

are supported by Level B-R (randomized) evidence (moderate evidence from ≥ 1 RCTs) and 1 by Level B-N (nonrandomized) evidence. Two recommendations are based on Level C evidence supported by limited data; no recommendations are based on Level C evidence derived from expert opinion. Likewise, the strength of recommendations is weaker than optimal: no Class 1 (strong) recommendations, 3 Class 2a (moderate) recommendations, 3 Class 2b (weak) recommendations, and 2 Class 3: No Benefit recommendations are included in these guidelines. There are no recommendations designated Class 3: Harm.

Guideline Structure

These guidelines are organized into knowledge chunks, grouped into discrete modules of information on specific topics or management issues.^{9,10} Each modular knowledge chunk includes a table of recommendations that uses the standard AHA nomenclature of COR and LOE. Recommendations are presented in order of COR: most potential benefit (Class 1), followed by lesser certainty of benefit (Class 2), and finally potential for harm or no benefit (Class 3). Following the COR, recommendations are ordered by the certainty of supporting LOE: Level A (high-quality randomized controlled trials) to Level C-EO (expert opinion). A brief introduction puts the recommendations into context with important background information and overarching management or treatment concepts. Recommendation-specific text clarifies the rationale and key study data supporting the recommendations. Hyperlinked references facilitate quick access and review. All writing group members reviewed and approved the final manuscript.

Document Review and Approval

These guidelines were submitted for blinded peer review to 11 subject-matter experts nominated by the AHA and the AAP. Before appointment, all peer reviewers were required to disclose relationships with industry and any other conflicts of interest, and all disclosures were reviewed by AHA staff. Peer reviewer feedback was provided for guidelines in draft format and again in final format. All guidelines were reviewed and approved for publication by the AHA Science Advisory and Coordinating Committee, the AHA Executive Committee, and the AAP Executive Board. Comprehensive disclosure information for peer reviewers is listed in Appendix 2.

These recommendations augment the last full set of AHA recommendations for neonatal resuscitation made in 2020.⁷ All other recommendations and algorithms published in the 2020 guidelines remain the official recommendations of the AHA Emergency Cardiovascular Care Science Subcommittee and writing groups.

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2. UMBILICAL CORD MANAGEMENT

Background

Management of the umbilical cord and placental transfusion at delivery remains an area of robust investigation. The volume of blood transferred from the placenta to the newborn infant and the effect of that transfusion vary on the basis of gestational age at delivery, mode of delivery, the time from delivery to cord clamping, any milking of the umbilical cord, and physiological status of the newborn infant.

Both the American College of Obstetrics and Gynecology and the AAP have produced guidelines about umbilical