

Abstract: Emergency Medicine Neonatal Resuscitation

Background:

Neonatal resuscitation in the emergency department (ED) is a rare but critical event. Literature review suggests that 90% of neonates do well transitioning at birth and breath on their own. The 10% that require assistance range from stimulation, supplemental oxygen and positive pressure ventilation. Only 1% of neonates require advanced resuscitation at birth (intubation, CPR). Neonatal resuscitations program (NRP) biannual certification training is not required for most credentialing bodies. The training is usually done by Neonatal ICU staff and not directed toward emergency physicians who may deal with neonates presenting with different demands and settings. This study aimed to assess the incidence, interventions, and outcomes of neonatal births in an urban Level 1 trauma center ED.

Methods:

A retrospective chart review was conducted from 2010–2023, including neonates delivered in the ED or by EMS. Exclusion criteria included infants over 6 hours old, those previously discharged, or born under a DNR plan. Outcomes, resuscitation interventions, and maternal risk factors were analyzed.

Results:

Out of 114 births, 108 met inclusion criteria. Most (60%) arrived via EMS, and 55% of deliveries occurred in the ED or in an ambulance. Most births were vaginal births, accounting for 94%, with 6% via emergency cesarean with 2/3 of those being perimortem C-sections. Notably, 37% of neonates were from planned home or birth center deliveries. Advanced neonatal resuscitation such as PPV was required in 20% of the cases and CPR and intubation was required in 13% of the cases which is significantly higher than national averages. Most neonates cared for in the ED had good outcomes with 75% being admitted to the nursey, 17% admitted to the NICU, however 8% died. At hospital discharge, 87% went home, while 3% were deceased.

Conclusions:

Neonatal resuscitation in ED settings requires specialized preparedness, particularly due to the high proportion of out-of-hospital births. The rate of advanced resuscitation was markedly higher than national estimates, underscoring the need for focused NRP training and resources for EMS and ED teams.