High-fidelity Simulation in a Nurse Residency Program: Effective Decision-making to Prevent Failure to Rescue

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Clinical Practice Problem

- Effective clinical decision-making in nursing is essential when caring for patients experiencing deterioration from post-operative complications which risk mortality, termed failure to rescue (FTR)
- Increasing numbers of new graduate registered nurses (RNs) are employed in acute care settings. Their lack of experience in the decision-making required to care for patients at risk for FTR is a concern
- Nurse Residency programs which include high-fidelity Human Patient Simulation (HPS) can provide specialty content on decision-making processes essential to prevent FTR

Evidence-Based Practice Model

The Johns Hopkins Nursing Evidence-Based Practice model and process guided the development of this project from formulation of a practice question, to evaluation of the evidence, and finally to translation of the evidence into a practice change.

Implementation

- IRB approval obtained from both institutions
- Quasi-experimental two group post-test design
- New graduate RNs exposed twice to the HPS offering a baseline measure of their decision-making, with follow-up repeat HPS in one month. Each HPS included briefing of learning objectives, simulation, and debriefing with video-tape review and guided reflection of performance
- Evaluation by review of simulation videotapes using the Lasater Clinical Judgment Rubric (LCJR) to determine if there was an increase in decision-making between the 1st and 2nd simulation

Search Strategy

- Searched: CINAHL, PubMed, National Guidelines Clearinghouse (NGC), Google Scholar
- Reviewed: 78 articles, 109 guidelines on pulmonary embolism, 52 guidelines on upper gastrointestinal bleed, and 56 guidelines on cardiac arrest
- Inclusion/Exclusion Criteria: Applicable to new graduate RNs and use of high-fidelity HPS; guidelines included if pertinent to the evidence and intended for use by nurses
- Accepted: 51 articles, 3 guidelines for developing evidenced-based simulations

Literature Synthesis

- FTR is an important patient safety concern resulting from organizational and nursing processes
- Nurse Residency programs contribute to patient safety by providing specially trained nurse in improving processes for new graduate RNs
- Skill in decision-making in nursing practice impacts patient safety when caring for patients at risk for FTR
- High-fidelity HPS is an effective educational strategy to teach skill in decision-making

Key Stakeholders

- New graduate RNs: #1 interest on Topic: Interest Survey Recognizing and responding to the deteriorating patient
- Professional Practice Department – Responsible for Nurse Residency program. Meetings identified this project as important content in the program. Department provided nurse educator skilled in simulation
- Risk Management Department, Rapid Response Team, Physicians and other providers, Regulatory Agencies, Patients

Cost Analysis

<table>
<thead>
<tr>
<th>Item</th>
<th>Project Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>New graduate RNs at levels</td>
<td>$1500.00</td>
</tr>
<tr>
<td>Catering</td>
<td>$100.00</td>
</tr>
<tr>
<td>Supplies</td>
<td>$500.00</td>
</tr>
<tr>
<td>Overhead Building costs</td>
<td>No additional costs</td>
</tr>
<tr>
<td>Stipulation</td>
<td>Payment to student for time spent (school of nursing)</td>
</tr>
</tbody>
</table>

Cost benefits of project may include decreased institutional liability, need for transfer of patients to a higher level of care, and increased retention of new graduate RNs.

Results

The LCJR has four phases as described below, and eleven dimensions. These phases and dimensions were assessed for the 1st and 2nd simulation for each participant using the Wilcoxon Signed Ranks test because normality of test score distribution was not assumed. Alpha was preset at 0.05 for all testing of significance.

The overall mean score increased significantly from 2.168 to 2.575 between the 1st and 2nd simulation. Each of the Lasater phases demonstrated a statistically significant increase between the 1st and 2nd simulation with the Noticing phase exhibiting the most significant increase.

Practice Implications- Moving Forward

- Use of HPS as a teaching strategy may facilitate in moving new graduate RNs from the Developing level to the Accomplished level of decision-making, which could result in improved outcomes for patients at risk for FTR
- Statistical significance in all phases was achieved. The Noticing phase exhibited the greatest increase; however achieving more significance in the Interpreting and Responding phase would demonstrate essential aspects of decision-making.
- Best practices in simulation, as demonstrated in this project, are important for successful achievement of learning outcomes.
- Opportunities for future: The cost-effectiveness of HPS compared to other educational strategies; transferability of knowledge from simulation to the clinical setting; and research on tools which provide objective evaluation of participant performance in HPS.

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References available on handout.