

## PEDIATRIC ADVANCED LIFE SUPPORT

## INTRODUCTION

The American Academy of Pediatrics (AAP) and the American Heart Association (AHA), in conjunction with International Liaison Committee on Resuscitation (ILCOR), developed the Pediatric Advanced Life Support (PALS) curriculum. The course teaches healthcare providers to more effectively recognize potential respiratory failure and shock in infants and children and to respond with early appropriate interventions to prevent cardiopulmonary arrest. The hallmark of the PALS curriculum is the rapid identification of life threatening conditions in infants and children by utilizing a 4-tiered Pediatric Assessment scheme focused on simplicity and graduated to provoke timely and appropriate early interventions. The scheme uses a recurring cycle of “assess-categorize-decide-act” management scheme for the management of seriously ill or injured infants and children. This scheme funnels emergency decision making into respiratory (distress or failure) and circulatory (compensated or hypotensive) categories, which can be further defined, based upon additional information gathered in the 4-tiered assessment process. The PALS curriculum further emphasizes the importance of the Resuscitation Team Concept, which encourages clear, collaborative communication. The Neonatal Resuscitation Program (NRP), also offered by the AAP and AHA, addresses the resuscitation of the newborn in the delivery room or in the neonatal intensive care unit and is discussed elsewhere in this publication. Pediatric hospitalists frequently encounter clinical situations that require immediate intervention based on these guidelines.

## KNOWLEDGE

*Pediatric hospitalists should be able to:*

- Define the roles, team composition, and responsibilities of “rapid response” and “code blue” teams, noting local context.
- List the common etiologies and recognize early signs of respiratory failure and all forms of shock, attending to variations in each due to age.
- Describe how deterioration can lead to cardiopulmonary arrest when early signs of distress are not recognized or acted upon.
- Discuss the utility of early warning systems/pediatric rapid assessment tools designed to anticipate significant clinical instability within the local context.
- Describe how basic airway, breathing, circulation, and disability, and exposure (“ABCDE”) life support maneuvers differ with age from newborns to infants and older children.
- Summarize the modalities commonly available to support the airway, breathing and circulation in children with worsening respiratory distress, in increasing intensity/invasiveness.
- Compare and contrast the advantages, disadvantages, and proper selection of bag-mask ventilation versus advanced airway management techniques.
- Describe the pathophysiology of hypovolemic, septic, and cardiogenic shock.
- Review the approach toward stabilization of hypovolemic, septic and cardiogenic shock, attending to varied age groups and including treatments and testing.
- Explain how assessment tools and interventions should be customized for special resuscitation situations such as trauma, toxicological emergencies, rapid sequence intubation, procedural sedation, children with special health care needs and others.
- List common pediatric cardiac dysrhythmias and describe the most appropriate algorithm to apply for each.
- Describe the appropriate context and use of automated external defibrillators in children.
- Review the management of post resuscitation care and transport.
- Discuss the basic pharmacology of drugs most commonly utilized in PALS.

## SKILLS

*Pediatric hospitalists should be able to:*

- Successfully complete the Pediatric Advanced Life Support course and maintain certification.
- Recognize early warning signs of acute respiratory distress and cardiac compromise and institute corrective actions to avert further deterioration.
- Identify patients requiring institution of PALS techniques, accurately perform rapid assessment, and apply appropriate interventions.

## CORE SKILLS

- Perform effective cardiopulmonary resuscitation and basic life support skills.
- Perform effective resuscitation and stabilization of newborns in the delivery room as appropriate for local context.
- Efficiently stabilize the airway, using effective non-invasive and invasive airway management techniques in collaboration with other services as appropriate.
- Efficiently obtain peripheral or central vascular access by placement of intravenous, intraosseous or central venous catheters in collaboration with other services as appropriate.
- Correctly identify and treat common pediatric cardiac dysrhythmias.
- Correctly utilize an Automated External Defibrillator under appropriate circumstances.
- Effectively use weight/size based resuscitation tools.
- Correctly apply PALS principles to special resuscitation situations such as toxicological emergencies, procedural sedation, or trauma.

## ATTITUDES

*Pediatric hospitalists should be able to:*

- Effectively lead or participate as a member of a stabilization (rapid response) and/or resuscitation (code blue) team.
- Communicate effectively and compassionately with the family/caregiver.
- Advocate for family/caregiver presence during resuscitation when appropriate.
- Collaborate with the primary care provider to enhance support for the family/caregiver.

## SYSTEMS ORGANIZATION AND IMPROVEMENT

*In order to improve efficiency and quality within their organizations, pediatric hospitalists should:*

- Lead, coordinate or participate in the development of a local Pediatric Advanced Life Support training program.
- Work with hospital administration to ensure code carts are pediatric-specific and contain adequate, appropriate equipment.
- Work with hospital administration to create inter-facility transport and affiliation agreements between community hospitals and pediatric tertiary care centers to foster effective and appropriate triage of sick and injured children.
- Advocate for statewide Emergency Medical Systems (EMS) for Children program which places pediatric emergency care in its proper place within the EMS system.