

Cases from the Base: Pediatrics Tape Review

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Learning Objectives

By the end of the session, participants will:

- Explore examples of critical prehospital and ED pediatric care in LA County
- Describe importance of pain assessment in pediatric patients
- Differentiate contraindications vs. barriers to pain treatment in pediatrics
- Identify pediatric patients who require transfer to a Burn Center
- List the most common causes of hypoglycemia in the neonatal period
- Discuss the indications for IO placement in pediatric patients
- Review tachyarrhythmias in pediatrics
- Understand available treatments for pediatric tachydysrhythmias

Summary of Key Points

General

- 5-15% of EMS transports in the United States are for pediatric patients (0-14 years old)
- There were nearly 30,000 pediatric EMS transports in LA County in 2015
- The most common presenting complaints for pediatric EMS transports include
 - Trauma**
 - Respiratory
 - Pain (chest, abdomen, limb)
- There are few “critical procedures” performed

Burns

- 10,000 children are hospitalized each year for serious (2nd or 3rd degree) burns
- Children <5 years old comprise 50% of burn admissions
- Scald injuries are the most common cause of pediatric burns
- Most children who suffer burn injuries can, and should, be taken to the nearest EDAP or PMC. These patients should *not* be primarily transported to a Burn or Trauma center
- The LA County Pediatrics Surge and Burn Surge plans both include caveats for critical patients (particularly burn patients) to be managed for up to 72 hours at a non-burn center in the case of a major burn disaster.

Pain

- Formal assessment of pain is the #1 contributor to appropriate pediatric pain management
- Early and aggressive pain management in pediatrics (even in very young children) correlates with fewer long-term adverse events (PTSD, Chronic Pain, Behavioral problems)
- The FLACC scale is a validated tool for pediatric pain assessment in non-verbal patients
- Both non-pharmacological and pharmacological methods can, and should, be used for pediatric pain management
- Both morphine and fentanyl can be utilized safely in pediatric patients

Neonatal hypoglycemia

- Hypoglycemia is the most common metabolic problem of neonates (birth to 28 days). It is defined as <30 mg/dL in the first 24 hours, and <45mg/dL on days 2-28
- A Glasgow Coma Scale can be performed on infants with ALOC
- ALOC in the neonate is most commonly caused by sepsis, followed by trauma, hypoglycemia, and congenital heart defects
- Similarly, hypoglycemia in the later neonatal period is strongly associated with sepsis
- IO placement is a safe way to attain vascular access in neonates and children, with minimal reported complications

Dysrhythmias

- Children may tolerate tachyarrhythmia for much longer periods than adults before decompensation
- Paroxysmal SVT (PSVT) is the most common tachyarrhythmia seen in pediatrics. It can occur in structurally normal hearts and often resolves spontaneously in later childhood
- PSVT in pediatrics is more likely to result from an accessory conduction pathway as compared to adults. It is more likely to respond to vagal maneuvers, and less likely to respond to adenosine
- In ordering field treatment of PSVT in pediatrics, it is crucial to confirm that the QRS is narrow and the rhythm is regular before ordering adenosine, as its use in “antidromic” WPW can lead to fatal tachycardia. When in doubt, if unstable/decompensating, sedate and perform DC cardioversion.
- Paramedic education currently prohibits adenosine use for patients with history of Wolff-Parkinson-White
- While Vagal maneuvers are associated with syncope, this has not been demonstrated in therapeutic use. They are not included for “unstable” tachyarrhythmia treatment due to potential of delaying other treatments (i.e. DC cardioversion)