

PALS STUDY
GUIDE
2020



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Systematic Approach

INITIAL IMPRESSION- *what you see before touching the child*

Look for A B C's

Appearance

Breathing

Circulation

Check for:

- Life-threatening issues
- Non-life-threatening issues

Systematic Approach

PRIMARY ASSESSMENT

Rapid, hands-on assessment

Airway

Breathing

Circulation

Disability

Exposure

Systematic Approach

SECONDARY ASSESSMENT

Brief History- SAMPLE Assessment

Signs and Symptoms

Allergies

Medications

Past Medical History

Last Meal

Events leading to the problem

Systematic Approach

IDENTIFY THE PROBLEM

Is it Respiratory, Circulatory or BOTH

Respiratory:

- **Upper Airway** (Croup, FB)
- **Lower Airway** (Asthma, Bronchiolitis)
- **Lung Tissue Disease** (Pneumonia, Pulmonary Edema)
- **Disordered Control of Breathing** (ICP, Drug Overdose, Seizure)

Circulatory:

- **Hypovolemic Shock** (Fluid Loss)
- **Obstructive Shock** (PE, Pneumothorax)
- **Distributive Shock** (Sepsis, Anaphylaxis)
- **Cardiogenic Shock** (Myopathy, Ductal Dependent Lesion)

INTERVENE, REPEAT AS NEEDED

Commonly used PALS Drugs

Epinephrine- Cardiac Arrest/Symptomatic Bradycardia	.01 mg/kg
Amiodarone- Cardiac Arrest with a Shockable Rhythm	5 mg/kg (300 mg max or 3 attempts)
Lidocaine- Cardiac Arrest with a Shockable Rhythm	1mg/kg
Atropine- Symptomatic Bradycardia 2 doses max.	.02 mg/kg (Max. single dose, 0.5 mg)
Adenosine- SVT	0.1 mg/kg, 0.2 mg/kg
Albuterol- Breathing Issues	2.5 mg
Ipratropium- Often used w/ Albuterol	0.25 mg
Naloxone- Opioid Reversal	0.1 mg/kg (Max. single dose, 2.0 mg)

Fluid Resuscitation

Cardiogenic Shock (*Low and Slow*) **5-10 ml/kg over 10-20 minutes**

Non-Cardiogenic Shock (*Fast and Furious*) **20 ml/kg over 5-20 minutes**

Septic Shock- (*Moderate*) **10-20 ml/kg Assess Frequently**

Repeat vital signs often, check for fluid overload

Synchronized Cardioversion

Unstable SVT or V-Tach with a Pulse

First Attempt- .5-1J/kg

Second an all-subsequent attempts- 2J/kg

“If you are shocking at 1 and then 2, they can buckle their shoe”

Defibrillation

Ventricular Fibrillation or Pulseless Ventricular Tachycardia

First attempt- 2-4 J/kg

Second attempt- 6 J/kg

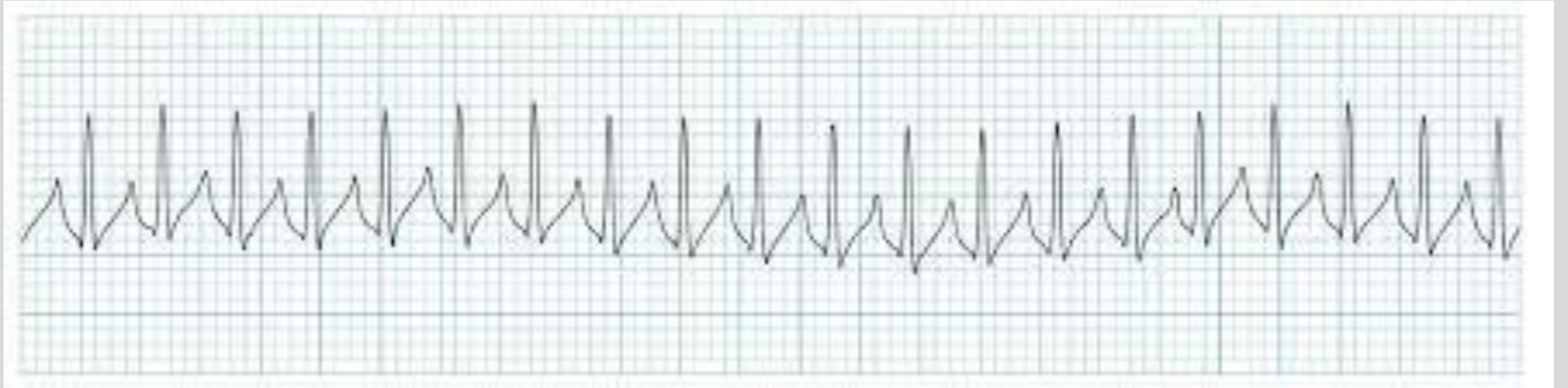
Third attempt- 8 J/kg

Up to 10 J/kg

2-4-6-8, That's the dose to defibrillate!

“If you are shocking at 2 and then 4, they are dead on the floor”

Supra Ventricular Tachycardia (SVT) Fast, Narrow and Regular



- Vagal Maneuver (Ice to the face)
- Adenosine 0.1 mg/kg
- Adenosine 0.2 mg/kg

- Cardioversion, 1 J/kg the 2 J/kg

Ventricular Tachycardia (VT) with a Pulse. Fast, Wide and Regular or Monomorphic



- Expert Consultation
- Consider Anti-Arrhythmic Infusion
- Consider Cardioversion- 1 J/kg then 2 J/kg

Torsades De Pointes (TDP) Fast, Wide and Irregular or *Polymorphic*



- Magnesium Sulphate
- Unsynchronized Cardioversion (Defibrillation)

Sinus Bradycardia



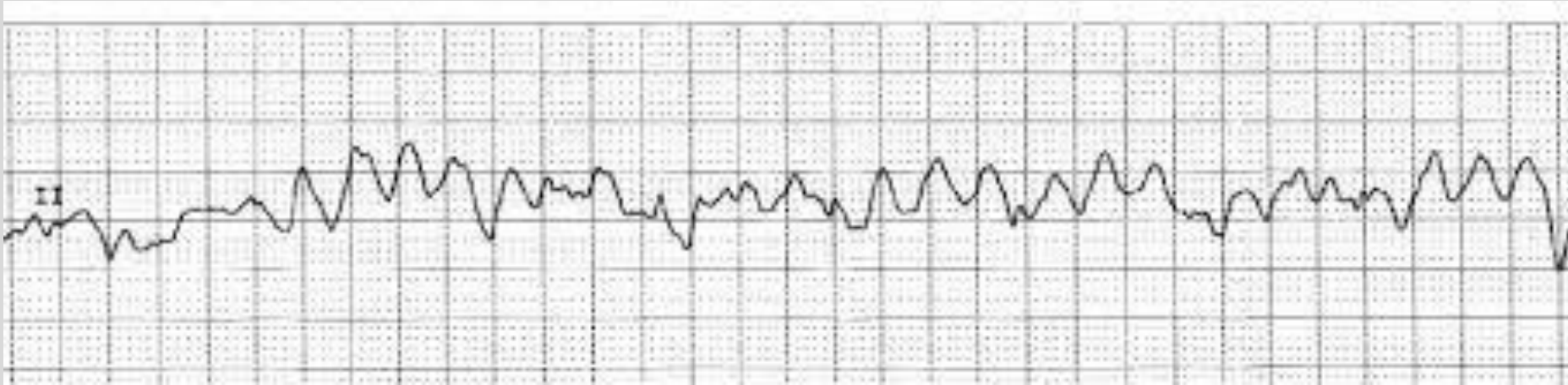
STABLE:

- Observe and Monitor, look for underlying causes

UNSTABLE:

- Epinephrine .01 mg/kg
- Atropine 0.02 mg/kg repeat once, every 4 min, 0.5 max single dose
- **If the heartrate drops below 60 bpm with signs of poor perfusion, despite adequate oxygenation and ventilation, you MUST BEGIN CPR**

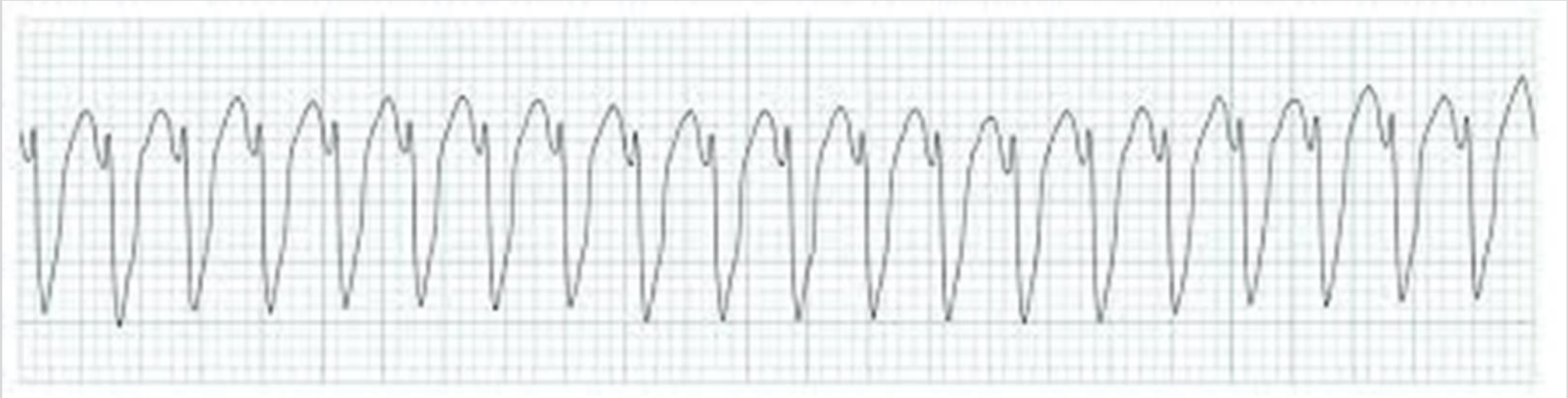
Ventricular Fibrillation (VF)



FULL CARDIAC ARREST:

- High Quality CPR, 100-120 bpm, allow full chest recoil
- Defibrillation every 2 minutes
- Epinephrine 0.01 mg/kg every 4 minutes, no max dose
- Amiodarone 5 mg/kg (300 mg max or 3 attempts) opposite of Epi

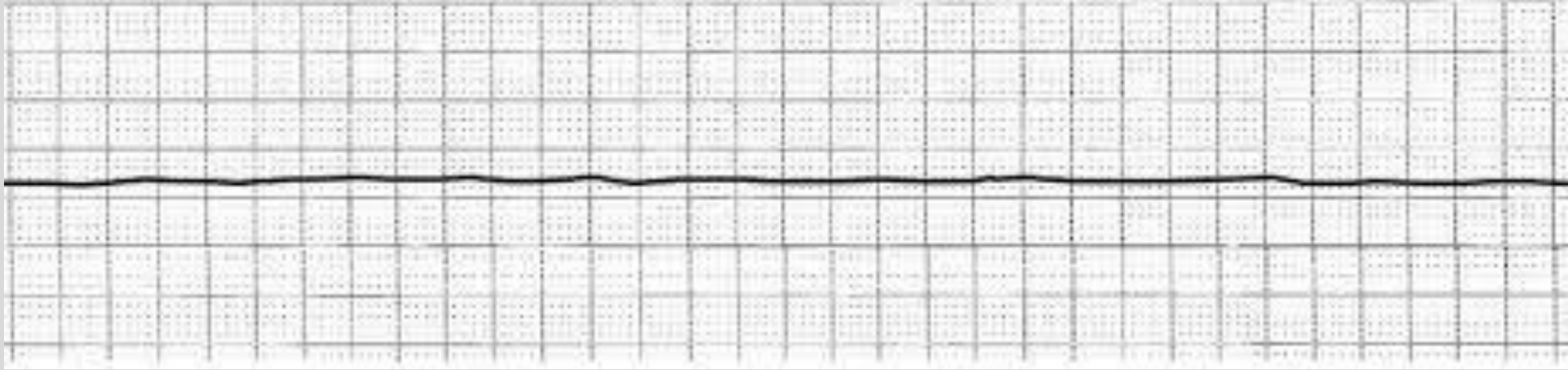
Pulseless Ventricular Tachycardia (pVT)



FULL CARDIAC ARREST:

- High Quality CPR, 100-120 bpm, allow full chest recoil
- Defibrillation every 2 minutes
- Epinephrine 0.01 mg/kg every 4 minutes, no max dose
- Amiodarone 5 mg/kg (300 mg max or 3 attempts) opposite of Epi
- Lidocaine 1mg/kg

Asystole



FULL CARDIAC ARREST (no electrical or mechanical activity)

- High Quality CPR, 100-120 bpm, allow full chest recoil
- Non-Shockable Rhythm
- Epinephrine 0.01 mg/kg every 4 minutes, no max dose
- Amiodarone/Lidocaine are not indicated

Pulseless Electrical Activity (PEA)



FULL CARDIAC ARREST (no mechanical activity)

- High Quality CPR, 100-120 bpm, allow full chest recoil
- Non-Shockable Rhythm
- Epinephrine 0.01 mg/kg every 4 minutes, no max dose
- Amiodarone/Lidocaine are not indicated
- *** Any rhythm that “can” perfuse, but no pulse is present**

Reversible Causes (H's and T's)

- Hypovolemia= Fluids/Volume
- Hypoxia= Oxygen
- Hydrogen Ion Acidosis (Respiratory/Metabolic)= Ventilation/Sodium Bicarb
- Hyperkalemia= Insulin, Dextrose, Calcium Gluconate
- Hypokalemia= Potassium
- Hypothermia= Warm the patient
- Hypoglycemia= Dextrose

- Tension Pneumothorax= Needle Decompression
- Tamponade (Cardiac)= Cardiocentesis
- Toxins= Antidote
- Thrombosis (Cardiac)= Fibrinolytics
- Thrombosis (Pulmonary)= PCI/Cath Lab

Waveform Capnography

- Measures the expired Carbon Dioxide
- Normal levels: 35-45 mmHg
- Less than 10 mmHg during CPR indicates poor quality CPR
- 10-20 mmHg during CPR indicates high quality CPR
- Helps identify ROSC (Return of Spontaneous Circulation)
- Sharp and sustained increase in ETCO₂ (above 35 mmHg)
- Presence of Pulse Oximetry

ACUTE CAUSES OF DETERIORATION WITH AN ADVANCED AIRWAY

Think DOPE

Displacement of ET Tube

Obstruction

Pneumothorax

Equipment Failure

**Consider using a cuffed ET Tube*

Thank you!

**We are looking
forward to
exceeding
your
expectations!**

CMR  **CPR**
EXCEEDING YOUR EXPECTATIONS