Disaster Preparedness: Neonatal Intensive Care Unit Evacuation Training

Anna M. Muñoz, DNP, RN, CNS-BC, Catherine Cummins, MD, MSN, Margaret Brady, PhD, CPNP, RN

Background

August 29, 2005: Hurricane Katrina devastated Memorial Medical Center in New Orleans. The emergency evacuation of 16 critically ill neonates was hampered by chaotic, unorganized efforts despite a formal hurricane response plan.

October 29, 2012: Hurricane Sandy descended upon New York City. NYU Langone Medical Center registered nurses (RNs) safely evacuated 21 critical neonates. The successful emergency response reflected extensive response plan preparations and modifications.

Lessons Learned: Every hospital with a Neonatal Intensive Care Unit (NICU) must have an evacuation response plan as part of their overall emergency management and disaster preparedness planning.

Objectives

1. To assess the NICU RNs' knowledge of their roles and responsibilities during emergency neonatal evacuation procedures.
2. To educate the NICU RNs on the existing emergency evacuation policy, including equipment and supplies, identification procedures, and documentation requirements.
3. To evaluate the effectiveness of educational information, obtained from evidence-based core competencies and best-practice toolkits, on increasing the NICU RNs’ awareness and knowledge of neonatal evacuation within the overall medical center EOP.
4. To identify possible opportunities for improvement in the neonatal evacuation protocol, and provision of education, training, communication, and resources.

Theoretical Frameworks

Deming Cycle for Learning and Improvement (Deming, 1982)

Diffusion of Innovations: Adopter Categorization on the Basis of Innovativeness (Rogers, 2003)

Methodology

Participants/Settings: Twenty-six RNs currently working in a Level III NICU in a 377-bed Southern California not-for-profit medical center

Data Collection: Demographic questionnaire; pretest-posttest survey to measure the effectiveness of a QI educational intervention on changing nurses' knowledge, attitudes, and behaviors (KABs), and perceptions towards emergency neonatal evacuation

Data Analysis: Measures of central tendency to describe baseline characteristics and summarize KABs prior to educational course; paired sample t-tests for statistical significance

QI educational course resources included:
- Emergency Preparedness and Disaster Response Core Competency Set for Perinatal and Neonatal Nurses (Jorgenson, Mendoza, & Henderson, 2010)
- NICU/Nursery Evacuation Tabletop Exercise Toolkit (Illinois Emergency Medical Services for Children, 2013)

Results

Meaningful increase in abilities to implement neonatal evacuation policy

Conclusions

The project, with its recommendations, ensures a more comprehensive approach to the medical center’s planning, preparedness, and testing activities of disaster and emergency management in alignment with TJC recommendations for addressing neonatal disaster planning as part of a hospital’s overall EOP. It will:
- Provide clear definitions of staff roles and responsibilities during emergencies
- Assist in sustaining staff disaster response competencies over time
- Ensure function of a successful overall evacuation strategy
- Ultimately, safeguard the health outcomes of neonates, the hospital’s most vulnerable population