

Implementation of an Evidence-Based Neonatal Code Blue Class to Enhance Knowledge and Skill Retention of Neonatal Nurses  
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Abstract

An evidence-based NICU Code Blue class was developed as part of a quality improvement initiative implemented at All Children's Hospital (ACH), Neonatal Intensive Care Unit (NICU) in St. Petersburg, Florida, and a project initiative of the Doctorate of Nursing Practice program at the University of South Florida. A pre-test, post-test descriptive study was done to test a newly developed NICU Code Blue Class. The class included eight stations, followed by a simulated code blue experience to determine if the course could enhance the NICU nurses' knowledge and skill retention. The participants in the study were all Neonatal Resuscitation Program (NRP) certified NICU nurses from ACH ranging in age from 23 years to 60 years of age.

Measures of central tendency were used to compare the pre-test, post-test and skill performance scores between the groups. The pre-test raw scores ranged from 43 - 66 points out of 100 possible points, with a mean score of 57. The post-test raw scores ranged from 66 - 84 points out of 100 possible points, with a mean score of 77. All participants demonstrated improvement in their post-test scores when compared to their pre-test scores by a range of 13 - 30 points. The skill performance scores of participants ranged from 97 - 100 out of a possible 100 total points. The pre-test scores suggest that despite being NRP certified every two years, NICU nurses' knowledge and skill declined rapidly over time. The results of the project also raise the question that NRP certification, which is primarily focused on delivery room resuscitation, may not adequately prepare the NICU nurse for many of the practical realities and situations that commonly occur during a code in the NICU. The results further suggest that a NICU Code Blue class can be developed that includes all the critical elements of an NICU code, beginning with eight 30-minute skill stations that are designed to prepare participants' for a final mock code blue simulation. Participants demonstrated the NICU Code Blue class was beneficial, providing the essential content, scaffolding, and hands on experience which enhanced their neonatal resuscitation knowledge and skill performance.

The small sample size, which consisted of a convenience sample of seven nurses and the attrition rate of 42%, was identified as a limitation of the study. The pre-test, post-test and skill performance checklists which were the measurement tools used for data collection may also be considered as limitations of the study as these tests were not established to be reliable or valid prior to being used in the study. Based on the low pre-test scores observed in the study population, the author recommends the NICU Code Blue Class become a mandatory class for all NICU Nursing staff supplemented with participation in random unit based codes and quality improvement audits to determine participants competence in actual NICU codes.

Keywords: Evidence-based teaching strategies; Cardiopulmonary resuscitation; Neonatal nursing; Active learning; Simulation