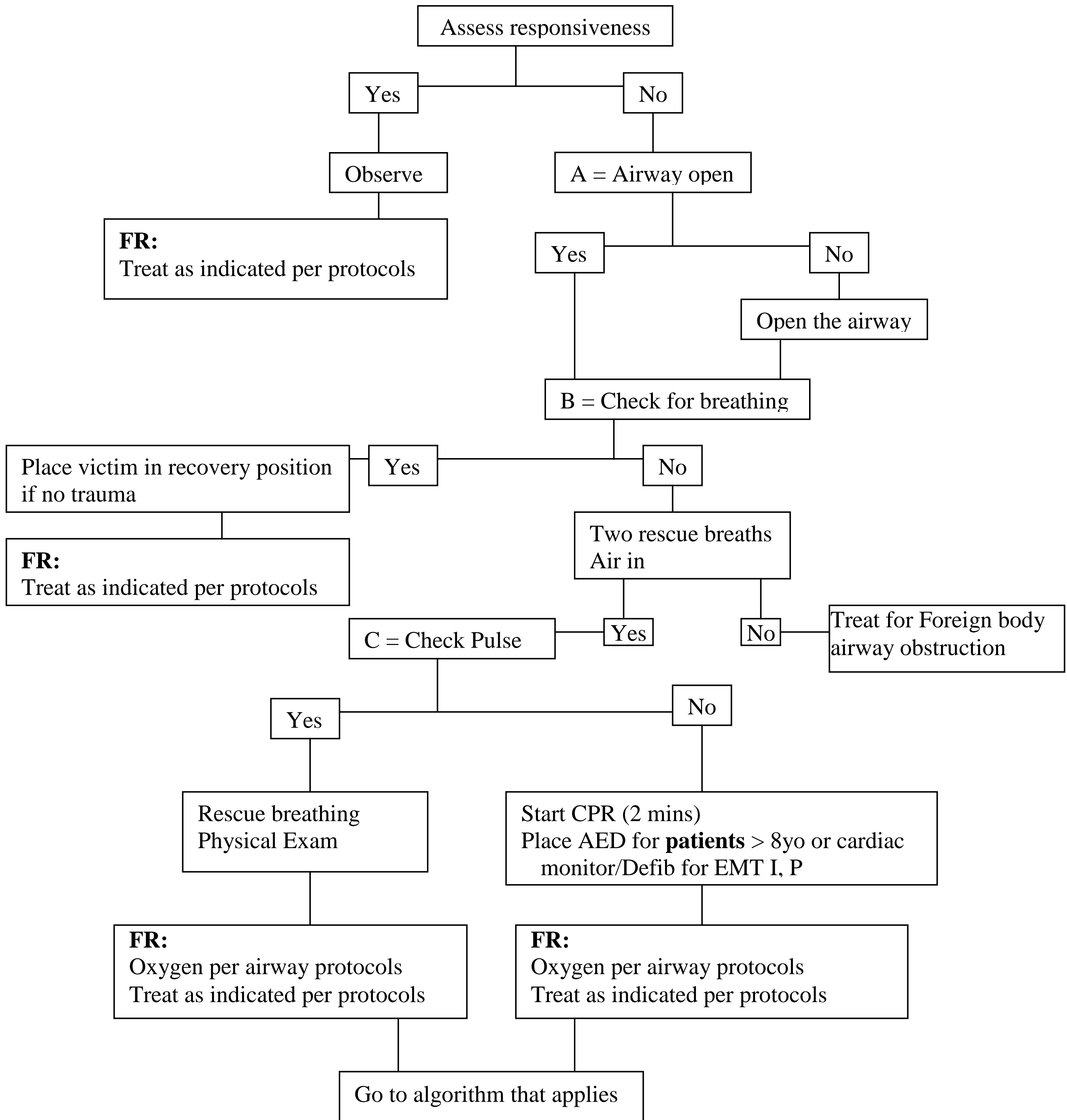
Universal Algorithm



Asystole

Treatment:

FR, EMTs

Consider causes:

- Hypothermia – Warm victim up
- Hypoxia – Airway protocol

Continue CPR or

Consider Death in the field

EMT I, P

Vascular Assess procedure

Confirm asystole in more than one lead

Epinephrine 1:10,000 1 mg IVP repeat as needed every 3-5min, ***Peds*** = 0.01mg/kg IV/IO then subsequent doses should be given 0.1mg/kg IV/IO

Atropine 1 mg IVP repeat every 3-5min Max 0.04 mg/kg (3 mg)

EMT P

Pacing only if witnessed

Epinephrine 1:1,000 2 mg ET repeat every 3-5min, ***Peds*** = 0.1mg/kg of 1:1,000 IV/IO

Atropine 2 mg ET repeats every 3-5min, Max 6 mg

Bradycardia

Treatment

FR, EMT's
Airway Protocols
Vital Signs protocol, heart rate < 60
Peds = Chest compression if: heart rate <60/min in a child or infant

EMT I, EMT P
Cardiac monitor
Vascular Assess procedure
Symptomatic Bradycardia:
Atropine 0.5 mg IV every 3 to 5minutes, not to exceed 0.04mg/kg (3 mg)
Peds = epinephrine IV/IO: 0.01mg/kg 1:10,000 repeat every 3-5 minutes, then
Atropine (Contraindicated in Neonates) IV/IO 0.02mg/kg, minimum dose: 0.1mg, maximum single dose: 0.5mg for child, 1.0mg for adolescent, may be repeated once

EMT P
Peds = epinephrine 0.1mg/kg 1:10,000 ET repeat every 3-5 minutes then
Atropine (Contraindicated in Neonates) 0.02mg/kg ET, minimum dose: 0.1mg, maximum single dose. 0.5mg for child, 1.0mg for adolescent, may be repeated not to exceed 0.04mg/kg (3 mg)
12-lead EKG procedure
Transcutaneous Pacing procedure and sedation with Versed 2.5mg to 5mg IV or 5 mg to 10 mg IM; repeat as needed up to 10 mg. ***Peds*** = 0. 1 mg/kg IV/IM, repeat as needed to a maximum of 5 mg, 0. 2 mg/kg IM, repeat as needed to a maximum of 10 mg
OLMC for Dopamine infusion Adult and ***Peds*** = 5-20ug/kg/min

Cardiac Chest Pain

Treatment

FR, EMT's
Airway protocol

EMT's
Aspirin 324 mg PO (four chewable baby aspirin)
Assist patient with patient's nitroglycerin for EMT B, BP must be maintained > 90 systolic

EMT I, P
Cardiac monitor
Vascular Assess procedure
Nitroglycerin 0.4 mg SL q 5 minutes, consider fluid challenge for hypotension
Consider Pain Management protocol if pain is not relived with Nitroglycerin, 2-4mg IVP titrated to pain and blood pressure > 90 systolic repeat every 5 – 10 minutes until desired effect. Up to 20 mg
12-lead EKG
Consider Cath Lab alert at Corvallis (bypass Albany) or Salem Hospital

Designation of Condition: Typical chest pain suggestive of cardiac origin with discomfort < 6 hours duration, age 85 years or less who meet the below criteria:

12 lead ECG without left bundle branch block and meeting one of the two below criteria:

ST elevation:

- 1 mm ST elevation in two contiguous lateral leads (I, AVL, V4, V5 & V6 OR; two contiguous inferior leads (II, III and AVF)
- > 2 mm ST elevation in two contiguous chest leads (V1, V2, & V3)
- OR; Automatic ECG interpretation of "ST Elevation Myocardial Infarction" or "Acute MI Suspected".

Acute myocardial infarction with ST elevation is usually best managed with rapid transport to a cardiac catheterization center for diagnosis and treatment.

PEA

Treatment

FR, EMT's
Consider causes:
- Hypothermia – Warm victim up
- Hypoxia – Airway management procedure

EMT I, EMT P
Vascular Assess procedure
Consider causes:
- Hypovolemia - fluid challenge of 500cc, ***Peds*** = 20 cc/kg for child, 10 cc/kg for Neonates
- Drug overdose – narcan 2 mg IV/IM/IO, ***Peds*** = 0.1 mg/kg IV/IO

Epinephrine 1:10,000 1 mg IVP repeat as needed every 3-5min, ***Peds*** = 0.01mg/kg IV/IO then subsequent doses should be given 0.1mg/kg IV/IO
Atropine: 1 mg IVP repeat every 3-5min Max 0.04 mg/kg (3 mg) (slow PEA only)

EMT P
Consider causes: (for PEA)
- Hydrogen ion - acidosis – Sodium bicarbonate, 1mEq/kg IV/IO, ***Peds*** = 1mEq/kg IV/IO
- Hypo\Hyperkalemia
- Hypoxia – Airway protocol
- "Tablets" (Drug overdose) – narcan 2 mg IV/IM/IO, ***Peds*** = 0.1 mg/kg IV/IO
- Tamponade, cardiac
- Tension pneumothorax – chest decompression
- Thrombosis, coronary
- Thrombosis, pulmonary (embolism)

Epinephrine 1:1,000 2 mg ET repeat every 3-5min, ***Peds*** = 0.1mg/kg of 1:1,000 IV/IO
Atropine 2 mg ET repeats every 3-5min, Max 6 mg (slow PEA only)

Tachycardia

Treatment

FR, EMT's
Airway protocol
Vital signs, heart rate over 150 needs to be treated

EMT I, EMT P
Cardiac monitor
Vascular Assess procedure
Ventricular Tachycardia, wide complex rhythm
Stable: ***Adult and Peds***
Lidocaine 1.5 mg/kg, then 0.75 mg/kg q 5 min, should be given until resolved or until maximum dose of 3 mg/kg is reached, after ectopy resolves or patient converts, a drip should be started at 20-50 ug/kg/min

EMT P
Supraventricular tachycardia, **Atrial fib/Atrial Flutter,** narrow complex rhythm
Unstable: heart rate that remains above 150 bpm with serious S/S
Versed 2.5 mg to 5.0 mg IV or 5.0 mg to 10 mg IM; repeat as needed to a maximum of 0.1 mg/kg for sedation, ***Peds*** = 0.1 mg/kg IV or 0.2 mg/kg IM maximum of 5 mg
Cardioversion for **Atrial flutter** start at 50J, **for fib and flutter** 100J, 200J, 300J, or 360J synchronized as needed, ***Peds*** = 0.5 j/kg, second and subsequent 1.0 j/kg as needed
Stable: heart rate that remains above 150 bpm with out serious S/S
Vagal maneuvers if not contraindicated (Do not use carotid massage.)
Adenosine: (Not effective if underlying rhythm is A-fib) 6 mg rapid IVP over 1-3sec If not converted in 1-2 minutes give adenosine 12mg rapid IVP
Cardioversion as needed, follow unstable
Ventricular Tachycardia, wide complex rhythm
Unstable: heart rate that remains above 150 bpm ***Peds*** > 180 for a child, > 220 for an infant with serious S/S
Versed 2.5 mg to 5 mg IV or 5.0 mg to 10 mg IM; ***Peds*** = 0.1 mg/kg IV or 0.2 mg/kg IM maximum of 5 mg
Cardioversion at 100J, 200J, 300J, or 360J synchronized as needed, ***Peds*** = 0.5 j/kg, subsequent 1.0 j/kg as needed
Stable:
Lidocaine drip after ectopy resolves, or patient converts. A drip should be started at 2 mg/min increasing to 4 mg/min as indicated
Cardioversion at 100J, 200J, 300J, or 360J synchronized as needed, follow unstable, ***Peds*** = 0.5 j/kg second and subsequent 1.0 j/kg as needed

V-fib or Pulseless V-tach

Treatment

FR, EMT's

Defibrillate at 200J
Airway protocol
CPR (2 mins)
Defibrillate at 300J
CPR (2 mins)
Defibrillate at 360J
CPR

EMT I, EMT P

Defibrillate at 200J
CPR (2 mins)
Vascular Assess procedure
Epinephrine 1:10,000 1mg IV/IO, ***Peds*** = 0.01mg/kg 1:10,000 IV/IO repeat every 3-5min
Defibrillate at 300J
CPR (2 mins)
Consider fluid challenge
Lidocaine Adult and ***Peds*** 1.5 mg/kg IV/IO, then 0.75 mg/kg every 5 min, should be given until patient's pulse returns or until maximum dose of 3 mg/kg is reached
Defibrillate at 360J repeat after CPR
CPR (2 mins)

EMT P

Defibrillate at 200, ***Peds*** = Defibrillate at 2J/kg
CPR (2 mins)
Epinephrine 1:1,000 2mg ET not to exceed 40 cc's of fluid, ***Peds*** = 0.1mg/ml ET
Defibrillate at 300J, ***Peds*** = 4J/kg
CPR (2 mins)
Lidocaine: 3 mg/kg ET, then 1.5 mg/kg q 5 min, should be given until patient's pulse returns or until maximum dose of 6 mg/kg is reached, followed by lidocaine drip if patient's pulse returns with lidocaine, a drip should be started at 2 to 4 mg/min IV; ***Peds*** = 1.5mg/kg ET
Defibrillate at 360J, ***Peds*** = 4J/kg
CPR (2 mins)
Magnesium sulfate 1-2g in 10 cc saline IVP over 1-2 minutes, follow up infusion of 0.5 - 1.0 g/hr for 24 hrs, ***Peds*** = 25 to 50 mg/kg IV/IO
Defibrillate at 360J, ***Peds*** = 4J/kg
CPR (2 mins)