



A Primer on Updates to the Neonatal Resuscitation Program

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Clinicians caring for newborns in birthing room settings are required to be trained in neonatal resuscitation through the Neonatal Resuscitation Program (NRP), which is jointly sponsored by the American Heart Association (AHA) and American Academy of Pediatrics (AAP). As part of the effort to ensure current, evidence-based guidelines for the NRP, evaluation of emerging scientific evidence related to neonatal resuscitation is performed on a routine and ongoing basis, resulting in the publication of updated

editions of the NRP every five to six years since the inaugural edition in 1987.

The sixth edition was adopted into practice in 2011; it not only contained the latest evidence for patient care but also adopted significant changes in resuscitation education, with a shift to team-based training through the use of simulation (AAP & AHA, 2011).

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Abstract In October 2015, the American Heart Association and the American Academy of Pediatrics released advanced notification of substantive changes to appear in the seventh edition of the Neonatal Resuscitation Program (NRP) scheduled for release in the spring of 2016. The expectation is that all NRP providers will be educated in the seventh edition of the NRP during 2016, with the national implementation target date set as January 2017. This column presents a brief discussion and summary of changes to the NRP. <http://dx.doi.org/10.1016/j.nwh.2016.04.003>

Keywords neonatal delivery room management | neonatal resuscitation | Neonatal Resuscitation Program | newborn transition



(Perlman et al., 2015). The expectation is that all NRP providers will be educated in the seventh edition of the NRP during 2016, with the national implementation target date set as January 2017. This column presents a brief discussion and summary of the changes in the NRP expected as part of the seventh edition.

Summary of Upcoming Changes

Several categories of changes are set for revision in practice in the seventh edition of the NRP.

Initial Steps

Although the existing routine of three questions to be asked at the time of birth has been retained, the order has been changed to read: *Term gestation?*, *Good tone?*, and *Breathing or crying?*

Management of Nonvigorous Infants With Meconium-Stained Amniotic Fluid

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(MSAF); the seventh edition of the NRP no longer suggests routine intubation and endotracheal suctioning for these neonates. This change in practice recommendations stems from the desire to avoid harm, that is, delaying initiation of positive pressure ventilation (PPV) to perform endotracheal suctioning, a procedure for which there is insufficient supporting evidence. Rather, nonvigorous neonates with MSAF should receive the same steps in resuscitation as neonates without MSAF, including clearing of the airway and initiation of PPV should the criteria for that be met. Although routine endotracheal suctioning is no longer recommended, full resuscitation may be required for newborns with MSAF or when an airway is obstructed. Therefore, at least one person skilled in endotracheal intubation should always attend such births.

“The Golden Minute”

Although the algorithm for “The Golden Minute” has been modified slightly and the 30-second mark has been removed (AHA, 2015), the emphasis remains on completing the initial steps and initiating resuscitation, specifically establishing adequate ventilation in a neonate who fails to respond to the initial steps before 1 minute of age.

Delayed Cord Clamping

Based on recent and emerging evidence, the seventh edition of the NRP found delayed cord clamping (>30 seconds) reasonable for term and preterm newborns not requiring resuscitation in the birthing room. However, insufficient evidence exists at this time to extend this practice to neonates who do require resuscitation in the birthing room.

Temperature Management of Term and Preterm Newborns

In light of evidence supporting the strong predictive value of admission temperature on the

mortality rates of nonasphyxiated newborns, the seventh edition of the NRP recommends that admission temperatures be recorded as a quality improvement indicator and should be in the range of 36.5 °C to 37.5 °C. Strategies to prevent hypothermia continue to be emphasized and include the use of radiant warmers, plastic wrap, increased room temperature, and use of thermal mattresses among others.

Evaluation of Heart Rate

A new option for assessing newborn heart rates using electrocardiography leads is presented as part of the seventh edition of the NRP. This recommendation stems from studies that showed the lack of reliability in palpating or auscultating an accurate heart rate in the birthing room and from several studies

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