiatives

Impact of the Wellness at Work Lifestyle Change Initiative on Retention of Experienced Nurses at Edward Hospital and Health Services in Naperville, Illinois

In 2003, Edward implemented “Wellness at Work”, a series of initiatives targeting lifestyle changes in order to foster an environment of optimal staff health and well-being and help reduce the stress-related and physical challenges of the nursing profession for mature RNs. Over 40% of mature RNs participate in the program and it has contributed to greatly improved retention in recent years. However, a major challenge encountered was the presence of confounding variables, including other retention initiatives that made it difficult to accurately assess the impact of this specific intervention on mature RN retention.

The Virtual Intensive Care Unit as an Alternative Environment for Critical Care Practice and Experienced RN Retention at Froedtert Hospital in Milwaukee, Wisconsin

Froedtert Hospital implemented the Virtual Intensive Care Unit (vICU) in 2005 to improve quality outcomes for ICU patients. Staffed by experienced ICU nurses, the unit provides remote monitoring of ICU patients across multiple sites. Experienced critical care nurses are required to staff this unit but the work is physically less demanding than traditional ICUs. The purpose of this study was to evaluate vICU as an alternative environment to retain older ICU nurses. No vICU turnover has been reported since implementation. Data from focus group interviews and an electronic survey indicate vICU is less stressful, physically less demanding, intellectually stimulating, and nurses have positive working relationships with their nurse and physician vICU colleagues. The vICU may be an example of an alternative work environment that maintains “Wisdom at the Bedside.”

Fanning the Flame: A Retention Initiative for Experienced Nurses at University Health System of Eastern Carolina in Greenville, North Carolina

Responding to perceptions among experienced RNs that the hospital offered few educational opportunities tailored to their needs, the Fanning the Flame program was instituted in 2003. Focusing on retention, the program empowers the experienced bedside nurse through a three day educational experience supporting professional development. Results to date include reduced experienced RN turnover, increased job satisfaction and increased sense of collegiality among participants. Over 97% of nurses participating in the program have remained in the organization. A key lesson learned is that keeping experienced nurses at the bedside by helping them expand their practice creates a win-win situation for both the nurse and the hospital.

II. BACKGROUND AND PURPOSE OF THE EVALUATION

The root causes of the current national nursing shortage stem from both supply and demand factors. Fewer people are entering and remaining in the profession at the same time that a growing and aging population creates a wave of increased demand for health services across delivery sectors and levels of care.

As the key caregivers in hospitals, nurses can significantly influence the quality of care provided and, ultimately, treatment and patient outcomes. Consequently, hospitals' pursuit of high quality patient care is dependent, at least in part, on their ability to retain an experienced and highly skilled nursing workforce.

These issues confront today's nurse leaders with the challenge of how to retain nursing expertise at the bed side at levels adequate to provide high quality care for patients in a care environment complicated by:

- Growing patient acuity, coupled with shortened lengths of stay, resulting in intensified and accelerated care processes.
- Fewer expert-level RNs practicing at the bedside compared to the past, as experienced nurses retire or are offered opportunities to move out of the hospital to practice in less demanding settings.
- Growing scrutiny by public and private regulators, payers and others that create safety and financial imperatives for ensuring that appropriate levels of expert nursing care are available at the bedside.

America's nurses also are aging. According to a study of hospital RN shortages by Buerhaus, the current average age of RNs is greater than 45 years.⁴ By 2010, nearly 50 percent of the RN workforce will be over age 50. And, of the practicing nurses over age 50, 46 percent work in hospital settings.⁵

These projected demographic trends intersect with results from an American Nurses Association survey, which revealed that 82 percent of nurses age 40 and over plan to retire over the next 20 years.⁶ These troubling findings speak to the need to identify and test strategies that could extend the career life of RNs providing direct patient care in hospitals and health systems in order to retain their valuable knowledge and experience.

The Robert Wood Johnson Foundation's nursing research group is collaborating with hospitals, health systems and nursing leaders to develop and disseminate creative solutions to improve the retention of hospital nurses and to develop "best practice" models for more widespread dissemination and uptake.

⁴ Peter I. Buerhaus, Douglas O. Staiger, David I. Auerbach. Is the Current Shortage of Hospital Nurses Ending? *Health Affairs*, Volume 22, Number 6, November/December, 2003.

⁵ Analysis of AHRQ data currently being conducted by Kovner and Brewer.

⁶ CAN. The Mature Nurses Survey [Survey Summary], Silver Spring, MD; 2003. Center for the American Nurse. Unpublished presentation.

Recognizing the wealth of clinical expertise, organizational knowledge, interpersonal skills and judgment that experienced nurses bring to these settings, the Foundation commissioned a white paper, *Wisdom at Work: the Importance of the Older and Experienced Nurses in the Workplace*. Published in 2006, the white paper identified a number of strategies with the potential to contribute to the retention and recruitment of experienced nurses, and recommended that resources be invested to test the strategies identified.⁷ The Foundation supported that recommendation by funding the “Wisdom at Work: Retaining Experienced Nurses Research Initiative.”

The purpose of the Initiative was to test selected strategies identified by the *Wisdom at Work* white paper based on “adaptations to the work environment,” and build an early evidence base on the ability of these strategies to favorably influence retention of experienced registered nurses (RNs), age 45 and older, in hospital/health system settings to the usual retirement age and even beyond.

Of the eight strategies identified in the white paper, five focusing on work place adaptations were recommended for inclusion in the Wisdom Works Research Initiative. The five then were stratified into the following three typologies for testing impact on retention rates among experienced nurses:

1. Those focused on testing evidence-based ergonomic workplace redesign approaches.
2. Those testing the impact of new clinical information technologies; and
3. Those testing the impact of human resource-related strategies, including staffing models and other initiatives, designed to transform organizational culture.

RWJF provided grants to 13 pre-existing hospital-based initiatives intended to enhance nurse retention, with particular focus on the experienced RN. The primary purpose of these grants was to evaluate the outcomes of each initiative through the collection and analysis of key performance data, such as changes in experienced RN turnover and the associated estimated average direct costs of RN turnover. The table below summarizes the 13 participating hospitals and health systems and the titles of their funded interventions.

⁷ White paper sources included published literature and interviews with individuals with expertise in health care systems design, executive leadership and management, patient-centered care and safety and labor relations.

HOSPITAL	TITLE OF FUNDED INTERVENTION
Cedars-Sinai Health System	Reducing Physical Practice Burdens for Experienced Nurses
Edward Foundation	Wellness at Work Initiative: Impact on Retention of Experienced Nurses
Froedtert Memorial Hospital	Impact of a Virtual Intensive Care Unit on Experienced Nurse Retention in the ICU
Greenville Hospital	Addressing Experienced Nurse Retention While Promoting Safe Patient Handling
Centra Health	Closed Staffing: A Nursing Retention Strategy
Mary Imogene Bassett Hospital	The Admission Nurse-Recruiting and Retaining Wisdom
Pitt County Memorial Hospital/University Health Systems of Eastern Carolina	Fanning the Flame: A Leadership Development Retention Strategy for Experienced Nurses
Poudre Valley Health System	Impact of the Base Staffing Model on Retention of Experienced Nurses
Rush-Copley Medical System	The ACT Nurse Program's Impact on Experienced RN Retention
St. Joseph's Health System	The "Smooth Move" to Retain Experienced Nurses
Florida Health Sciences Center	Impact of a Lift Team on Recruitment/Retention of Experienced Nurses
University of Rochester Medical Center	A Minimum Lift Program to Reduce Lost Staff time From Patient-related Injuries
Vanderbilt Medical Center	Comprehensive Evaluation of a Safe Handling Program

The Lewin Group (Lewin) was commissioned to coordinate the evaluation, provide technical assistance to grantees and conduct data analysis to identify program outcomes.

The remainder of this evaluation is organized to:

- Provide a summary description of the evaluation design and methodology.
- Present aggregated and individual hospital/health system study outcomes and evaluation findings. These also include a discussion of success factors and lessons learned from the interventions tested.
- Summarize grantee dissemination activities planned and undertaken.
- Present summary case studies of each hospital/health system's retention initiatives, describing primary goals and outcomes, including the impacts of grantee interventions on:
 - Trends in experienced RN turnover rates
 - Estimated direct costs of RN turnover, i.e., the business case for retaining experienced RNs
 - Trends in experienced RN patient handling injuries and hospital disability costs stemming from ergonomic initiatives
 - Success factors and lessons learned that influenced outcomes and potential spread of the interventions tested

III. EVALUATION DESIGN AND METHODOLOGY

This evaluation was carried out between January, 2007 and December, 2008. During this 24 month period, the first 18 months (January, 2007-June, 2008) focused largely on providing evaluation coordination and technical assistance services to participating hospitals and health systems and collecting and analyzing performance data. The final six months (July-December, 2008) focused on data synthesis and presentation of findings.

Participating hospitals and health systems were required to provide the WAW Coordinating Center with annual staffing and financial data through an electronic Web-based portal for three years prior to each intervention and quarterly for all years post-intervention through 2007. Data collected was used to calculate RN turnover costs and to establish a time series through December, 2007 to track changes in turnover, and the impact of ergonomic initiatives.

For a more detailed description of the evaluation design and methodology, including key study assumptions and definitions and specific data elements collected and analyzed, please refer to Appendix A. Appendix A also presents the data collection template completed by each grantee study site to calculate the direct costs associated with RN turnover. Financial data collected was used to help make the business case for retention by identifying and quantifying the major cost drivers associated with RN turnover.

IV. DESCRIPTION OF EVALUATION FINDINGS

The primary area of focus for this evaluation was to assess in the aggregate and individually the impact of grantee initiatives on experienced RN turnover. In addition to turnover, many grantee initiatives also sought to favorably impact other important nursing related issues. As a result, the scope of this evaluation is organized to examine the following:

1. The direct costs of RN turnover based upon data provided by individual grantees. Highlighting and linking the costs of RN turnover to organizational business strategy is proving to be an effective approach for making the case for programs that improve retention.
2. Trends in turnover rates pre-and post-intervention for experienced RNs compared with all RNs in aggregate and by type of grantee intervention.
3. Trends in hospital disability costs and RN patient handling injuries resulting from ergonomic initiatives.
4. Summary of grantee dissemination activities.
5. Lessons learned and conclusions drawn from the WAW Initiative.

A. Assessing the Direct Costs of RN Turnover

Turnover of nursing staff has important implications for hospitals and health systems beyond the impacts of lost knowledge and experience on staff performance levels, patient outcomes and other aspects of organizational performance. Not the least of these is the direct financial cost of losing and replacing a bedside nurse. With estimated national annual turnover rates for RNs ranging between 8.4% and 13.9%, this cost can be significant.^{8,9}

A number of national studies have estimated the average cost of replacing an RN to be anywhere from about \$22,000 to over \$64,000 (Advisory Board, 1999; Jones, 2005; O'Brien-Pallas et al., 2006; Stone et al., 2003; Waldman et al., 2004).¹⁰ The wide range in estimated costs results from differing methodologies, variations in labor costs across the national landscape, differing hospital cost finding capabilities and other factors.

To add value to this evaluation, Lewin worked with the WAW grantees to develop a model to estimate the average per capita direct cost of RN turnover for each hospital or health system. The model utilized consistently defined 2007 cost data collected and reviewed by grantee finance and human resources staff (See Appendix A for the model template). A number of grantees noted that the data collection and analysis process while time consuming was also rewarding, as it enabled hospital staff to better understand costs that may not previously have been fully considered in decision making.

⁸ PricewaterhouseCoopers' Health Research Institute. *What Works: Healing the Healthcare Staffing Shortage*. July 2007

⁹ Bernard Hodes Group. *The 2006 Aging Nursing Workforce Survey*. March 2005.

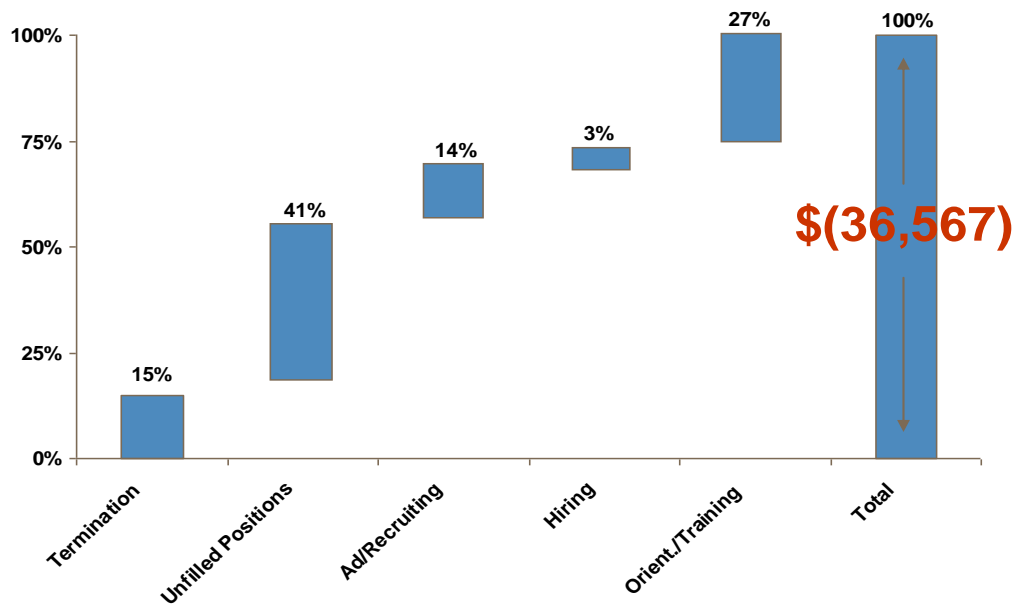
¹⁰ OJIN: The Online J Issues Nurs. 2007;12(3)

The model calculated the financial impact of RN turnover across five major cost drivers. These included:

- **Termination costs-** Defined as costs associated with the departure of an RN, such as payment for unused vacation time and other departure related costs.
- **Costs of unfilled positions-** Costs associated with filling vacant positions through overtime payments to nursing staff or temporary hiring of agency nurses.
- **Advertising and recruiting costs-** Costs related to recruiting replacement RNs. Examples include advertising and recruiting costs and RN signing bonuses.
- **New staff hiring costs-** Costs associated with the RN hiring process, such as interviewing and background checks.
- **New staff training and orientation costs-** Costs associated with on-boarding of new RNs. Examples include unit and organization-wide orientation and training department activities.

Figure 5 below summarizes RN turnover across the 13 grantee hospitals in total and by major cost driver. The estimated direct cost of replacing a full-time equivalent (FTE) RN in 2007 averaged about \$36,567. About two-thirds of RN replacement costs were associated with temporarily filling vacant RN positions and the training and orientation of new nurses.

Figure 5
Per FTE Average Cost of RN Turnover by Major Cost Driver
2007



RN replacement costs among the 13 Wisdom at Work Grantees were generally consistent with the national studies summarized above. They ranged from a low of about \$14,225 at St. Joseph's Health System in Atlanta to a high of \$60,102 at Cedars-Sinai Health System in Los Angeles.

In reviewing these findings with grantees, we found that both individual hospital characteristics and local market factors play an important role in influencing the cost of RN turnover. To begin to better understand these issues, we analyzed the cost of turnover at grantee organizations using RN staffing levels as a proxy for hospital size. We stratified grantees into two comparison groups: 1) those with RN staffing complements of fewer than 1,000 FTEs; and 2) those with greater than 1,000 FTE RNs on staff.

As Figure 6 shows, the average 2007 RN turnover cost for hospitals with fewer than 1,000 FTE RNs was \$24,861, while hospitals with RN FTE staffing levels greater than 1,000 reported average turnover costs of \$43,667, about 75% higher.

Froedtert Memorial Hospital in Milwaukee, Wisconsin was calculated separately, as their initiative, described in the case study chapter below, was focused solely on hospital intensive care units. The costs associated with recruiting and training highly specialized ICU RNs is typically higher than the hospital-wide mix of all inpatient services reported by the other grantees.

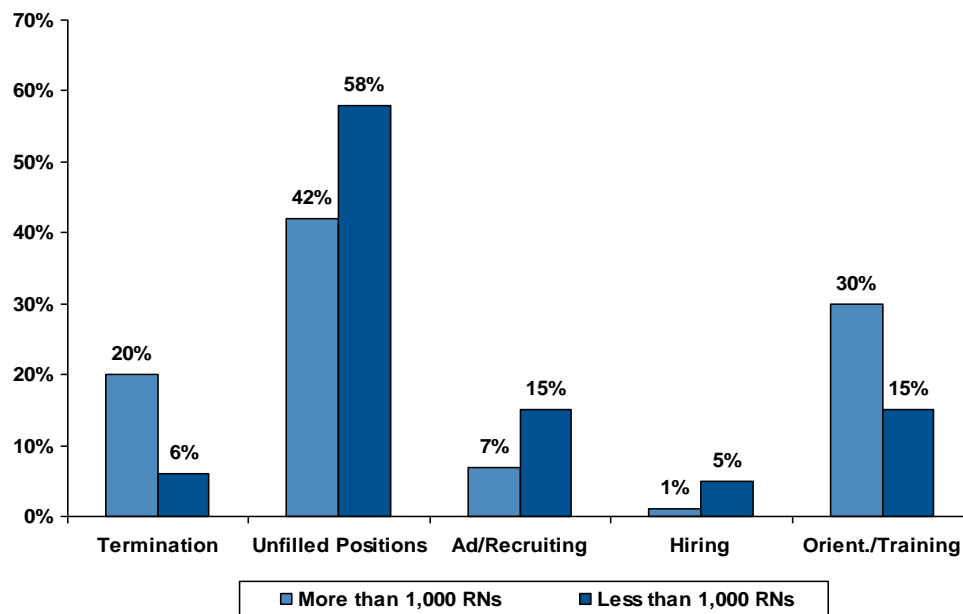
Figure 6
Summary of Estimated Direct Cost of Turnover per RN by Hospital Staffing Level

	HOSPITAL	2007 RN STAFFING	ESTIMATED COST OF TURNOVER
Hospitals with less than 1,000 RNs <i>Average Cost= \$24,861</i>	Centra Health	829	\$33,171
	Poudre Valley Health System	710	\$18,594
	St. Joseph's Health System	689	\$14,225
	Rush-Copley Medical System	410	\$23,860
	Mary Imogene Bassett Hospital	92	\$25,091
	Greenville Hospital	81	\$34,225
Hospitals with greater than 1,000 RNs <i>Average Cost= \$43,667</i>	Univ. of Rochester Medical Center	1,926	\$45,843
	Florida Health Sciences Center	1,795	\$32,175
	Pitt County Memorial Hospital	1,678	\$52,037
	Cedars-Sinai Health System	1,229	\$60,102
	Vanderbilt Medical Center	1,198	\$45,036
	Edward Hospital	1,052	\$26,810
	Froedtert Memorial Hospital	149	\$64,204
Evaluated on the unit level			
	Froedtert Memorial Hospital	149	\$64,204

Further analysis was conducted to help inform why average per FTE nurse turnover costs was significantly higher among hospitals with higher levels of nurse staffing. Comparing individual cost drivers among hospitals with higher RN staffing levels (>1,000 FTEs) to those with smaller RN staffing complements offered some perspective (Figure 7). Hospitals with higher RN staffing levels reported spending considerably more on average for termination and new hire orientation and training compared to their smaller counterparts. Contributing explanatory factors may include:

- Grantee organizations with larger RN staffs appear more likely to have departments, units or individuals whose primary functions include staff orientation and training. As a result, their true costs may be more easily identified and captured by hospital cost accounting systems than is the case among their smaller counterparts.
- The service mix in hospitals with larger RN staffs tends to be more heavily weighed towards more complex tertiary care services, such as ICUs, than is the case at their smaller counterparts. Replacing highly skilled RNs in these services is typically associated with high costs due to the time required to recruit replacement RNs with requisite skills and experience and specialized training costs.

Figure 7
Allocation of RN Turnover Costs by Major Cost Driver
 >1,000 RN Staffing Levels v. <1,000 RN Staffing Levels
 2007



External market factors may also contribute to variations in RN turnover costs. Examples include variations in local labor costs between urban and rural areas, the extent of competition for nurses among local hospitals and other healthcare related organizations and the available supply of nurses.

This analytic approach supported by “real world” financial data offers grantee hospitals and other interested organizations a practical and useful tool to help estimate the economic impact

of nurse turnover and to support the business case for retention programs and other initiatives that improve RN satisfaction with their work place and willingness to remain at the bed side. These are issues that will become increasingly relevant as the RN shortage continues.

Although based on a small sample of hospitals and health systems, these findings also suggest that much more can be learned about factors influencing the cost of RN turnover by partnering with hospitals to conduct practical research based on “real world” data and other information.

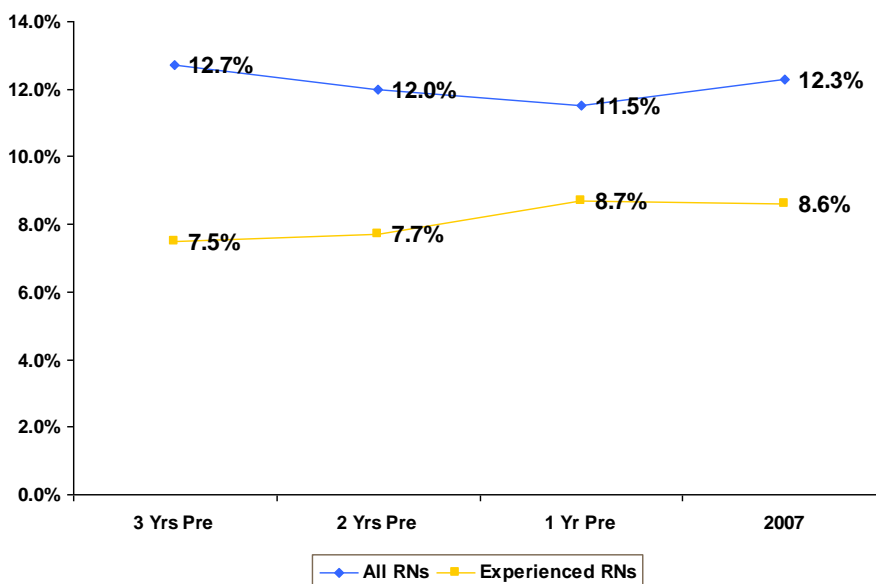
B. Overall Trends in Pre- and Post- Intervention Experienced RN Turnover

The average RN replacement costs of \$36,567 among Grantee hospitals highlight the importance of controlling nurse turnover, particularly among the most difficult nurses to replace, the experienced RN. Grantees initiatives were intended as forward thinking efforts to address the needs of experienced RNs, with an anticipated outcome of decreased turnover among that population.

To measure the impact of these initiatives, turnover rates were tracked for the three years prior to each intervention’s implementation and compared to 2007, the most recent period for which post-intervention data is available, for both all RNs and for experienced RNs (age 45 and older). As depicted in Figure 8 below, the overall turnover rate in 2007 for both experienced RNs and all RNs did not appear to be positively influenced by grantee initiatives.

Grantee hospitals’ turnover across all RNs also was generally consistent with national averages. Estimated national turnover rates for RNs range between 8.4%* and 13.9%. By comparison, RN turnover rates at grantee organizations averaged 12.0% the three years before their interventions were implemented and 12.3% in 2007.

Figure 8
Grantee Hospital RN Turnover Rates
 Pre-Intervention v. 2007
 All RNs v. Experienced RNs



While experienced RN turnover was not measurably influenced across the board, this finding varied across the three major types of initiatives implemented by grantees, including:

- **Ergonomic initiatives:** These include ergonomic work place redesign oriented programs, such as patient lift teams and patient lift equipment, to reduce physical practice burdens for experienced nurses.
- **Staffing initiatives:** These include innovative staffing models and approaches to nurse staffing intended to improve RN satisfaction levels and retention, such as closed staffing, base staffing, and the staffing of unique positions to relieve stress on experienced bed side RNs.
- **Other initiatives:** These include wellness, nurse leadership development and clinical technology programs.

Detailed information on each of these initiatives can be found in the grantee case studies presented below and a year by year look at experienced RN turnover rates for each hospital can be found in Appendix B.

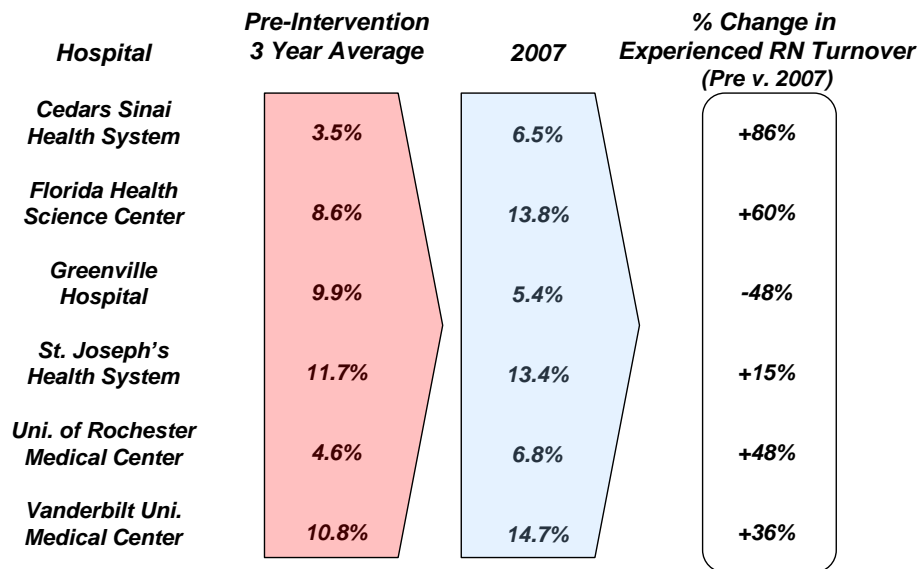
Trends in Turnover Rates among Ergonomic Initiatives

Six grantees implemented ergonomic initiatives whose goals included reducing patient handling injuries and improving work place satisfaction and retention among experienced RNs. Only one grantee initiative saw a decline in experienced RN turnover (Figure 9). However, it is worth noting that four of the participating hospitals had experienced RN turnover rates below ten percent before these initiatives were implemented, making further improvements more difficult to achieve.

Hillcrest Memorial Hospital, part of the Greenville Hospital System in Greenville, South Carolina managed to reduce experienced RN turnover by almost half with their safe patient handling initiative. Their major success factors, described in more detail below, included:

- Consistent senior leadership support and a dedicated program champion.
- Implementation that began with a small-scale pilot program to better control for expected and unexpected challenges and confounding factors.
- Targeting a location and patient care units where the prospects for success were maximized. Hillcrest had an older RN workforce (average age of 54) and housed a bariatric unit contributing to high rates of physical injuries among RNs.

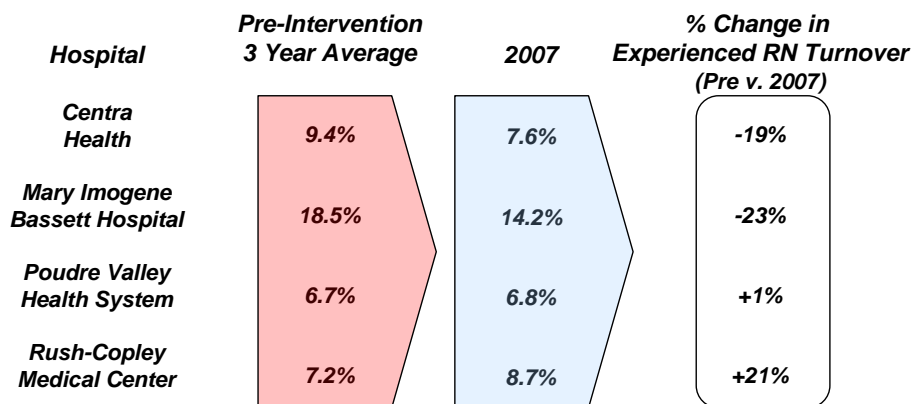
Figure 9
Ergonomic Initiatives: Changes in Experienced RN Turnover Rates



Trends in Turnover Rates among Staffing Initiatives

On average, the four grantee hospitals and health systems implementing staffing related initiatives saw their experienced RN turnover decline from 8.2% to 7.7%. Those experiencing declining turnover rates implemented staffing models to improve the operational efficiency of the admissions process, relieving unit nurses of that responsibility (Mary Imogene Bassett Hospital); and a closed staffing model designed to improve nurse satisfaction and decrease turnover by keeping nurses on their home units (Centra Health).

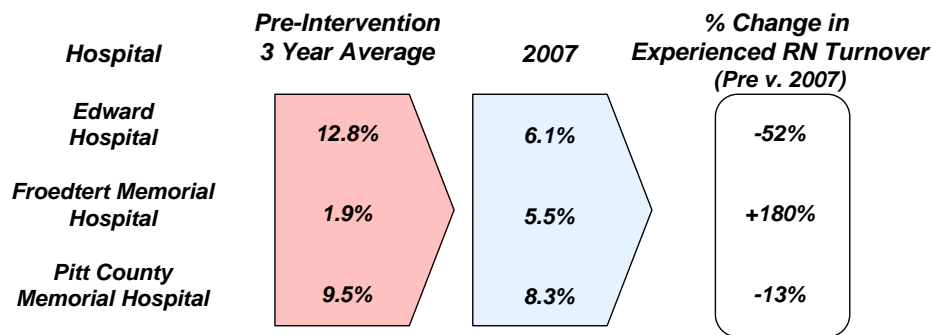
Figure 10
Staffing Initiatives: Changes in Experienced RN Turnover Rates



Trends in Turnover Rates among Other Retention Initiatives

Two of the three grantee initiatives that focused on areas other than ergonomics or staffing saw a drop in experienced RN turnover (Figure 11). Over 40% of experienced RNs participate in Edward Hospital’s “Wellness at Work” initiatives targeting lifestyle changes, which reportedly has contributed to improved retention. And Pitt County Memorial Hospital credits the professional development opportunities offered to experienced bedside nurses. Over 97% of nurses participating in the “Fanning the Flame” program implemented in 2003 remain at the hospital. Case studies of both initiatives are presented below.

Figure 11
Other Initiatives: Changes in Experienced RN Turnover Rates



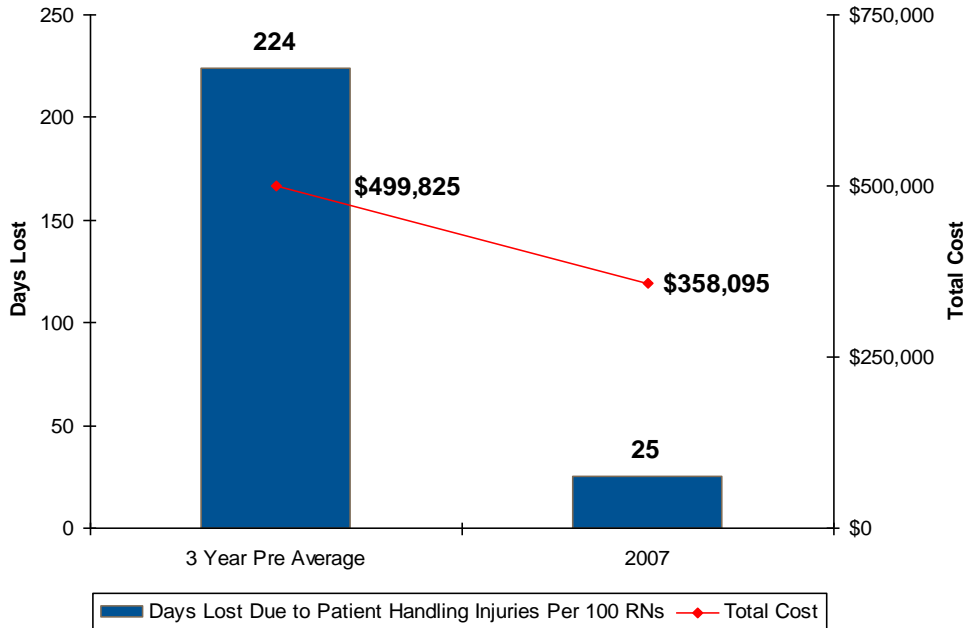
C. Trends in RN Patient Handling Injuries and Hospital Disability Costs from Ergonomic Interventions

Six Wisdom at Work Grantees implemented ergonomic initiatives. The goals of these programs included providing a safer work environment for staff, resulting in fewer days of work lost due to patient handling injuries, lower hospital disability costs, improved levels of RN satisfaction with their work environment and lower experienced RN turnover.

Separate from examining the impact of these programs on experienced RN turnover, the WAW Coordinating Center also worked with grantees to collect and analyze data quantifying the positive impacts of these programs on patient handling injuries and associated hospital disability costs.

As Figure 12 shows, in aggregate, the six grantee ergonomic initiatives reduced the number of RN days lost due to work related injuries by 89% and hospital disability costs associated with patient handling injuries by 28% since their implementation. These outcomes were consistent across grantees and speak to the effectiveness of this model in areas other than improving experienced RN retention.

Table 12
Trends in Days Lost Due to Patient Handling Injuries per 100 RNs and Hospital Disability Costs



V. WISDOM AT WORK GRANTEE DISSEMINATION ACTIVITIES

Wisdom at Work grantees have and continue to make significant efforts to share their work with others. The most common forms of dissemination include presentations to internal staff and at local and regional nursing conferences. Grantees have also opened their doors to site visits from interested organizations, produced DVD's documenting their work, and were cited in books and other publications. These dissemination activities are highlighted in Table 13 below.

Table 13
Summary of Wisdom at Work Grantee Dissemination Activities

<p>Edward Foundation: The ACT Nurse Program's Impact on Experienced RN Retention:</p> <ul style="list-style-type: none"> • Internally, a project overview was provided to nursing directors, to over 1,000 nurses, and to Senior Staff (President/CEO and Vice Presidents) and all of the Management Team. • Presented at Illinois Nurse Leaders: Shaping Practice and Public Policy Conference, Fourth and Fifth Annual Evidence-Based Practice Conference, and Creating a Community of Caring Conference. • Planning a press release and team members are preparing several manuscripts.
<p>Florida Health Sciences Center: Impact of a Lift Team on Recruitment/Retention of Experienced Nurses:</p> <ul style="list-style-type: none"> • Submitted an abstract to the 6th Annual Florida Magnet Nursing Research Conference to be held February 2009. • Shared findings internally to the Patient Services Executive Committee and the Nursing Research Council. • Cited in five publications, including the St. Petersburg Times • Eleven hospitals have conducted site visits to learn about the program
<p>Greenville Hospital: Addressing Experienced Nurse Retention While Promoting Safe Patient Handling:</p> <ul style="list-style-type: none"> • The project was presented at the PHTS state conference, the national Premier Breakthroughs Conference and a regional nursing research conference. • William Sadler PhD contacted the organization and interviewed CNO and grantee. He is co-authoring a book with Dr. Fay Bower promoting the development/support/retention of senior nurses titled: "New Pathways: Careers for Third Age Nurses" to be published in 2009 by Sigma Theta Tau International. • Production of a DVD "Introduction to the Greenville Hospital System UPLIFT Minimal Lift Equipment" for Staff and Students. A copy was provided to each area School of Nursing and discussed with the Deans. • Submitted an abstract to the 9th Annual Safe Patient Handling and Movement Conference.
<p>Pitt County Memorial Hospital/ University Health Systems of Eastern Carolina: Fanning the Flame: A Leadership Development Retention Strategy for Experienced Nurses:</p> <ul style="list-style-type: none"> • A meeting was held to discuss the development of a three tiered business plan for assisting other hospitals that wish to replicate this program for their nurses and for distributing the materials developed during the grant period. • Presented at the Center for American Nurses' National LEAD Conference held in Washington DC in June 2008. • Shared results with the Chief Nursing Officers of all the hospitals in our health system. • Presented poster at the Pitt County Memorial Hospital Nursing Research Fair in November 2008. • Plans for 2009 include: completion of two articles for publication; delivery of a grand rounds presentation; and a presentation during an event with the East Carolina University School of Nursing

Rush-Copley Medical System:

The ACT Nurse Program's Impact on Experienced RN Retention:

- Contacted by hospitals across the nation via email and phone. Salem Hospital in Oregon sent a team to meet with the ACT nurses and their clinical director to discuss replicability at their facility.
- The ACT team has shared information via phone conferences, articles in local and regional trade journals and at local and statewide conferences
- Project staff made three presentations across the state of Illinois, including to the Illinois Organization of Nurse Leaders.
- Media coverage of the program was highlighted in *Advance for Nurses*, and *Nursing Spectrum* magazines.
- The program was shared with the patient community via the annual *Community Report, 2007*.
- Project staff plans to submit abstracts to the American Organization of Nurse Leaders annual meeting and to the Nursing Management Congress.

Mary Imogene Bassett Hospital:

The Admission Nurse-Recruiting and Retaining Wisdom:

- The press release about the grant was published in several newspapers in the region.
- The Bassett PI presented the topic of Wisdom at Work at the New York State Nurses Association
- A poster with the same title was presented at the Eastern Nursing Research Society Annual Conference in March, 2008 in Philadelphia, PA.
- New York Organization of Nurse Executives - poster about Admission Nurse Program presented at Annual Convention Fall 2006.

University of Rochester Medical Center:

A Minimum Lift Program to Reduce Lost Staff time From Patient-related Injuries:

- Presentations to the Nursing Practice Executive Council (NPEC), the chief nurse officer (CNO)/nurse manager leadership group and the professional nursing council (PNC).
- A manuscript describing the program and its evaluation findings is under development for submission to a peer reviewed journal and an abstract has been submitted for presentation at a national conference.
- A copy of presentations to stakeholder groups has been placed on their organization's intranet.

VI. WISDOM AT WORK EVALUATION: LESSONS LEARNED AND CONCLUSION

Lessons Learned

This evaluation tested the ability of selected strategies identified by the *Wisdom at Work* white paper to improve retention of experienced nurses at 13 hospitals and health systems who received grants from RWJF to evaluate their initiative outcomes. After two years of providing program coordination, technical assistance and analyzing performance data, the following “Lessons Learned” emerged regarding the ability of the interventions tested to improve retention of experienced nurses.

- ***There is no single silver bullet to improve experienced RN retention:*** No single program will likely achieve sustainable improvements in experienced RN retention. Success builds on supportive organization-wide factors, such as sustained leadership commitment, a corporate culture valuing nursing, a structured approach to talent management and retention and ongoing performance measurement and evaluation.
- ***Retention is a focused goal, but frequently not the only one sought by grantee initiatives:*** Although improving experienced RN retention was a goal of all grantee initiatives, it often was not the sole focus and desired outcome. Many initiatives sought also to address other important organizational issues such as patient handling injuries, inefficient patient flow and leadership development.
- ***Single initiatives are often one piece of a larger puzzle:*** Many grantees have implemented multiple programs/strategies to retain nurses, often making it hard to disentangle and measure the specific impact of these grantee interventions.
- ***Unplanned internal and external events occur with the passage of time that confound the ability to isolate and measure the impact of grantee initiatives:*** Examples include:
 - Significant expansions of inpatient capacity at several grantee hospitals required the hiring of many new nurses, placing stress on experienced RNs as they tried to balance bed side care with training and monitoring new staff, resulting in rising turnover.
 - Increasing expectations and accountability for RNs in quality and patient safety on top of other responsibilities reportedly resulted in experienced RNs self selecting out of the workforce.
 - Changing hospital Human Resource and compensation practices negatively influenced experienced RN retention at several grantee hospitals.
- ***Hospital data systems are often challenged to collect performance measures of interest.*** Challenges were initially encountered collecting selected performance measures from some grantees. These included staff exit interview data and staffing and turnover data by age cohort that had never previously been collected and analyzed. An unexpected outcome of this evaluation was reports by several grantees that this initiative has helped raise the need to collect this data to a higher priority level at their organizations.
- ***The duration of the interventions tested was limited.*** The duration of some interventions may not have allowed for significant results to be identified. All Grantees had their initiatives in place prior to receiving grant funding. However, some had been

in place for three years or less as of the end of CY 2007 when data collection activities were completed. It remains unclear whether more time may be needed to measure the full impact of these interventions.

Conclusion

As a complement to this evaluation, the WAW Coordinating Center is conducting eight in-depth case studies of healthcare and non-healthcare organizations that have been publicly recognized for achieving high levels of success in retaining experienced RNs and other mature workers. A common message from these organizations that applies to this evaluation is that success in retaining experienced staff relies on doing a number of things particularly well. These include:

- Consistent leadership commitment through effective communication, transparency and support for a culture valuing nursing.
- Consistent organization-wide focus on talent management and development as a retention strategy.
- Focus on metrics to rapidly identify retention issues and target interventions.
- Aligning benefits to support retention objectives. Examples for experienced RNs include:
 - Phased retirement options
 - Flexible work scheduling options
 - Eldercare benefits
 - Transfers from bedside nursing to clinical mentoring roles

These findings suggest that achieving and sustaining success in retaining experienced RNs is dependent on far more than individual programs. Therefore, the Foundation might wish to consider broadening the focus of future research to explore “Best Practices” in system effectiveness among organizations whose goals include becoming a career destination for talented nurses.

INDIVIDUAL WISDOM AT WORK GRANTEE INITIATIVE CASE STUDIES

HOSPITAL	TITLE OF FUNDED INTERVENTION	TYPE OF INITIATIVE
Greenville Hospital	Addressing Experienced Nurse Retention While Promoting Safe Patient Handling	Ergonomic
Poudre Valley Health System	Impact of the Base Staffing Model on Retention of Experienced Nurses	Staffing
Vanderbilt Medical Center	Comprehensive Evaluation of a Safe Handling Program	Ergonomic
Edward Foundation	Wellness at Work Initiative: Impact on Retention of Experienced Nurses	Alternative
Florida Health Sciences Center	Impact of a Lift Team on Recruitment/Retention of Experienced Nurses	Ergonomic
Mary Imogene Bassett Hospital	The Admission Nurse-Recruiting and Retaining Wisdom	Staffing
University of Rochester Medical Center	A Minimum Lift Program to Reduce Lost Staff time From Patient-related Injuries	Ergonomic
Centra Health	Closed Staffing: A Nursing Retention Strategy	Staffing
Cedars-Sinai Health System	Reducing Physical Practice Burdens for Experienced Nurses	Ergonomic
Pitt County Memorial Hospital/University Health Systems of Eastern Carolina	Fanning the Flame: A Leadership Development Retention Strategy for Experienced Nurses	Alternative
St. Joseph's Health System	The "Smooth Move" to Retain Experienced Nurses	Ergonomic
Rush-Copley Medical System	The ACT Nurse Program's Impact on Experienced RN Retention	Staffing
Froedtert Memorial Hospital	Impact of a Virtual Intensive Care Unit on Experienced Nurse Retention in the ICU	Alternative

WISDOM AT WORK GRANTEE CASE STUDIES

ADDRESSING RETENTION OF EXPERIENCED NURSES WHILE PROMOTING SAFE PATIENT HANDLING AT GREENVILLE HOSPITAL SYSTEM IN GREENVILLE, SOUTH CAROLINA

INITIATIVE-AT-A-GLANCE: A 2004 risk analysis found that experienced RNs at a small system hospital housing a bariatric surgery program had increased rates of physical injuries due to patient handling. In response, a safe patient handling program was implemented. Minimal lift equipment was purchased, staff was provided ergonomics training and a new role of Nurse Ergonomist was created to oversee and support the “roll out” the program. Results included lower experienced RN turnover, fewer experienced RN days lost due to patient handling injuries, cost savings and improved job satisfaction. Lessons learned included the need to clearly define and reinforce the role of Nurse Ergonomist for staff, the importance of consistent support by senior management and managing culture change during the transition from project planning to full implementation. In 2007, the program was rolled-out to the system’s rehabilitation and long term acute care hospitals.

A. Issue

Greenville Hospital System has been recognized for the past three years as one of the nation’s 100 Most Wired Hospitals and Health Systems. Hillcrest Memorial Hospital is an acute care satellite facility that employs 110 RNs whose average age is 46 years. About half of RNs are over 45 years of age. A risk analysis conducted in 2004 found that Hillcrest was among the areas in the system with the highest number and costs of RN patient handling injuries. Based upon this and the fact that the hospital housed a bariatric surgery program, a safe patient handling program was implemented in 2005.

B. Program

The purpose of the program was to create a minimal lift environment for nurses. Specific equipment was purchased to meet the needs of patients in critical care, the medical surgical unit, radiology, and ED and outpatient departments. The minimal lift environment for nurses includes state of the art patient handling and transfer equipment, a Nurse Ergonomist staff position created to provide program leadership, ergonomic training, unit mobility coaches, specific safe patient handling policies and procedures and post-occurrence evaluation of each nurse injury sustained from patient handling.

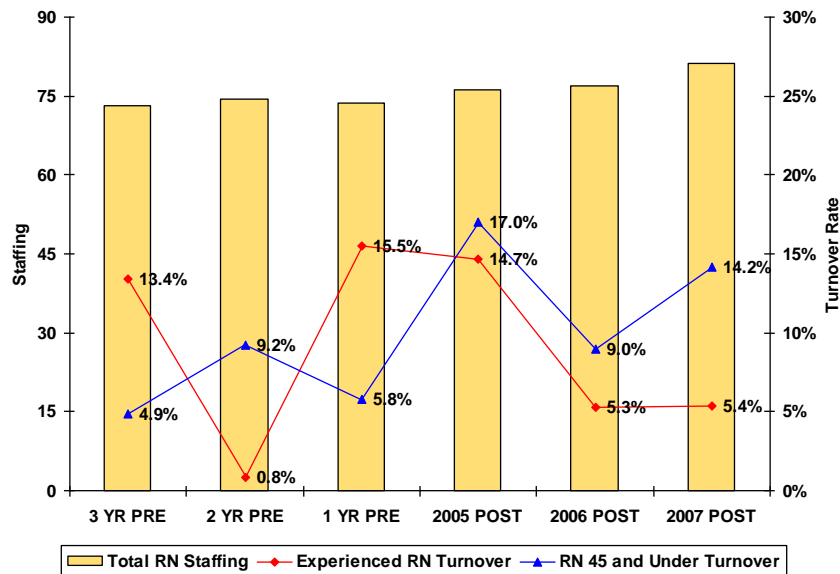
C. Impact on Retention of Experienced RNs

As depicted below, experienced RN turnover at Hillcrest Memorial fluctuated widely during the three years before the minimal lift program initiative was implemented in 2005. Since then, however, experienced nurse turnover has fallen sharply and this greatly improved performance has been sustained for the past two years.

Nurses have provided positive feedback about the program, pointing to increased productivity, improved morale and reduced numbers of injuries. Together with system leadership support,

the presence of a Nurse Ergonomist position to champion the program and provide coaching on proper use of equipment was seen as a critical success factor.

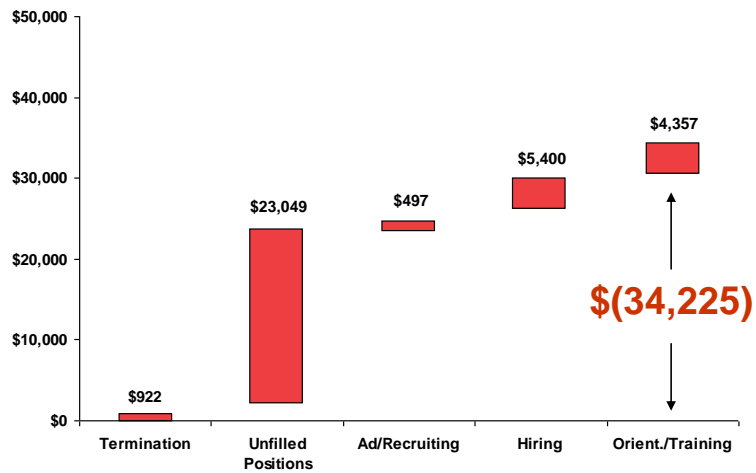
Figure 1
Greenville Hospital System: Trends in RN Staffing and Turnover
(Hillcrest Memorial Hospital Only)



D. The Direct Cost of RN Turnover at Hillcrest Memorial

Failure to retain sufficient numbers of experienced nurses creates significant replacement costs for hospitals and health systems. As depicted below, excluding the indirect costs of lost productivity and other aspects of lost “wisdom,” on average it cost Hillcrest Memorial over \$34,000 in 2007 to replace an experienced RN. Most of that cost (\$23,049) is associated with hiring registry and other temporary nurses and overtime payments to staff nurses. By reducing turnover of experienced nurses from 15.5 percent during the year prior to this intervention to 5.4 percent in 2007, Hillcrest Memorial saved an estimated \$170,016 in 2007.

Figure 2
Greenville Hospital System: Direct Cost of Turnover per RN FTE
(Hillcrest Memorial Hospital Only)

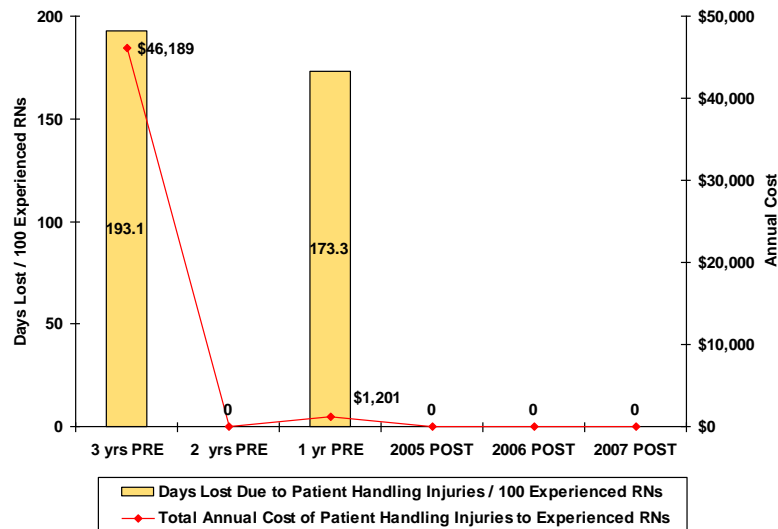


E. Impact of Lift Team Initiative on Experienced RN Disability Costs and Days Lost

Prior to implementing this initiative, experienced RNs were losing a significant amount of work time due to patient handling injuries. And Hillcrest Memorial was incurring added disability costs and lost productivity.

As shown below, three years prior to implementing the lift initiative 193.1 days of work per 100 experienced RNs were lost, and the hospital incurred \$46,189 in disability costs from injuries suffered handling patients. Since implementing the initiative, no days lost or disability costs have been incurred.

Figure 3
Hillcrest Memorial Hospital: Experienced RN Days Lost per 100 Experienced RNs and Annual Disability Costs Due to Patient Handling Injuries



Another outcome of this program has been the transition of the nurse ergonomist role to a new position with greater responsibilities called the “Employee Safety and Ergonomics Coordinator”. Working under the department of Employee Health, this new position is responsible for system-wide support of the patient handling program as it expands to other system hospitals.

Analysis of data from a staff survey administered in 2007 also found that administrative support for the safe patient handling program resulted in increased awareness of experienced nurse retention and heightened focus on employee safety in the workplace.

F. Challenges and Lessons Learned

Challenges and lessons learned during planning and implementing this successful intervention included:

- The need to clearly define and reinforce the role of Nurse Ergonomist for staff.
- The importance of consistent support by senior management.
- Managing culture change during the transition from project planning to full implementation.
- The importance of a program champion focused on ergonomics and coaching nursing staff on proper use of equipment.

G. Potential for Replicability

The outcomes of this program were so well received that it was rolled out to the systems acute rehabilitation hospital in 2006. And in 2007, plans were announced to implement the patient handling initiative in the systems long term acute care hospital, long term skilled nursing center

and high risk acute care units. A logo and theme for the program was implemented to “brand” the program for awareness and sustainability. In 2008, a full time role was created and master’s prepared nurse was hired as an “Employee Safety and Ergonomics Coordinator” to oversee the rollout and sustainability of the program through this large healthcare system. An educational DVD was developed for new hire orientation, continued education and for affiliated colleges of nursing to provide updated information for their curriculums.

IMPACT OF THE BASE STAFFING MODEL ON RETENTION OF EXPERIENCED NURSES AT POUDRE VALLEY HEALTH SYSTEM IN FT. COLLINS, COLORADO

INITIATIVE-AT-A-GLANCE: Following a 2001 discussion with senior management, the recruitment and retention committee at Poudre Valley Health System suggested a staffing model to address nursing concerns with safe patient care and a better work environment. Senior Nursing Leadership implemented the Base Staffing Model to address nurse dissatisfaction and high nursing costs. This model staffs for peak occupancy, rather than average occupancy. The resulting reduction in overtime and turnover repaid the cost of implementation within six months. In addition to positive financial outcomes, the Base Staffing Model helped maintain consistently low turnover rates and improved RN satisfaction levels. However, given the current health system inpatient volume fluctuations and changing financial environment, PVHS is facing the challenge of continuing to justify the return on investment of this staffing model.

A. Issue

In early 2001, the PVHS nurse recruitment and retention committee reported to senior management that nurses at this Magnet designated hospital were experiencing high job dissatisfaction related to patient workload and mandatory on-call. At the same time, PVHS was experiencing financial challenges related to the cost of RN overtime, double-time and the use of traveling nurses. To help address these issues and improve recruitment and retention, PVHS implemented the base staffing model in 2002 in all direct patient care areas.

B. Intervention

A national best practice cited by the American Nurses Credentialing Center, the base staffing model staffs for frequent peak occupancy (approximately 70%) rather than average occupancy. This limits the number of times RNs are required to be on-call or work overtime due to unpredictable patient volumes. Both issues were key dis-satisfiers voiced by nurses.

The cost of implementing the program was about one million dollars and was reportedly recovered within six months. The model has also reportedly decreased the cost of outside agency usage from about \$938,000 in 2001 to \$311,000 in 2005. Similarly, nursing related overtime expenses fell from \$1.4 million to only \$200,000 during the same time period.

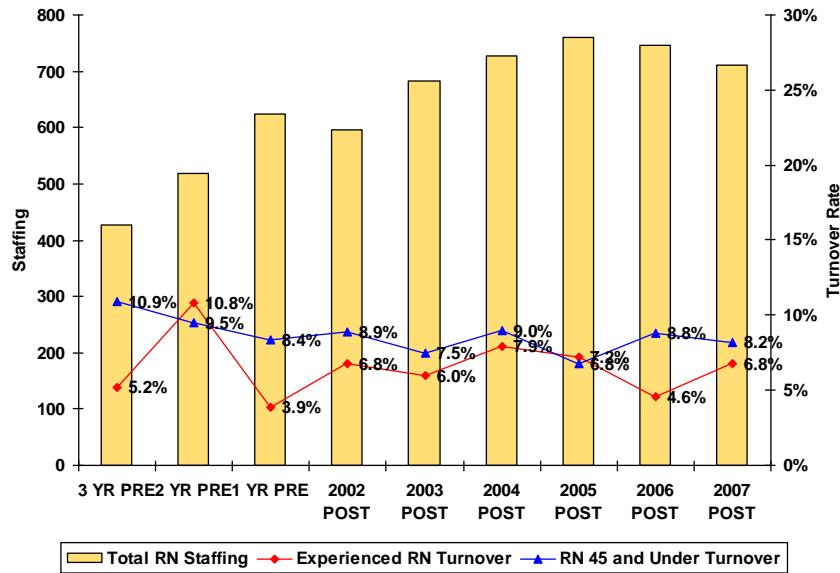
C. Impact on Retention of Experienced RNs

Experienced RN retention data collected prior to and after implementation of the base staffing model showed that turnover among that group was consistently low since the model was implemented. However, turnover varied less after program implementation than during the three years prior to the intervention. In addition, turnover among mature RNs has consistently trended below their younger counterparts.

The data that PVHS collected for the Magnet Survey prior to and after implementation of the base staffing model also showed improvements in specific nursing areas of satisfaction, such as the quality of care, time that nurses have to provide care and general working conditions.

Poudre Valley staff believes that the relatively high RN/patient staffing ratios associated with this model also have created a good nurse work environment that contributes to low turnover.

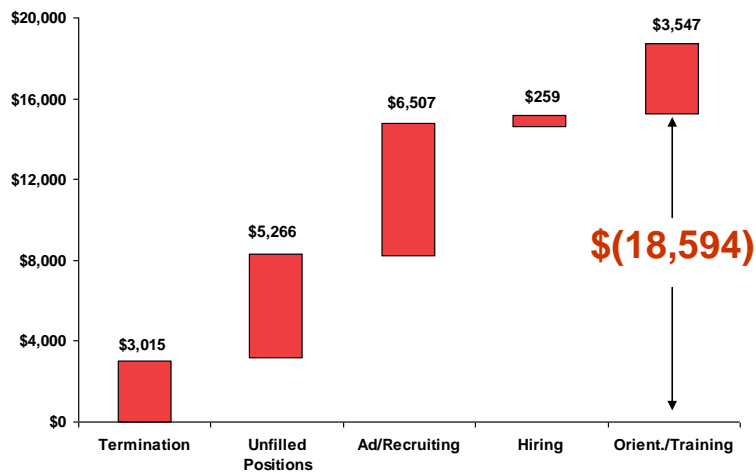
Figure 4
Poudre Valley Health System: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Poudre Valley Health System

The direct cost of experienced RN turnover at PVHS in 2007 (\$18,594) was relatively low compared to other study participants. The system is located near Denver, Colorado, a desirable area to live. Coupled with the system’s high nurse staffing ratios, these factors have proven to be effective in recruiting nurses.

Figure 5
Poudre Valley Health System: Direct Cost of Turnover per RN FTE



E. Challenges and Lessons Learned

PVHS had to overcome early and more recent challenges to implementing and sustaining the model. First, senior management had to be persuaded to accept a certain level of financial risk to increase staffing patterns. These included initial costs and ongoing costs of non-productive care hours, balanced against savings in overtime and registry expenses. More recently, nursing leadership has been challenged to maintain rich staffing ratios in the face of system-wide financial challenges and RN recruitment pressures associated with the 2007 opening of a new 136 bed system hospital.

A dedicated focus on maintaining the staffing model and hiring new staff to meet patient needs, resulted in a significant reduction in overtime, critical staffing pay and external agency use, which peaked shortly after the opening of the new hospital. By the end of 2007 staffing ratios, RN vacancy rates, and external agency returned to pre-MCR opening status.

A lesson learned and a key success factor is the importance of a sustained effort to promote the model throughout all recruitment and retention efforts. It is also crucial for patient care units to plan effectively for the transition to and operation of the base staffing model. Units need to examine their base staffing in relation to patient volumes over a long period of time and then make needed adjustments. This allows units to plan for historical peak volume times and offer staff opportunities to use accrued vacation time.

F. Potential for Transferability

PVHS believes that many organizations have the ability to introduce a base staffing model. They are committed to assisting other organizations in implementing and evaluating the model for their operations, and have presented the model nationally to healthcare providers at Magnet facilities.

A COMPREHENSIVE EVALUATION OF THE “SMOOTH MOVES” SAFE HANDLING PROGRAM AT VANDERBILT UNIVERSITY MEDICAL CENTER IN NASHVILLE, TENNESSEE

INITIATIVE-AT-A-GLANCE: After a successful pilot, in 2006 the medical center implemented “Smooth Moves”, a hospital-wide safe patient handling program designed to improve staff safety and reduce costs associated with work-related injuries and turnover. The initiative coincided with a hospital expansion that required hiring additional RNs. Although post-intervention patient handling injuries fell sharply, an unexpected outcome of the expansion was increased turnover among experienced RNs. Factors potentially contributing to experienced RN turnover include nurse preceptor “burn out” from orienting large numbers of new RNs and wage compression resulting from salary increases awarded to younger RNs that exceeded those awarded to their more experienced colleagues.

A. Issue

Vanderbilt is an 823 bed academic medical center employing about 2,100 RNs. Of this total, about 36% are 45 or older. In 2000, the medical center found that a significant portion of workers compensation expenses stemmed from ergonomic injuries to nurses and nurse assistants. After carefully examining other options, funds were granted in 2004 to support a pilot of “Smooth Moves,” a safe patient handling initiative, adapted from the Tampa VA Center for Patient Safety. A study of six units in 2005 revealed a 55% reduction in work-related injuries on these pilot units.

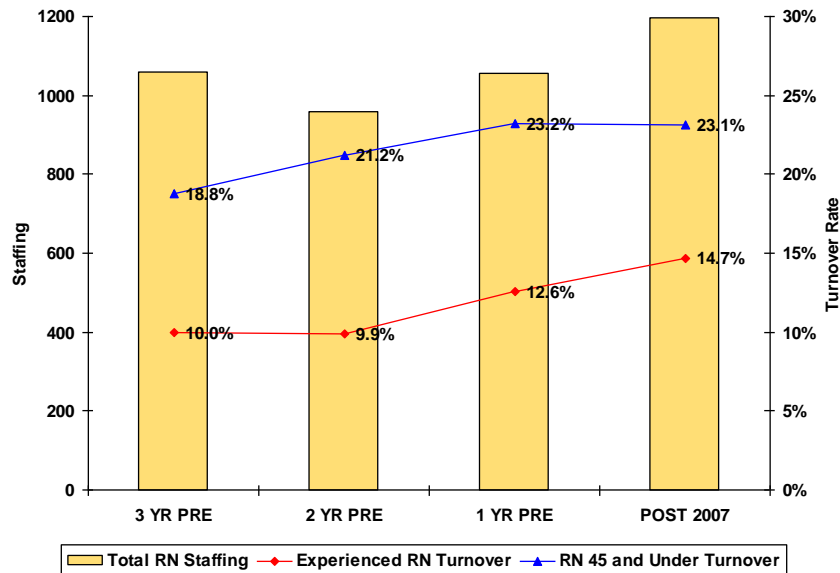
B. Intervention

Following the pilot program’s success, the patient handling initiative was implemented throughout the system’s adult acute care hospital in 2006. An experienced ED nurse was hired to lead the program and training on use of the equipment has been incorporated into nurse orientation. Six different types of equipment are used in the Smooth Moves program—a powered total lift, two types of powered sit-to-stand lifts, a non-powered sit-to-stand and transport device, an air-powered lateral transfer device and friction-reducing repositioning sheets.

C. Impact on Retention of Experienced RNs

As shown below, experienced RN turnover increased during 2007, the first post-intervention annual time period. The increase is reportedly due largely to a number of unrelated confounding events described below that coincided with the timing of this intervention. In addition, it is difficult to make generalized and valid conclusions regarding the impact of this intervention based upon analyzing data from a post-intervention time period of only one year.

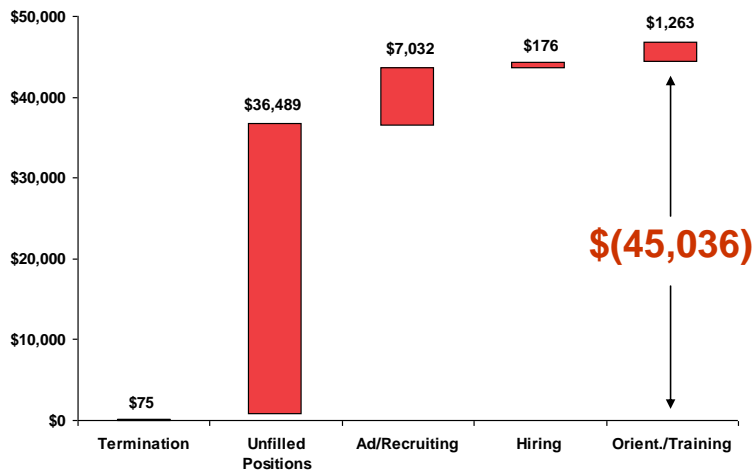
Figure 6
Vanderbilt University Medical Center: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Vanderbilt University Medical Center

The direct cost of experienced RN turnover at Vanderbilt in 2007 was estimated at \$45,036 per FTE. This cost is largely driven by the expense of unfilled positions within the hospital, which includes almost \$4.0M per year for temporary, or traveling, nurses. Traveling nurses are an expense that decreased turnover directly addresses.

Figure 7: Vanderbilt University Medical Center: Direct Cost of Turnover per RN FTE

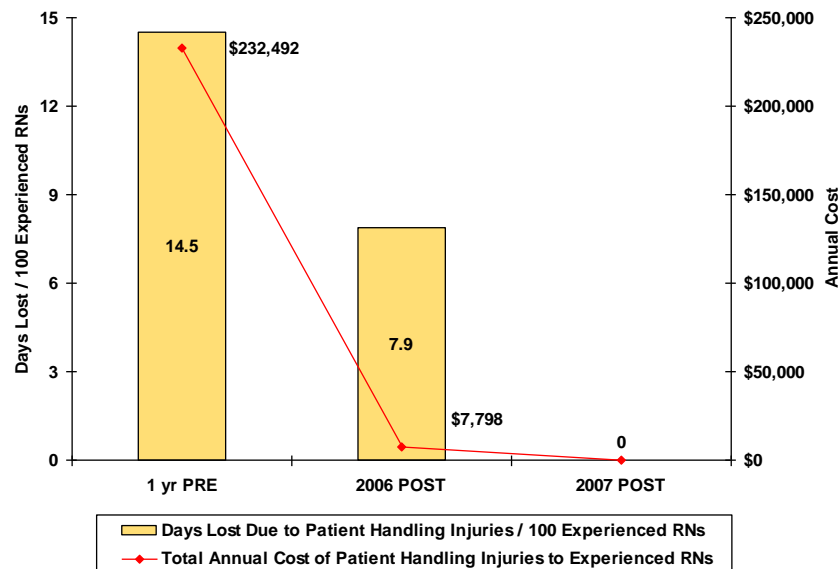


Note: Hiring figure based on comparable hospital

E. Impact of Smooth Moves Initiative on Experienced RN Disability Costs and Days Lost

Although the intervention did not positively affect experienced RN retention, after the program was implemented in 2006 the number of experienced RN days lost due to patient handling injuries per 100 experienced RNs fell from 14.6 in 2005, to 7.9 in 2006 and none in 2007. And the financial impact on the medical center has also been positive. Hospital disability costs plummeted from about \$232,000 in 2005 to zero in 2007.

Figure 8
Vanderbilt University Medical Center: Experienced RN Days Lost per 100 Experienced RNs and Annual Disability Cost Due to Patient Handling Injuries



Note: 2006 Post is 2nd Quarter 2006 – 1st Quarter 2007
2007 Post is 2nd Quarter 2007 – 1st Quarter 2008

F. Challenges and Lessons Learned

The “Smooth Moves” initiative coincided with a significant hospital expansion that required hiring many additional RNs. A challenge and unexpected outcome of the expansion was increased turnover among experienced RNs for reasons unrelated to this initiative. Possible reasons for the higher than expected turnover included high levels of nurse preceptor “burn out” from orienting large numbers of new RNs in a compressed time frame. Some newly hired RNs reportedly had between seven and eleven preceptors on average, challenging their ability to maintain continuity.

Another potential factor reportedly influencing experienced RN turnover was a market-driven salary adjustment that increased salaries for younger nurses, at a higher rate than their more experienced counterparts. During exit interviews, experienced RNs reportedly referred to this decision as “insulting.”

One lesson learned while implementing this initiative is the need to establish formal accountability for program success. Absent that, the initiative likely will “die on the vine,” especially in a large and complex medical center.

G. Potential for Replicability

“Smooth Moves” is modeled after the Tampa VA Patient Safety program, which has been implemented in hospitals nationwide. Educational materials to support the Smooth Moves program have been revised and structured so that they can be easily exported to other institutions.

IMPACT OF THE WELLNESS AT WORK POPULATION HEALTH IMPROVMENT INITIATIVE ON RETENTION OF EXPERIENCED NURSES AT EDWARD HOSPITAL AND HEALTH SERVICES IN NAPERVILLE, ILLINOIS

INITIATIVE-AT-A-GLANCE: In 2003, Edward Hospital implemented “Wellness at Work”, a series of initiatives targeting lifestyle changes in order to foster an environment of optimal staff health and well-being and help reduce the stress-related and physical challenges of the nursing profession for mature RNs. Over 40% of mature RNs participate in the program and it has contributed to greatly improved retention in recent years. However, a major challenge encountered was the presence of confounding variables, including other retention initiatives that made it difficult to accurately assess the impact of this specific intervention on mature RN retention.

A. Issue

Edward Hospital and Health Services includes a 317 bed hospital, with about 1200 nurses on staff. Edward believes that the function of a hospital is not only to treat the sick, but to promote a philosophy of wellness, especially among its employees. The commitment to supporting a Wellness Culture stems from the belief that this empowers employees, especially experienced RNs, to live a healthy lifestyle. Edward believes that the intervention has a particular impact on nurses over age 45, as they enter a life-period of physical and situational changes when attention to health and wellness become more critical.

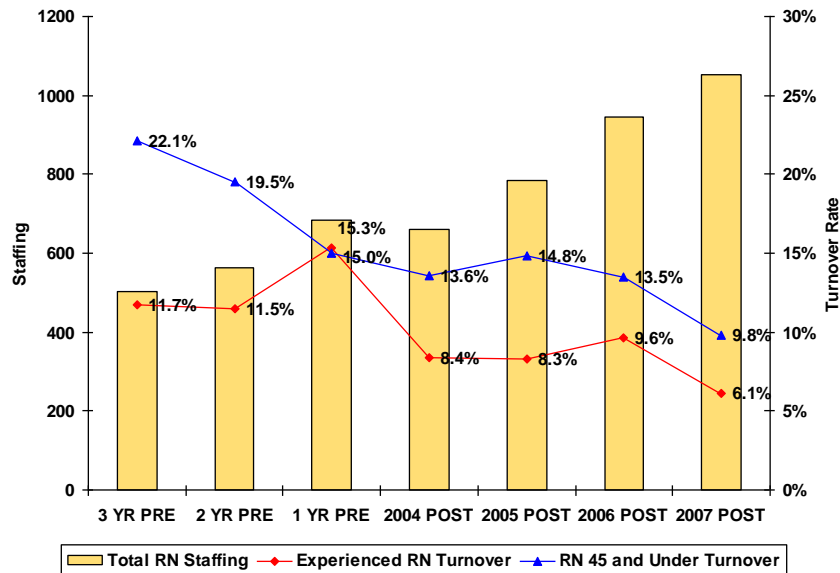
B. Intervention

This intervention implemented in 2003 is based on an organizational commitment to foster an environment where personal health is a valued priority. The key elements of this intervention include a Healthbuck\$ incentive program that allows employees to earn points for participating in wellness activities and redeem them for awards, free fitness center membership, Weight Watchers at Work, ongoing challenges including an annual walking challenge, a 100% Tobacco free environment, and a recognition program for healthy achievements. In addition, participation in a comprehensive health improvement program, which includes a personal health risk assessment and telephonic lifestyle coaching, is rewarded with a medical premium discount or cash incentive. The intervention assumes that healthier lifestyles will reduce the stress-related and physical challenges of the nursing profession for mature RNs. The program has grown since 2003 and impact and outcomes data are shared with senior staff and employees to nurture the wellness culture. By 2006, over 40% of experienced RNs participated in the program. Program costs average about \$70 annually per employee participant.

C. Impact on Retention of Experienced RNs

RN turnover has fallen steadily since the program was implemented in 2003. By 2007, experienced RN turnover reached a low of 6.1%. Other factors reportedly contributing to improved turnover include the positive effects of achieving Magnet status in 2005 and additional resources made available to nursing staff, including nurse educators devoted to each inpatient unit.

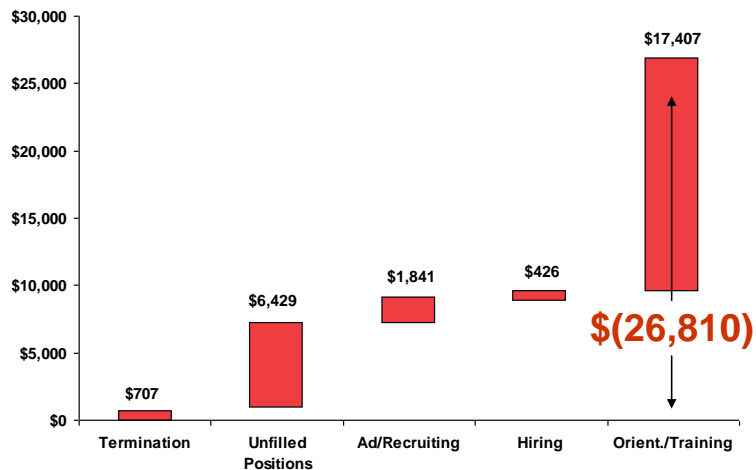
Figure 9
Edward Hospital: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Edward Hospital

As shown below, Edward estimates that on average the direct cost of replacing an experienced RN is about \$27,000. Most of that cost is associated with orienting and training new staff. By reducing turnover of experienced nurses from 15.3% in the year prior to implementing “Wellness at Work” to 6.1% in 2007, Edward saved an estimated \$1.1M in 2007.

Figure 10
Edward Hospital: Direct Cost of Turnover per RN FTE



E. Challenges and Lessons Learned

The importance of involving and collaborating with multiple hospital partners was stressed, with the active involvement of the Human Resources division being critical. Another lesson learned was the finding that experienced RNs have a higher participation rate in the program than other staff. A major challenge was the presence of confounding factors, including other hospital retention initiatives that made it difficult to accurately assess the impact of this specific initiative on mature RN retention.

F. Potential for Replicability

Although there are start-up costs associated with this type of initiative and creating a culture of wellness takes time, program staff believes that the initiative is eminently transferable. Use of program guidelines and best practice standards from established professional resources is the first step in emulating practices that encourage healthy lifestyles; especially around nutrition and fitness.

IMPACT OF A LIFT TEAM ON THE RECRUITMENT AND RETENTION OF EXPERIENCED NURSES AT FLORIDA HEALTH SCIENCE CENTER IN TAMPA, FLORIDA

INITIATIVE-AT-A-GLANCE: In the face of rapid growth in patient volume and a growing local nursing shortage, retention of nurses with clinical experience became a strategic driver at this magnet-designated hospital. A hospital-wide lift team initiative was implemented early in 2002 to help improve retention by reducing RN injuries related to patient handling and improving job satisfaction. Outcomes to date are mixed. While turnover among less experienced RNs fell along with the number of patient handling injuries, experienced RN turnover trended upward. Contributing factors appear to be driven by both the local market, including growing opportunities beyond hospital bedside nursing, and the hospital's staffing model. Experienced RN focus group participants objected to 12 hour shifts that are required in some units. A positive outcome of the intervention has been a large drop in the number of days lost by experienced RNs due to patient handling injuries.

A. Issue

Florida Health Science Center is a magnet-designated hospital with 877 licensed beds, over 1,700 RNs and the only American Burn Association certified burn center in Florida. The hospital has seen a 41% increase in its inpatient census since 2000, due to growth in local population and market share. The Lift Team initiative implemented in February of 2002 was targeted to help ensure the retention of RNs with clinical experience by supporting the bedside nurse and reducing the number of patient handling injuries.

B. Intervention

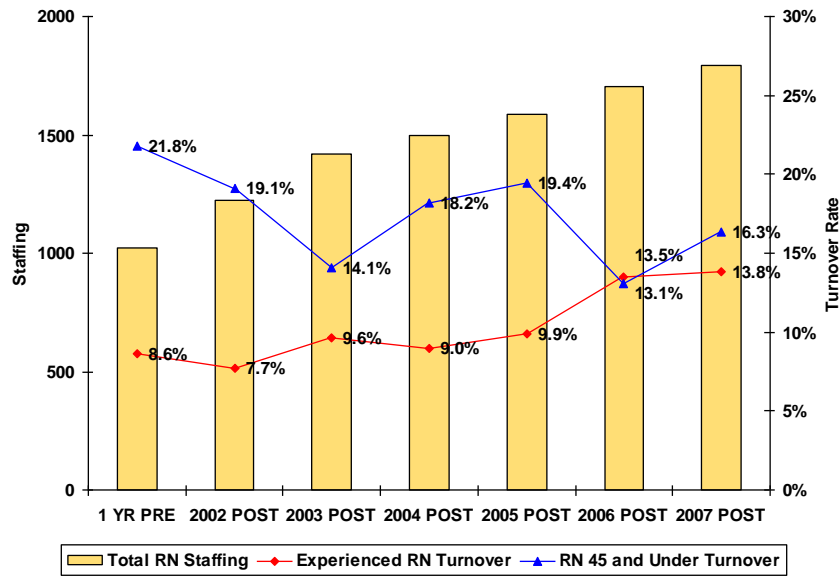
Consisting of about 10 FTEs, the Lift Team's primary duties are to transfer dependent patients and conduct repositioning and scheduled turning rounds in the intensive care units. The team also provides safe patient handling education to all new direct patient care providers.

Lift team utilization has grown from about 500 monthly requests in 2002 to over 2,500 in 2007. And about \$500,000 of equipment, such as ceiling lifts, supports their efforts. The program is managed within Employee Health Services under the supervision of the Injury Prevention Coordinator who is a Certified Ergonomic Specialist.

C. Impact on Retention of Experienced RNs

Experienced RN turnover has trended upward since the intervention was implemented, with notable growth occurring during the past two years. According to program staff, the primary drivers of mature RN turnover are the demands upon mature RNs due to the growing intensity of care delivered in the hospital, coupled with other attractive local employment opportunities beyond the bedside. These include outpatient centers, physician group practices and case management. Another factor cited by hospital focus group participants is a growing reluctance by experienced RNs to continue working 12 hour shifts.

Figure 11
Florida Health Science Center: Trends in RN Staffing and Turnover

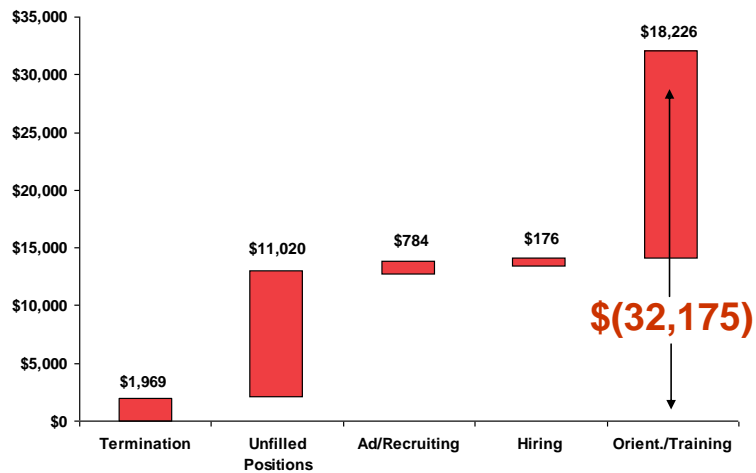


Note: Data for 3 and 2 year pre-implementation is not available

D. The Direct Cost of RN Turnover at Florida Health Science Center

On average, it cost the health science center over \$32,000 to replace an experienced nurse in 2007. Well over half of that expense covered orientation and training of newly hired RNs.

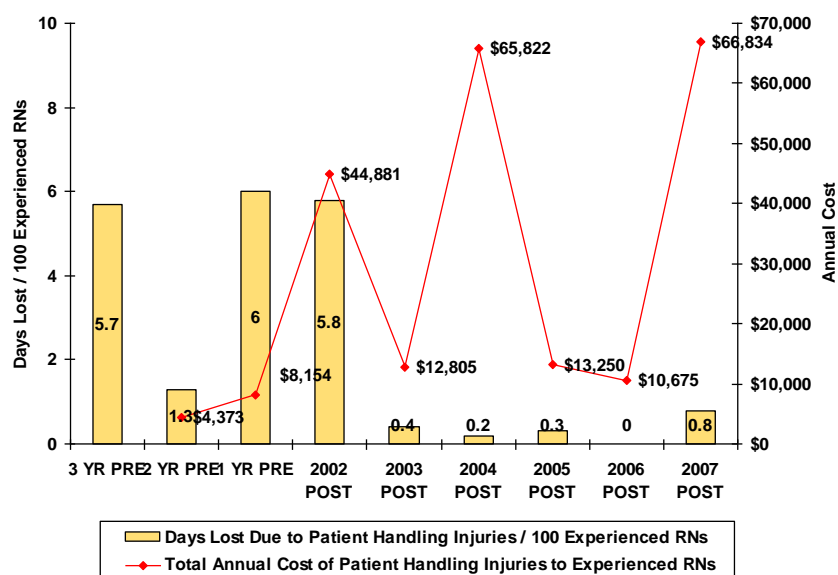
Figure 12
Florida Health Science Center: Direct Cost of Turnover per RN FTE



E. Impact of Lift Team Initiative on Experienced RN Disability Costs and Days of Work Lost

As highlighted below, since implementing the lift team initiative, days of work lost due to patient handling injuries per 100 experienced RNs fell dramatically. That disability costs appear higher after the intervention may be due to the fact that disability costs are often not incurred until some time after disability claims are filed. Therefore, due to the “long tail” of these events, disability costs paid by the hospital in 2004 and 2007 may have been related to patient handling injuries that occurred years earlier.

Figure 13
Florida Health Science Center: Experienced RN Days Lost per 100 Experienced RNs and Annual Disability Cost Due to Patient Handling Injuries



Note: Three Years Pre-Intervention Cost Data is Unavailable

F. Challenges and Lessons Learned

Several lessons have been learned over the years. While the potential benefits of the lift team to the nursing staff and institution were clear at the time of implementation, the challenges associated with culture change were not considered. The equipment was new to the nursing staff and many experienced nurses were reluctant to challenge physician requests to manually transfer patients rather than call the lift team. As a result, the program got off to a slow start. After education and training was provided, staff became more willing to appropriately use the team. In addition, to improve recruitment and retention of lift team members, their pay grade was increased by two levels.

G. Potential for Replicability

The lift team is seen as transferable because staff and equipment can be tailored to a facilities type, size and location. In addition, the Health Science Center has developed comprehensive protocols, policies and procedures that they have shared with numerous hospitals.

IMPACT OF THE ADMISSION NURSE INITIATIVE ON RECRUITING AND RETAINING WISDOM AT MARY IMOGENE BASSETT HOSPITAL IN COOPERSTOWN, NEW YORK

INITIATIVE-AT-A-GLANCE: In 2001 Mary Imogene Bassett launched the “Admissions Nurse” program. The program is an easily replicated approach to improve the operational efficiency of the admissions process and targets the experienced nurse. A thorough patient admissions process is a key to good outcomes and relieves the staff nurse of the added burden of the admission function. Though this program is not the only factor effecting experienced nurse turnover, the hospital has seen a reduction in this metric since implementation.

A. Issue

Mary Imogene Bassett Hospital, the main facility of Bassett Healthcare, is a 180 bed inpatient Magnet hospital and trauma center with about 300 RNs, of whom about 90 are experienced. Bassett faces challenges retaining experienced RNs due to its rural setting, transportation difficulties, limited partner employment opportunities and high housing costs. The Admission Nurse initiative was implemented in 2001 to help address retention issues and to ease patient gridlock and throughput pressures.

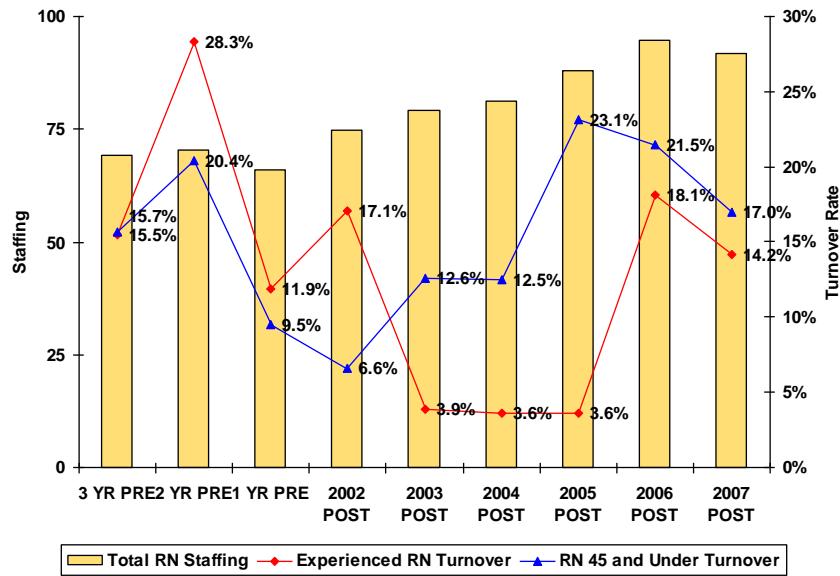
B. Intervention

A prompt and thorough patient admission process is key to achieving good outcomes and improves patient satisfaction. But it is also resource intensive for the busy staff nurse. Initially launched with five RNs, the purpose of the Admitting Nurse role is to facilitate the process for patient admission and initiate medical and nursing regimens before turning the patient over to an accountable RN. Core competencies include clinical experience, communication skills, critical thinking and prioritizing skills. In other words, the position was designed to be occupied by an experienced nurse. The program is monitored by tracking admission activity, productivity, documentation completeness and satisfaction of the Admitting Nurse and of the staff nurses.

C. Impact on Retention of Experienced RNs

As shown below, experienced RN turnover has fluctuated widely over time, with improved performance observed after the intervention was implemented. Hospital management feels that increased expectations and accountability for the RNs role has had the effect of RNs self selecting out of the workforce and causing the fluctuations over the past few years.

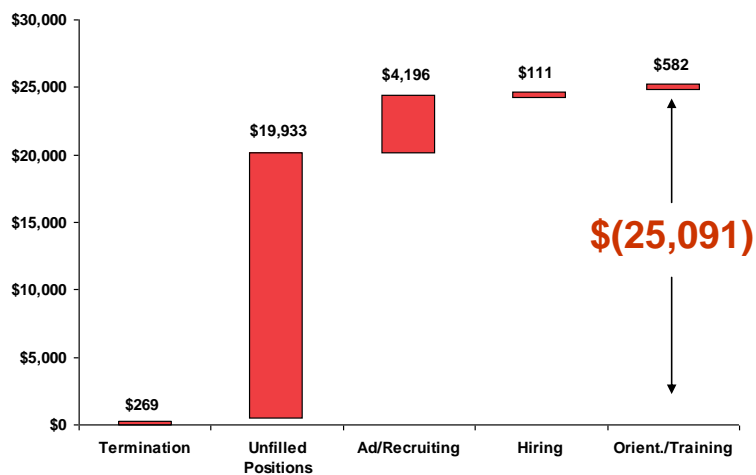
Figure 14
Mary Imogene Bassett Hospital: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Mary Imogene Bassett Hospital

It cost Bassett over \$25,000 on average in 2007 to replace RNs leaving the system. The primary cost drivers were use of registry and other temporary nurses and overtime payments to staff nurses.

Figure 15
Mary Imogene Bassett Hospital: Direct Cost of Turnover per RN FTE



E. Challenges and Lessons Learned

In 2004, after three years of Admission Nurse experience the hospital implemented electronic nursing documentation. Orientation to the new system was initially difficult for the Admission Nurses who had not been computer users in their previous nursing employment. A lesson learned was the need to be alert to possible fragmentation in care and communication as the number of nurses involved in patient care increases.

F. Potential for Replicability

According to Bassett staff, this is not a complicated program and has been implemented in other organizations. The intervention is sensible where admissions are delayed and volume pressures exist. Bassett is willing to provide information to any interested organization, including job descriptions, the orientation process and checklists and schedule templates.

THE MINIMUM LIFT PROGRAM INITIATIVE TO REDUCE LOST STAFF TIME DUE TO PATIENT-RELATED INJURIES AT STRONG MEMORIAL HOSPITAL AT THE UNIVERSITY OF ROCHESTER MEDICAL CENTER

INITIATIVE-AT-A-GLANCE: Strong Memorial Hospital's experienced nurses had concerns about work load and work demand issues. To address these issues, the hospital implemented a Minimum Lift Team Program in 2005. Utilizing best practices in the industry, this program was intended to reduce the daily stress on the experienced nurses and alleviate their concerns about the physical aspect of their jobs. Due to an expansive implementation approach and turnover of staff within the program, the initiative did not initially achieve its desired impact. However, the hospital has used the lessons learned to refine and improve the program.

A. Issue

Strong Memorial Hospital (SMH) is the primary acute care teaching hospital of the University of Rochester Medical Center. The Magnet hospital includes 739 beds and the region's only Level 1 trauma center. SMH's Minimum Lift Program initiative was introduced in 2005 to combat a number of experienced nurse retention barriers. These included: 1) Negative mindsets regarding the ability of mature nurses to keep up with the demands and physical requirements of the staff nurse role; 2) Limited number of positions available to retain nurses who need to move to a less physically demanding environment; and 3) Management perception of the need to be equitable in the distribution of work load and to avoid giving less physically demanding assignments to mature nurses. Another factor was the financial impact of patient handling injuries which cost the hospital more than \$825,000 in 2005.

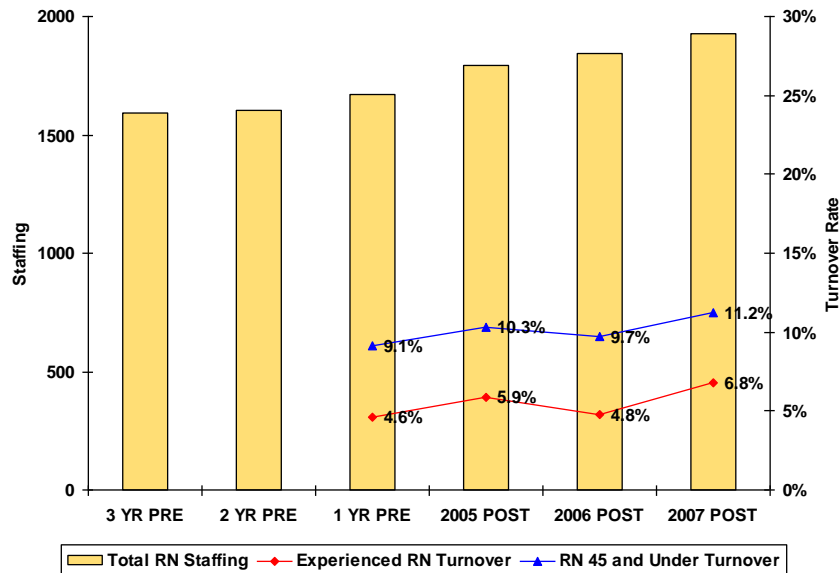
B. Intervention

Prior initiatives to reduce work-related injuries in nursing achieved limited success because they focused solely on education and targeted the newly hired, rather than all nurses. The hospital-wide lift program is based on a combination of established practices for reducing the ergonomic risk factors faced by hospital nurses. Program components include: 1) The increased use of stationary and mobile lift devices; 2) Introduction of a lift team in Adult ICUs, high risk areas; 3) Addition of safety nurses on each inpatient care unit; 4) In-servicing of nursing staff concerning availability and correct use of lift equipment; and 5) Incorporating a comprehensive injury analysis and feedback mechanism to understand factors contributing to injuries. Over 1,100 experienced RNs have been affected by this initiative.

C. Impact on Retention of Experienced RNs

Although both experienced and other RN turnover rates remain low, they have trended upward since roll-out of the lift team initiative. Contributing factors reportedly include an unexpected outcome of a baccalaureate level program for non-nurses introduced by the systems school of nursing. A number of graduates of this program were hired to help staff several new patient care units. Shortly thereafter a number of these new RNs left the bedside to enter Masters level training programs.

Figure 16
University of Rochester Medical Center: Trends in RN Staffing and Turnover

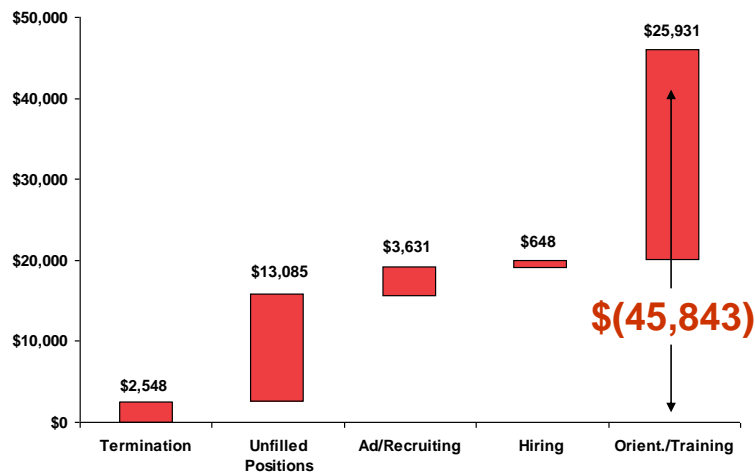


Note: Turnover data for 3 and 2 years pre-implementation is not available

D. The Direct Cost of RN Turnover at University of Rochester Medical Center

At the University of Rochester Medical Center, it cost almost \$46,000 to replace a nurse. This was largely driven by the direct costs associated with unfilled positions and orientation and training. Orientation and training costs of \$25,931 per nurse is largely driven by the salaries and benefits of the preceptors and educators that must train the replacement nurse.

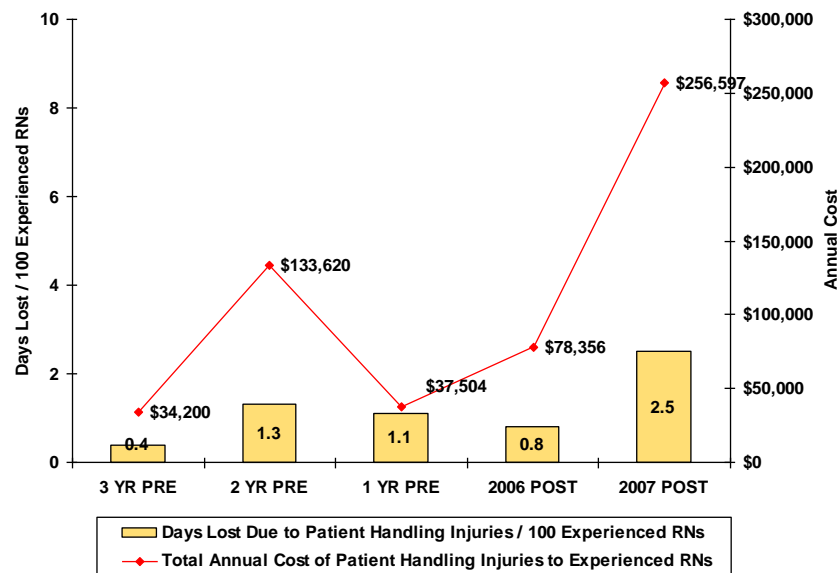
Figure 17
University of Rochester Medical Center: Direct Cost of Turnover per RN FTE



E. Impact of Lift Team Initiative on Experienced RN Disability Costs and Days Lost

Days of work lost by experienced RNs due to patient handling injuries and associated hospital disability costs rose steeply in 2007 (Figure 18) for reasons that remain unclear. One contributing factor was injuries incurred by ICU lift team members which resulted in significant downtime in that unit while the affected lift team members were replaced.

Figure 18
University of Rochester Medical Center Days Lost per 100 Experienced RNs and Annual Cost Due to Patient Handling Experienced RN Injuries



F. Challenges and Lessons Learned

Lessons learned by program staff include: 1) The need for a multidimensional approach to achieve the level of culture change required to meet minimum lift standards; 2) Hands-on training and constant reinforcement in the use of equipment and body mechanics is necessary for best results; 3) Knowledge must be shared across departments to avoid staff injuries resulting from a lack of information about assistive device need and to support allocation of resources within a constrained cost environment; and 4) Senior management support is essential. An unexpected benefit of the program is a new hospital-wide focus on mature RNs that never occurred before through data collection and analysis supporting program planning.

Challenges encountered to date include turnover of several key program staff which hampered the ability of program supporters to build organization-wide support, difficulty changing an existing culture that believed that lifting and injuries are “part of the job” and differing perceptions about the value of lift teams, which varies from unit to unit.

G. Potential for Transferability

The intervention undertaken at SMH is evidence-based and incorporates strategies that are transferable to other organizations regardless of size or patient population.

CENTRA HEALTH'S LYNCHBURG GENERAL HOSPITAL AND VIRGINIA BAPTIST HOSPITAL, LYNCHBURG, VIRGINIA

INITIATIVE-AT-A-GLANCE: Following the recommendations of a Task Force of Nurse Managers, Centra Health implemented a Closed Staffing model. This model seeks to increase nurse job satisfaction and decrease turnover by keeping nurses on their home units. Since program implementation, Centra has seen a decline in experienced nurse turnover and absenteeism as well as improved patient outcomes.

A. Issue

Centra Health is a not-for-profit community hospital system located in Central Virginia. It consists of two acute care hospitals, Lynchburg General Hospital and Virginia Baptist Hospital, with a total of 526 beds.

Centra Health noticed that nurses frequently do not feel comfortable or competent being pulled from one medical unit to another, as it is difficult to integrate and provide consistently high quality care across widely varying specialty care settings. The frustration with this traditional staffing model was often cited as a reason for nurse turnover. Responding to this issue, Centra Health implemented the Closed Staffing model in an attempt to decrease RN turnover, absenteeism, and nosocomial infections and improve patient satisfaction.

B. Intervention

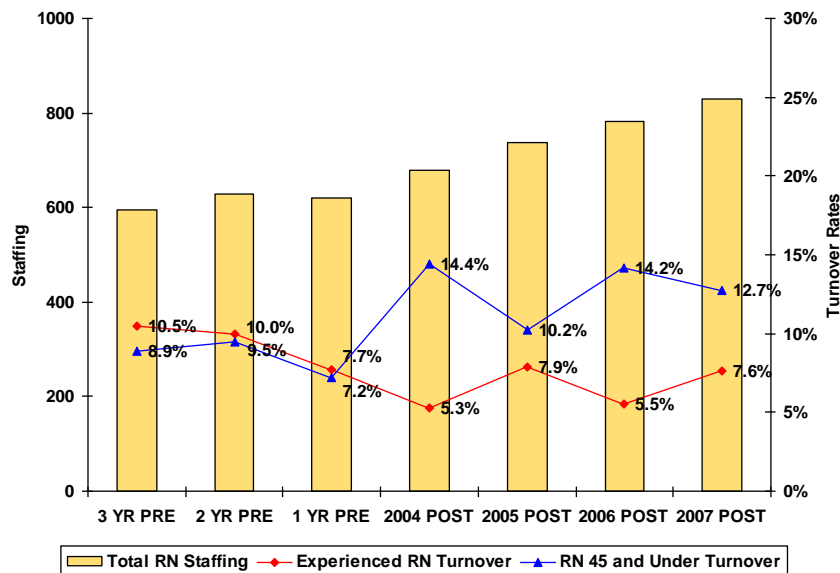
Closed Staffing at Centra refers to the process of scheduling nurses without pulling staff across units to cover vacancies. Closed Staffing eliminates "floating". Nurses remain on their home unit unless they volunteer to work another unit. This initiative is meant to ensure that the right nurse is on the right unit, at the right time, with the right skills. Of the close to 600 RNs participating in the closed staffing initiative, over 60% are experienced nurses.

During focus groups consisting of RN's participating in the Closed Staffing program, it was indicated that in the past nurses would call in sick or knew of others that would call in sick if they were pulled from their unit. The closed staffing model has contributed to an improved willingness by RNs to stay at Centra. When asked how they would feel if Centra went back to the old staffing procedures, the focus group indicated they would feel unappreciated and stressed. One nurse went as far to say, "I might have to downsize if that happened, and look at an office job."

C. Impact on Retention of Experienced RNs

In the three years prior to the implementation of the Closed Staffing model, Lynchburg General Hospital's experienced nurse turnover was higher than the turnover of RNs age 45 and younger. After the start of the Closed Staffing program, turnover among experienced RNs dropped to as low as 5.3% in 2006, and most recently was recorded at 7.6% in 2007.

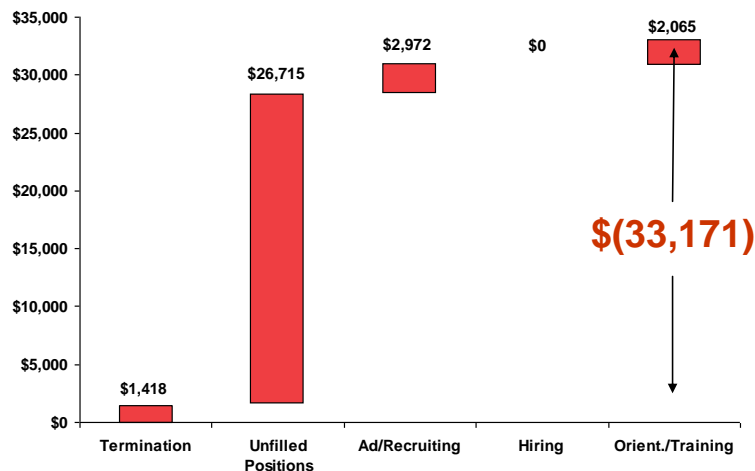
Figure 19
Centra Health at Lynchburg General Hospital: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Centra Health at Lynchburg General Hospital

Centra Health’s direct cost of turnover per RN FTE, at \$33171, is in line with the other grantees. Centra Health found that the majority of the cost was driven by filling the vacated position. In 2007, over \$2.7M total was charged to units by nurses from the Resource Team who filled in for vacant positions. In addition, it is important to note that while Centra Health did not allocate any cost to the hiring process, they did include drug testing/background checks and orientation costs relate to processing new hires in the orientation/training section.

Figure 20
Centra Health at Lynchburg General Hospital: Direct Cost of Turnover per RN FTE



E. Challenges and Lessons Learned

Initially, two major issues related to the Closed Staffing model were identified. One was “the fear factor”. Unit managers and staff worried about staffing during periods with high vacancy and census changes. Many did not know what they would do if they could not depend on staff from other units. The other issue identified was that the Nursing Supervisors and the Staffing Office were not actively involved in the planning.

Centra responded to these challenges by increasing staff meetings, developing creative approaches to staffing, and establishing on-going communication among staff and between staff and management. As a result, staff now have a feeling of ownership of the initiative and have worked out the major implementation issues.

F. Unexpected Outcomes

Closed Staffing came with both positive and negative unexpected outcomes. Some of the benefits that were not fully anticipated included: the heightened sense of teamwork and team building; strengthening of unit manager’s leadership skills; ability of unit staff to take time off when the census was low; and greater staff participation in problem solving.

Other initial unintended outcomes included achieving staff buy-in due to concerns regarding their levels of responsibility within their units and perceptions that they may not be able to rely on help from other units. In addition, the hospital initially observed a decreased spread of Best Practices between units. This issue was resolved through the use of shared governance to disseminate information.

G. Potential for Replicability

Closed Staffing can be implemented at other hospitals if the proper steps are taken. The most important is having the commitment from leadership and managers before starting. From there, a diverse task force must be formed to address the issue from all angles. Finally, establishing baseline data is critical to measure the impact of the program in the future.

IMPACT OF REDUCING PHYSICAL PRACTICE BURDENS ON RETENTION OF EXPERIENCED NURSES AT CEDARS-SINAI MEDICAL CENTER IN LOS ANGELES, CALIFORNIA

INITIATIVE-AT-A-GLANCE: In 2004 Cedars-Sinai Medical Center started a lift team initiative to decrease the number of back injuries, lost work days and costs related to patient handling injuries. The lift team consisted of two teams operating at all times. Since implementing the lift team initiative, numbers of days of work lost due to patient handling injuries and disability costs have improved. Challenges encountered include uneven use of the lift team by some inpatient units and the physical size of the organization which reportedly increases response time by lift teams.

A. Issue

Cedars-Sinai Medical Center (CSMC) is a large Magnet designated urban academic medical center with 952 inpatient beds and about 2,300 nurses. CSMC is the largest health care system funded under this study. About 57% of the nursing staff is over 45. Prior to implementing the lift team in 2004, an average of eight patient involved lift injuries occurred monthly resulting in an average of 43 lost days of work. The average annual cost of each reportable back injury related to patient handling was over \$20,000.

Following a pilot project in the medical centers intensive care units, a lift team initiative was spread to all medical/surgical units and ICUs in fall 2004 and house-wide in September 2006. Primary nursing related objectives included:

- Decreasing back injuries related to patient handling
- Reducing the number of lost and limited duty work days
- Decreasing costs related to back injuries
- Improving staff retention and satisfaction

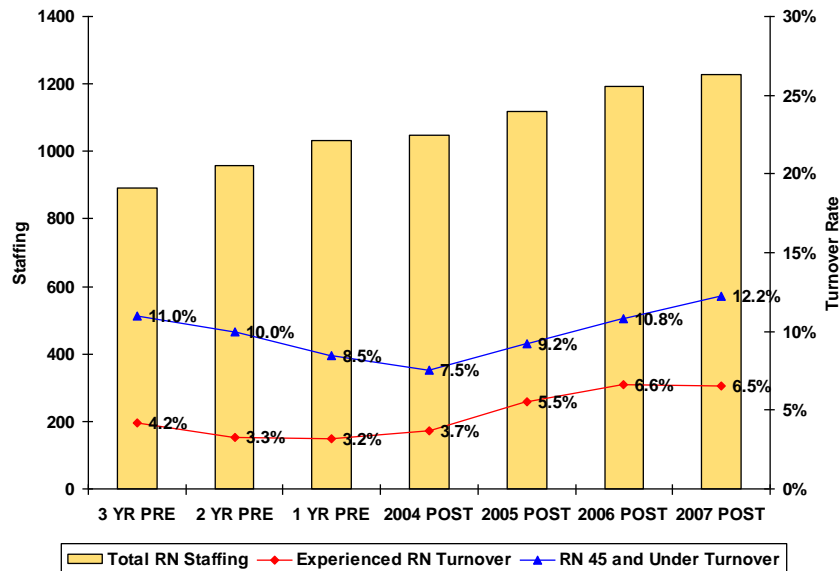
B. Intervention

Two lift teams are available 24 hours a day, seven days a week with two shifts overlapping at mid-day. Lift team personnel are specially trained in patient transfer and can be paged by nurses or accessed by the CSMC intranet web page.

C. Impact on Retention of Experienced RNs

Although consistently tracking at low levels, experienced RN turnover has steadily risen since this intervention was implemented. According to program staff, rising turnover is unrelated to the lift team initiative.

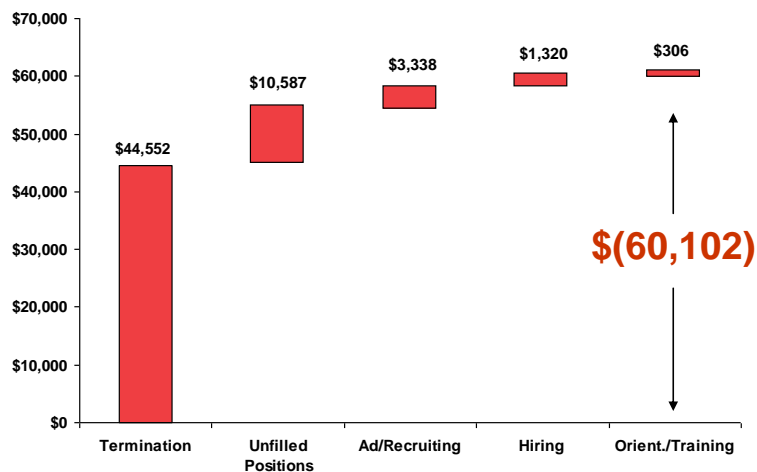
Figure 21
Cedars-Sinai Medical Center: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Cedars-Sinai Medical Center

As depicted below, CSMC estimates that on average the direct costs of replacing an RN in 2007 was about \$60,000. This represents the second highest replacement costs among all organizations funded for this initiative. Contributing factors include a high cost local labor market, a highly competitive regional market for nurses stemming from severe nurse shortages, rising demand for inpatient care and the effects of California’s mandated nurse-patient ratios. Unlike the experiences of other health systems participating in this initiative, termination related costs were the primary driver of CSMC’s RN turnover costs. These included payments for accrued RN vacation and overtime costs.

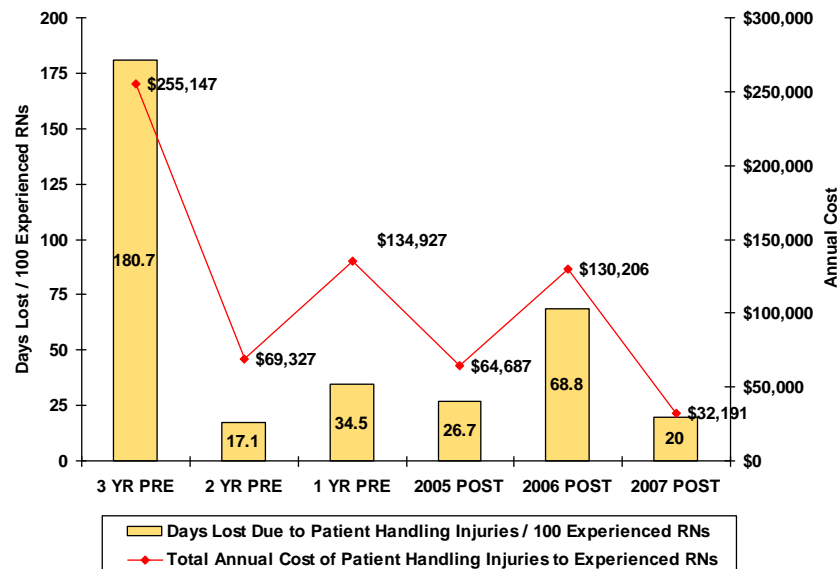
Figure 22
Cedars-Sinai Medical Center: Direct Cost of Turnover per RN FTE



E. Impact of Lift Team Initiative on Experienced RN Disability Costs and Days Lost

Since implementing the lift team initiative, numbers of days of work lost due to patient handling injuries per 100 experienced RNs and disability costs have fluctuated widely. Nevertheless, despite the challenges discussed below, on average Cedars-Sinai's post-intervention patient handling injuries and disability costs have improved upon its pre-intervention outcomes.

Figure 23
Cedars-Sinai Medical Center: Trends in Experienced RN Days Lost / 100 Experienced RNs and Annual Disability Costs Due to Patient Handling Injuries



F. Challenges and Lessons Learned

CSMC has encountered several challenges since implementing its lift team initiative. Although implemented hospital-wide in 2006, some inpatient units, including the medical/surgical area are reportedly not currently using the lift teams. The physical size of the organization reportedly increases response time by lift teams to the point where medical-surgical unit RNs prefer to carry out patient transfers and repositioning themselves rather than waiting for lift teams to arrive.

An unexpected outcome was the impact of culture change on the willingness of nurses to report patient handling injuries. Historically, nurses were more likely to consider patient handling injuries as being part of the job and subsequently were less likely to report them. Since creation of the lift teams, nurses have reportedly become more aware of injury issues and are now more likely to report them.

G. Potential for Replicability

The lift team intervention is potentially transferable to health care institutions of all sizes. CSMC would willingly share lessons learned regarding implementation of a lift team and establishing protocols for lift team use.

FANNING THE FLAME: A RETENTION INITIATIVE FOR EXPERIENCED NURSES AT PITT COUNTY MEMORIAL HOSPITAL IN GREENVILLE, NORTH CAROLINA

INITIATIVE-AT-A-GLANCE: Responding to perceptions among experienced RNs that the hospital offered few educational opportunities tailored to their needs, the Fanning the Flame program was instituted in 2003. Focusing on retention, the program empowers the experienced bedside nurse through a three day educational experience supporting professional development. Results to date include reduced experienced RN turnover, increased job satisfaction and increased sense of collegiality among participants. Over 97% of nurses participating in the program have remained in the organization. A key lesson learned is that keeping experienced nurses at the bedside by helping them expand their practice creates a win-win situation for both the nurse and the hospital.

A. Issue

Pitt County Memorial Hospital is a 761 bed academic medical center located in a largely poor and rural service area of North Carolina. The Fanning the Flame intervention was conceived following an internal hospital report's conclusion that experienced nurses felt that after ten years of service they had taken advantage of all educational opportunities offered by the hospital. Nurses expressed a need for additional avenues to help them improve their practice. After initial funding as a pilot project, ongoing hospital funding was secured in 2003 in large measure because competition for experienced nurses is keen in this rural area.

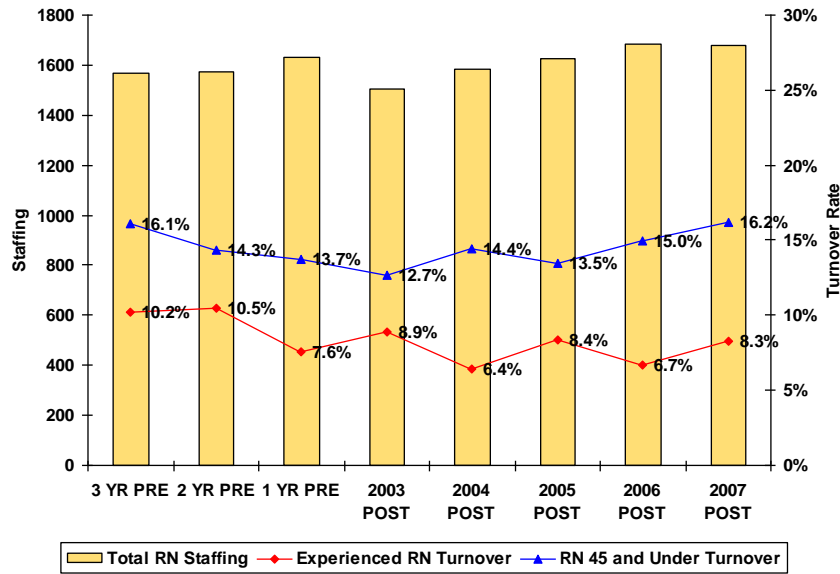
B. Intervention

Fanning the Flame is a three-day off-site educational experience that includes activities supporting professional development for experienced nurses by exploring options for re-envisioning their practice while serving the hospital as direct care providers. Its primary purpose is to improve experienced RN retention by providing the opportunity to renew and reframe their nursing practice. Five sessions were offered between 2003 and 2007, with about 25 nurses participating in each event. More than half of the participants are at least 45 years old.

C. Impact on Retention of Experienced RNs

Reportedly, to date only three nurses who participated in the intervention have left the system. However, the 126 experienced nurses completing the program are a small subset of experienced RNs at University Health Systems of Eastern Carolina and unlikely to materially impact retention on an organization-wide level. That, notwithstanding, turnover rates among experienced RNs have trended at a consistently low level since the intervention (Figure 24) at about half that of less experienced RNs.

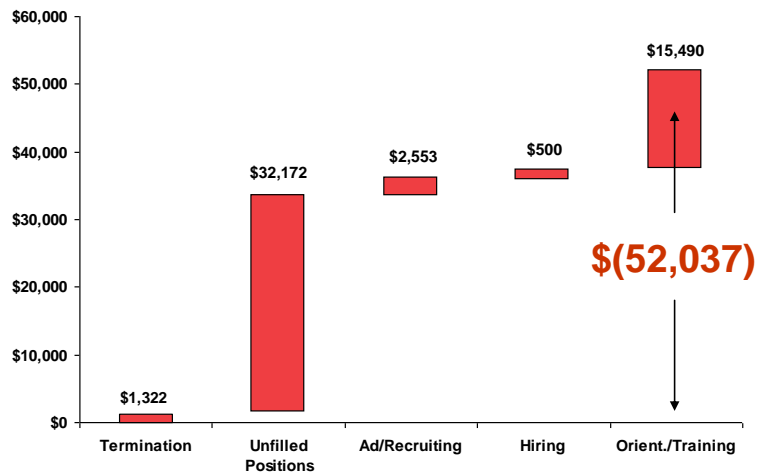
Figure 24
University Health Systems of Eastern Carolina: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Pitt County Memorial Hospital

As described below, Pitt County spends over \$52,000 on average to replace each RN leaving the system. Much of that expense is bound up in replacement labor from nurse registries and overtime payments to staff nurses. This relatively high replacement cost compared to other Wisdom at Work grantees also stems in part from the time it takes to recruit RNs to this rural area.

Figure 25
Pitt County Memorial Hospital: Direct Cost of Turnover per RN FTE



E. Challenges and Lessons Learned

Lessons learned from the sessions conducted to date include:

- Nurses who were planning to leave nursing reported that they changed their minds as a result of their retreat experience.
- Conducting the event in a serene environment away from work allowed nurses to decompress, reduce stress levels and rethink their nursing practice.
- Keeping experienced nurses at the bedside by assisting them to expand their practice creates a win-win situation for both the nurse and the hospital.

F. Potential for Replicability

The Flames program is replicable in other hospitals, although small rural hospitals may need to partner with other hospitals in order to release 20-25 experienced nurses to attend a three-day retreat. Pitt County also has created a tool kit and manual to assist other hospitals in implementing this initiative and is working with four hospitals that are interested in replicating this initiative.

THE “SMOOTH MOVES” INITIATIVE TO RETAIN EXPERIENCED NURSES AT THE BEDSIDE AT SAINT JOSEPH’S HOSPITAL IN ATLANTA, GEORGIA

INITIATIVE-AT-A-GLANCE: St. Joseph’s Hospital believes that an optimal work environment will enhance recruitment and retention of experienced nurses. As a result, St. Joseph’s Hospital implemented the “Smooth Moves” Minimal Lift Program initiative hospital wide in 2005. Through education and promotion about the available lift teams and ergonomic equipment, St. Joseph’s achieved nurse buy in for the program. Within a year of implementation the hospital saw a reduction in patient movement related injuries for experienced nurses from 22 to 4. Experienced RN turnover has remained relatively unchanged, while turnover among other nurses rose sharply, reportedly influenced by an unanticipated 2007 layoff due to financial issues. Despite challenges, Catholic Health East is now reportedly considering replicating the Smooth Moves program nationally at 31 of its affiliated hospitals.

A. Issue

Saint Joseph’s Hospital (SJHA) is a 410 bed Magnet recognized tertiary care hospital affiliated with Catholic Health East and committed to maintaining an optimal work environment for the experienced nurse. The Smooth Moves initiative is aimed at improving the nursing setting by providing a “no lift” environment for the experienced nurse, and supports key tenets of the hospital strategic plan.

These include: **Growth:** By supporting experienced nurse retention; **Service:** By improving the safety of patient handling; **Quality:** By decreasing work place injuries related to patient handling; **People:** By improving employee satisfaction regarding workplace safety; and **Finance:** By decreasing Workers Compensation costs associated with patient handling injuries.

B. Intervention

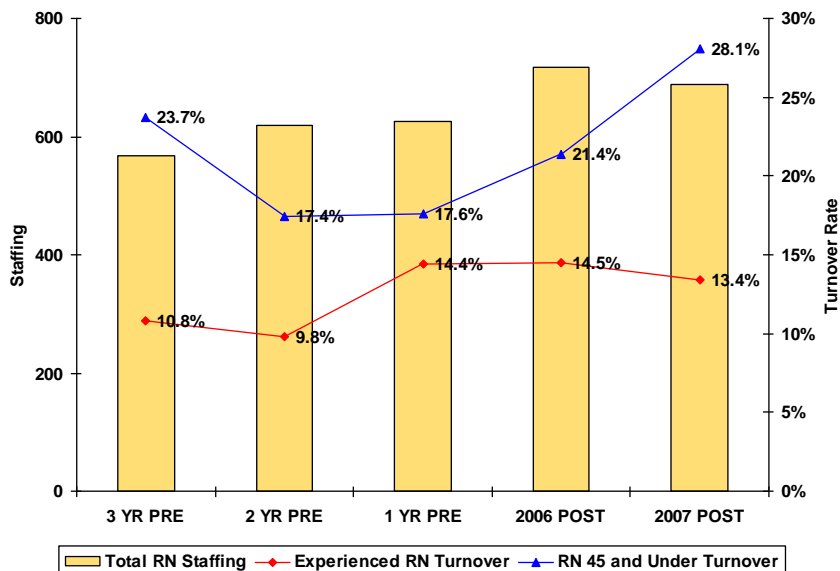
After securing Board approval and funding of about \$700,000, Smooth Moves was implemented hospital-wide in 2005 with consistent equipment throughout all units. Equipment ranges from simple inflatable hover mats for lateral transfers to total lift-hydraulic-driven equipment with slings that allow hands-free lifting. In addition, a Smooth Moves Lift Team assists with the training and education of nurses as part of a comprehensive orientation and education program.

St. Joseph’s also established an Ergonomics Committee as a subcommittee of the Hospital Safety Committee.

C. Impact on Retention of Experienced RNs

Experienced RN turnover has remained fairly constant since Smooth Moves was established, while turnover among other nurses rose sharply. These trends were reportedly influenced by an unanticipated layoff in 2007 due to financial issues impacting the organization.

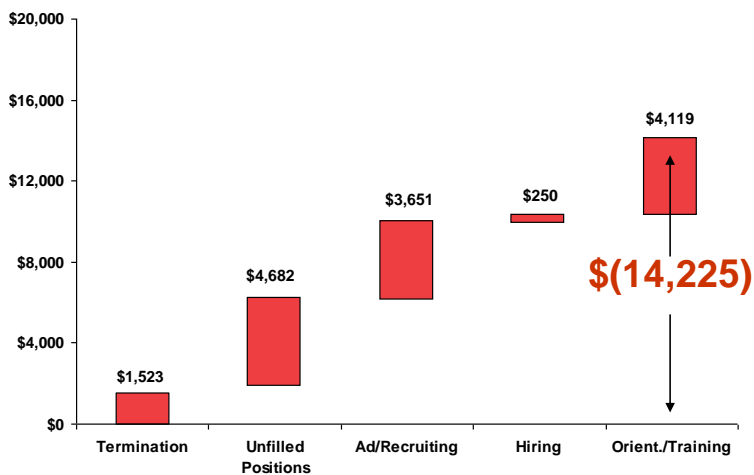
Figure 26
St. Joseph's Health System: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at St. Joseph's Health System

St. Joseph's reportedly spends about \$14,000 on average to replace each RN leaving the hospital. Most of that expense is bound up in costs related to unfilled positions, such as replacement labor from nurse registries and overtime payments to staff nurses, advertising and recruiting expenses and orientation and training for new RNs.

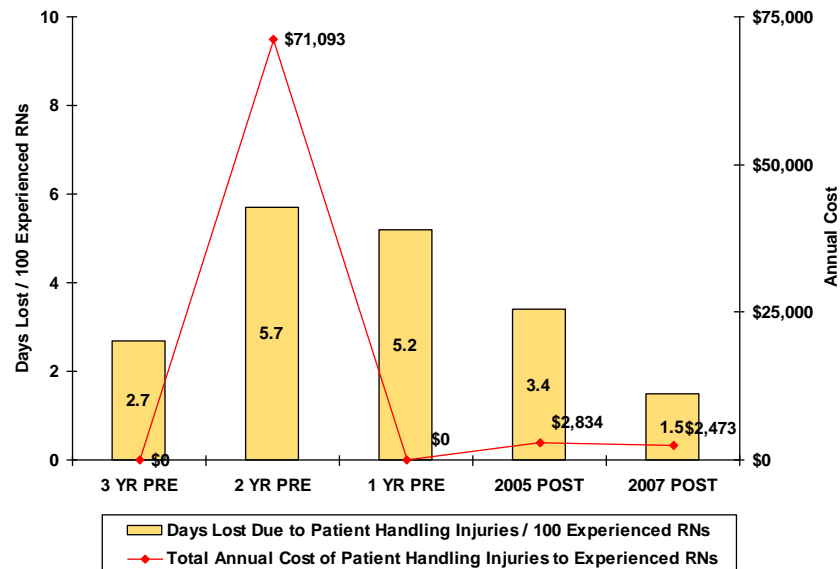
Figure 27
St. Joseph's Health System: Direct Cost of Turnover



E. Impact of Lift Team Initiative on Experienced RN Disability Costs and Days Lost

Since hospital-wide implementation in 2005, the minimal lift program has contributed to a sharp decline in both patient handling injuries and hospital disability costs among experienced RNs (Figure 28).

Figure 28
St. Joseph's Health System: Experienced RN Days Lost per 100 Experienced RNs and Annual Disability Cost Due to Patient Handling Injuries



F. Challenges and Lessons Learned

The main barrier to implementing Smooth Moves has been the common “resistance to change”. The Smooth Moves team has worked to overcome this barrier with ongoing education and promotion. Nursing management must embrace a minimal lift culture and that can be difficult to sustain while managing fiscal challenges and staff changes. Program staff point to the following as being critical program success factors: 1) identifying an organizational champion who believes in the importance of the program; 2) securing senior management support; 3) making the business case for financial commitment by identifying the financial impact of work injuries and the costs of recruiting and retraining replacement RNs; and 4) continuous reinforcement and focus on eliminating barriers.

G. Potential for Replicability

Smooth Moves can be adapted to other acute and chronic care facilities to prevent patient movement related injuries in experienced nurses. Training and education can be carried out using a variety of venues, including upon hire and annually. In addition, through identification of patient demographics specific to each facility, it is possible to customize this program for any interested organization.

Finally, Catholic Health East is now reportedly considering replicating the Smooth Moves program nationally at 31 of its affiliated hospitals.

IMPACT OF THE ACT NURSE PROGRAM ON EXPERIENCED NURSE RETENTION AT RUSH-COPLEY MEDICAL CENTER IN AURORA, ILLINOIS

INITIATIVE-AT-A-GLANCE: Rush-Copley is committed to the issue of retention and recruitment of clinical professionals and even highlights these as part of its 2010 Vision. The hospital's ACT (Admission, Coordination, and Transfer) nurse program is an attempt to realize this vision. The program utilizes experienced nurses to manage patient admittance and placement. Designed by nurses, the initiative intends to improve retention through increased job satisfaction of both the ACT nurse and those nurses that are relieved of the stress of admitting and placing patients. Since implementation in 2005 the program has grown to include ACT nurse "winter challenge" to address bottlenecks associated with high volume during fall and winter month. Early staff satisfaction surveys show improvements and the goal is to reduce staff turnover as the program continues to mature and evolve.

A. Issue

Rush-Copley Medical Center (RCMC) has 183 beds and 652 full- or part-time nurses. Experienced nurses aged 45 and above comprise 29% of the nursing staff. Discussions with hospital nurses revealed that they were "Very to somewhat" dissatisfied with the patient admission and discharge processes.

In the hope of managing patient flow/admissions, improving job satisfaction, creating new job opportunities for experienced nurses and reducing nursing staff turnover, RCMC implemented the Admission, Coordination, Transfer (ACT) Nurse Program in 2005. The ACT Program is designed to utilize the knowledge and skill of experienced nurses to expedite the care of patients and support their colleagues by allowing more control over patient flow, admission and discharge.

B. Intervention

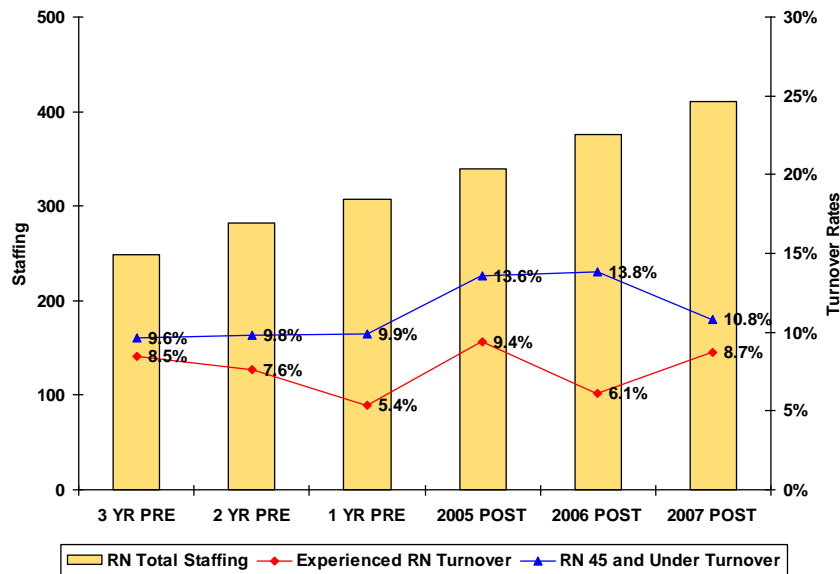
The ACT Nurse Program consists of experienced RNs who are solely responsible for patient admittance and placement in hospital inpatient units. The original units identified for the expanded initiative included Intermediate Care (ICA), Cancer Care and Medical Surgical Pediatrics Care. Intermediate Care was removed from the initiative because there were only 2 experienced RNs employed on ICA when the grant was received. RNs are selected for this position based upon their high level of clinical and organizational knowledge. Duties include: completing the admission database, initiating all referrals, first orders and clinical practice guidelines. A separate program, the "Winter Challenge" was piloted in December 2005 to deal with winter time bottlenecks by ensuring that patients were discharged in a timely manner so that beds were available prior to peak admissions hours.

C. Impact on Retention of Experienced RNs

Turnover among experienced RNs decreased after the program was initiated in late 2005. When the program was expanded in 2007, turnover among this group increased due largely to two factors unrelated to this initiative. The first contributor to increased turnover was fallout from a reduced patient census which resulted in staffing reductions and resignations due to a

reduction in available hours to work. Many of the experienced nurses were primary financial providers and left to find positions that were not impacted by a fluctuating census. The second was the introduction of revised performance standards for nursing that increased levels of staff accountability as it relates to medical errors and a hospital culture of safety.

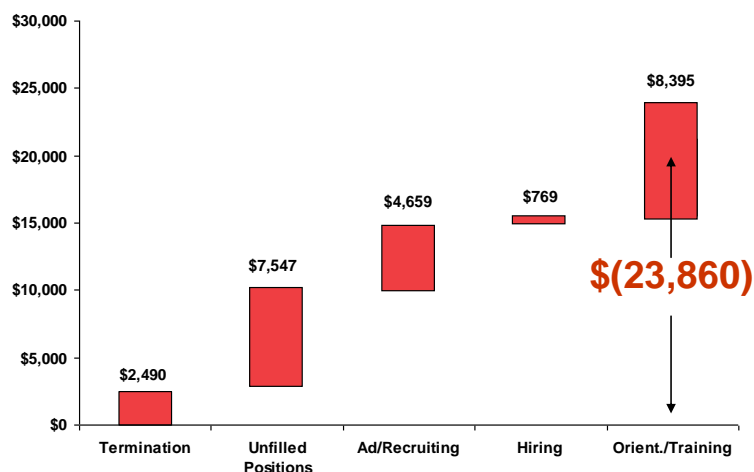
Figure 29
Rush-Copley Medical Center: Trends in RN Staffing and Turnover



D. The Direct Cost of RN Turnover at Rush-Copley Medical Center

The average cost of turnover for a RN at Rush-Copley is \$23,860. This cost initially appears low considering Rush-Copley’s proximity to Chicago, a high cost metropolitan center. However, given Rush-Copley’s growth, only 60% of new hirers are replacing RNs who left the organization. Therefore only 60% of advertising/recruiting, hiring, and orientation costs are attributed to turnover.

Figure 30
Rush-Copley Medical Center: Direct Cost of Turnover



E. Challenges and Lessons Learned

The following challenges occurred during the project:

- Recruiting experienced nurses
- Staff dissatisfaction related to limiting pilot units
- Admission activity exceeded expectations, reducing support to discharge preparation, limiting the proposed scope of the role
- Attending staff nurses requested elimination of the role of the ACT Nurse in obtaining physician orders and administering initial medications, limiting the proposed scope of the role
- Data analysis

When the ACT role was initially implemented, commitment to the role was inconsistent. Different staff was rotated through the role and staff was frequently reassigned at the beginning of the shift or mid-shift to accept a patient care team assignment. Experienced nurses were reluctant to accept one of the “permanent” positions created with the grant supported expansion of the role because they feared inconsistency in assignments and inability to return to the unit and shift on which they were currently working if the role was not retained.

Potential candidates also reported receiving negative feedback from colleagues because the role was designed for nurses 45 and older rather than open to all interested employees. The challenge was successfully resolved by offering candidates the option to work in the ACT role part time and work in their current role part time. All were reassured that ample notice would be provided if the program was not continued so they could return to their desired schedule and unit if they chose to accept the role for their full complement of hours. The delay in filling the expanded positions resulted in nurses younger than 45 years of age rotating through the role along with limitations in coverage until the positions were filled.

As admission activity increased there was no ability to recruit additional staff to adequately support the discharge component of the role because of a deteriorating hospital financial environment that lowered the possibility of expanding the program to all inpatient units.

F. Potential for Replicability

Program staff believes there is a variety of options that may be explored in the way the ACT role is filled to allow experienced nurses to rotate into the role. Job descriptions are transferable and the program may also be tailored to meet the needs of community medical centers without a designated admissions unit. RCMC has received multiple calls from local and national organizations that have heard about our program for information on implementing such a program in their institutions. The ACT role will continue at RCMC with modifications to hours worked.

THE VIRTUAL INTENSIVE CARE UNIT AS AN ALTERNATIVE ENVIRONMENT FOR CRITICAL CARE PRACTICE AND EXPERIENCED RN RETENTION AT FROEDTERT HOSPITAL IN MILWAUKEE, WISCONSIN

INITIATIVE-AT-A-GLANCE: Froedtert Hospital implemented the Virtual Intensive Care Unit (vICU) in 2005 to improve quality outcomes for ICU patients. Staffed by experienced ICU nurses, the unit provides remote monitoring of ICU patients across multiple sites. Experienced critical care nurses are required to staff this unit but the work is physically less demanding than traditional ICUs. The purpose of this study was to evaluate vICU as an alternative environment to retain older ICU nurses. Recruitment and retention, including cost, data for all critical care units were obtained for three years preceding and two years following implementation of the vICU. No vICU turnover has been reported since implementation. Data from focus group interviews and an electronic survey indicate vICU is less stressful, physically less demanding, intellectually stimulating, and nurses have positive working relationships with their nurse and physician vICU colleagues. The vICU may be an example of an alternative work environment that maintains “Wisdom at the Bedside.”

A. Issue

Froedtert Memorial Lutheran Hospital is a 434 bed facility with about 1,443 nurses and the regions only Level I trauma center. Competition for experienced RNs is reportedly intense in the Milwaukee market. Froedtert recognizes the intellectual capital and talent of experienced RNs and has implemented several programs to enable them to be optimal contributors. For example, in 2003, the medical-surgical units were redesigned to be more ergonomically enhanced and in 2005 a cluster staffing model was introduced to promote floating to sister units with similar types of patients, assuring nurses’ continuity to care for specialty patients.

In 2005, aiming to improve quality outcomes, Froedtert implemented the Virtual Intensive Care Unit (VICU), staffed by experienced ICU nurses steeped in critical thinking and communication skills and a board-certified critical care intensivist.

B. Intervention

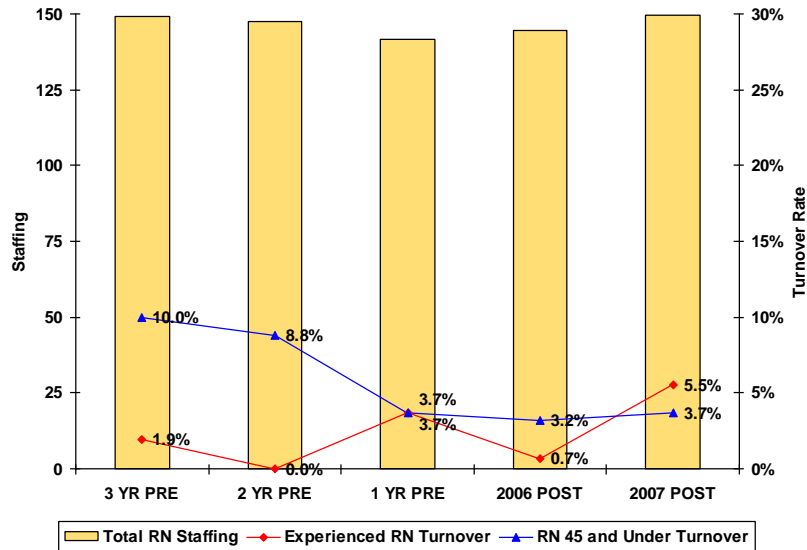
The VICU is a remote system of monitoring ICU patients at multiple sites. It uses technology to provide secondary monitoring in critical care, support the bedside clinician and trend patient data. The goal of the VICU is to lower ICU mortality rates, decrease length of stay and improve patient outcomes. It also provides a critical care nursing environment not associated with the demands of a physically taxing work environment. Experienced RN staff is recruited from existing ICU staff and the average age of the VICU nurses is about 46 years.

C. Impact on Retention of Experienced RNs

The impact of the VICU on turnover of experienced RN staff from the Froedtert Hospital ICUs was examined. Turnover among experienced ICU RNs has been historically quite low. However, between 2006 and 2007, turnover spiked from less than 1% to over 5%. Contributing factors are reportedly unrelated to the VICU intervention. Based upon feedback from nursing directors, underlying drivers included relocation for personal reasons and organizational change attributable to higher expectations of RNs relative to an organizational excellence

initiative based on the Studer group methodology of high/medium/low performer conversations.

Figure 31
Froedtert Hospital: Trends in RN Staffing and Turnover

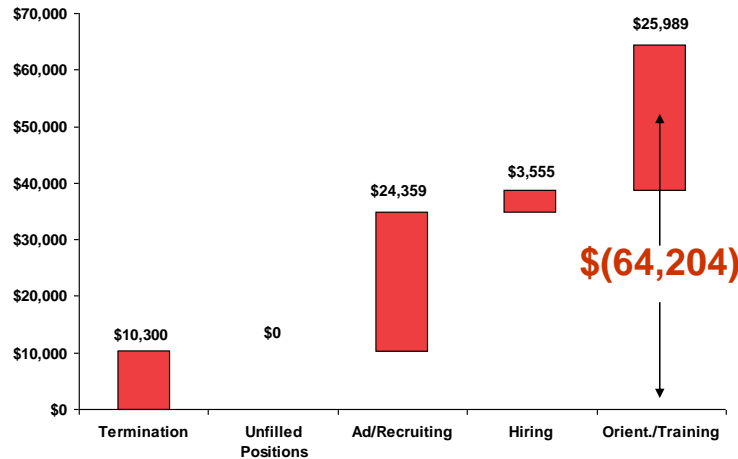


D. The Direct Cost of RN Turnover at Froedtert Hospital

Froedtert Hospital’s VICU determined their direct cost of RN turnover to be around \$64,204.

This falls on the high end of the spectrum in relation to the other grantees. However, this can largely be attributed to the additional costs associated with recruiting and training highly specialized ICU RNs. Froedtert managed turnover costs by not utilizing traveling nurses to fill vacant positions.

Figure 32
Froedtert Hospital: Direct Cost of Turnover



E. Challenges and Lessons Learned

The success of the intervention requires a supportive and thoroughly prepared medical staff. Also, to facilitate recruitment of experienced RNs, it's important that nurses are able to visualize the concept prior to implementation. One way to achieve this is to allow nurses to tour a VICU in organizations that offer this service.

F. Potential for Replicability

There are about 200 virtual ICUs in the United States. The concept of using experienced nurses in electronic monitoring facilities is easily replicable, although a business case may be more difficult to make for hospitals with limited ICU capacity. The most significant barrier to replication is initial cost. Therefore, smaller hospitals or others with limited resources may benefit from partnering with others.

APPENDIX A: EVALUATION DESIGN AND METHODOLOGY

This evaluation was carried out between January, 2007 and December, 2008. During this 24 month period, the first 18 months (January, 2007-June, 2008) focused largely on providing evaluation coordination and technical assistance services to participating hospitals and health systems and collecting and analyzing performance data. The final six months (July-December, 2008) focused on data synthesis and presentation of findings. The remainder of this appendix includes:

- A summary of key study assumptions and definitions.
- Research design.
- Data collection time window and data elements.
- Data analysis methods.
- Primary outcome measures.

A. Summary of Key Study Assumptions and Definitions

- Participation in this research study was limited to a sub-set of 13 non-federal, acute-care hospitals and health systems.
- Hospitals and health systems previously and currently involved in the Pebble Project¹¹ served as the target population for testing evidence-based workplace design and ergonomic approaches.
- Hospitals and health systems that achieved Magnet status¹² served as the target population for testing human resource and organizational culture-related strategies. Research shows that Magnet hospitals enjoy increased retention rates, report lower rates of nurse burnout and higher rates of job satisfaction.
- To ensure that the sample of nurses at each study site was both representative and large enough to yield statistically significant results, the target population was limited to hospital and health system work environment adaptations that affected either an entire organization; or units, wings or other patient care settings large enough to include a “critical mass” of experienced nurses.
- Experienced nurses were defined as RNs age 45 and over.
- Funding was up to \$75K per participating hospital for their 18 month data collection effort.

¹¹ The Pebble Project is a partnership between the Center for Health Design and pioneering health care organizations committed to improving quality and safety through evidence-based design and publishing their results. As of April 13, 2005, there are 30 active participants undertaking various types of capital projects in different stages of design.

¹² The Magnet Recognition Program® was developed by the American Nurses Credentialing Center, a subsidiary of the American Nurses Association, to recognize health care organizations that provide the very best in nursing care.

B. Research Design

Participating hospitals and health systems were required to provide staffing data annually through an electronic Web-based portal for three years prior to each intervention and quarterly for all years post-intervention. Data collected was used to establish a time series through December, 2007 to track changes in turnover, and the impact of ergonomic initiatives.

The major limitations of the time series design were the possibility that something else occurred at the same time as the intervention, causing or contributing to the observed change in the problem and, in some cases, the availability of only a limited number of post-intervention data points. To help rule out these possibilities would have entailed adding a parallel time series for a control group, which was not feasible given the resources available to carry out this evaluation.

C. Data Elements

Table 2 presents the data elements that were collected in order to calculate and track time series trends in turnover by hospital nurses, both pre-and post-intervention. All RN staffing data was reported on a full-time equivalent (FTE) basis to standardize reporting of full- and part-time nursing positions across grantee sites.

Table 2
Hospital/Health System Data Elements Collected to Track RN Turnover

1. Total number of RNs
2. Average age of RN workforce
3. Total number of experienced RNs (age 45 and older)
4. Total number of RNs who exited the organization
5. Total number of experienced RNs (age 45 and older) who exited the organization
6. Total number of RNs subject to intervention (if not a hospital-wide intervention)
7. Total number of experienced RNs subject to intervention (if not a hospital-wide intervention)
8. Total number of RNs subject to the intervention who exited the organization
9. Total number of experienced RNs subject to the intervention who exited the organization

Table 3 presents the data elements collected to calculate and track time series trends in RN days of work lost due to patient handling injuries and changes in hospital disability costs stemming from ergonomic interventions.

Table 3
Hospital Ergonomic Initiatives: Data Elements Collected to Track Changes in RN Days Lost due to Patient Handling Injuries and Hospital Disability Costs

1. Changes in annual RN and experienced RN days lost due to work related patient handling injuries
2. Changes in number of workers compensation claims filed by RNs and experienced RNs for patient handling injuries
3. Changes in annual RN and experienced RN-related hospital disability costs

Appendix D presents the data collection template completed by each study site to calculate the direct costs associated with RN turnover. Data collected was used to help make the business case for retaining experienced nurses by identifying and quantifying the major cost drivers associated with turnover.

Other data elements collected included de-identified RN exit interview data that described pre- and post-intervention trends in:

- Primary reasons for experienced RN turnover.
- Experienced RNs expected future employment settings.

The purpose for collecting these data elements was to test a hypothesis that successful retention initiatives would lead to fewer experienced RNs moving from bedside nursing to other settings. A lesson learned was that this hypothesis could not be tested due to the following limitations:

- Exit interviews are conducted on a voluntary basis, and only about 20% of experienced RNs participated. As a result, statistically significant sample sizes could not be collected.
- Exit interview questions varied greatly across organizations. As a result, comparable responses could not be isolated.

D. Outcome Measures

Three main quantitative outcome measures were tracked and used to construct an evidence base for the interventions tested under this initiative.

1. Change in turnover rates pre- and post-intervention for experienced RNs compared with all other RNs.
2. Comparative analysis of the average direct costs associated with RN turnover across major cost drivers based upon comparable data collected from all grantees.
3. Post-intervention hospital cost savings and improved productivity resulting from fewer RN days lost due to patient handling injuries stemming from ergonomic initiatives.

APPENDIX B: SUMMARY OF HOSPITALS' ANNUAL EXPERIENCED RN TURNOVER PRE-INITIATIVE VERSUS POST-INITIATIVE

The table below shows turnover rates for experienced RNs for the three years prior to their interventions compared to the turnover rates for this group after their interventions were implemented. In addition, the table shows the change between the average of the pre-intervention turnover rates and the most recent turnover rate for calendar year 2007. While only five grantees saw turnover rates drop from pre-intervention to 2007, it is important to note that eight grantees had experienced RN turnover rates in 2007 below the national average of 8.4% for RN turnover and no grantees experienced RN turnover rate exceeded 15%.¹³

Ergonomic Initiatives

Cedars Sinai Health System: Reducing Physical Practice Burdens	3 Yrs Pre 4.2%	2 Yrs Pre 3.3%	1 Yr Pre 3.2%	3 Yrs Pre Average 3.5%	Change in Experience RN Turnover (Pre Avg v. 2007) +86%			
	2004 Post 3.7%	2005 Post 5.5%	2006 Post 6.6%			2007 Post 6.5%		
Florida Health Science Center: Lift Team				3 Yrs Pre n/a	2 Yrs Pre n/a	1 Yr Pre 8.6%	3 Yrs Pre Average 8.6%	Change in Experience RN Turnover (Pre Avg v. 2007) +60%
	2002 Post 9.0%	2003 Post 9.9%	2004 Post 9.0%	2005 Post 9.9%	2006 Post 13.5%	2007 Post 13.8%		
Greenville Hospital: Safe Patient Handling	3 Yrs Pre 13.4%	2 Yrs Pre 0.8%	1 Yr Pre 15.5%	3 Yrs Pre Average 9.9%	Change in Experience RN Turnover (Pre Avg v. 2007) -48%			
			2005 Post 14.7%			2006 Post 5.3%	2007 Post 5.4%	
St. Joseph's Health System: "Smooth Move"	3 Yrs Pre 10.8%	2 Yrs Pre 9.8%	1 Yr Pre 14.4%	3 Yrs Pre Average 11.7%	Change in Experience RN Turnover (Pre Avg v. 2007) +15%			
						2006 Post 14.5%	2007 Post 13.4%	
University of Rochester Medical Center: Minimum Lift Program	3 Yrs Pre n/a	2 Yrs Pre n/a	1 Yr Pre 4.6%	3 Yrs Pre Average 4.6%	Change in Experience RN Turnover (Pre Avg v. 2007) +48%			
			2005 Post 5.9%			2006 Post 4.8%	2007 Post 6.8%	
Vanderbilt University: Safe Handling Program	3 Yrs Pre 10.0%	2 Yrs Pre 9.9%	1 Yr Pre 12.6%	3 Yrs Pre Average 10.8%	Change in Experience RN Turnover (Pre Avg v. 2007) +36%			
						2007 Post 14.7%		

¹³ "What Works: Healing the Healthcare Staffing Shortage". PricewaterhouseCoopers' Health Research Institute. July 2007.

Staffing Initiatives

Centra Health: Closed Staffing	3 Yrs Pre 10.5%	2 Yrs Pre 10.0%	1 Yr Pre 7.7%	3 Yrs Pre Average 9.4%	Change in Experience RN Turnover (Pre Avg v. 2007) -19%
	2004 Post 5.3%	2005 Post 7.9%	2006 Post 5.5%	2007 Post 7.6%	

Mary Imogene Bassett Hospital: Admission Nurse	3 Yrs Pre 15.5%			2 Yrs Pre 28.3%	1 Yr Pre 11.9%	3 Yrs Pre Average 18.5%	Change in Experience RN Turnover (Pre Avg v. 2007) -23%
	2002 Post 17.1%	2003 Post 3.9%	2004 Post 3.6%	2005 Post 3.6%	2006 Post 18.1%	2007 Post 14.2%	

Poudre Valley Health System: Base Staffing Model	3 Yrs Pre 5.2%			2 Yrs Pre 10.8%	1 Yr Pre 3.9%	3 Yrs Pre Average 6.7%	Change in Experience RN Turnover (Pre Avg v. 2007) +1%
	2002 Post 6.8%	2003 Post 6.0%	2004 Post 7.9%	2005 Post 7.2%	2006 Post 4.6%	2007 Post 6.8%	

Rush-Copley Medical Center: ACT Nurse Program	3 Yrs Pre 8.5%	2 Yrs Pre 7.6%	1 Yr Pre 5.4%	3 Yrs Pre Average 7.2%	Change in Experience RN Turnover (Pre Avg v. 2007) +21%
		2005 Post 9.4%	2006 Post 6.1%	2007 Post 8.7%	

Other Initiatives

Edward Hospital: Wellness at Work	3 Yrs Pre 11.7%	2 Yrs Pre 11.5%	1 Yr Pre 15.3%	3 Yrs Pre Average 12.8%	Change in Experience RN Turnover (Pre Avg v. 2007) -52%
	2004 Post 8.4%	2005 Post 8.3%	2006 Post 9.6%	2007 Post 6.1%	

Froedtert Memorial Hospital: Virtual-ICU	3 Yrs Pre 1.9%	2 Yrs Pre 0.0%	1 Yr Pre 3.7%	3 Yrs Pre Average 1.9%	Change in Experience RN Turnover (Pre Avg v. 2007) +180%
			2006 Post 0.7%	2007 Post 5.5%	

Note: This turnover is for the entire ICU. The Virtual-ICU had no turnover in 2007

Pitt County Memorial Hospital: Fanning the Flame	3 Yrs Pre 10.2			2 Yrs Pre 10.5	1 Yr Pre 7.6%	3 Yrs Pre Average 9.5%	Change in Experience RN Turnover (Pre Avg v. 2007) -13%
	2003 Post 8.9%	2004 Post 6.4%	2005 Post 8.4%	2006 Post 6.7%	2007 Post 8.3%		

APPENDIX C: SUMMARY OF ERGONOMIC INITIATIVES EFFECTS ON EXPERIENCED RN DAYS LOST DUE TO PATIENT HANDLING INJURIES PER 100 EXPERIENCED RNS

HOSPITAL	ERGONOMIC INITIATIVES	DAYS LOST: 3 YRS PRE AVG	DAYS LOST: 2007	PERCENT CHANGE
Cedars-Sinai Health System	Reducing Physical Practice Burdens	77.4	20.0	(74.2%)
St. Joseph's Health System	The "Smooth Move" to Retain Experienced Nurses	4.5	1.5	(66.6%)
Greenville Hospital	Addressing Experienced Nurse Retention While Promoting Safe Patient Handling	122.1	0.0	(100.0%)
Florida Health Sciences Center	Impact of a Lift Team on the Recruitment and Retention of Nurses	4.3	0.8	(81.4%)
University of Rochester Medical Center	Minimum Lift Program to Reduce Lost Staff Time from Patient Related Injuries	0.9	2.5	177%
Vanderbilt Medical Center	Comprehensive Evaluation of a Safe Handling Program	14.5	0.0	(100.0%)

APPENDIX D: NURSE TURNOVER COST CALCULATOR TEMPLATE

Data for the Year Ending: <i>(Insert Date Here)</i>			
Hospital Information			
Item	Value	Unit	
Hospital Name			
Number of RN FTEs younger than 45 employed		RNs	
Number of RN FTEs 45 or older employed		RNs	
Average annual salary of a RN FTE >=45		\$/year	
Average annual salary of a RN FTE <45		\$/year	
Total RN FTE hires		/year	%Turnover related 0
Turnover			
Enter the number of RN FTEs older and younger than 45 who left each month below in 2006.			
Month	Nurses 45 or older	Nurses younger than 45	Unit
January			RNs
February			RNs
March			RNs
April			RNs
May			RNs
June			RNs
July			RNs
August			RNs
September			RNs
October			RNs
November			RNs
December			RNs
Total	0	0	RNs
			%Experienced 0
Advertising/Recruiting			
Enter annual advertising and recruiting expenditures for the following categories.			
Item	Value	Unit	
Recruiter personnel salaries		\$/year	
Headhunter fees		\$/year	
Supplies		\$/year	
School & Job Fairs		\$/year	
Advertising		\$/year	
Signing bonuses		\$/year	
Other		\$/year	
Total	\$ -	\$/year	
Total due to turnover	\$ -	\$/year	
Total (Nurses 45 or older)	\$ -	\$/year	
Unfilled Positions			
Enter annual costs associated due to unfilled positions for the categories below.			
Item	Value	Unit	
Temporary RN FTEs		\$/year	
Other		\$/year	
Total	\$ -	\$/year	
Total (Nurses 45 or older)	\$ -	\$/year	
Hiring			
Enter costs per position filled for the categories below.			
Item	Value	Unit	
Interviews		\$/ (Position filled)	
New hire processing costs		\$/ (Position filled)	
Total	\$ -	\$/year	
Total due to turnover	\$ -	\$/year	
Total (Nurses 45 or older)	\$ -	\$/year	
Termination			
Enter costs per vacating FTE RN for the categories below.			
Item	Value	Unit	
Unused vacation/sick pay		\$/ (vacating RN)	
Exit interviews		\$/ (vacating RN)	
Other		\$/year	
Total	\$ -	\$/year	
Total (Nurses 45 or older)	\$ -	\$/year	
Orientation/Training			
Enter orientation and training costs below.			
Item	Value	Unit	
Staff time/salaries		\$/ (new hire)	
Supply/Equipment		\$/year	
Teacher/Instructor		\$/year	
Other		\$/year	
Total	\$ -	\$/year	
Total due to turnover	\$ -	\$/year	
Total (Nurses 45 or older)	\$ -	\$/year	
Summary			
Item	Value	Unit	
Annual cost of RN turnover	\$ -	\$/year	
Annual cost of RN turnover (Nurses 45 or older)	\$ -	\$/year	
Per RN cost of turnover	\$ -	\$/ (vacating RN)	
Turn over rate for RNs younger than 45		0%	
Turn over rate for RNs 45 or older		0%	
Overall turnover rate		0%	