Staying Alive: A Pediatric Simulation Course Focused on Pediatric Advanced Life Support Algorithms

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BACKGROUND

•Pediatric resuscitation events are high-risk but infrequent, limiting opportunities for nurses to maintain PALS proficiency.

•PICU nurses reported low confidence in applying PALS algorithms, and mock codes revealed knowledge and skill gaps.

•Traditional PALS certification provides limited hands-on practice prior to real emergencies.

•Simulation-based training has been shown to improve confidence, teamwork, and clinical performance in pediatric emergencies.

OBJECTIVES

•Provide nurse-designed, simulation-based training using PALS-based scenarios.

•Facilitate hands-on, peer-to-peer practice of core PALS algorithms.

•Improve learner familiarity, confidence, and clinical application of pediatric resuscitation algorithms.

•Strengthen team-based performance during pediatric emergency response.

•Practice the physical execution of pediatric emergency care, including:
- •Medication preparation and administration
- •Use of a biphasic multifunction defibrillator
- •High-quality CPR performance

METHODS

• Participants: Small-group format with up to eight PICU nurses per session, facilitated by two peer nurse instructors.

• Simulation Design: Participants completed six high-fidelity pediatric emergency scenarios focused on application of PALS algorithms.

• Scenario Structure: Cases were participant-driven, with vital signs and patient responses adjusted in real time based on clinical decisions and medications administered.

• Debriefing: Structured debriefing followed each scenario to review clinical decision-making, teamwork, and PALS algorithm application.

• Skills Practice: Dedicated time at the end of the session allowed participants to practice targeted skills and reinforce areas of uncertainty.

• Evaluation: Pre- and post-course surveys assessed participant confidence in managing pediatric emergencies and applying PALS algorithms.

Magnet Recognition Designated American Nurses Credentialing Center

RESULTS

Participants in the Stayin' Alive class reported significant gains in confidence when managing pediatric medical emergencies and using PALS algorithms. Confidence in handling medical emergencies increased by 35%, and confidence in applying PALS algorithms rose by more than 81%.

FIGURE 1: PRE-CLASS CONFIDENCE SCORES

How confident are you in applying PALS algorithms during pediatric emergencies?

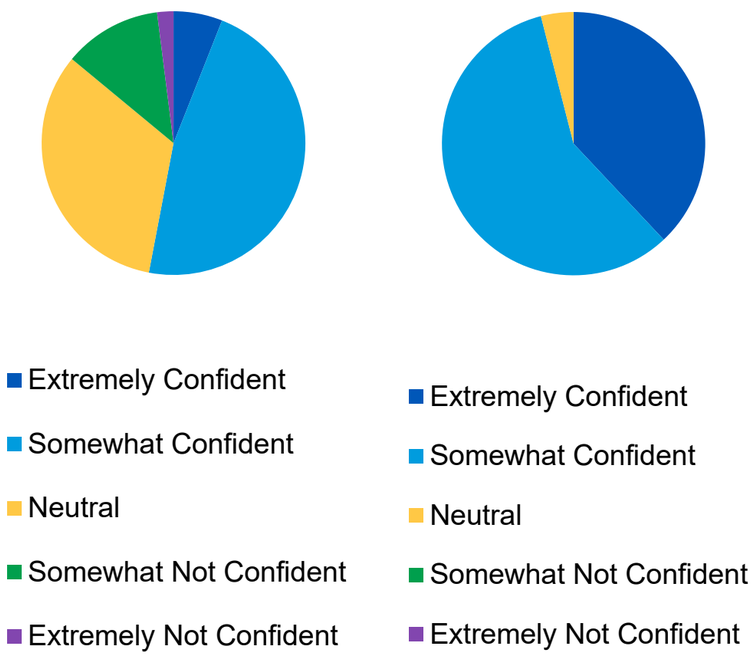


FIGURE 2: POST CLASS CONFIDENCE SCORES

After participating in Peds Stayin' Alive, how confident are you in applying PALS algorithms during Pediatric Emergencies?

FIGURE 3: SIMULATION IN PROCESS

Participants rotate through multiple roles in each scenario to build skills and broaden clinical experience.

DISCUSSION

• Expanded the course to include Pediatric Cardiac Surgery ICU RNs, demonstrating its adaptability across pediatric critical care environments.

•Participation has currently been limited to registered nurses (RNs) with PALS certifications. Future expansion may include interdisciplinary team members such as respiratory therapists, physicians, nurse practitioners, and pharmacists.

•A limitation of the evaluation was the inability to collect consistent quantitative data due to differences in manikin software.

•Maintaining small class sizes and a peer-led, nurse-to-nurse format has been critical to promoting psychological safety, engagement, and active participation, and will remain a priority as the program grows.

The pre-survey asked participants to identify the areas in which they felt least confident. Common themes included medication preparation and administration, application of PALS algorithms, and airway management. Post-course survey results demonstrated that the class successfully addressed 100% of the areas in which learners initially reported low confidence.

FIGURE 4: COURSE GOAL EVALUATION

Did the course address the areas that you felt least confident in from your pre-

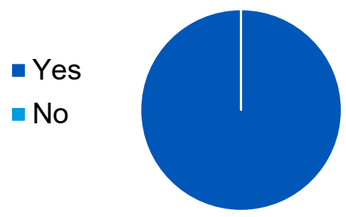
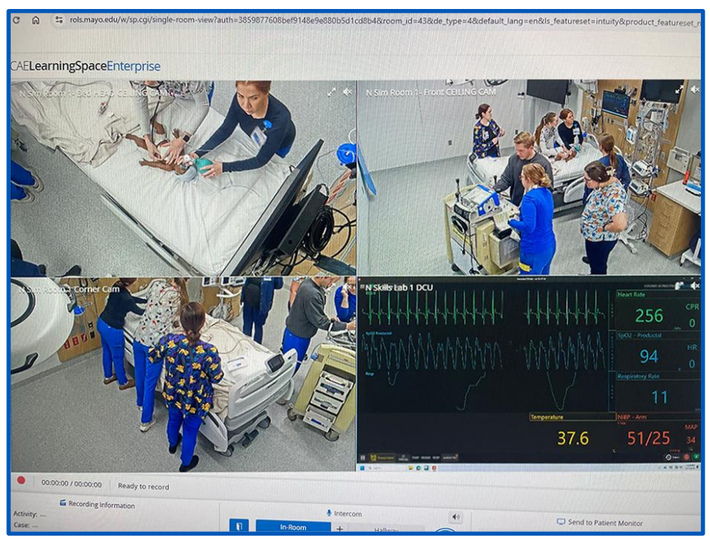


FIGURE 5: SIMULATION CENTER CAMERA AND MONITOR VIEWS



Instructors can monitor the simulation from the control room, allowing them to observe the scenario from multiple camera angles.

CONCLUSIONS

- Following participation, 98% of learners reported increased confidence in managing pediatric medical emergencies and applying PALS algorithms, and all initially identified low-confidence areas were addressed.
- Learners described a psychologically safe environment that supported active engagement, role rotation, and intentional debriefing, promoting experiential learning and competence development.
- All participants (100%) indicated they would recommend the course to peers, reinforcing its effectiveness and value.

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