



Editorial: The 2025 AHA Guidelines for Pediatric Resuscitation: From Technical Updates to Holistic Care

Editörden: 2025 AHA Pediatrik Resüsitasyon Kılavuzları: Teknik Güncellemelerden Bütüncül Bakıma

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Scientific progress generally manifests through cumulative and evolutionary steps rather than sudden, revolutionary leaps. Each new guideline presents a synthesis of these steps, refining our existing knowledge and guiding our clinical practice. The publication of the American Heart Association's (AHA) 2025 Guidelines for cardiopulmonary resuscitation (CPR) and emergency cardiovascular care is the most recent example of this evolutionary process.¹ The updates, particularly in pediatric basic life support (PBLS) and pediatric advanced life support (PALS), not only introduce technical changes compared to the 2020 recommendations but also reveal significant developments in our perspective on the science and practice of resuscitation in children.

Upon reviewing these new guidelines, the first notable change is at the structural and conceptual level. The reorganization of PBLS and PALS, which were combined into a single part in the 2020 guidelines, into separate parts (parts 6 and 8) in 2025 demonstrates a deeper recognition of the unique complexity and specialized nature of pediatric resuscitation.¹ This separation promises a more targeted approach in both education and practice settings. Similarly, the consolidation of the chain of survival concept, which previously had different versions for various populations and scenarios, into a single, universal 6-link chain emphasizes the universality of resuscitation's core principles while providing standardization and simplicity in training.¹ This approach reflects the philosophy of building population-specific nuances (such as the newly

introduced 7-link chain of survival for neonatal care) upon a solid foundation of fundamental principles.

The 2025 guidelines also underscore the importance of the language used, moving beyond technical applications. The removal of terms like "rescue breaths" to create a clear distinction between "breaths" and "ventilations" and the adoption of the term "lay rescuer" to encourage action, replacing the passive connotation of "bystander" highlight a commitment to enhancing clarity in communication and promoting community involvement.¹ These and other key conceptual advancements are summarized in Table 1.

From Technique to Philosophy: The Evolution in Basic Life Support

Updates in PBLS clearly demonstrate the progression of evidence-based practice. The 2020 guidelines opened the door for compression-only CPR, in line with the trend in adults.² However, the 2025 guidelines more strongly emphasize, based on large observational studies, that the best outcomes in pediatric out-of-hospital cardiac arrests are achieved with conventional CPR (chest compressions and breaths).¹ This approach is based on population-specific physiology, underscoring the fact that pediatric arrests, unlike adult arrests, are often due to respiratory causes.

Another significant change occurred in the infant chest compression technique. The 2-finger technique, an acceptable option in 2020, is no longer recommended in 2025 due to

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Table 1. Selected conceptual advancements between the 2020 and 2025 guidelines

Concept	2020 approach	2025 approach and its reflected advancement
Organization	PBLS and PALS were combined into a single part.	PBLS and PALS were performed in separate parts. Advancement: A clearer recognition of the specialized nature of pediatric resuscitation.
Chain of survival	Four different versions (adult/pediatric, IHCA/OHCA).	A single, universal 6-link chain. Advancement: Emphasis on universal principles and simplicity in education.
Terminology	Mixed and less action-oriented terms (e.g., bystanders).	Standardized, clear, and action-oriented terms (e.g., lay rescuers). Advancement: A goal is to improve communication quality and community engagement.

PBLS: Pediatric basic life support, PALS: Pediatric advanced life support, IHCA: In-hospital cardiac arrest, OHCA: Out-of-hospital cardiac arrest

its lower efficacy.¹ Simulation and observational data have shown that the 2-thumb-encircling hands or 1-hand technique provides a more effective compression depth.¹ This change demonstrates a commitment to removing techniques that do not meet the evidence-based quality metrics.

Goal-directed Resuscitation: New Horizons in Advanced Life Support

Innovations in PALS signal an evolution from a “protocol-driven” approach to a more goal-directed understanding of resuscitation guided by physiological data.

Although early epinephrine administration was recommended in 2020, uncertainties regarding timing existed.² The 2025 guidelines reduce this ambiguity by providing more aggressive and clear timing recommendations for both non-shockable and shockable rhythms (e.g., as early as possible for non-shockable rhythms).¹ This shows that pharmacological intervention is shifting from a reactive step to a proactive strategy.

Perhaps one of the most innovative approaches is the recommendation to use physiological parameters to assess CPR quality. For patients with invasive arterial blood pressure monitoring, the establishment of specific diastolic blood pressure targets during CPR (≥ 25 mmHg for infants, ≥ 30 mmHg for children) shifts the quality of resuscitation from subjective assessments to objective, measurable targets.¹ Similarly, the post-arrest goal of maintaining systolic and mean arterial pressures at or above the 10th percentile for age symbolizes a transition from the general aim of “stabilizing the patient” to the specific task of “achieving age-specific, evidence-based hemodynamic targets.”¹

In the field of neuroprognostication, a more cautious and holistic approach has been reinforced. The 2025 guidelines, more strongly than in 2020, emphasize the need to avoid making irreversible decisions based on a single examination finding, biomarker, or imaging result, stating that a multimodal assessment incorporating multiple data points is essential (COR 1, LOE B-NR).¹ This approach aligns significantly with the multimodal assessment principles gaining traction in neurocritical care and reflects an ethical stance that recognizes the potential risks of a “poor prognosis” label for patients.

Conclusion: The Pursuit of Holistic Care and Equity

When evaluated as a whole, the changes in the 2025 AHA Guidelines reveal that pediatric resuscitation is no longer

viewed merely as a series of technical interventions performed at the moment of cardiac arrest. It is now considered a holistic process that begins with pre-arrest prevention and includes high-quality CPR, goal-directed advanced life support, comprehensive post-arrest care, and ultimately, physical, cognitive, and emotional recovery. This process is embodied by the integration of “recovery” the sixth link, into the chain of survival.¹

Furthermore, the guidelines’ strong emphasis on health disparities provides an important roadmap for future research and clinical practice. The 2025 guidelines show that the principle that every child has the right to access the highest quality of care, regardless of race, ethnicity, socioeconomic status, or geographic location, is now more firmly placed at the center of resuscitation science.¹

In conclusion, the 2025 guidelines invite us to be not only better technicians but also better clinicians, better systems thinkers, and more equitable care providers. This is a promising development, indicating the continued progress of evidence-based, patient-centered, and ethically grounded care in the field of pediatric resuscitation.

Keywords: Cardiopulmonary resuscitation, pediatric advanced life support, heart arrest, practice guideline, child

Anahtar Kelimeler: Kardiyopulmoner resüsitasyon, çocuklarda ileri yaşam desteği, kalp durması, uygulama kılavuzu, çocuk

Footnotes

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