

Nursing Impact of Implementing the Geriatric Resource Nurse Model on Fall and Hospital Acquired Pressure Ulcer Rates, and Length of Stay in Older Adults in an Acute Care Hospital

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Background

Older adults are at high risk for adverse care outcomes, such as injuries from falls, hospital acquired pressure ulcers (HAPUs), and prolonged length of stay (LOS). Available evidence suggests outcomes may improve when older adults are cared for by healthcare providers with competence in geriatrics.

To improve outcomes, an acute care not-for-profit teaching hospital in Washington DC area implemented a Geriatric Resource Nurse (GRN) model that prepares registered nurses (RNs) as clinical experts on core geriatric principles on four general care wards (three medical-surgical and one cardiac).

Objectives

To examine the effects of GRN model implementation on fall and HAPU rates, and LOS in older adults in medical-surgical and cardiac units in an acute care hospital.

Methods and Analysis

Design: A retrospective chart review of two different samples (before and after) was conducted in this study to measure fall and HAPU rates, and LOS before and after implementation of the GRN model

Sample: A convenience sample was used and data from N=1176 charts (609 in the before and 567 in the after intervention group) was reviewed

Intervention: Prior to start of this study, the GRN model was implemented on three medical-surgical units and one cardiac unit in an acute care hospital with educational and mentoring activities constituting the core of the intervention

Procedures:

- 50 self selected RNs on the four units completed the web based geriatric education course and received GRN certificates

- "Lunch and learn" sessions were held monthly on selected units, during which GRNs provided education to other RNs on evidence-based geriatric care, and facilitated discussion on related topics
- A four hour education breakout session was offered to the GRNs for a development of unit specific action plans for implementation, and to improve care of older adults and clinical outcomes

Outcomes and Data Collection:

- A total of four databases were screened to identify cases meeting the inclusion criteria
- Medical records of patients meeting the inclusion criteria were retrieved and retrospectively reviewed for fall and HAPU rates, and LOS
- Before and after intervention data were abstracted. Data integrity was achieved through a concurrent data abstraction and confirmation by the independent reviewer for 10% of the data

Analytical methods: Data analysis was performed in SPSS 22

Results

- Total number of falls was 24 (2.0%) with 13 (2.1%) before and 11 (1.9%) after intervention group
- Total number of HAPUs was 26 (2.2%) including 18 (3.0%) before and 8 (1.4%) after intervention group
- LOS ranged from 1-71 days. LOS mean for total population was 5.14 (SD=5.10), with a mean of 4.88 (SD=4.71) before and a mean of 5.41 (SD=5.49) after intervention
- There were no statistically significant differences in fall ($\chi^2=0.06$, $p=0.81$) and HAPU ($\chi^2=3.24$, $p=0.07$) rates or LOS ($t=-1.78$, $p=0.07$) before and after the intervention (see Table 1.)

Conclusion

Our findings did not identify significant differences in fall and HAPU rates, and LOS before and after the intervention. These findings may be a result of inconsistencies in the institutional application of a systematic approach to geriatric care.

Clinical Implications

- To ensure standardization of care and its quality, healthcare institutions should enable learning environment and assume responsibility for supplying a workforce competent in geriatric care
- New outcome measures, more representative of nursing service, and measuring methodology should be identified
- Nursing service research should be conducted to measure the impact of the geriatric education on nursing service sensitive outcomes

Tables and Figures

Table 1. Comparison of outcomes variables before and after the GRN intervention

Outcome Variable	Total	Before Intervention	After Intervention	Statistic	P value
	N (%)	N (%)	N (%)		
Fall	24 (2.0)	13 (2.1)	11 (1.9)	$\chi^2=0.06$	0.81
HAPU	26 (2.2)	18 (3.0)	8 (1.4)	$\chi^2=3.24$	0.07
	Mean (SD)	Mean (SD)	Mean (SD)		
LOS (days)*	5.14 (5.10)	4.88 (4.71)	5.41 (5.49)	$t=-1.78$	0.07
	Range: 1-71				

*For LOS, one patient stayed 127 days that was an outlier, and was removed from analysis.

Graph 1. Geriatric Resource Nurse skills training



Limitations

- Retrospective chart review of this research project did not guarantee data integrity because of our lack of control over the data entry, which may have influenced the study outcomes
- During the study period, the institution did not utilize standardized HAPU documenting and reporting procedures, possibly leading to the HAPU incidence underreporting
- Utilization of primary diagnosis instead of Disease Related Group (DRG) codes, opened opportunities for an error in interpreting or categorizing data
- Non-probability convenience sampling offered a risk of sample bias resulting in oversampling of both female gender and unit type
- Because of study limitations caution should be used in generalizing the findings of our study to other populations or settings.

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