

The Evaluation of a Multi-Hospital System Nurse Residency Program on New Graduate Nurse Retention and Engagement

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Theoretical Framework

- Kristen Swanson's Theory of Caring
 - Maintaining Belief
 - Knowing
 - Being With
 - Doing For
 - Enabling
- Aims for the outcome of well-being (Swanson, 1993)
- Apply to the new graduate nurse population

Objectives

- Evaluated the Norton Healthcare Nurse Residency Program by:
 - Evaluating less-than-one-year registered nurse (NLRN) turnover for a control group and nurse residency program (NRP) group
 - Evaluating engagement within the NRP group
 - Determining the return on investment for the NRP

Norton Healthcare NRP

- Homegrown NRP based on best practice for NLRN transition to practice
- Year long program including orientation with a preceptor followed by 12 monthly workshops
- Evidence based practice project included in curriculum
- First cohort began in March of 2016
- Study looked at Cohorts 1, 2, and 3 which all began in 2016 and completed by September 2017

Background

- **Increased hiring of NLRNs** (Maresca, Eggenberger, Moffa, & Newman, 2015)
- **As of 2012** (RN Work Project, 2009)
 - 41% of NLRNs planned to leave their first job within three years
 - 18.1% of NLRNs left their first nursing job within 13 months of starting
 - 26.2% of NLRNs left their first nursing job within 25 months of starting
- **Turning over a NLRN: \$90,000** (Schulze, 2017)

Why a NRP?

- Recommended by Institute of Medicine (Future of Nursing, 2010)
- Effective way to reduce turnover (D'Ambra & Andrews, 2014; Harrison & Ledbetter, 2014; Wierzbinski-Cross, Ward, & Baumann, 2015)
- Retention rate goes up to 91% if new graduate nurses complete a residency program (AACN, 2016)



Methods

- Design: Retrospective pre-test, post-test design
- Setting: Norton Healthcare
- Features:
 - 4 acute care adult hospitals
 - Residency supported by Institute for Nursing Department
- Evaluation Duration
 - January 2014- October 2015- *Control group*
 - January 2016- September 2017- *NRP group*

Data Collection: Sample

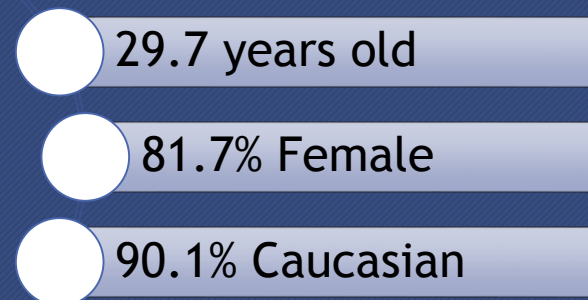
- 791 NLRNs hired between January 2014 to October 2015 (control group)
- 232 NLRNs participated in the NRP in 2016 (NRP group)
- Exclusion criteria:
 - registered nurses who were hired with start dates within the timeframes, but who did not actually start working at NHC as a registered nurse
 - NLRNs who didn't participate in residency

Data Collection- Turnover

Turnover= number of
NLRN leaving NHC in
less than one year/
number of NLRN starts
with NHC in the given
timeframe

Data Collection- Engagement

- Utrecht Work Engagement Scale (UWES)
- Most widely used scale for measuring work engagement
- Proven valid and reliable through numerous studies (Shaufeli & Bakker, 2004)
- Sent to NRP group: 29% participation rate



Data Collection- Engagement

Work & Well-being Survey (UWES) ©

0	Almost never	Rarely	Sometimes	Often	Very often	Always
Never	1	2	3	4	5	6
	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

1. _____ At my work, I feel bursting with energy
2. _____ I find the work that I do full of meaning and purpose
3. _____ Time flies when I'm working
4. _____ At my job, I feel strong and vigorous
5. _____ I am enthusiastic about my job
6. _____ When I am working, I forget everything else around me
7. _____ My job inspires me
8. _____ When I get up in the morning, I feel like going to work
9. _____ I feel happy when I am working intensely
10. _____ I am proud of the work that I do
11. _____ I am immersed in my work
12. _____ I can continue working for very long periods at a time
13. _____ To me, my job is challenging
14. _____ I get carried away when I'm working
15. _____ At my job, I am very resilient, mentally
16. _____ It is difficult to detach myself from my job
17. _____ At my work I always persevere, even when things do not go well

Engagement Dimensions

Vigor: energy and stamina while working

Dedication: enthusiasm and pride for work

Absorption: level of immersion in work

*Combined for overall engagement score

Data Collection- Return on Investment

- Included NRP budget for 2016
- Newly-licensed Nurse Turnover/Replacement Cost Worksheet (Cappannelli & Cleary, 2017)
 - Hiring costs
 - Vacancy costs
 - Orientation/training costs

Yale New-Haven Health Yale New Haven Hospital		
Newly Licensed Nurse Turnover/Replacement Cost Worksheet		
1	Newly Licensed Nurse (NLN) Benefited Hourly Rate (including salary, benefits, and other payouts)	\$ 29.21
HIRING COSTS		
2	Advertising (all costs, including internal and external postings, publications, recruitment, etc)	\$ 550.00
3	Hiring Bonus or Employee Referral Bonus	\$ 800.00
4	HR Interview and Screening of Applicant	\$ 2,000.00
5	Hiring Unit Interview	\$ 48.25
6	Employee Physical Pre-Screening Health Assessment	\$ 132.00
7	Criminal Background and Reference Check	\$ 100.00
8	ESTIMATED PRE-HIRE COST PER-NLN [CALCULATION: sum rows 2, 3, 4, 5, 6, & 7]	\$ 3,630.25
VACANCY COSTS		
9	Agency Tiered RN Hourly Rate (non-critical care)	\$ 72.00
10	Average Benefited Overtime Hourly Rate of Experienced Clinical Nurse (non-agency, non-critical care)	\$ 60.00
11	"Hourly Premium" is the difference in cost between the average agency overtime hourly rate and the NLN hourly rate. [CALCULATION = (row 9 - row 10) / 2 - row 1]	\$ 36.79
12	Average Days to Fill Vacant Positions	62.66
13	Average Days to Fill Converted to Hours	501.28
14	Average Length NLN Clinical Precepted Orientation in Hours	288.00
15	ESTIMATED COST OF STAFFING EACH VACANT POSITION [CALCULATION= (rows 13 - 14) x row 11]	\$ 29,037.61
ORIENTATION & TRAINING COSTS		
16	NLN Clinical Precepted Orientation Cost [CALCULATION= row 14 x row 1]	\$ 8,412.48
17	Number of Hours of Core Education per NLN (includes new employee orientation, nursing orientation, computer training, residency, etc.)	85.00
18	Average Number of NLNs in each Core Education Class	25.00
19	Average Benefited Hourly Rate of Core Education Classroom Educator	\$ 45.72
20	Distribute core education cost (employee attendance and instructor costs) evenly across attendees. [CALCULATION= Step 1: (row 1 x row 17) \$2,482.85 Step 2: (row 19 x row 17)/row 18 \$155.45 Step 3: Add results of step 1 and 2]	\$ 2,638.30
21	Number of Hours Allotted for NLN to Complete Self-Study Education *If none, or if completed during clinical or classroom	0
22	Cost of Specialty Education Materials/Programs Purchased for each NLN (e.g. IMCC, ECG, ECCO, AORN, etc.)	\$ 115.00
23	Cost of NLN to Complete Self-Study or Specialty Content [CALCULATION= row 1 x row 21] = row 22]	\$ 115.00
24	Number of Hours of Specialty Classroom Education (e.g. ACLS, Pediatric Transitions, Oncology Fundamentals, etc)	8.00
25	Average Number of NLNs in each Specialty Class	20.00
26	Average Benefited Hourly Rate of Specialty Classroom Educator	\$ 45.72
27	Distribute specialty education cost (employee attendance and instructor costs) evenly across attendees. [CALCULATION= Step 1: (row 1 x row 24) \$233.68 Step 2: (row 26 x row 24)/row 25 \$18.29 Step 3: Add results of step 1 and 2]	\$ 251.97
28	ESTIMATED TRAINING AND ORIENTATION COSTS PER NLN [CALCULATION= sum rows 16, 20, 23, 27]	\$ 11,417.75
ESTIMATED TURNOVER/REPLACEMENT COST PER-NLN		
29	Pre-Hire Costs= Vacancy Costs+ Training & Orientation Costs [CALCULATION= sum rows 8, 15, 28]	\$ 44,055.61
BREAK-EVEN POINT: Number of hours a NLN must work in a productive status post-orientation to neutralize expenses		
30	Total per-NLN turnover replacement cost/hourly premium used to fill vacant positions [CALCULATION= row 29/row 11]	1198 hours

Results

Turnover

- Control group: 14%
- NRP group: 3.5%
- Statistically significant decrease in turnover

Statistic	DF	Value	Prob
Chi-Square	1	19.5512	<.0001

Results

Turnover Comparison

2016 Advisory Board regional
benchmark for 90th percentile: 2.9%

2016 NRP group turnover: 3.5%

Results

Engagement (UWES)

Descriptive Statistics of the Study Sample (N=68)

Characteristic (Scale = 0-6)	Mean	Std. Deviation	Minimum	Maximum	UWES Manual Average Mean Score Range
Vigor	3.96	.85	0.50	5.50	3.21-4.80
Dedication	4.44	.87	.20	5.80	3.01-4.90
Absorption	3.52	.60	2.00	4.83	2.76-4.40
Engagement	3.97	.67	.90	5.02	3.07-4.66

Results

Engagement

Correlation Between Experience and Engagement Measures (N=68)

Variables	Vigor	Dedication	Absorption
Months of experience	-0.25 (0.04)	-0.19 (0.11)	-0.11 (0.40)

- Vigor statistically significant
- Dedication and Absorption clinically significant
- No association with age, gender, or race in relation to engagement factors

Results

Return on Investment

- Estimated cost to replace NHC NLRN= \$44,085.61
- 2016 NRP budget= \$97,777

Turnover %	# NLRNs Turnover	Cost
Control: 14%	33	\$1,454,825.13
NRP: 3.5%	9	\$396,770.49

$\$1,454,825.13 - \$396,770.49 - \$97,777 =$

\$960,277.64 Cost Avoidance

Results

Return on Investment

- Neutralize NHC NLRN orientation costs:

**1,198 productive
hours worked**

=

**8.32 months (36
hr/week nurse)**

Limitations

- NRP group participation in program
- Turnover limited to NRP participants
- Data from one control group, one NRP, and one organization
- Sample size for the UWES was small and did not include the engagement of the entire NRP group
- Engagement was not evaluated in the control group; therefore, a comparison was unable to be studied between the two groups

Recommendations for Future Studies

- Comparison of multiple NRP groups to a control group for turnover and engagement
- A larger study using the UWES with multiple NRP groups
- A study targeting the time frame of a NLRN's engagement decline to provide insight into when specific educational experiences should occur to combat the loss of engagement
- A study of the clinical outcomes for patients who were cared for by nurses that participated in the NRP

Conclusion

- Statistically significant reduction in turnover was demonstrated
- As months of experience increased, vigor, dedication and absorption decreased
- Cost savings demonstrated for NRP
- Insight into future studies to further evaluate the NHC NRP

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Questions

