Use of Simulation to Improve Resuscitation Team Performance in a Pediatric Cardiac Acute Care Unit

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Background

• Survival after in-hospital cardiac arrest is associated with resuscitation team performance and adherence to evidence-based resuscitation algorithms based on prior studies.

• Despite the importance of accurate and timely delivery of life-saving interventions, deviations and errors occur in many resuscitations related to inadequate opportunities to practice.

• Simulation of cardiac arrest, such as “1st Five Minute Drills”, an in-situ simulation intervention, focused on improving team performance in the initial stages of resuscitation, is an opportunity for providers to rehearse interventions and practice CPR skills.

• We hypothesized that an in-situ simulation program in the cardiac acute care unit would improve team performance in the essential elements of pediatric resuscitation.

Objective

• We sought to evaluate the effect of a cardiac arrest simulation program on team performance during simulation scenarios as determined by a validated clinical performance tool (CPT) scores.

Methods

• Single center prospective interventional quality improvement study. Participants were recruited based on random sampling of on-shift clinical team.

• 1st Five Minute Drills provide concise, repeated opportunities for acute care cardiology team members to practice low frequency, high-risk skills, and crisis resource management principles.

• Team performance was directly observed and evaluated using a modified CPT. A 20-point standardized tool that objectively scores team performance of 10 essential skills.

Results

• Nine 1st 5 Minute Drills were conducted over five months and fifty-four multidisciplinary team members participated. Participants were primarily CPCU nurses (74%).

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<th>Role</th>
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Comparison of Mean CPT Scores in Early, Middle, & Late Study Periods

Conclusion

• The implementation of 1st Five Minutes Drills in a cardiac acute care unit resulted in improved simulation resuscitation team performance based on comparison of mean early vs. late study period CPT scores.

• Next steps include focus on evaluation of compliance with AHA algorithms during actual patient resuscitations.

Figure 3: Improvement in mean CPT scores from early to late study periods.