• 5 y/o girl is brought in bleeding from a leg. Just after being hooked up to the monitor she loses her pulse and stops breathing.

V/S= HR: 75, RR: 0,  $O_2$  sat: 0%, Temp: 97°F, WT: 45lbs/20kg, HT: 42.5"/108cm, Broselow: **Blue** (Stop the bleeding)

# •Start 2 minute CPR, O<sub>2</sub>, monitor, and defibrillate

1.Compress 2. Airway 3. Breathing (Compression/Vent)

->100/min. -Head tilt/ -1 Rescuer 30:2 -2" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min. -Rotate every 2 min. -1 sec./breath

-Interrupt < 10 sec.

• No. Rhythm is non-shockable: PEA

• 2 Min CPR • Intubation: ? -Describe: L. Blade,

IV/IO Access (fluids, blood) ETT, insertion length

**Epinephrine:** Dose: **0.2 mg** IV/IO (1:10,000) Supraglottic: ? -Describe: LMA, etc. -Capnograph, 1 breath

every 6 sec. (10/min.)

• No. Rhythm is non-shockable: PEA

• 2 min. CPR.

HCT: 15 HB: 5 pH: 7.1

Blood: ? Sodium Bicarbonate: ?

• Yes. Rhythm is shockable: Ventricular Tachycardia

•J/kg: (2 J/kg) **40J** 

• 2 min CPR

**Epinephrine:** Dose: **0.2 mg** IV/IO (1:10,000)

**2 mg** ETT (1:1,000)

• No. Rhythm is non-shockable: PEA

• Sinus Rhythm with pulse Post Cardiac Arrest Care

•5y/o boy is brought after being hit by a car. He is breathing fast and shallow and has a bruise and deformity in the right chest. As you are evaluating vital signs, the pulse disappears and he stops breathing. Breath sounds are diminished on the right side.

V/S= RR: 0, HR: 0, BP: 0, T: 97°F, WT: 40lbs/18kg, HT: 43.5"/110cm, Broselow: White

# •Start 2 minute CPR, O<sub>2</sub>, monitor, and defibrillate

<u>1.Compress</u> <u>2. Airway</u> <u>3. Breathing (Compression/Vent)</u>

->100/min. -Head tilt/ -1 Rescuer 30:2 -2" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min. -Rotate every 2 min. -1 sec./breath

-Interrupt <10 sec.

- Yes. Rhythm is shockable: Ventricular Tachycardia
- J/kg: (2 J/Kg) 36J
- •CXR: Tension pneumothorax right side  $\rightarrow$  needle  $\rightarrow$  chest tube
- 2 Min CPR

IV/IO Access (fluids, blood)

• No. Rhythm is non-shockable: PEA

• 2 min. CPR • Intubation: ? -Describe: L. Blade,

**Epinephrine:** Dose: **0.18 mg** IV/IO (1:10,000) ETT, insertion length

**1.8mg** ETT (1:1,000) Supraglottic: ? -Describe: LMA, etc. -Capnograph, 1 breath

every 6 sec. (10/min.)

- No. Rhythm is non-shockable: PEA
- 2 min. CPR.

ABG pH 7.1  $\rightarrow$  Bicarbonate: 18mEq IV/IO

- No. Rhythm is non-shockable: Sinus Tachycardia
- Post Cardiac Arrest Care

• 8 y/o boy is brought by mother because he is "not breathing". Pt has blue lips. V/S= HR: 0, RR: 0, Temp: 97°F, O<sub>2</sub> sat: 0%, WT: 55 lbs/25 kg, HT: 50"/127 cm., Broselow: **Orange** 

# •Start 2 minute CPR, O<sub>2</sub>, monitor, and defibrillate

1.Compress 2. Airway 3. Breathing (Compression/Vent)

->100/min. -Head tilt/ -1 Rescuer 30:2 -2" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min. -Rotate every 2 min. -1 sec./breath

-Interrupt < 10 sec.

• No. Rhythm is non-shockable: PEA

• 2 Min CPR • Intubation: ? -Describe: L. Blade,

IV/IO Access (fluids, blood) ETT, insertion length

**Epinephrine:** Dose: **0.25 mg** IV/IO (1:10,000) Supraglottic: ? -Describe: LMA, etc. -Capnograph, 1 breath

every 6 sec. (10/min)

• No. Rhythm is non-shockable: PEA.

• 2 min. CPR.

-Reversible causes?

• No. Rhythm is non-shockable: PEA

 "Pronounced dead" Approach family Chaplain • 2 y/o girl comes in after 4 days of severe diarrhea. She is moderately dehydrated and she stops breathing as she is placed on the exam bed. Mucosa are moderately dry. She has been unresponsive and apneic with no pulse for 10 seconds when vital signs taken.

V/S= RR: 0, HR: 50, BP: 0, T: 98°F, WT: 27lbs/12kg, HT: 34"/86 cm, Broselow: Yellow

# •Start 2 minute CPR, O<sub>2</sub>, monitor, and defibrillate

1.Compress 2. Airway 3. Breathing (Compression/Vent)

->100/min. -Head tilt/ -1 Rescuer 30:2 -2" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min. -Rotate every 2 min. -1 sec./breath

-Interrupt <10 sec.

- Yes. Rhythm is shockable: Ventricular Fibrillation
- J/Kg: (2 J/Kg) **24 J**
- 2 min. CPR
  IV/IO Access (fluids, blood)
- Yes. Rhythm is shockable: Ventricular Fibrillation
- J/kg: (4 J/kg) **48J**

• 2 Min CPR • Intubation: ? -Describe: L. Blade,

**Epinephrine:** Dose: **0.01 mg** IV/IO (1:10,000) ETT, insertion length

**0.12mg** ETT (1:1,000) Supraglottic: ? -Describe: LMA, etc. -Capnograph, 1 breath

every 6 sec. (10/min)

- Yes. Rhythm is shockable: Ventricular Tachycardia
- J/kg: (up to 10 J/kg) **120J**
- 2 min. CPR

**Amiodarone:** 60 mg bolus  $\rightarrow$  sinus rhythm.

K: 2.0, pH: 7.12

**Sodium Bicarbonate:** 1 mEq/kg = 12 mEq IV/IO

Lidocaine: 12 mg IV/IO, 24-36 mg ETT

Fluids (n/s), Potassium....

• 4 y/o girl is brought unresponsive to ER after sticking a toy in an outlet at home. V/S= HR: 0, RR: 0, T: 96°F, O<sub>2</sub> sat: 0%, WT: 34lbs/16kg, HT: 39.5"/100cm Broselow: **White** 

# •Start 2 minute CPR, O<sub>2</sub>, monitor, and defibrillate

1. Compress 2. Airway 3. Breathing (Compression/Vent)

->100/min. -Head tilt/ -1 Rescuer 30:2 -2" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min. -Rotate every 2 min. -1 sec./breath

-Interrupt < 10 sec.

- Yes. Rhythm is shockable: Ventricular tachycardia
- J/Kg: (2 J/Kg) 32 J
- 2 min. CPR IV/IO Access (fluids, blood)
- Yes. Rhythm is shockable: Ventricular tachycardia
- J/kg: (4 J/kg) 64J
- 2 Min CPR Intubation: ? -Describe: L. Blade,

**Epinephrine:** Dose: **0.16 mg** IV/IO (1:10,000) ETT, insertion length

1.6 mg ETT (1:1,000) Supraglottic: ? -Describe: LMA, etc.

-Capnograph, 1 breath every 6 sec. (10/min)

• No. Rhythm is non-shockable: PEA

• Pulse present Post Cardiac Arrest Care • 11y/o diabetic girl is brought for abdominal pain, vomiting, and tachypnea. On arrival she stops breathing.

V/S= RR: 0, HR: 0, O<sub>2</sub> sat: 0%, Temp: 97°F, WT: 81 lbs/37kg, HT: 57"/145cm, Broselow: Green

# •Start 2 minute CPR, O<sub>2</sub>, monitor, defibrillate

2. Airway 3. Breathing (Compression/Vent) 1.Compress

-1 Rescuer 30:2 ->100/min. -Head tilt/

-2" -Chin lift/ -2 Rescuer 15:2 -Jaw thrust -8-10 breaths/min. -Allow Recoil

-1 sec./breath -Rotate every 2 min.

-Interrupt < 10 sec.

- Yes. Rhythm is shockable: Ventricular Fibrillation
- J/Kg: (2 J/Kg) 74 J
- 2 min. CPR
- -No change
- Yes. Rhythm is shockable: Ventricular Fibrillation
- J/kg: (4J/kg)148J
- Intubation: ? • 2 min. CPR – No change -Describe: L. Blade,

IV/IO Access (fluids, blood)

**Epinephrine:** Dose: **0.37mg** IV/IO (1:10,000) Supraglottic: ? -Describe: LMA, etc.

**3.7mg** ETT (1:1,000) -Capnograph, 1 breath

every 6 sec. (10/min)

6

ETT, insertion length

- Yes. Rhythm is shockable: Ventricular Fibrillation
- J/kg: (6-10 J/kg) **222-370J**
- 2 min. CPR -- No change

Amiodarone Dose: 185mg (5mg/kg) Route: IV/IO

- Rhythm is: Sinus Tachycardia
- Labs: **ABG pH 7.1** → **Bicarbonate: 37mEq** IV/IO

Glucose  $600 \rightarrow \text{Fluids}$ 

Insulin

Consult

•1½ y/o boy stopped breathing in the ER lobby and is rushed to the room. VS= HR: 50, RR: 8, Temp: 97°F, O<sub>2</sub> sat: 60%, WT: 24lbs/11kg, HT: 31.5"/80cm, Broselow: **Purple** 

# •Start 2 minute CPR, O2, monitor, defibrillate

1.Compress2. Airway3. Breathing (Compression/Vent)->100/min.-Head tilt/-1 Rescuer 30:2-1.5"-Chin lift/-2 Rescuer 15:2

-1.5" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min. -Rotate every 2 min. -1 sec./breath

-Interrupt < 10 sec.

• No. Rhythm is non-shockable: Asystole

• 2 Min CPR • Intubation: ? -Describe: L. Blade,

IV/IO Access (fluids, blood) ETT, insertion length Epinephrine: Dose: 0.11 mg IV/IO (1:10,000) Supraglottic: ? -Describe: LMA, etc.

1.1 mg ETT (1:1,000)

-Capnograph, 1 breath every 6 sec. (10/min)

- Yes. Rhythm is shockable: Ventricular Fibrillation
- J/kg: (2J/kg) 22J
- 2 min. CPR
- Epinephrine every 3-5 minutes
- Yes. Rhythm is shockable: Ventricular Fibrillation
- J/kg: (4J/kg) 44J
- 2 min. CPR

Amiodarone: 55 mg IV/IOLidocaine: 22 mg IV/IO

• Rhythm is: Sinus Tachycardia Post Cardiac Arrest Care • 2 y/o boy is brought by mother who claims patient is "not breathing". Patient is alert, breathing, and has good color.

V/S= HR: 95, RR: 24, Temp: 98°F, O<sub>2</sub> sat: 90%, WT: 26.5lbs/12kg, HT: 34"/86cm

Broselow: Yellow

• No.

• No.

• Evaluate:

Primary Assessment
AirwayBreathingCirculationDisabilityExposure
Secondary Assessment
Signs and SymptomsAllergiesMedicationsPast medical historyLast meal-

•Dx test Events leading to illness-

- •Patient suddenly stops breathing and loses pulse
- •Go to cardiac arrest algorithm: CPR, O2, monitor, defibrillator
- •Start 2 minute CPR:

 1.Compress
 2. Airway
 3. Breathing (Compression/Vent)

 -2100/min.
 -Head tilt/
 -1 Rescuer 30:2

 -2"
 -Chin lift/
 -2 Rescuer 15:2

 -Allow Recoil
 -Jaw thrust
 -8-10 breaths/min.

 -Rotate every 2 min.
 -1 sec./breath

- Is rhythm shockable? Yes: Ventricular Tachycardia
- •J/kg: (2J/kg) 24J
- •CPR 2 min
- •IV/IO access
- Organized rhythm
- •Return of spontaneous circulation (ROSC)
- •Post Cardiac Arrest Care

- 20 month infant girl fell from her mother's arms (5ft) head-on and is not breathing. V/S= HR: 40bpm, RR: 0, O<sub>2</sub> sat: 0%, Temp: 97°F, WT: 25lbs/11.5kg, HT: 32"/82 cm Broselow: Purple
- Yes.
- Shout for help. Activate emergency response.
- No breathing, pulse present.
- Open, maintain airway. Begin ventilation, O2, monitor, pulse oximetry.
- No. Pulse is 70bpm
- 1. Evaluate:
  - -Primary assessment: GCS=8 (eye opening-0, best verbal cries to pain-3, best motor withdraws to pain-4
  - = Total: 8)
  - -Airway-
  - -Breathing-
  - -Circulation-
  - -Disability-
  - -Exposure-
- •Right After Intubation:
- -Cardiac arrest
- •Start 2 minute CPR:
- 3. Breathing (Compression/Vent) 1.Compress 2. Airway

-1 sec./breath

- ->100/min. -Head tilt/ -1 Rescuer 30:2 -1.5" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min.
- -Rotate every 2 min.
- -Interrupt <10 sec.
- •Is rhythm shockable? Yes: Ventricular Tachycardia
- J/kg: (2J/kg) 23J
- Organized Rhythm
- After return of spontaneous circulation (**ROSC**):
  - -Evaluate: Primary and secondary assessment
  - -Identify
  - -Intervene

- -Secondary assessment:
- -Dx Tests: CT head and neck
- -Signs and symptoms-
- -Allergies-
- -Medications-
- -Past medical history-
- -Last meal-
- -Events leading to illness-
- 2. Identify:
  - Intracranial bleed
- Intubation: ? -Describe: L. Blade, ETT, insertion length Supraglottic: ? -Describe: LMA, etc. -Capnograh, 1

3. Intervene

breath every 6 sec. (10/min.)

• 5 m/o female had a febrile seizure and vomited while seizing. She comes gasping for air, unresponsive.

V/S= HR: 20, RR: 8, Temp: 103°F, O<sub>2</sub> sat: 60%, WT: 14.5"/6.5 kg, HT: 25"/63cm, Broselow: **Pink** 

- Yes.
- Shout for help. Activate emergency response.
- No breathing, pulse present.
- Open, maintain airway, ventilate, O2, monitor, pulse oximetry.

• Yes.

#### •Start 2 minute CPR:

 1.Compress
 2. Airway
 3. Breathing (Compression/Vent)

 ->100/min.
 -Head tilt/
 -1 Rescuer 30:2

 -1.5°
 -Chin lift/
 -2 Rescuer 15:2

 -Allow Recoil
 -Jaw thrust
 -8-10 breaths/min.

 -Rotate every 2 min.
 -1 sec./breath

- •Go to cardiac arrest algorithm
- •Is rhythm shockable? Yes: Ventricular Fibrillation
- •J/kg: (2J/kg) 13J
- •2 min. CPR
- •IV/IO access
- •Is rhythm shockable? Yes: Ventricular Fibrillation
- •J/kg: (4J/kg) **26J**
- •2 min. CPR
- •Epinephrine-

Dose: **0.065 mg** IV/IO (1:10,000); **0.65 mg** ETT (1:1,000)

• Return Of Spontaneous Circulation (ROSC)

1. Evaluate 2. Identify 3. Intervene

Primary assessment:

AirwayBreathingCirculationDisabilityExposure
Secondary assessment:

Signs and symptomsAllergiesMedicationsPast medical historyLast meal-

Events leading to illness-

Dx test:

• 2 ½ y/o girl comes in with a "barking cough", only gasping for air with subcostal retractions. V/S= HR: 50, RR: 20, O <sub>2</sub> sat: 50%, Temp: 101°F, WT: 24lbs/11kg, HT: 31.5"/80cm Broselow: <b>Purple</b>
• Yes.
• Shout for help. Activate emergency response.
• No breathing or only gasping, no pulse.

#### •Start 2 minute CPR:

1.Compress2. Airway3. Breathing (Compression/Vent)->100/min.-Head tilt/-1 Rescuer 30:2-2"-Chin lift/-2 Rescuer 15:2-Allow Recoil-Jaw thrust-8-10 breaths/min.-Rotate every 2 min.-1 sec./breath

interrupt 10 sec.

- •Go to cardiac arrest algorithm
- •Return Of Spontaneous Circulation (ROSC)
- (Fever)

1. Evaluate 2. Identify 3. Intervene

Primary assessment:

AirwayBreathingCirculationDisabilityExposure
Secondary assessment:

AilergiesAllergiesMedicationsPast medical historyLast meal-

Events leading to illness-

•2 ½ y/o boy comes with diarrhea for 4 days, 6 episodes per day. Mucosa are dry, fontanel is moderately sunken, and patient is crying without tears.	
V/S= HR: 140, RR: 25, Temp: 97°F, O <sub>2</sub> sat 90%, WT: 29.5lbs/13.5kg, HT: 36"/92cm, Broselow: <b>Yellow</b>	
• Maintain patient airway, assist breathing, $O_2$ , cardiac monitor, BP, pulse oximetry, IV/IO, 12 lead ECG.	
• ODS < 0.00 gag (Namow)	
• QRS ≤ 0.09 sec. (Narrow)	
•Probable Sinus Tachycardia	

•Fluids IV
Labs: Dehydration

Procainamide  $\rightarrow$  NSR

Dose: (15mg/kg) **225mg** IV/IO over 30-60 min.

•6y/o boy was brought in because mom noticed SOB. She also noticed a visible neck pulse that was "very fast".

V/S= HR 190, RR: 38, Temp: 97°F, O<sub>2</sub> sat: 88%, WT: 45lbs/20kg, HT: 45"/115cm, Broselow: **Blue** 

• Maintain patient airway, assist breathing,  $O_2$ , cardiac monitor, BP, pulse oximetry, IV/IO, 12 lead ECG.

• QRS  $\leq$  0.09 sec. (Narrow)

• Probable supraventricular tachycardia

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•Vagal Maneuvers or
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-Situation A:

IV/IO access

Adenosine: Dose: 0.1mg/kg IV/IO

0.2mg/kg IV/IO

-Situation B:

Adenosine ineffective →

Synchronized cardioversion  $\rightarrow$  NSR

 $0.5\text{-}1\text{J/kg} \rightarrow 2\text{J/kg}$ 

(sedate first if no delay)

- Situation C:

No IV/IO access →

Synchronized cardioversion  $\rightarrow$  NSR

 $0.5\text{-}1\text{J/kg} \rightarrow 2\text{J/kg}$ 

(**sedate** first if no delay)

•5 y/o girl is brought by mom because she is not "herself" and seems disoriented. Mom reports this has happened before but not this long.  V/S= HR: 140, RR: 30, Temp: 98°F, O <sub>2</sub> sat 88%, WT: 40lbs/18kg, HT: 42"/107cm, Broselow: White
• Maintain patient airway, assist breathing, $O_2$ , cardiac monitor, BP, pulse oximetry, IV/IO, 12 lead ECG.
• QRS > 0.09 sec.
• Yes.
• Yes. Hemodynamically unstable.
1 cs. 11cmouj numicumy unstable.
• Synchronized cardioversion Sedate first if no delay 0.5-1.0 J/kg

- •3 y/o girl with dysuria and urinary frequency has been having a fever for 2 days with nausea and vomiting. Today she has not urinated and seems to be very lethargic and disoriented. V/S= HR: 50, BP: 60/20, RR: 15, Temp: 103°F, WT: 31 lbs/14 kg, HT: 37.5"/95cm, Broselow: Yellow
- $\bullet$  Maintain patient airway, assist breathing,  $O_2,$  cardiac monitor, BP, pulse oximetry, IV/IO, 12 lead ECG.

• Yes.

# •Start 2 minute CPR if HR <60/min

1.Compress2. Airway3. Breathing (Compression/Vent)->100/min.-Head tilt/-1 Rescuer 30:2-2"-Chin lift/-2 Rescuer 15:2-Allow Recoil-Jaw thrust-8-10 breaths/min.-Rotate every 2 min.-1 sec./breath

- -Interrupt <10 sec.
- •No, bradycardia resolves.
- -Support ABCs
- -Give  $O_2$
- -Observe
- -Consult/Transfer

•1 y/o boy with a prolonged seizure is brought in. He was having high fever for a few hours before seizing. He is bradycardic, febrile, and has poor perfusion.  V/S= HR: 55, BP: 50/20, RR: 20, Temp: 102°F, WT:23lbs/10.5kg, HT: 29.5"/75cm,  Broselow: <b>Purple</b>
$\bullet$ Maintain patient airway, assist breathing, $O_2,$ cardiac monitor, BP, pulse oximetry, IV/IO, 12 lead ECG.
• No, with O <sub>2</sub> and IV fluids patient recovers.
-Fever treated.

•Support ABCs
Give O<sub>2</sub>
Observe

Consult/Transfer

•3y/o boy comes in with difficulty breathing. Pt has history of reactive airway disease and has been working hard to breath for last hour.

V/S= HR: 50, RR: 40, Temp: 97°F, O<sub>2</sub> sat: 60% on RA, WT: 32lbs/15kg, HT: 37.5"/95cm,

Broselow: White

 $\bullet$  Maintain patient airway, assist breathing,  $O_2$ , cardiac monitor, BP, pulse oximetry, IV/IO, 12 lead ECG.

• Yes.

#### •Start 2 minute CPR if HR <60/min

1.Compress 2. Airway 3. Breathing (Compression/Vent)

->100/min. -Head tilt/ -1 Rescuer 30:2 -2" -Chin lift/ -2 Rescuer 15:2 -Allow Recoil -Jaw thrust -8-10 breaths/min. -Rotate every 2 min. -1 sec./breath

-Interrupt <10 sec.

•Yes, bradycarida persists.

**Epinephrine:** Dose: **0.15 mg** IV/IO (1:10,000)

**1.5mg** ETT (1:1,000)

**Atropine:** Dose: 0.02mg/kg (max single dose: **0.5mg**; max dose: **1mg** – Child)

(max single dose: 1.0mg; max dose: 3mg –Adolescent)

Pacing (TT or TV): ABG: pH 7.1, pCO<sub>2</sub>

Bicarbonate IV: 1mEq/kg

- Pulseless Arrest
- Continue CPR, O<sub>2</sub>, Board, Monitor/Defibrillate
- •Rhythm shockable? Yes: PVT
- Shock: (2J/kg) 36J
- •2 min. CPR
- •Rhythm shockable? **No: Organized rhythm with pulse**.
- •Return of Spontaneous Circulation (ROSC)
- •Post Cardiac Arrest Care