Abstract

Background and purpose: Trauma certified registered nurses respond to pediatric trauma resuscitations and must maintain competency in a specialized knowledge and skill set. However, there are no clearly defined practice guidelines or standards for maintaining competency as a trauma nurse. The purpose of this quality improvement project is to improve competency and team performance of trauma certified nurses, by improving communication, situational awareness, collaboration, and skills competency using an evidence based, educational intervention.

Methods: This project was conducted using a pre and post intervention design at a large academic hospital. The intervention, Rapid Cycle Deliberate Practice (RCDP), was used to assess and improve nursing team performance and competency of Pediatric Intensive Care Unit (PICU) nurses. Using the 5-point Likert scale, T-NOTECHs, team performance was assessed. A time sensitive task checklist was utilized to assess nurse competency.

Results: 46 PICU nurses participated. The proportion of time sensitive tasks completed increased significantly following intervention (49.5% completion to 94.8%, $p<0.001$). T-NOTECH scores were also significantly higher following intervention (15 to 22), $p<0.001$).

Conclusions: Improvement in team performance was evident by higher T-NOTECH scores post-intervention. Higher T-NOTECH scores are clinically significant as they indicate better team and clinical performance and decreased resuscitation times during high-risk scenarios. Clinical significance was also evident for proportion of time sensitive task completion. All participants were found to have adequate time sensitive task completion post-intervention with nearly all participants completing 100% of tasks.

Implications: Findings suggest RCDP can be utilized to achieve and maintain trauma nurse competency in the PICU. Improving trauma nurse competency could improve pediatric trauma resuscitation and patient outcomes.

Key Words: Rapid cycle deliberate practice, RCDP, pediatric, trauma, resucitation