

CPR CONSULTANTS

TRAINING CENTER

CPR Consultants, Inc.

CRNA ACLS, PALS, & BLS Triple Certification

Attn: Certified Nurse Anesthetists (CRNA)

CRNA American Heart Association Triple Certification (BLS, ACLS, and PALS)

CPR Consultants offers American Heart Association certifications in BLS, ACLS, and PALS to be completed in one day of training. This is only available for CRNAs.

CPR Consultants understands that CRNAs have advanced training in many of the topics covered in the American Heart Association courses. CPR Consultants uses this experience, knowledge base, and a unique blending of eLearning and traditional critical thinking class work to deliver this training in a one day format.

This unique format for American Heart Association training allows for CRNAs to have a time and economic value to their training experience. Classes are conducted in a small format to allow for maximum amount of hands on training and critical thinking learning.

CPR Consultants has experts in the field of resuscitation to help deliver this approach.

This is how it works:

1. **Complete the Heartcode BLS online portion provided with your class fee, prior to the class date.** *This is sent to you in the class confirmation email from info@cprconsultants.com. If not received please check your Spam/Junk email filter. If not received please contact our office by email info@cprconsultants.com or 919-850-9295.*
2. From 8 am – 12 pm (or 9am-1pm), ACLS Renewal is completed.
 - a. Science Review
 - b. CPR Teaching and Testing – Adult and Infant Skills Check
 - c. Review of Respiratory Emergencies
 - d. BLS and ACLS Survey
 - e. ACS and Stroke Review
 - f. Team Approach
 - g. Algorithm Review
 - h. Putting It All Together

- i. Megacode and Written Testing
3. From 1 pm – 5 pm (or 2pm-6pm), PALS is completed.
 - a. Science Review
 - b. Pediatric Assessment
 - c. Review of Core Cases
 - Respiratory Emergencies Upper Airway Lower Airway Lung Tissue Disorder of Breathing Shock Emergencies Hypovolemic Obstructive Distributive Cardiogenic Rhythm Recognition and Management Tachycardia Bradycardia Pulseless VF/VTach PEA/Asystole
 - d. Putting It All Together
 - e. Megacode and Written Testing

Please complete the Heartcode BLS online portion prior to the course date and bring the certificate of completion with you to class or email it to info@cprconsultants.com.

Please complete the Pre-Test for ACLS and PALS at <https://elearning.heart.org/> using the algorithms provided and 2020 provider manuals (if available to you) as a guide prior to the class. If any questions are not clear, please be ready to address those questions at the start of class.

ACLS pre-test

<https://elearning.heart.org/>

Search for: KJ-1480

PALS pre-test

<https://elearning.heart.org/>

Search for: KJ-1485

**the certificate of completion or score page needs to be printed and brought to class or emailed to info@cprconsultants.com.

POST-CARDIAC ARREST

- Optimize Ventilation and Oxygen
- Maintain SaO₂ >92-98 %
- Consider advanced airway and ET/CO₂ (35-45)
- Avoid hyperventilation

TREAT HYPOTENSION

- IV/IO BOLUS (1-2 L)
- Vasopressor Infusion
- Treatable causes H's & T's
- 12 Lead EKG

Consider Induced Hypothermia 32-36° C >24 hours

FOLLOW COMMANDS?

YES

STEMI Or High Suspicion of AMI

YES

PCI Reperfusion

NO

Advanced Critical Care

REVERSIBLE CAUSES H's & T's

- Hypovolemia
- Hypoxia
- Hydrogen Ion (H⁺)
- Hypohydr/kalemia
- Hypothermia
- Toxins
- Tamponade
- Tension Pneumothorax
- Thrombosis
- Pulmonary Coronary

Based on AHA ECC 2020 Guidelines

TACHYCARDIA

HR typically > 150 BPM

UNIVERSAL ASSESSMENT
Reversible Causes? H's & T's

- Airway? BVM as necessary
- Oxygen if Hypoxic
- Pulse, and Blood Pressure
- Cardiac Monitor
- IV Access
- 12 Lead EKG. DO NOT delay therapy

REVERSIBLE CAUSES H's & T's

- Hypovolemia
- Hypoxia
- Hydrogen Ion (H⁺)
- Hypohydr/kalemia
- Hypothermia
- Toxins
- Tamponade
- Tension Pneumothorax
- Thrombosis
- Pulmonary Coronary

Persistent tachyarrhythmia with HYPERFUSION:

- Hypotension
- Altered Mental Status
- Shock
- Ischemic Chest Pain/discomfort
- Acute heart failure

YES

SYNC Cardioversion

- Consider Sedation
- If regular narrow complex, consider adenosine

NO

Wide QRS? > .12 second

YES

- Consider Adenosine if regular and monomorphic
- Consider antiarrhythmic infusion
- EXPERT CONSULTATION

NO

- Vagal Maneuvers
- Adenosine (SVT) 6mg IV Bolus 12mg IV Bolus
- β-Blocker or Calcium Channel Blocker
- EXPERT CONSULTATION

Wide Complex Antiarrhythmic Infusion

- Procainamide - 20-50 mg/min
- Amiodarone - 150 mg over 10 min
- Sotalolol - 100 mg (1.5 mg/kg) over 5 min

BRADYCARDIA WITH A PULSE

Heart Rate typically < 50 BPM with complaint

UNIVERSAL ASSESSMENT
 Reversible Causes? H's & T's

- Airway? BVM as necessary
- Oxygen if Hypoxic
- Pulse, and Blood Pressure
- Cardiac Monitor
- IV Access

Monitor and Observe
 Expert Consultation

Persistent bradycardia with HYPOPERFUSION:

- Hypotension
- Altered Mental Status
- Shock
- Ischemic Chest Pain/discomfort

YES

CONSIDER ATROPINE

Atropine Dose:

- First Dose: 1 mg IV Bolus
- Repeat Dose: 1 mg IV Bolus
- Repeat every 3 - 5 minutes
- Max total dose: 3 mg

If Atropine is not effective:

- Transcutaneous Pacing
- OR
- Dopamine Infusion - 5-20 mcg/kg/min
- OR
- Epinephrine Infusion - 2-10 mcg/min

Consider:
 Expert Consultation
 Transvenous Pacing

CARDIAC ARREST ALGORITHM

HELP—ACTIVATE EMERGENCY RESPONSE

- REVERSIBLE CAUSES
 H's & T's
- Hypovolemia
 - Hypoxia
 - Hypertension Ion (H+)
 - Hypotriperalemia
 - Hypothermia
 - Toxins
 - Tamponade
 - Tension Pneumothorax
 - Thrombosis
 - Pulmonary
 - Coronary

START High Quality CPR
 30:2
 100—120 per minute
 Compression Fraction > 60—80 %

- Give Oxygen
- Attach Monitor/Defibrillator

CHECK RHYTHM

VF/VT SHOCK

Drug Therapy

- IV/IO Access
- Epinephrine 1 mg 3-5 min
- Amiodarone 300 mg or Lidocaine (1—1.5 mg/kg)/VF/VT

CONSIDER ADVANCED AIRWAY

TREAT REVERSIBLE CAUSES H's & T's

ROSC

AT 2 MINUTE CYCLE—RE-EVALUATE RHYTHM

NO

YES

POST CARDIAC ARREST CARE

CONTINUOUS CPR | MONITOR | ETC | 2 | MAP

CPR CONSULTANTS

TRAINING CENTER

PEDIATRIC ADVANCED LIFE SUPPORT 2020

CARDIAC ARREST

Call for Help/Activate Code Team
START CPR (Hard and Fast)
 Give Oxygen
 Attach Monitor/Defibrillator

Shockable

YES

VF/VT

Defibrillate 2-4 j/kg

CPR 2 min
 IV/IO access

Shockable
 Rhythm?

Defibrillate 4j/kg

CPR 2 min

Epi 0.01 mg/kg
 q 3-5 min

Shockable
 Rhythm?

Defibrillate 4-10j/kg

CPR 2 min
 Advanced Airway
 PETCO2
 Amiodarone 5mg/kg
H & Ts

NO

Asystole/PEA

CPR 2 min
 IV/IO access

Shockable
 Rhythm?

No

Epi 0.01 mg/kg
 q 3-5 min

CPR 2 min

Shockable
 Rhythm?

No

CPR 2 min
 Advanced Airway
 PETCO2
H & Ts

H & Ts

Hypovolemia
 Hypoxia
 Hydrogen Ion (H+)
 Hypo/hyperkalemia
 Hypoglycemia
 Hypothermia
 Toxins
 Trauma;
 Tamponade
 Tension Pneumo
 Thrombosis
 Pulmonary
 Coronary

PALS Assessment

Evaluate—Identify—Intervene

Respiratory
 Distress vs Failure?

Respiratory
 Distress vs Failure?

Circulatory
 Emergency

Shock

Rhythm

SaO2— 94-99%

Upper Airway

- Croup
 - Anaphylaxis
 - Foreign Body
- Lower Airway
- Asthma/RAD
 - Bronchiolitis

Lung Tissue
 Disease

- Infectious Pneumonia
- Aspiration
- Chemical Exposure
- ARDS
- Pulmonary Edema

Disorder of
 Breathing

- Drug overdose
- Poisoning
- Increased ICP
- Neuromuscular Disease

Tachycardia
 0-1y/o >220 BPM
 > 1 y/o >180 BPM

Bradycardia
 HR < 60 BPM
 With Cardiopulmonary
 compromise
CPR

Pulseless
 VF/VT
 Or
 PEA/Asystole

Hypovolemic
 - Nonhemorrhagic
 - Hemorrhagic
 20mL/kg

Obstructive
 - Cardiac Tamponade
 - Tension Pneumo
 - Pulmonary Emboli
 - Congenital Lesions

Distributive
 - Septic
 10-20mL/kg
 - Anaphylactic
 - Neurogenic

Cardiogenic
 - pulmonary edema
 - venous congestion
 - cardiomegaly
 Fluids 5-10 mL/kg

Evaluate B/P

- PEDIATRIC HYPOTENSION**
- 0-28 days <60 systolic
 - 1-12 months <70 systolic
 - 1-10 y/o <70 systolic (AGE, IN YEARS x2)
 - > 10 y/o <90 systolic

NOTE:

NS & LR are
Isotonic crystalloid
 The standard IV fluids
 used for initial volume
 resuscitation

Peds Assessment Triangle

Alert
 Breathing
 Skin Color

Primary Assessment

Airway—Patent? Maintain?

Breathing—SaO2? Rate?
 ↑ Work of Breathing?
 Require Supplemental O2?

Circulation—
 • Skin Color/Temp
 • Heart Rate-Heart Rhythm
 • Blood Pressure
 • Pulses
 • Cap Refill

Disability—
 AVPU Response
 GCS— Pupillary Response

Exposure

Detailed Physical
 “Head to Toe” Assessment

Secondary Assess-

HISTORY

- Signs and Symptoms
- Allergies
- Medications
- Past Medical History
- Last Meal
- Events

Diagnostic Test

- Bedside Glucose
- ABG
- PETCO2 Monitoring
- Chest X-Ray
- Expiratory Peak Flow
- CAT Scan

PALS Tachycardia (2020 Guidelines)

