

# Submission Title: Neonatal Resuscitation Program Provider Certification for Emergency Medical Technicians and Paramedics in a Large Texas Metropolitan Region to Improve Initial Care of Out of Hospital born Neonates

## Purpose/Objectives

Out of hospital (OOH) births represent approximately 450 of 93,000 annual births in the Southeast Texas Regional Advisory Council (SETRAC) hospitals. Neonatal resuscitation is best achieved through implementation of the AAP Neonatal Resuscitation Program (NRP), as evidence-based interventions improve outcomes. < 1% of emergency medical technicians (EMT)/paramedics in SETRAC region are NRP certified. Studies have described worse outcomes for OOH births, poor knowledge base of EMT/paramedics(EMS) in appropriate resuscitation, and resultant omission of basic evidence-based interventions. SETRAC Perinatal, a QI collaborative among birth hospitals representing 25% of Texas births, implemented a QI initiative certifying EMS in NRP. Objectives: Improving knowledge base in neonatal resuscitative management of EMS, improving ambulance readiness for providing neonatal resuscitation, improving specific implementation of NRP in OOH birth and neonatal emergencies.

## Design/Methods

SETRAC Perinatal provided classes for various EMS agencies in the region. NRP instructors certified 162 EMT/paramedics (EMS). Prospective data collected through Microsoft Forms deidentified Pre/Post-Questionnaire administered on site. Responses exported into Power BI. Raw data exported into Microsoft Excel for statistical analysis comparing pre-and post NRP certification training for objectives-based metrics.

## Results

162 EMS received formal NRP certification. 122 surveys completed. Provider-rated confidence in provision of neonatal resuscitation, initial NRP steps, identification of appropriate initiation positive pressure ventilation (PPV), administration timing for epinephrine/volume expansion improved from median value 7 (on a 10-point scale) Pre-training to 9 Post. Identification of correct population to provide NRP interventions improved 7 Pre to 10(100%) Post. Confidence in transporting neonates to appropriate level of hospital improved from Pre-7 to 9- post-training. 50% of providers were mistaken pre-certification on correct equipment to perform NRP. Correct cardiac compression initiation/cessation and correct compression technique improved from Pre-training rating 8 to post-median of 9.

## Conclusion/Discussion

This QI initiative highlights the extreme knowledge gap in EMS providers in SETRAC region in NRP certification, in preparation for resuscitation of critically ill neonates, and in application of best-evidence resuscitation practices. Formal NRP training of EMS resulted in tremendous narrowing of this knowledge gap, certifying 162 individual EMS in NRP.

Literature demonstrates that poor quality resuscitation of OOH born neonates by EMS results in substantially worse survival and neurodevelopmental disability. NRP training is essential for EMS. EMS agencies, with the support of local NICU partners, should support the training of adequate numbers of personnel in this life-saving intervention. We passionately advocate for the AAP NRP Program to allow EMS certification as NRP Instructors, as OOH birth continues to rise in the United States and NRP certification for EMS remains a significant gap in the provision of best possible care to this vulnerable population. The SETRAC Perinatal Committee is committed to training our EMS providers in NRP, and ultimately facilitating this training throughout Texas and the USA.

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