



Exploring the Relationship Between RN Turnover and Unit Acquired Pressure Ulcers

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BACKGROUND

- In Quarter 3 2007, NDNQI began offering nurse turnover as one of its quarterly processing indicators. Now, there is sufficient sample to investigate the relationship between nurse turnover and patient outcomes. Although there is research on what contributes to nurse turnover, the research on how nurse turnover impacts patient outcomes such as unit acquired pressure ulcers is evolving
- Unit Acquire Pressure Ulcer (UAPU) has been a quarterly processing indicator since Quarter 4 2006. With the release of revised Centers for Medicare and Medicaid Services (CMS) regulations on “Never Events” in 2008, monitoring unit acquired pressure ulcers, has become greatly important
- The economic impact of these indicators:
 - Pressure ulcers cost American hospitals \$2.2 – \$3.6 billion/year (Beckrich, 1999)
 - Each RN turnover/separation cost American hospitals approximately:
 - \$88,000 if the vacancy is filled by new RN
 - \$82,000 if the vacancy is filled by an experience RN (Jones, 2008)

RESEARCH OBJECTIVE

- To explore the relationship between RN turnover and staffing and unit acquired pressure ulcers (UAPU) in adult med-surg units that participate in the National Database of Nursing Quality Indicators (NDNQI)

SAMPLE

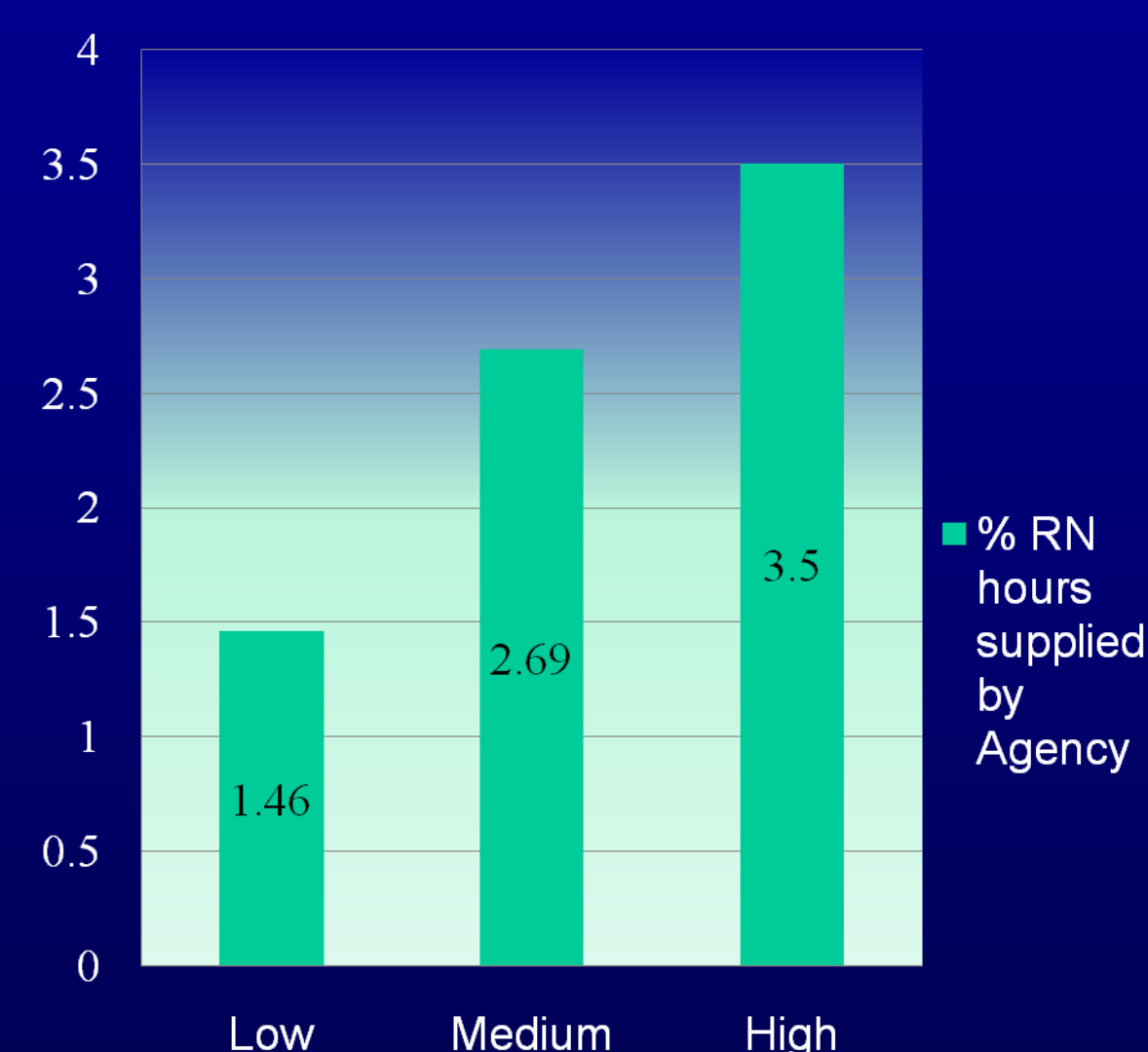
Adult Med-Surg Units	
RN Turnover Classification	Number of Reporting Units
Low (< 8.29%)	73
Medium (8.30-25.62%)	149
High (> 25.62%)	74
TOTAL	296

METHODS

- Quarter 2, 2008 through Quarter 1, 2009 data were extracted from the NDNQI database
- Analysis sample included adult med-surg units that submitted complete turnover, staffing, and UAPU data for all four quarters
 - Total RN Unit Turnover Rate as % of Employed Number of Staff
 - NDNQI definition of separation: leaving permanent unit based direct patient care position
- Unit-level, annual rates were calculated for each variable
- Approximate transformation was conducted to normalize variables and Pearson’s coefficient was performed on the continuous variables
- To describe the sample, turnover rate was classified into three categories:
 - Low turnover units had an annual turnover rate less than 25th percentile
 - Medium turnover: units that had an annual turnover rate between the 25th percentile and the 75th percentile
 - High turnover units had a turnover rate above the 75th percentile

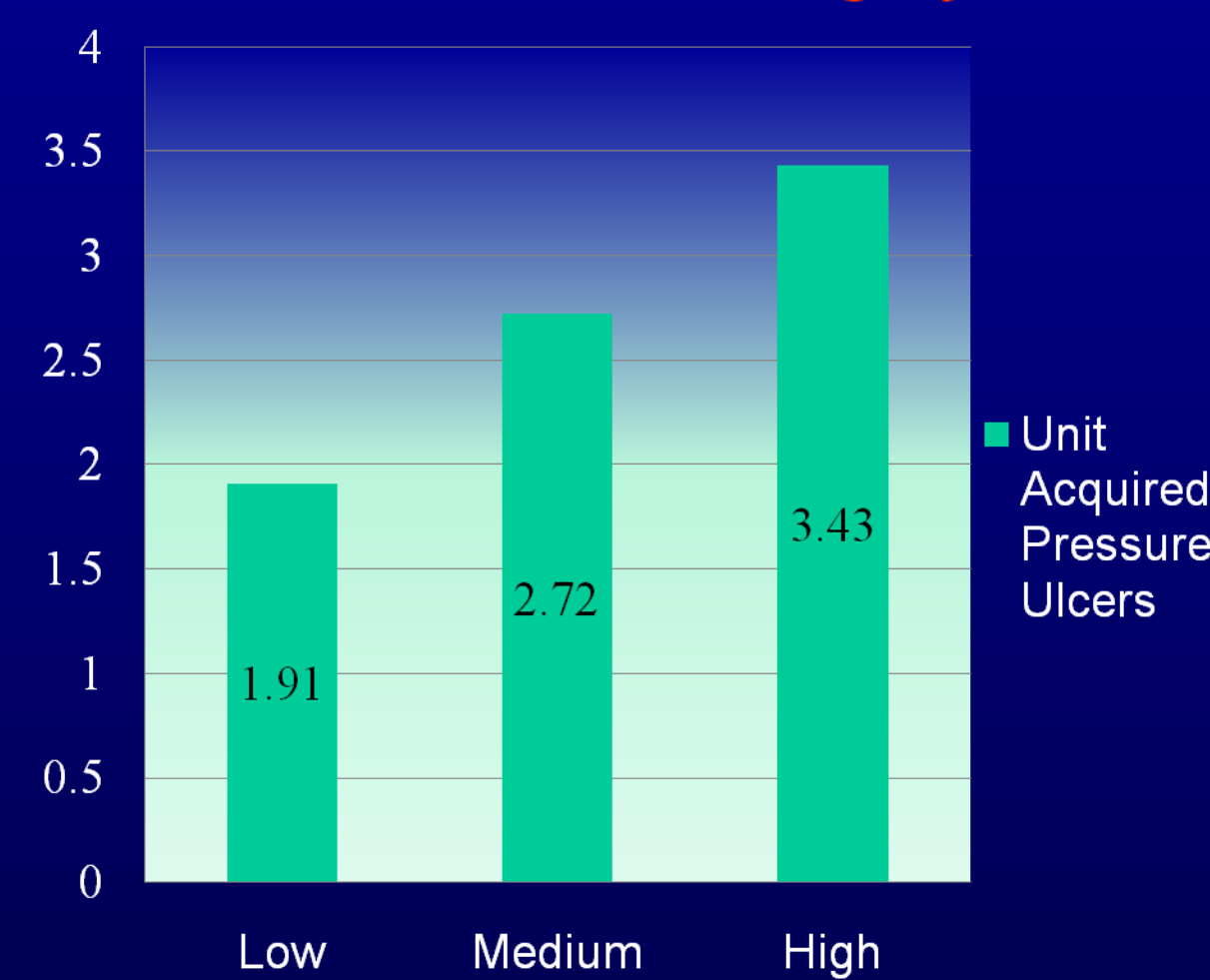
RESULTS

Percent of RN Hours Supplied by Agency by RN Turnover Category



R = 0.17, p-value = 0.003

Percent of Surveyed Patients with Unit Acquired Pressure Ulcers by RN Turnover Category



R = 0.14, p-value = 0.0189

Non-statistical Significant Indicators

Indicator	Turnover Category			P-value
	Low	Medium	High	
Total Nursing Care Hours per Patient Day	8.52	8.65	8.79	0.55
RN Hours per Patient Day	5.51	5.60	5.45	0.18
Unit Acquired Pressure Ulcers Stage II and Above	0.73	0.86	1.44	0.11
Percentage of Patients with Ulcer Risk Assessment Performed in Last 24 hours	92.06	88.75	84.91	0.15

CONCLUSION

- The analysis demonstrates the positive relationship between RN turnover and UAPU in adult med-surg units. There is also a positive relationship between RN Turnover and percent of RN hours supplied by agency staff

DISCUSSION

- This is likely the first research that documents a relationship between nurse turnover and an adverse patient outcome at a unit-level
- Understanding turnover data elements and tracking all unit-level separations are difficult for hospitals
- Replication of data results is warranted given the difficulty of turnover data collection
- More research is needed to investigate deeper implications and explore the possibility that turnover is a proxy for underlying issues in the unit environment

REFERENCES:

- Beckrich, K. Hospital-Acquired Pressure Ulcers: A Comparison of Costs in Medical vs Surgical Patients. Nursing Economics. 1999;17:5:263-271.
- Jones, CB. Revisiting Nurse Turnover Costs. Journal of Nursing Administration. 2008;38:1:11-18.

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