System-Wide Deployment of Color Coded Pediatric Resuscitation Carts Supported By In Situ Simulation

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Pre Broselow

Purpose:

Our goal was to improve the pediatric code blue resuscitation system within a large health network. Pediatric resuscitation requires timely provision of medications and equipment appropriate to the patient's size. Color coded systems include: measuring tapes, code carts, and medication guides to facilitate system response. We standardized equipment to promote ease of education, standard work related to the restocking process, successful outside agency inspection, and to improve response time. We used high fidelity manikin-based in situ simulation (simulation in the care environment) to test system response to create deliberate practice regarding role clarity, communication and teamwork.

Objectives:

We developed a pediatric code blue in situ simulation program to evaluate the current standards of pediatric resuscitation and identified areas for systems-based performance improvement. We then conducted a network wide transition to color coded pediatric resuscitation carts. Currently, the revised system is being retested with in situ simulation.

Description of Project:

18 pediatric simulated code team responses were observed in three emergency departments (ED), the pediatric floor, the PICU, and pediatric outpatient settings prior to the rollout of color coded carts. The setting included three campuses of an academic community hospital with Magnet® nursing designation. All codes were videotaped and reviewed using the previously described structured method (Blike, Christoffersen et al. 2005) to categorize five broad areas of error: event detection, initial management, diagnostic decision making, advanced management, and crew resource management. The review identified systems, environment and care management issues/challenges. These items were then reported to unit directors, Performance Improvement and Pediatric Code Blue Committees. One example of improvement involved a collaborative effort by the pharmacy and code blue teams to resolve issues of medication availability.

Post Broselow

Implementation:

Stakeholders identified essential equipment for the 39 color-coded carts to be deployed. A team comprised of physicians, nurses and simulation content experts developed an educational plan to support the change to color coded carts. Challenges included availability of capital resources to purchase carts, personnel to stock the carts, ordering of equipment, delivery of education and orchestration of the overall rollout to a large physically dispersed group of providers across inpatient and outpatient settings. After initial pilot testing, carts were requested through a capital budget process with advocacy from project team members and patient safety leaders. Carts were introduced to large groups at department, residency, and nursing unit meetings. An online learning module including video segments and still pictures, with an accompanying quiz, was created and made mandatory for key personnel and encouraged for many others. A total of 299 participants attended "hands on" in-service education sessions a total of twelve drop in sessions were conducted and carts were used during day long educational events for appropriate providers.

Conclusion/Nursing Implications:

In situ simulation with video review identified significant care management improvement opportunities. This method will be used to study the system post implementation and continue to drive improvement through feedback to stakeholders. A collaborative interprofessional effort was required to successfully change and standardize a pediatric response system within a large healthcare network.

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