

PEDIATRIC CRASH CART COMPARISON STUDY: QUALITY IMPROVEMENT PILOT STUDY OF PERFORMANCE AND PERCEPTIONS

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Background Information: Use of emergency equipment code carts is a common practice during cardiac arrest. Compared to adult code carts, pediatric code carts contain multiple weight/age-based items. The degree of cart complexity and variability may negatively impact performance during a resuscitation, which is directly related to delivering high-quality care.^{1,2} Despite standardization of item placement and type, difficulty in locating and retrieving carts items by providers across our institution's pediatric hospital emerged.

Objective: To compare performance and perceptions between our standard pediatric emergency cart (STND), a modified version of our standard emergency cart (MOD-STND) and a commercially available weight-based pediatric emergency cart (COMM), i.e. Broselow™ ColorCode cart.

Implementation Process/Methods: Available PACU nurses participated in one of three sessions over the course of a day; each session consisted of three activities. Individual participants took part in a simulation-based "scavenger hunt" activity during which they were asked to locate and retrieve 12 standardized crash cart items. A member of the project measured duration of time to locate each item by each participant, for each of the carts; total time to complete each "hunt" was determined by adding the individual times. Participants completed a 5-item survey regarding perceived ease of use.

Results: Performance/perception data from twelve nurse participants was collected. Total time to complete the scavenger hunt activity were analyzed using the Wilcoxon Rank-sum test. The standard cart took the longest median time for participants to locate all 12 items, followed by the modified cart, with the COMM cart being associated with the fastest times (STND: 162s [151-174]; MOD-STND: 135s [101-141]; COMM: 101s [87-126]). There were no statistically significant differences between the COMM and MOD-STND groups ($p=0.54$), nor between the MOD-STND and STND groups ($p=0.07$), however there was a significant difference between the COMM and STND groups ($p=0.01$). Questionnaire data has been analyzed.

Successful Practice/Conclusion: Pilot project suggests that a commercially available weight-based pediatric emergency cart may allow for faster location and retrieval of contents by Peds PACU nurses

Implications: Results from QI Pilot Study will be utilized to inform institutional capital purchase planning in the context of cost-benefit analysis and systems integration efforts.