Title: Nurse-Sensitive Indicators and Patient Transition Safety in Outpatient Hemodialysis Units

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**Session Title:** Improving Nursing Care and Outcomes for Patients Living With End-Stage Renal Disease  
**Slot:** J 08: Saturday, 29 July 2017: 1:30 PM-2:45 PM  
**Scheduled Time:** 1:50 PM

**Keywords:** end-stage renal disease, hemodialysis and transitions

**References:**


**Abstract Summary:** Globally, two million patients are undergoing hemodialysis for end-stage renal disease. Hemodialysis patients have higher morbidity and mortality associated with adverse events and a complex treatment regimen. This symposium explores patient, provider, and system factors that can be leveraged to decrease adverse events, readmission, and improve symptom management and quality-of-life.
### Learning Activity:

<table>
<thead>
<tr>
<th>LEARNING OBJECTIVES</th>
<th>EXPANDED CONTENT OUTLINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop a rudimentary understanding of the greatest risk to mortality faced by End-Stage Renal Disease patients.</td>
<td>1. Scope of hemodialysis treatments in U.S. a. Comparison of ESRD treatment prevalence by modality (in-center hemodialysis, peritoneal dialysis, home dialysis, transplant) b. Costs of hemodialysis treatments 2. Risk for adverse patient events associated with hemodialysis therapy a. Patient falls, medication errors, failure to follow established safety procedures, errors in dialysis machine preparation, lapses in infection control, vascular access-related events, shortened and skipped dialysis treatments, hospitalization, mortality</td>
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<td>2. Identify current recommendations and restrictions in existing end-stage renal disease treatment modalities.</td>
<td>3. Patient transitions during patient shift changes in outpatient dialysis a. Definition b. Association with adverse events i. Skipped and shortened dialysis treatments, vascular access infiltration and infection, vascular access bleeding and thrombosis, medication errors, emergency room visits, patient and family complaints</td>
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rate c. Analytic sample delimited to 422 nurses who identified their role as staff nurses. 8. Study findings a. Only 39% of nurses positively endorsed patient transition safety b. 31% of nurses reported an RN-to-patient ratio of 12 or more patients c. 41% of nurses reported high workloads d. 25% of nurses reported unsupportive practice environments; 50% were mixed in their ratings; and 25% reported supportive practice environments e. All nursing indicators were significantly related to patient transition safety in bivariate relationships f. For-profit dialysis unit ownership status was significantly related to unsafe patient transition safety ratings by nurses g. High RN workloads, unsupportive dialysis practice environments, and missed nursing care were independent predictors of unsafe patient transitions. These variables explained 33% of variance in patient transition safety h. Missed nursing care is an important operant mechanism (i.e., mediator) in the relationships between nursing structures (RN staffing, RN workload, practice environment support) and patient transition safety in outpatient dialysis units. 9. Conclusion a. These findings can inform the design and evaluation of innovative care models in outpatient dialysis units that target modifiable nursing structures and care processes associated with adverse patient outcomes in these settings.
Abstract Text:

**Purpose:** Outpatient hemodialysis centers are the most common site of long-term hemodialysis therapy for persons with ESRD in the United States (U.S.). Although hemodialysis in an outpatient setting is a routine mode of treatment, it is a complex and potentially hazardous procedure\(^7\). Patient shift changes in outpatient hemodialysis units occur several times a day and are high-volume, error-prone patient transition periods that can threaten patient safety\(^8\)\(^\)\(^-\)\(^10\). These transition periods in hemodialysis units are associated with adverse events that have been independently linked with hospitalization and mortality in hemodialysis patients\(^11\). Despite the patient safety challenges in outpatient hemodialysis units, little attention has been allocated to assessing the patient safety cultures of these health care settings. Consequently, there is little evidence on which to guide strategies to ensure patient safety during peak transition times. A concern expressed by nephrology nurse leaders, nurse managers, and staff nurses is the need for more attention on the impact of the contributions of nephrology nursing on quality of care, patient safety, and outcomes in settings where nephrology nurses provide care\(^12\),\(^13\). Thus, the impact of nurse-sensitive indicators (RN staffing, workload, hemodialysis practice environment support, adequacy of nursing care processes) on the safe transition of patients during these periods in outpatient hemodialysis units, merit attention. The purpose of this study was to 1) describe nurses’ ratings of patient transition safety during patient shift changes and 2) examine the impact of nurse sensitive indicators on patient transition safety in outpatient hemodialysis units.

**Methods:** A secondary analysis of data collected in a sample of 422 registered nurses who worked in outpatient hemodialysis facilities in the United States was conducted. Multiple linear regression and ordinary least squares path analysis with bootstrap samples was conducted to examine direct and indirect effects of nurse-sensitive indicators on patient transition safety.

**Results:** High RN workloads, unsupportive dialysis practice environments, and missed nursing care were independent predictors of unsafe patient transitions. These variables explained 33% of variance in patient transition safety. Additionally, missed nursing care is an important operant mechanism (i.e., mediator) in the relationships between nursing structures (RN staffing, RN workload, practice environment support) and patient transition safety in outpatient dialysis units.

**Conclusion:** The findings from this study can inform the design and evaluation of innovative care models that target modifiable nursing structures and care processes to improve the safe transition of patients during patient shift changes in outpatient hemodialysis settings.