PALS Study Guide 2020 Guidelines

Pre-Course Requirements

The PALScourse now requires a mandatory **Precourse Self-Assessment and Precourse Work** witha passing scoreof at least 70%. Students maytaketheself-assessment as manytimes as needed. Pleasebringyour Certificate of Completionwithyoutothe PALSclassoremailinadvanceto info@showmecpr.com Instructions foraccessing the Precourse Requirements are included in your registration confirmation.

PALS Written Exam

The ACLS Provider exam is 50 multiple-choice questions, with a required passing score is 84%. All AHA exams are now "open resource" which means student may use the PALS manual, study guides, handouts and personal notes during the exam. Using the PALSProvider Manual ahead of time with the online resources is very helpful.

BLS Review for Child and Infant

Assessment Steps for BLS

- Make sure scene is safe
- Tap/shout to check for responsiveness
- Call for help if patient is unresponsive
- Checkforpulseandbreathingforatleast5butno more than 10 seconds
- Ifnopulse(ornotsureifthereisapulse) beginCPR
  - If alone and witnessed collapse, immediately activate EMS/AED before CPR
  - If alone and not witnessed, do 2 minutes of CPR before activating EMS/AED

Breaths During CPR

- Compressions to breaths ratio 30:2 ifsingle rescuer
- Compressions to breaths ratio 15:2 with 2 rescuers
- Each breath given over 1 second
- Aneffectivebreathwillresultinvisiblechestrise
- CPR with ETT: 1 breath every 2-3 seconds with continuous compressions
- VerifyETTplacement: waveform capnography

Compressions

- Compress at least one-third the depth of the chest
- Compress at a rate between 100 – 120/min
- Allow for full Chest recoil between compression
- $PEtCO_2$(intubated) < 10mmHg indicates poorcompressions
- Interruptions in compressions should be < 10 seconds
- Switch compressors every 2 min.

Rescue Breathing

- Fora patient whoisnotbreathing or breathing effectively
- Give 1 breath every 2-3 seconds
- Each breath given over 1 second
- Aneffectivebreathwillresultinvisiblerise/fallofthechest
- Excessive ventilation decreases cardiac output
- Difficulty positioning airwayforpatency, placeNPAorOPA
- OPA Placement = Measure from the corner of the mouth to the angle of the mandible

Effective Team Dynamics

1. Clear roles and responsibilities: Team leader should clearly delegate tasks
2. Knowing your limitation: Stay in scope of practice / ask for a new role if inappropriately assigned
3. Constructive interventions: if someone is about to make a mistake address that team member immediately
4. Knowledge sharing
5. Summarizing and Re-evaluation
6. Closed loop communication: Repeat back the order
7. Mutual respect

Systemic Approach

Initial Impression

- This is a quick "doorway" assessment lookingatthechild's Appearance, Work of Breathing, andCirculation
- Is the child in failure or distress?

Primary Assessment

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Secondary Assessment

- Head to Toe Physical
- History: SAMPLE
  - Signs and Symptoms
  - Allergies
  - Medications
  - Past Medical History
  - Last Meal
  - Events leading up to admission

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Respiratory

- Grunting,associated with **Lung Tissue Disease**,isanattempt to maintain positivepressure and preventcollapse ofthe alveoli and small airways. Patient should be evaluated quickly, it may indicate respiratory distress or respiratory failure.
- **UpperAirway Obstructions** usually isassociated with abnormal sounds(Stridor, hoarseness,) andincreased WOB during the inspiratory phase. Examples include croup, epiglottis, foreign body, and anaphylaxis.
- **Respiratory Failure** is inadequate Oxygenation or inadequate Ventilation, or both.

Common Respiratory Complications

Upper Airway Obstruction

- Inspiratory Stridor is a common finding
- Foreign Body, Croup, Epiglottitis, Anaphylaxis, Trauma
- VS, oxygen, monitor, IV, CXR, possible blood gas
- Nebulized Epi (Racemic Epinephrine), Steroids
- Keep child calm to prevent situation from worsening

Lower AirwayObstruction

- Expiratory Wheezing is a common finding
- Asthma, Bronchiolitis
- VS, oxygen, monitor, IV, CXR, possible blood gas
- Bronchodilator (Albuterol)
- Consider CPAP or BiPAP

Lung Tissue Disease

- Expiratory Grunting is a common finding
- Crackles often heard on auscultation
- Hypoxemia despite oxygen administration
- Pneumonia
- O2, monitor, IV, CXR, blood gas, CBC, Cultures
- Antibiotics within first hour, provide supportive care

Disordered Control of Breathing

- Absent or abnormal breathing
- Toxins, poisons, head trauma, seizures
- Ensure adequate oxygen **and** ventilation
- Treat the underlying cause to correct

Shock/ Circulatory

- **IOplacement** isan acceptable optionif IVaccess cannotquicklybeestablished. Contraindications toIO placement include previous attempts, infection, or crush injury in the same extremity.
- In Shock but BP is acceptable = **Compensated** / BP is unacceptable = **Hypotensive**
  - Acceptable BP is 70 + 2(age inyears). Example: 4 y/ois compensated if his systolic pressure is greater than 78.

Common Shock / Circulatory Complications

Hypovolemic Shock

- Blood or fluid loss
- Treat with fluid bolus and consider blood products
- Standardbolus:20cc/kgofIsotonic Crystalloids(NS)
- Deliver bolus over 5 to 10 minutes

Obstructive Shock

- Must fix the underlying cause
- Examples:Cardiac Tamponade, TensionPneumothorax
- Consider CPAP or BiPAP
- Tension Pneumothorax most common = needle decompression and chest tube

Cardiovascular Shock

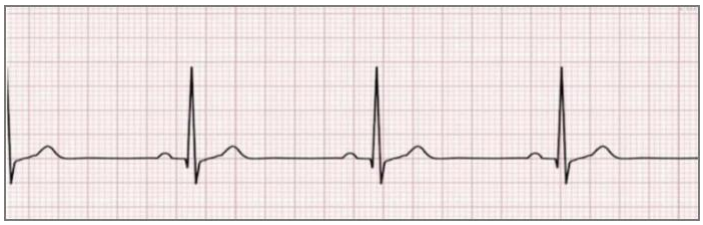
- Pulmonary edema and possible enlarged heart
- Consult Cardiology / 12 lead / Ultrasound
- Consider smaller/slower boluses if needed (10cc/kg)
- Consider CPAP/BiPap to mobilize fluids

Distributive Shock

- More common in individuals with a weak immune system such as cancer patients
- Support oxy and ventilation, support blood pressure
- Antibiotics within the first hour

Cardiac

Rhythms

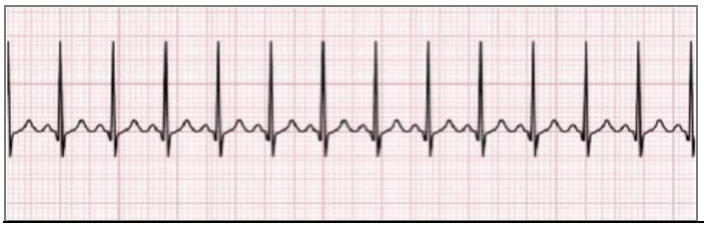


Normal Sinus Rhythm

Acceptable rate range varies according to age

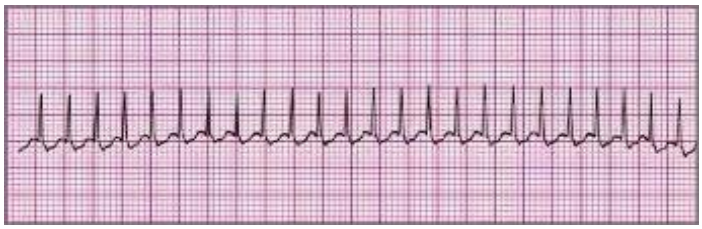
Sinus Bradycardia

Most common, usually Resp/oxygen related. If patient is compromised and not animmediate Respiratory fix, start CPR. Epi is the first drug for Pediatric patients



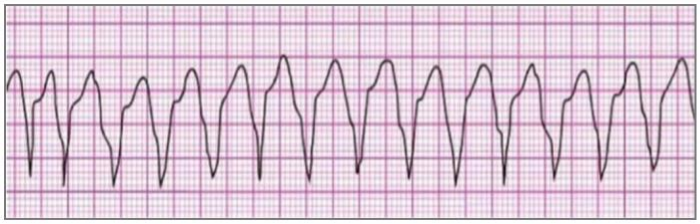
Sinus Tachycardia

Response to fever, pain, dehydration, physical exertion. Corrected by treating the underlying cause



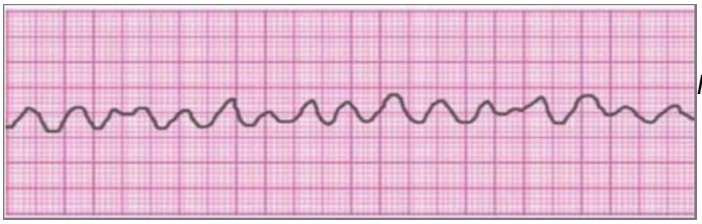
Supraventricular Tachycardia

HR greater than 220 in Infants, and 180 in Children. P wave can be absent or abnormal, rate does not vary with activity.Ifstable,considerVagalManeuversbutdonot waist time if unstable. Adenosine or Synchronized Cardioversion



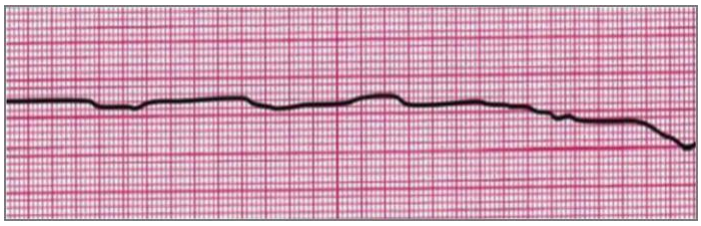
Ventricular Tachycardia

Always verify if pulse is present. Ifso, use the Tachycardia Algorithm, wide complex. If no pulse, usethe Cardia Arrest Algorithm. Shockable Rhythm (defib), Meds: Epi and Amiodarone (or Lidocaine) if refractory



Ventricular Fibrillation

As with Pulseless V-tach, Shockable Rhythm (defib), Meds: Epiand Amiodarone (or Lidocaine) ifrefractory



Asystole

High Quality CPR with minimal interruptions. Meds: Epi

PEA: Any Organized Rhythm without a PULSE