



The Benefit of Interprofessional Code Blue Simulation Training on Team Dynamics

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Rationale

The purpose of this study is to evaluate the impact of simulation based Rapid Cycle Deliberate Practice (RCDP) adult code blue training on teamwork and adherence to American Heart Association (AHA) guidelines during live events at a tertiary care center.

Methods

We performed a prospective observational independent measures design for this study from April 2019-February 2020. All professionals who respond to a medical code event completed a mandatory 1-hour RCDP Adult code blue training session from July–October 2019. The training involved an initial uninterrupted adult mock code. The code was run again with directive feedback using the Rapid Cycle Deliberate Practice approach, followed by another uninterrupted mock code.

Methods

All events were audited using a checklist and the Team Emergency Assessment Measure (TEAM) tool. These same tools were utilized to evaluate the impact of this training in real adult code blue events. Codes were audited using the 'ACMC Adult Code Blue Audit Checklist' that included a point system to evaluate the team's adherence to AHA guidelines and teamwork as follows: resuscitation and management (3 points), recognition and response (4 points), quality of CPR (4 points), documentation (1 point) and time to epinephrine administration (if appropriate). Teamwork was evaluated using the TEAM tool (< 28 points = below average, 28-40.9 = average, 41-54 = above average). The same tools were utilized in auditing real time adult code blue events before and after training.

Statistics used: We compared these groups using the Wilcoxon-Rank-Sum Test.

Results

We audited 7 pre-intervention live events, 33 pre-intervention codes, conducted in the Simulation Center, and 11 post-intervention live events. The mean quality of CPR (pre = 19.6; post = 31.3, $p = 0.005$), as well as the mean quality of teamwork (pre = 18.5; post = 34.5, $p = 0.0003$), were significantly higher among the post-intervention live events compared to the pre-intervention lab events. Interestingly, a statistically significant difference was not seen in recognition and response, resuscitation and management, or time to epinephrine between the pre and post intervention audits.

Conclusion

While our sample size was small, which may have improved performance that was based on comparisons between live events and in lab performance, our data suggests that the implementation of interdisciplinary Adult Code Blue training strengthened team dynamics and increased adherence to AHA guidelines for advanced cardiovascular life support (ACLS).

Clinical Implications

Evidence suggests that high quality CPR, early defibrillation, and ACLS are the largest contributing factors in a successful resuscitation. Our study shows that RDCP Adult Code Blue training is instrumental in improving these parameters. Further studies should focus on the frequency and repetition of these training sessions to ensure continued competency in managing Adult Code Blue events.