



An Affiliate of ValleyCare Health System of Ohio

Prehospital Care Protocol

02-2016

Medical Director Dr. Mark Swift, DO

Trumbull Memorial Hospital

Center for Prehospital Care

Patient Care Protocols – 2016 – Version 1.2 (02/2016)

Legend	Definition
EMR	Emergency Medical Responder Standing Orders
EMT	Emergency Medical Technician Standing Orders
AEMT	Advanced Emergency Medical Technician Standing Orders
Paramedic	Paramedic Standing Orders
Extended	Special Permission Granted by Medical Direction
	General information to consider

This document outlines the standing orders for providers of the appropriate level acting under the medical direction provided by Trumbull Memorial Hospital. These standing orders have been written and approved by the present EMS Board and Medical Director prior to publishing. These orders should be considered a “living document” and are subject to edits and updates on a regular basis to ensure the continuity of evidence based practices.

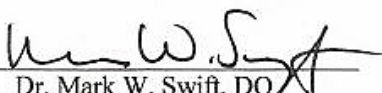
This protocol may not be altered or tampered with in any way without the exclusive written permission of the EMS Medical Director. Any deviation from this protocol must reside within the State of Ohio EMS Scope of Practice and be justified to the EMS Medical Director and the EMS Coordinator as a decision that was in the best interest of the patient.

This document may be reproduced and distributed for free to EMS providers and agencies operating under the medical direction of Trumbull Memorial Hospital or others for educational purposes.

Questions and comments should be directed to:

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As the EMS Medical Director for Trumbull Memorial Hospital, I do authorize use of the medical treatments, procedures, and guidelines contained in this document to agencies operating under these standing orders.


Dr. Mark W. Swift, DO
Medical Director

DISCLAIMER: Although the authors of this document have made great efforts to ensure that all the information is accurate, there may be errors. The authors cannot be held responsible for any such errors, and any suspected error should be immediately reported to the EMS Medical Director or the EMS Coordinator.

Notary Page for Entire Document

Witness of Signature

State of Ohio
County of Trumbull

On this 20 day of January, 2014.
Before me, the undersigned notary public, personally appeared Mark W Swift DO
Name of Person Acknowledging

proved to me through satisfactory evidence of identification to be the person whose name is signed on this document and acknowledged to me that he/she signed it voluntarily for its stated purpose.

[Signature]
Signature of Notary Public

April 23, 2017
Commission Expiration Date of Notary Public



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Adult Protocols

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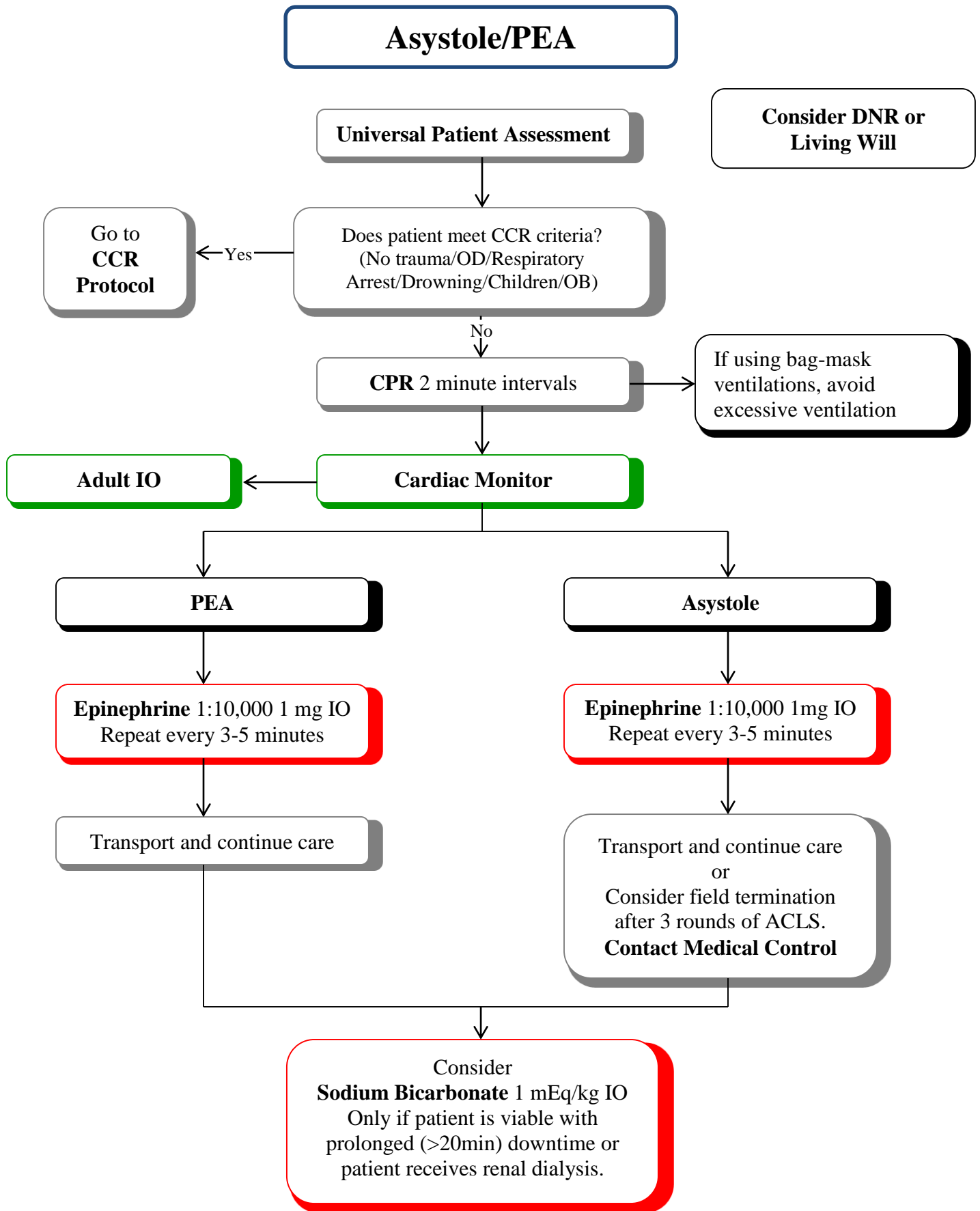
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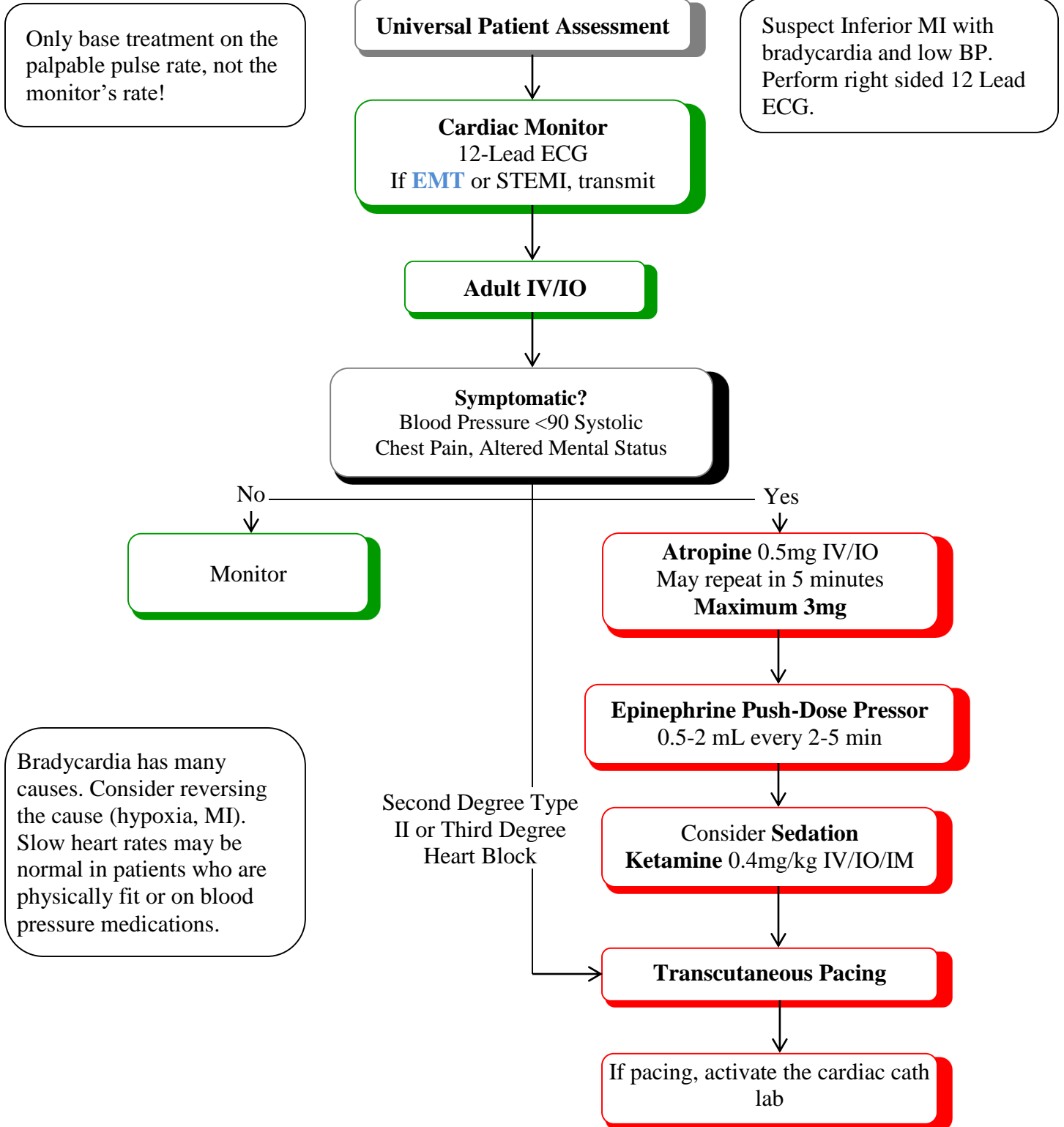
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Bradycardia



Cardiac Dysrhythmias

Only base treatment on the palpable pulse rate, not the monitor's rate!

Treat your patient, not the monitor!

Often it is best to discover and treat the underlying cause of the dysrhythmia, rather than directly treating the dysrhythmia.

Universal Patient Assessment

Consider the need for rapid transport or ALS response.

Adult IV/IO

Cardiac Monitor
12-Lead ECG
If **EMT** or STEMI, transmit

Assess for the cause of the dysrhythmia and treat accordingly.

Considerations:

- Myocardial Infarction
- Hypoxia
- Sepsis
- Electrolyte Imbalance
- Dehydration
- Anxiety
- Exercise
- Caffeine
- Asthma Medications

EMR

EMT

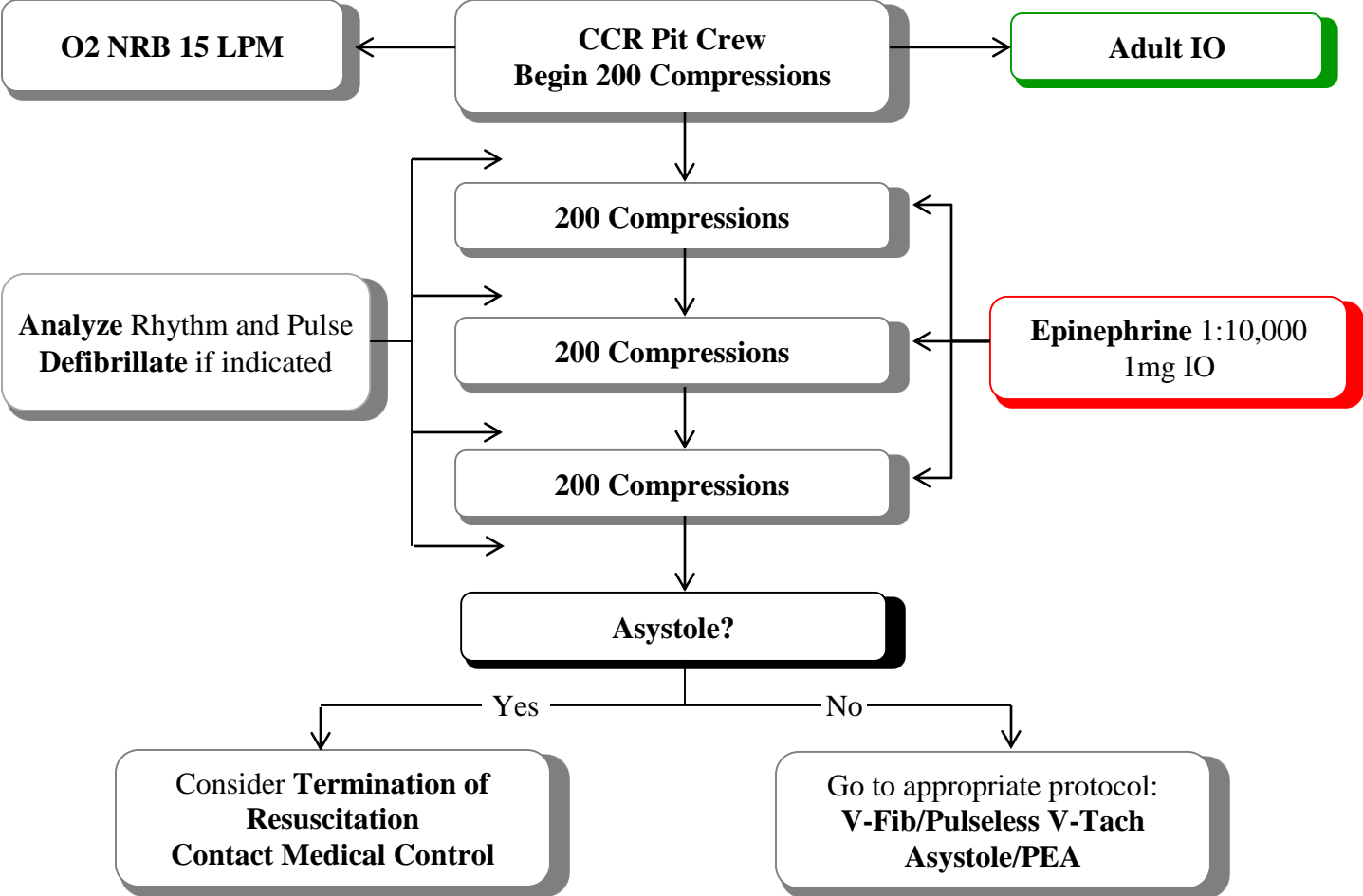
AEMT

Paramedic

Extended

Cardiocerebral Resuscitation

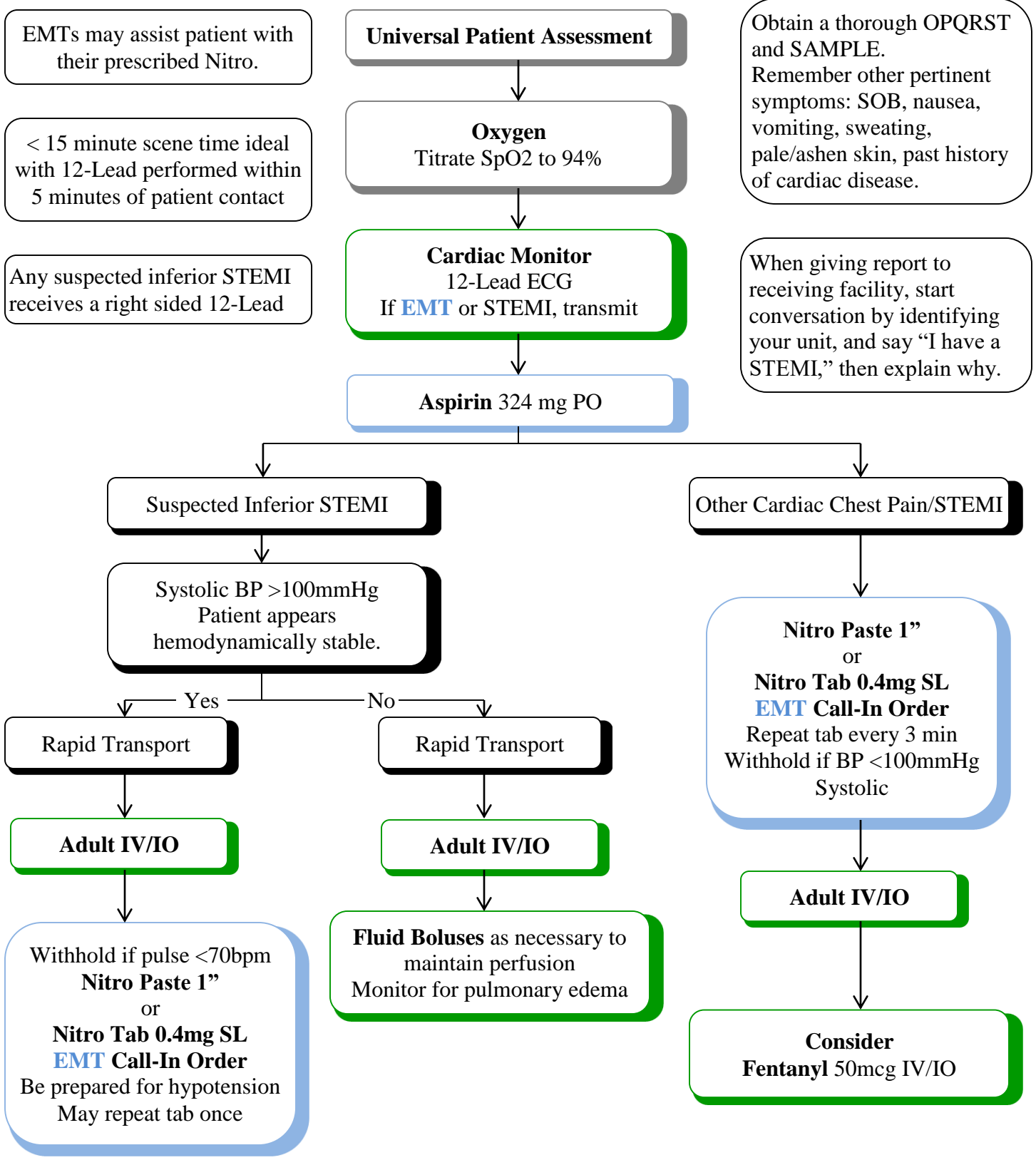
Not appropriate for trauma/OD/Respiratory Arrest/Drowning/Children/OB



Do not spend longer than 5 seconds on a pulse check.

Clinical Considerations
If signs of puberty are present, treat as an adult in cardiac arrest.

Chest Pain / STEMI



EMTs may assist patient with their prescribed Nitro.

< 15 minute scene time ideal with 12-Lead performed within 5 minutes of patient contact

Any suspected inferior STEMI receives a right sided 12-Lead

Universal Patient Assessment

Oxygen
Titrate SpO2 to 94%

Cardiac Monitor
12-Lead ECG
If **EMT** or STEMI, transmit

Aspirin 324 mg PO

Obtain a thorough OPQRST and SAMPLE. Remember other pertinent symptoms: SOB, nausea, vomiting, sweating, pale/ashen skin, past history of cardiac disease.

When giving report to receiving facility, start conversation by identifying your unit, and say “I have a STEMI,” then explain why.

Suspected Inferior STEMI

Systolic BP > 100mmHg
Patient appears hemodynamically stable.

Rapid Transport

Adult IV/IO

Withhold if pulse < 70bpm
Nitro Paste 1”
or
Nitro Tab 0.4mg SL
EMT Call-In Order
Be prepared for hypotension
May repeat tab once

Rapid Transport

Adult IV/IO

Fluid Boluses as necessary to maintain perfusion
Monitor for pulmonary edema

Other Cardiac Chest Pain/STEMI

Nitro Paste 1”
or
Nitro Tab 0.4mg SL
EMT Call-In Order
Repeat tab every 3 min
Withhold if BP < 100mmHg
Systolic

Adult IV/IO

Consider Fentanyl 50mcg IV/IO

EMR

EMT

AEMT

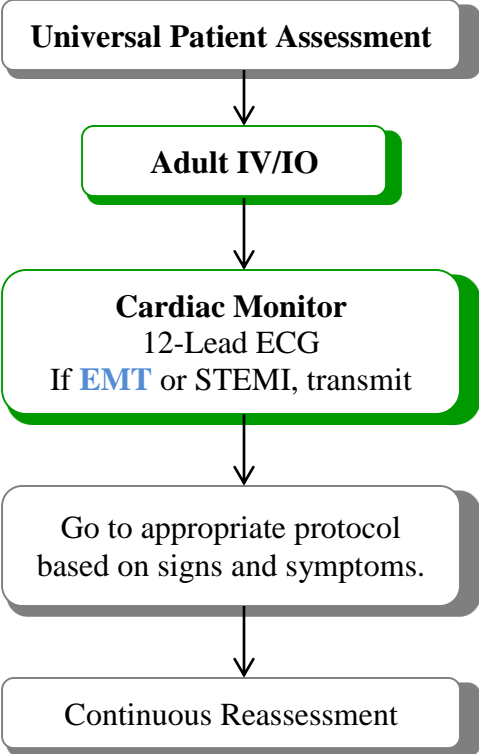
Paramedic

Extended

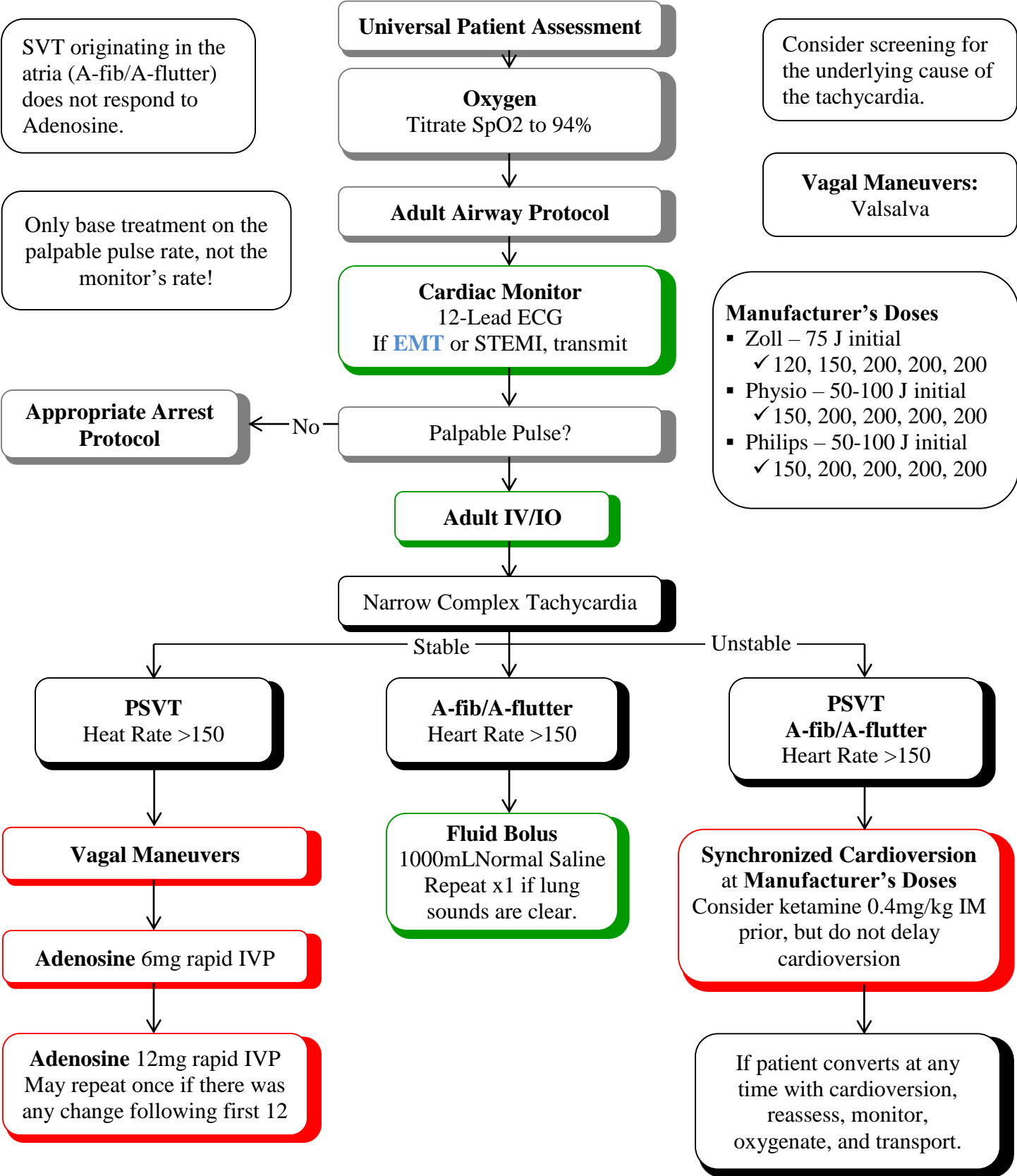
Hypertension

Clinical Considerations
Hypertension is defined as:
▪ SBP \geq 200 mmHg
▪ DBP \geq 120mmHg
Pertinent history to obtain includes:
▪ CVA
▪ Current pregnancy
▪ History of heart failure

Clinical Considerations
Hypertension can be reactive. Assess for the underlying cause:
▪ Stroke
▪ Intracranial Pressure
▪ Stress / Anxiety
▪ Medications



Narrow Complex Tachycardia



Consider screening for the underlying cause of the tachycardia.

Vagal Maneuvers:
Valsalva

Manufacturer's Doses

- Zoll – 75 J initial
✓ 120, 150, 200, 200, 200
- Physio – 50-100 J initial
✓ 150, 200, 200, 200, 200
- Philips – 50-100 J initial
✓ 150, 200, 200, 200, 200

Non-Traumatic Shock

Non-Traumatic Shock could present with dizziness, pale, cool, clammy skin, anemia, and orthostatic hypotension.

Non-Traumatic Shock could have origins that are cardiac, immunologic, obstructive, or resulting from dehydration.

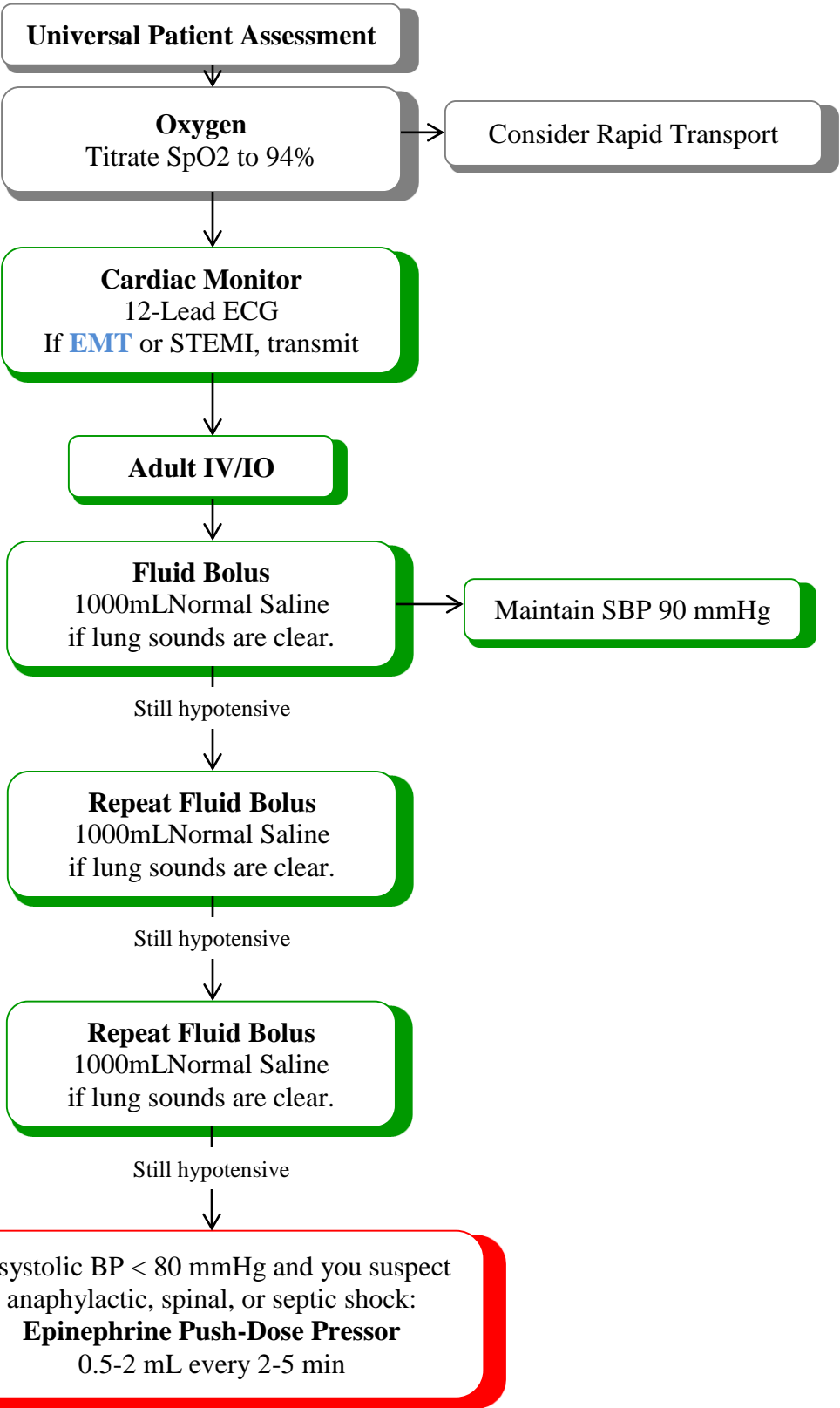
Epi Push-Dose Conversion
 Once mixed properly to 10 mcg/mL, this is the conversion:

Every 2 Minutes

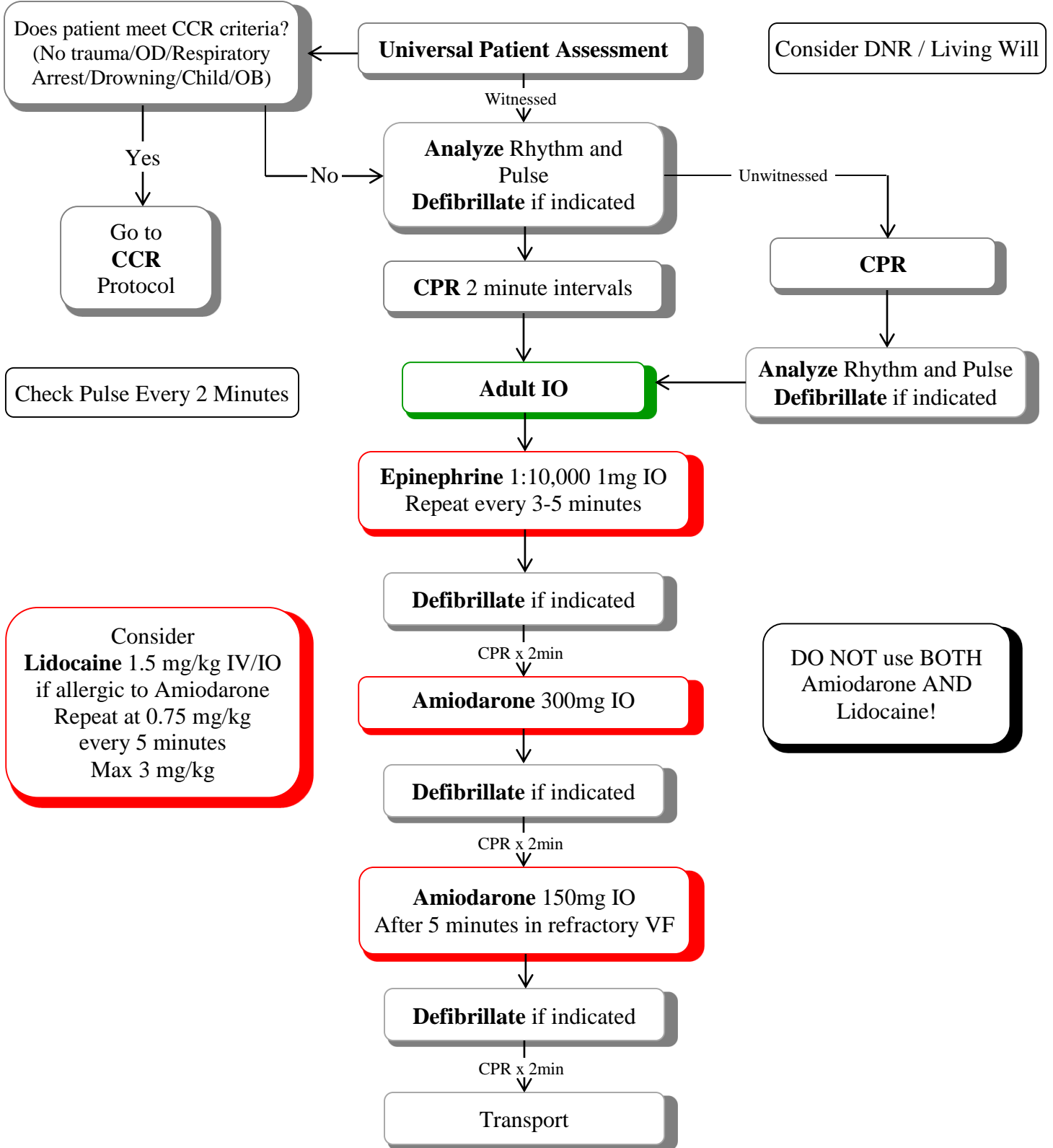
- 0.5mL q 2 min = 2.5 mcg/min
- 1mL q 2 min = 5 mcg/min
- 1.5mL q 2 min = 7.5 mcg/min
- 2mL q 2 min = 10 mcg/min

Every 5 Minutes

- 1mL q 5 min = 2 mcg/min
- 1.5mL q 5 min = 3 mcg/min
- 2mL q 5 min = 4 mcg/min



V-Fib/Pulseless V-Tach



Wide Complex Tachycardia

Universal Patient Assessment

DO NOT use BOTH
Amiodarone AND
Lidocaine!

Oxygen
Titrate SpO2 to 94%

Adult Airway Protocol

Cardiac Monitor
12-Lead ECG
If **EMT** or STEMI, transmit

Manufacturer's Doses

- Zoll – 75 J initial
✓ 120, 150, 200, 200, 200
- Physio – 100 J initial
✓ 150, 200, 200, 200, 200
- Philips – 100 J initial
✓ 150, 200, 200, 200, 200

Appropriate Arrest
Protocol

Palpable Pulse?

Yes

Wide Complex Tachycardia

Stable

Unstable

Amiodarone 150 mg over 5-10 minutes IV/IO Drip or VERY SLOW Push

Synchronized Cardioversion
Use Manufacturer's Recommended Doses

If recurrent VT

Amiodarone 150 mg over 5-10 minutes IV/IO Drip or VERY SLOW Push

If V-Tach converts to viable rhythm then converts back to V-Tach, perform cardioversion at energy level previously successful.

Consider
Magnesium Sulfate 2g IV/IO over 5-10 minutes if Torsades de Pointes, alcoholism, malnutrition

Consider
Lidocaine 1.5 mg/kg IV/IO if allergic to Amiodarone Repeat at 0.75 mg/kg every 5 minutes Max 3 mg/kg

EMR

EMT

AEMT

Paramedic

Extended

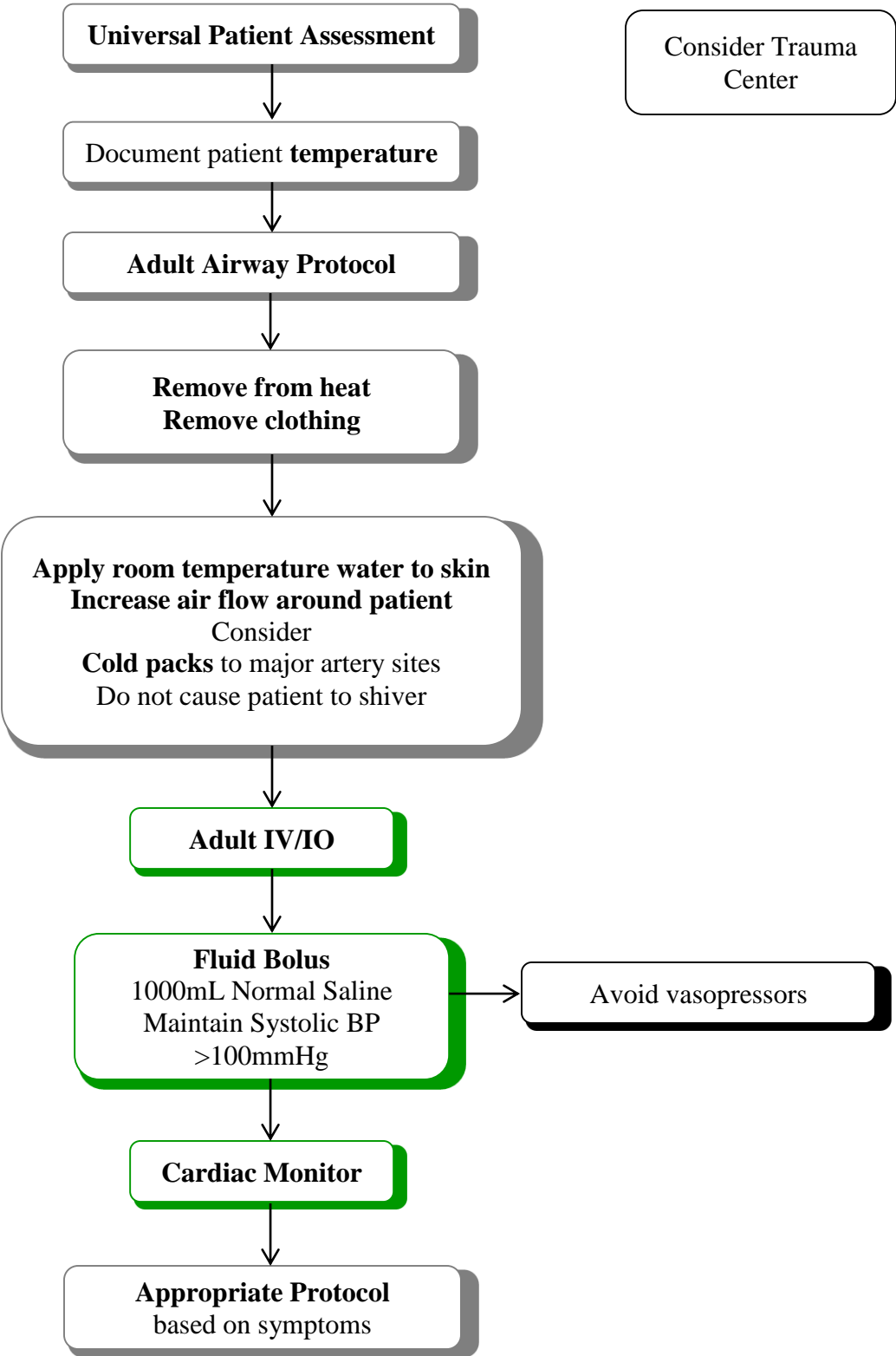
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Hyperthermia



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Hypothermia/Drowning

Axillary and oral temperatures are poor measures of core temperature. Rectal temperatures are more accurate.

Consider Trauma Center

In hypothermia if any pulse is present, no matter how slow, do not begin chest compressions

Universal Patient Assessment

Remove from source
Remove clothing
Handle gently

Apply **c-collar**

Document patient **temperature**

Passive rewarming

Adult IV/IO (warmed)

Severe Hypothermia
<86° F (30°C)

Moderate Hypothermia
86-92°F (30-34°C)

Mild Hypothermia
92-96°F (34-36°C)

CPR if necessary

CPR if necessary

Support Vital Functions

Avoid medications or limit to 1 dose, flush with 50cc warm saline.

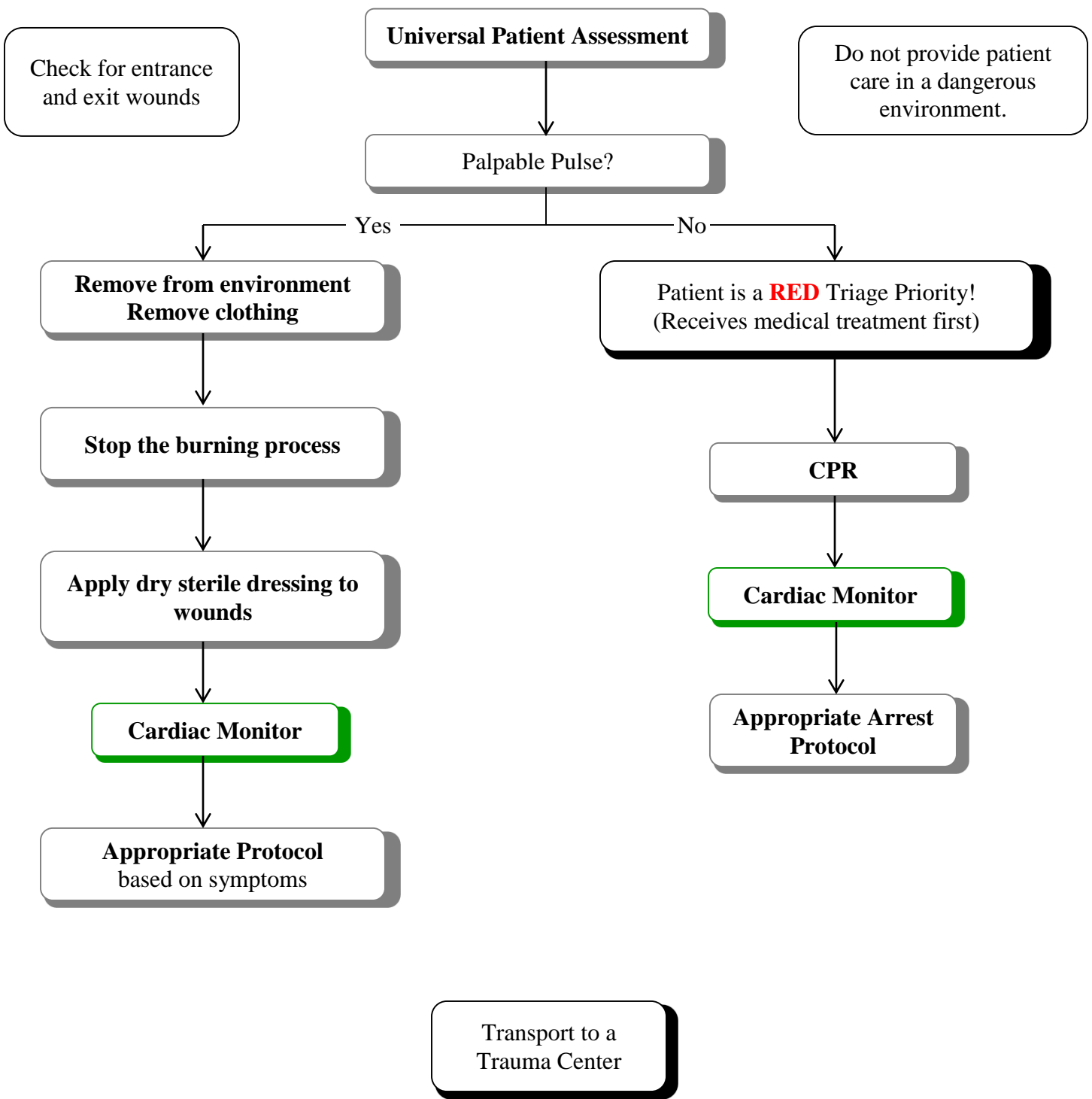
Use longer intervals for medications

Appropriate Protocol
based on symptoms

Consider limiting **Defibrillation** to 1 dose at 120/200J
Use MFG recommended defibrillation dose

Do not stop treatment until warm and dead

Lightning Strike



Gastrointestinal

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Nausea / Vomiting 24

Abdominal Pain

Universal Patient Assessment

A thorough history and physical exam can help to uncover the cause of abdominal pain.

Position of Comfort

Oxygen
Titrate SpO2 to 94%

Ask about intake/output history, hydration, nausea, vomiting.

Females of child bearing age (15 to 49), ask about last normal menstrual period and possibility of pregnancy.

Cardiac Monitor
12-Lead ECG
If **EMT** or STEMI, transmit

Fentanyl is better than Ketamine for visceral pain.

Adult IV/IO

Check BGL

Low BP

Normal BP

Systolic BP <100 mmHg
Patient appears hemodynamically unstable.

Systolic BP >100 mmHg
Patient appears hemodynamically stable.

Fluid Boluses as necessary to maintain perfusion
Monitor for pulmonary edema

Follow Nausea/Vomiting Protocol

Follow Nausea/Vomiting Protocol

Follow Pain Management Protocol

Follow Pain Management Protocol

EMR

EMT

AEMT

Paramedic

Extended

Nausea / Vomiting

Emesis management in pregnant females is common and safe with **Zofran**.

Universal Patient Assessment

Oxygen

Titrate SpO₂ to 94%

Suspected cardiac etiology?

Yes

Cardiac Monitor

12-Lead ECG

If **EMT** or STEMI, transmit

Appropriate Protocol

← STEMI

No

Adult IV/IO

Check BGL

Appropriate Protocol

If no history of congestive heart failure, no pulmonary edema, and vomiting has been persistent for hours.

Normal Saline Bolus

1000mL

Nausea/Vomiting?

Zofran 4mg ODT

May repeat once in adults >18 years to **maximum** of 8mg

Or

Zofran 4mg IV/IM

May repeat once in adults >18 years to **maximum** of 8mg

EMR

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Paramedic

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General

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Adult IV/IO

IV Therapy

- Administer fluids
- Administer medications

Universal Patient Assessment

Clinical Considerations

- Inform patient of IV insertion
- Use aseptic technique
- Assess patient and equipment
- Prepare dressings and ensure safe practices
- Instructions to patient
- Documentation
- The preferred site for EZ-IO and NIO devices is the **proximal humerus**

Use warmed fluids for hypothermic patients

Assess need for IV 0.9 NS
Emergent or potentially emergent medical or trauma condition

Peripheral IV
No more than four (4) attempts unless patient is critical

If patient is in cardiac arrest, go immediately to IO

If patient is critical consider IO after (2) IV attempts

Successful

Intraosseous EZ-IO®

If patient is critical or in cardiac arrest and has an external venous catheter, see **Central Venous Catheter Access Protocol**

Monitor infusion

Conscious patient with an IO

Administer 20mg of **Lidocaine** over 2 minutes prior to infusing fluids or other medications.

Clinical Considerations Approved Adult Devices

- EZ-IO®
- NIO®
- BIG®
- FASTResponder®

Clinical Considerations

EZ-IO Insertion Sites (Adult)

- Proximal Humerus
 - Proximal Tibia
 - Distal Tibia
- ### NIO Insertion Sites
- Proximal Humerus
 - Proximal Tibia

EMR

EMT

AEMT

Paramedic

Extended

Central Venous Catheter Access

Subcutaneous Venous Access Ports

- Never access without the appropriate needle (Huber needle)
- Never access without the appropriate training
- This protocol is not for subcutaneous devices

Watch for Signs of Infiltration

- Swelling
- Redness
- Pain
- Leakage/drainage

Failure to properly handle and reclamp the device will lead to an air embolism

Universal Patient Assessment

Assess need to access the external central venous catheter.

- Critical Patient
- Cardiac Arrest

Uncap and **diligently clean** the intended port and maintain sterility throughout the procedure

Connect syringe and **unclamp** the intended lumen

Draw back 10mL of blood from intended port and set syringe aside

Flush port with 10mL of normal saline to ensure patency

Administer intended medications

Flush port, **reclamp**, and **recap**. **Monitor** site for complications.

Clinical Considerations

- Failure to use aseptic technique could result in sepsis, hemorrhage, or loss of access site.
- Diligently wipe all accesses with alcohol preps prior to every use.
- Be sure to unclamp/reclamp and uncap/recap all sites appropriately.
- Many non-intravenous routes are available. Consider an alternative route of administration.
- If the device is used prehospitally, the hospital will likely need to replace it.

Do not access dual lumen ports intended for hemodialysis unless patient is in cardiac arrest and you have no alternative.

Interfacility Transport

SBAR

- Situation
- Background
- Assessment
- Recommendation

Obtain oral SBAR report from facility-appropriate staff

Universal Patient Assessment

Is the patient on a **medical device or medication** within the **Ohio EMS Scope of Practice**?

No

Yes

First time encountering unknown device? Provide a reasonable assessment of whether or not the device can be discontinued. **If continued, there must be NO REASONABLE ALTERNATIVE**

Yes

No

Transport to appropriate facility

Follow appropriate protocol for symptom management

Document patient vital signs throughout transport

Provide oral SBAR report to facility-appropriate staff

Maintain pre-existing medical devices and medications as appropriate per the **Ohio EMS Scope of Practice**.

Transport to appropriate facility

Follow appropriate protocol for symptom management

Document patient vital signs throughout transport

Provide oral SBAR report to facility-appropriate staff

Per the Ohio EMS Scope of Practice, scheduled transport of patients on medications or devices beyond the appropriate scope may not occur if there was an awareness of the device when scheduled. Training on the device cannot occur at the time of transfer. If uncomfortable with the medication or device, **DO NOT TRANSPORT!** Know your scope of practice.

EMR

EMT

AEMT

Paramedic

Extended

Pain Control

Information to Record

- Time of arrival
- HR, RR, BP, GCS
- Time of each dose
- Dose Given
- Time and results of pain score/quality
- Cause and location of pain

Universal Patient Assessment

> 16 years old

Position of Comfort
Calm the Patient

Adult IV/IO
If unable to obtain, use
alternative route

Determine the cause of pain

Visceral Pain

Orthopedic Pain

Painful Procedures

Fentanyl 1 mcg/kg via
IV/IO/IM/MAD
(0.5mcg/kg for frail elderly)
Maximum single dose 100mcg
Consider
Fentanyl 3 mcg/kg IV/IO/IM
For patients with a tolerance to
opioids

Consider
Midazolam 1-2mg
IV/IO/MAD
For side effects and anxiety

Consider
Ketamine 0.4mg/kg
IV/IO/IM
Maximum 40mg.
Be **prepared** for
side effects

- Hallucinations
- Nausea
- Nystagmus

May **repeat Fentanyl** at original
dose in **10 minutes** if justified
Maximum total dose 300mcg

Ketamine 0.1-0.2mg/kg
IV/IO/IM/MAD
Maximum single dose 20mg

May **repeat Ketamine once** at
0.1mg/kg in **10 minutes**

Throughout pain
control protocol
perform a continuous
reassessment

- **Cardiac Monitor**
- **Pulse Oximetry**
- **Capnography**

If pain is still severe, vitals are stable,
and medication is justified, add
Fentanyl 1mcg/kg

Pain Management Considerations

- Ketamine is better than Fentanyl for orthopedic pain. Fentanyl is better than Ketamine for visceral pain.
- Consider giving 1-2mg of **Midazolam** with your **Ketamine** dose to produce somnolence and reduce hallucinations, if the blood pressure is adequate.
- Consider **Zofran** for nausea before or after Fentanyl or Ketamine.
- Fentanyl and Ketamine potentiate one another, increasing effectiveness.
- Remember to **dilute** ketamine for the **IV/IO** route
- When properly **diluted**, the ketamine syringe contains **5 mg/mL**, and **4 mL** is the **maximum** single dose
- Ketamine **IM/IN** should **not** be diluted, and may be less effective via those routes.
- Ketamine is contraindicated in schizophrenia.

EMR

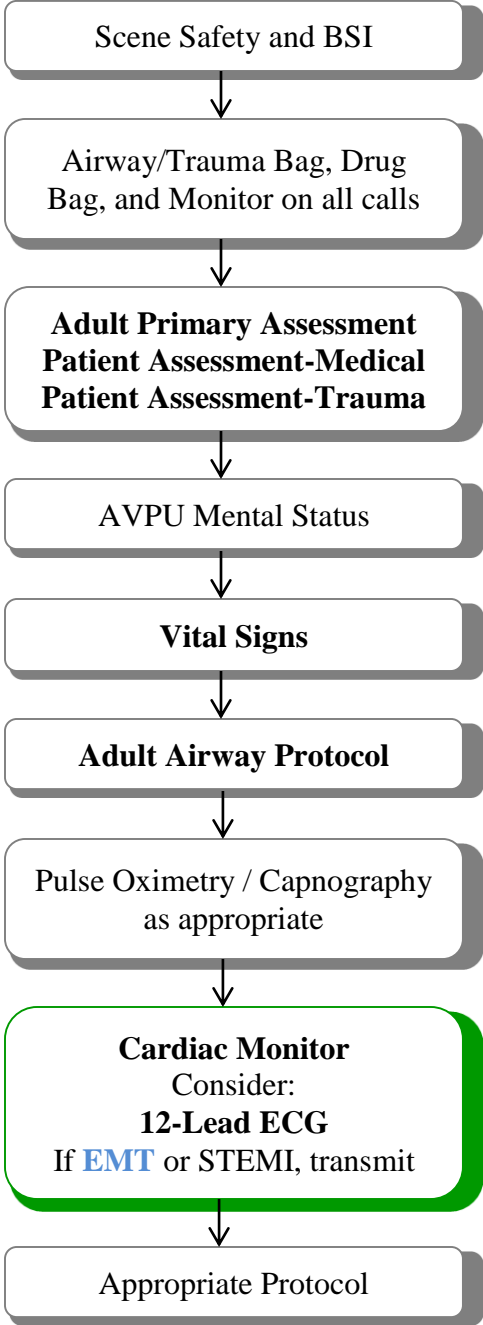
EMT

AEMT

Paramedic

Extended

Universal Patient Assessment



The universal patient assessment protocol should be used as a primary guide to all patient assessments.

- AVPU**
- Alert
 - Verbal
 - Painful
 - Unresponsive

When eliciting a noxious stimulus, the preferred method is the nasopharyngeal airway. If the patient accepts it, they need it. Ammonia capsules are second, and in extreme cases the sternal rub is acceptable.

- Vital Signs (as appropriate)**
- Pulse
 - Respirations
 - Blood Pressure
 - GCS
 - Pulse Oximetry
 - Capnography
 - Temperature
 - Carbon Monoxide Oximetry
 - Blood Glucose Level

Neurological

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Agitation / Combativeness

Clinical Considerations

Agitation causes may include:

- Excessive heat/cold
- Hypoxia
- Lack of blood flow to brain
- Head injury or stroke
- High or low BGL
- Metabolic disorders
- Neurologic disease

Keep in mind that many accidental needle sticks occur on medical personnel while dealing with violent or agitated patients.

Scene Safety
Law Enforcement should always be requested

Universal Patient Assessment

Remove patient from stressful environment

Try to identify and treat the underlying cause of the agitation.

Only restrain the patient if they are threatening the safety of themselves, the crew, or others. Do not attempt to subdue or restrain unless adequate personnel are present and law enforcement is on the scene. Evacuate if they are not.

If there is no treatable cause and the patient remains a threat to themselves or others, the paramedic may choose to attempt medical sedation

History of Schizophrenia or Allergy to Ketamine

Yes

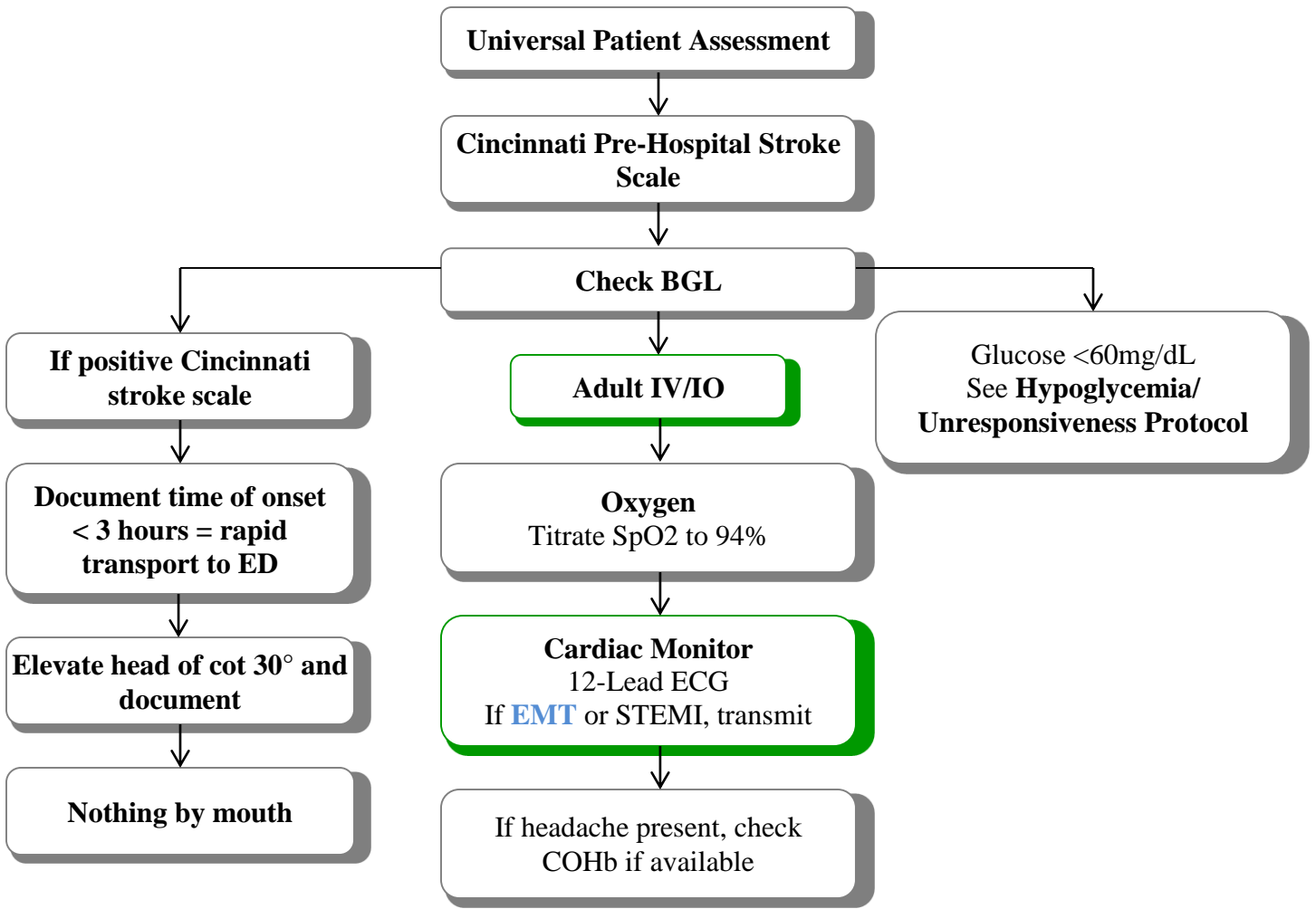
No

Haldol 5mg IM
And / Or
Versed 5mg IM
Have suction, BVM, and intubation equipment ready, be prepared to protect the airway, consider extra resources.
Monitor SpO₂ and ETCO₂.

Ketamine 1mg/kg IM
Have suction, BVM, and intubation equipment ready, be prepared to protect the airway, consider extra resources.
Monitor SpO₂ and ETCO₂.

May **repeat Haldol 5mg IM** in 10 minutes if patient is still combative and vital signs are adequate.

CVA / TIA



Clinical Considerations

Time of onset may include:

- Exact time symptoms started, if onset is witnessed
- The last time the patient was seen normal, if onset is not witnessed

Clinical Considerations

Stroke may present with:

- Dysrhythmias
- Hypertension
- Aphasia
- Vertigo
- Headaches
- Weakness or paralysis
- Head trauma
- Tumors

Assess for time of onset and progression of symptoms.

Excited Delirium

Clinical Considerations
 Agitation causes may include:

- Excessive heat/cold
- Hypoxia
- Lack of blood flow to brain
- Head injury or stroke
- High or low BGL
- Metabolic disorders
- Neurologic disease

Keep in mind that many accidental needle sticks occur on medical personnel while dealing with violent or agitated patients.

Paramedics who are not RSI certified may elect to call in for **Online Medical Direction** to give **Ketamine 5mg/kg IM** for **Excited Delirium**

Scene Safety
 Law Enforcement should always be requested

Universal Patient Assessment

Remove patient from stressful environment

Try to identify and treat the underlying cause of the agitation.

Only restrain the patient if they are threatening the safety of themselves, the crew, or others. Do not attempt to subdue or restrain unless adequate personnel are present and law enforcement is on the scene. Evacuate if they are not.

Excited Delirium
N-O-T A C-R-I-M-E

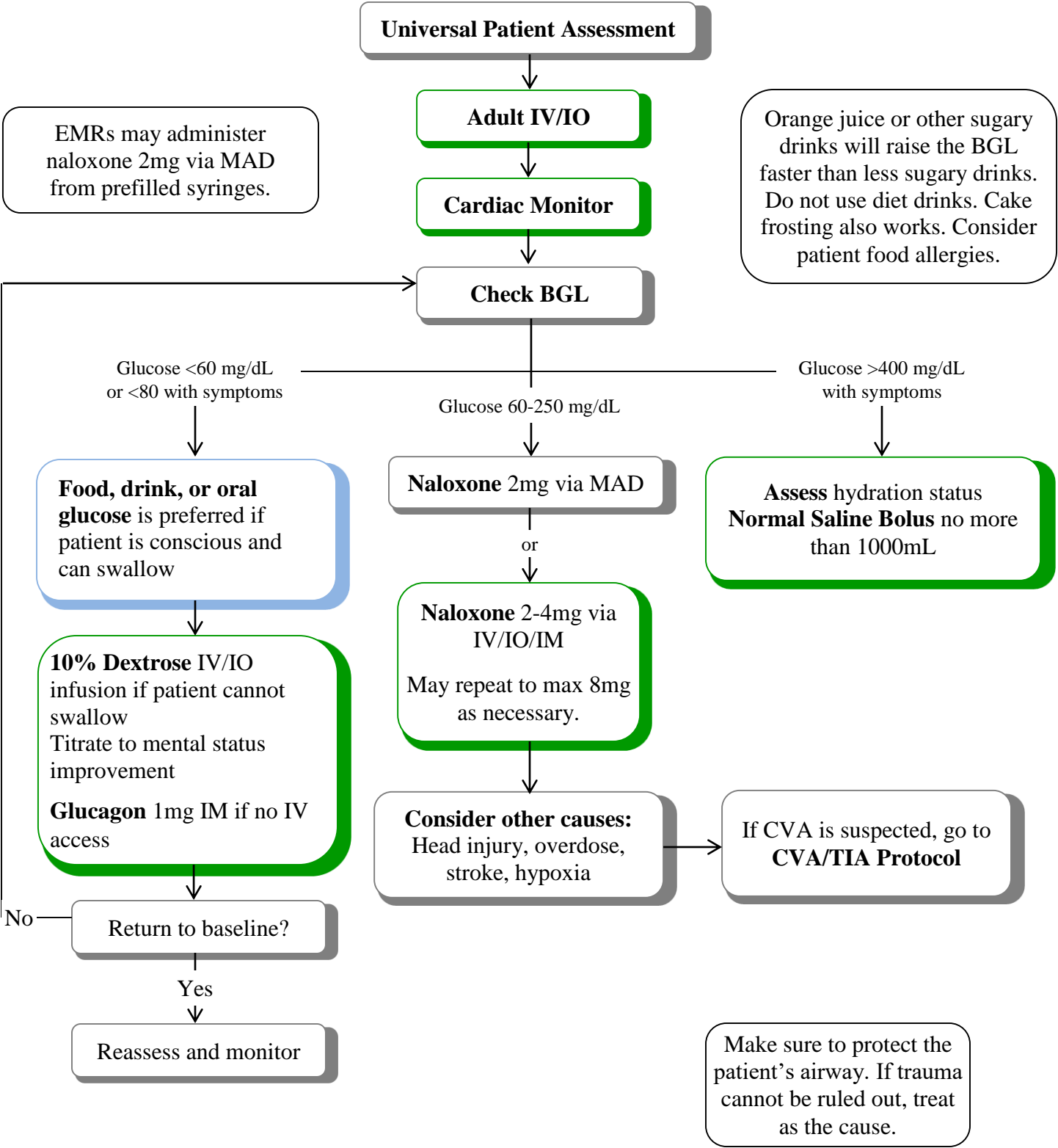
- Naked (they strip)
- Object (violence against)
- Tough (they are strong)
- Acute (onset)
- Confused
- Resistant (to commands)
- Incoherent speech
- Mental health issues -or- Makes you uneasy
- Early request of backup

Ketamine 5mg/kg IM

Have suction, BVM, and intubation equipment ready, be prepared to protect the airway, consider extra resources. Monitor SpO2 and ETCO2.

If an IV/IO line is already established:
Ketamine 2mg/kg IV/IO

Hypoglycemia / Unresponsiveness



Seizure

Clinical Considerations

Seizure may be caused by:

- Hypoxia
- Head trauma
- Toxicity
- Electrolyte imbalance
- Eclampsia
- CNS disturbance (CVA/TIA)

Clinical Considerations

If eclampsia is the suspected cause, see **Eclampsia / Preeclampsia Protocol**

Clinical Considerations

- The IM route is chosen for speed of seizure termination.
- DO NOT wait to start an IV before giving Versed.
- Give Versed IM, then attempt the IV/IO.
- DO NOT give Versed IV at these doses.

Clinical Considerations

Seizures are common and not necessarily a life threat. **Status Epilepticus** is a life threat.

- Duration > 5 minutes
- > 2 seizures without consciousness between them
- Repeated seizures for > 30 minutes

Universal Patient Assessment

Protect patient's head but do not restrain patient.

Adult Airway Protocol

Cardiac Monitor

Consider the need for rapid transport or ALS response.

Check BGL

Abnormal

Normal

Hypoglycemia Protocol

If actively seizing:

Versed 10mg IM only

- May **repeat** once in 3-5 minutes at 5mg if necessary.
- Versed should be given IM regardless of IV presence.

Adult IV/IO

EMR

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Paramedic

Extended

OB/GYN

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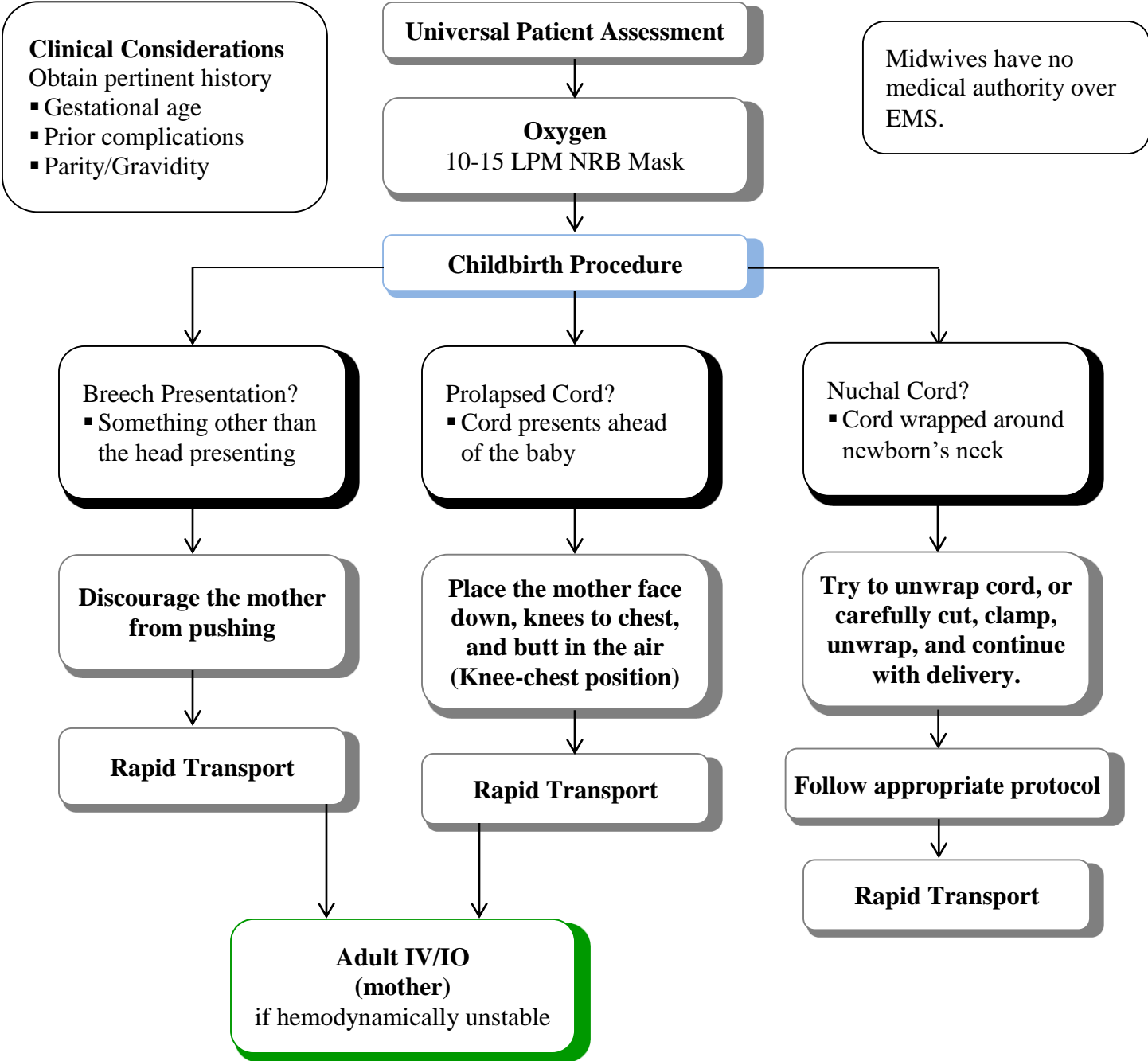
Mother with Normal Physiology 41

OB Emergencies – Placenta Previa / Placental Abruption 42

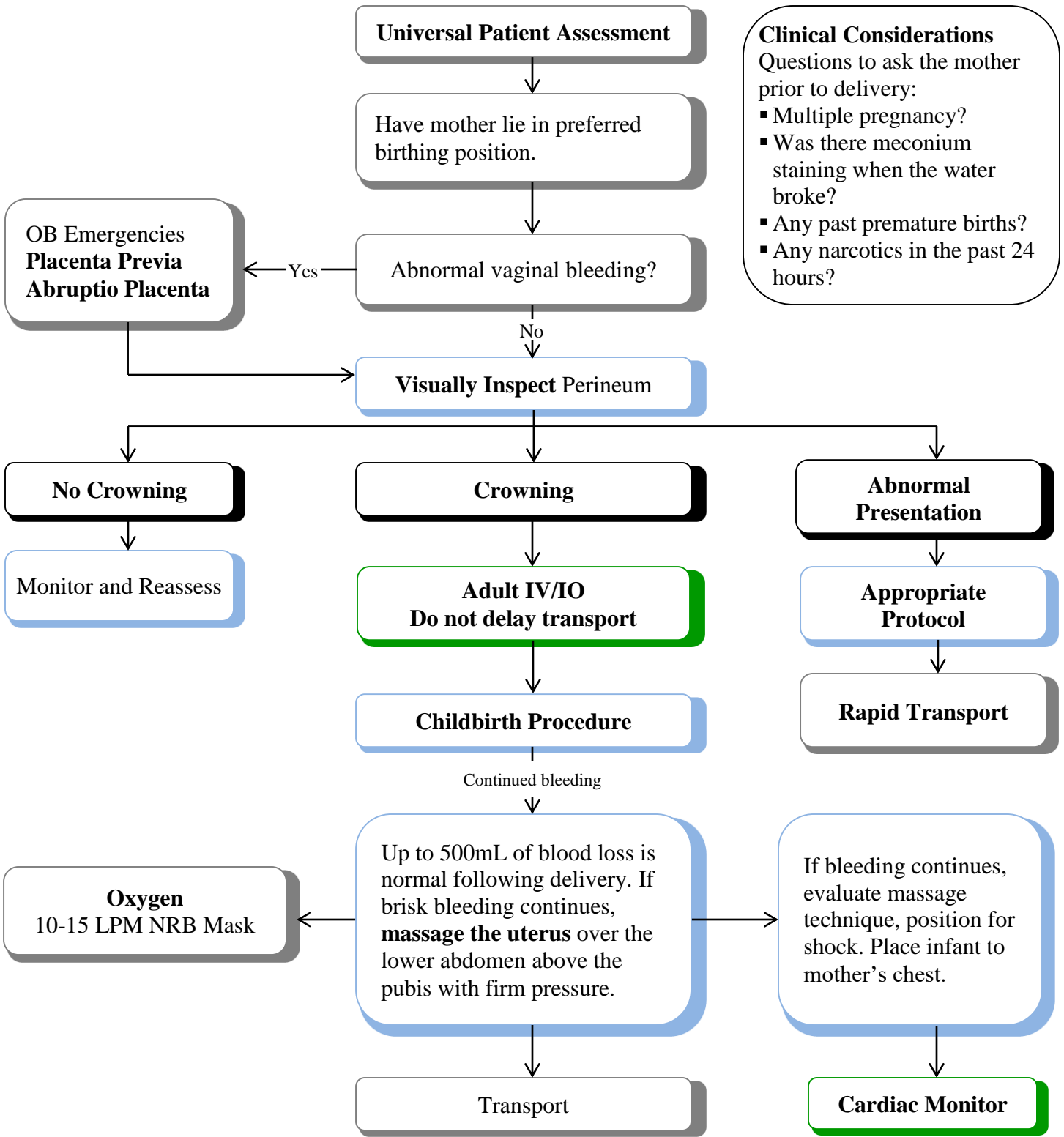
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Abnormal Deliveries – Breech / Prolapsed Cord



Childbirth / Labor



Clinical Considerations
 Questions to ask the mother prior to delivery:

- Multiple pregnancy?
- Was there meconium staining when the water broke?
- Any past premature births?
- Any narcotics in the past 24 hours?

Maternal Hypotension

Universal Patient Assessment

Place patient in left lateral position immediately unless possible spine injury or CPR is warranted; in which case, manually displace the uterus to the left and continue with treatment.

Oxygen
10-15 LPM NRB Mask

Adult IV/IO

Normal Saline Fluid Bolus
1000mL

Shock is not hemorrhagic in nature?

Non-traumatic Shock Protocol

- Clinical Considerations**
- Hemorrhage
 - Inferior Vena Cava Syndrome
 - Cardiac Insufficiency
 - Dehydration

Mother with Normal Physiology

Universal Patient Assessment

Obtain an accurate history:

- Vaginal bleeding or discharge
- Contractions and frequency
- Fetal movement

Transport in left lateral position
unless possibility of spine trauma

Adult IV/IO
Attempt in the right arm to avoid
occlusion from left lateral
transport position

EMR

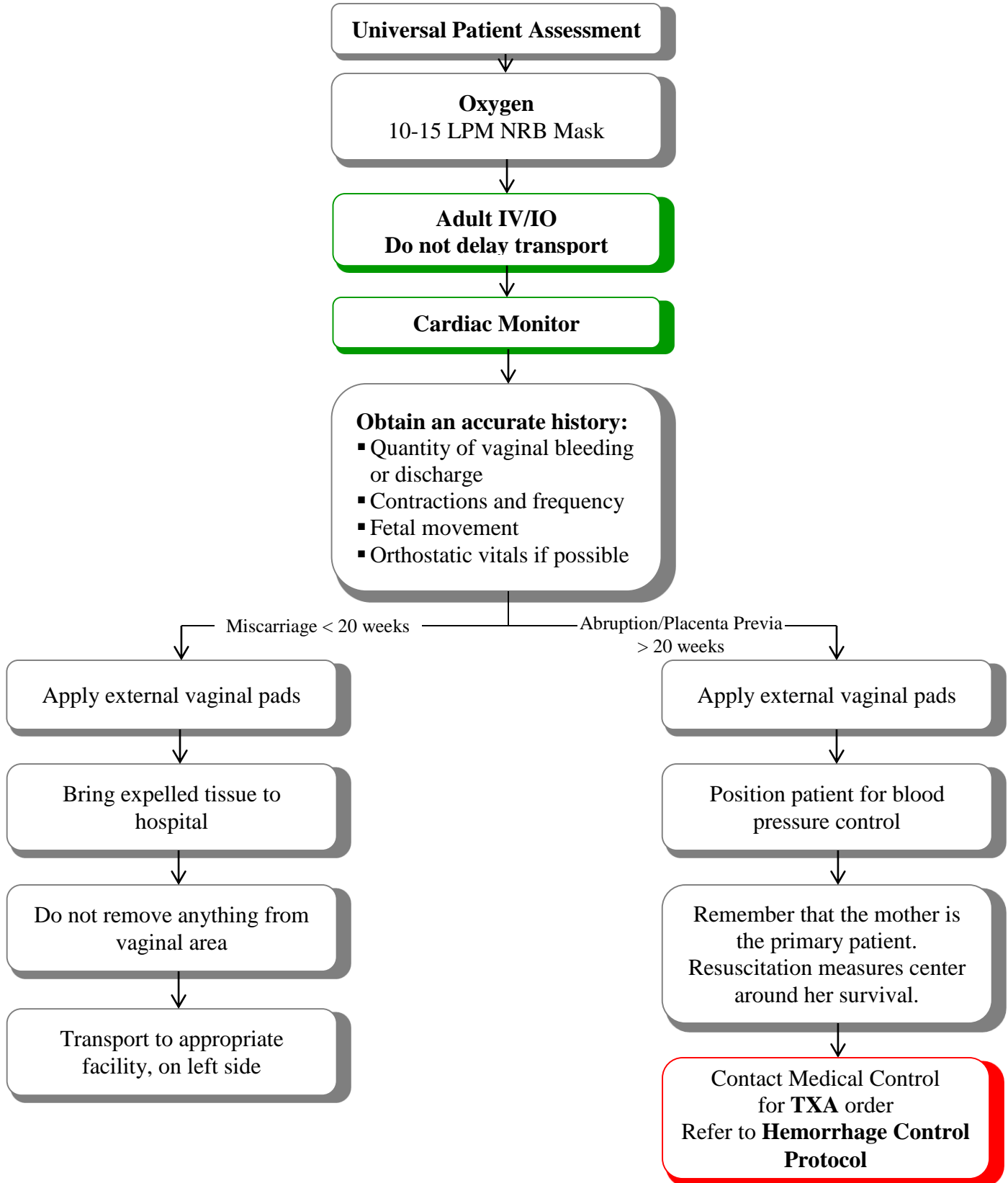
EMT

AEMT

Paramedic

Extended

OB Emergencies – Placenta Previa / Placental Abruption



EMR

EMT

AEMT

Paramedic

Extended

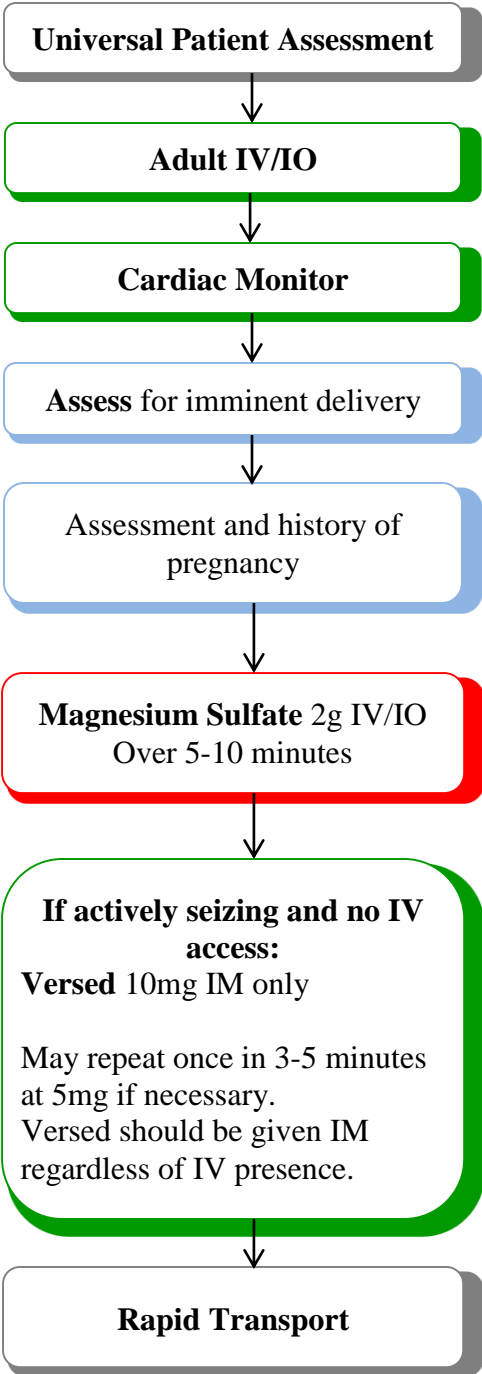
OB Emergencies – Pre-Eclampsia/Eclampsia

Clinical Considerations
 Signs of Pre-eclampsia:

- BP > 140/90
- Visual Disturbances
- Abdominal (RUQ) Pain
- Headache
- Pulmonary Edema

Clinical Considerations
 Eclampsia:

- Seizures in a patient with pregnancy induced hypertension not caused by other conditions (epilepsy, stroke, hypoglycemia, etc)



Pre-Term Labor

Clinical Considerations
Uterine contractions that occur prematurely (prior to 36wks) at least every 10 minutes lasting for 30 seconds are commonly caused by:

- Dehydration
- UTI
- Ruptured Membrane
- Fetal Death
- Cocaine Use

Universal Patient Assessment

Minimize movement of patient.
If labor is secondary to ruptured membrane, be prepared for delivery.

Adult IV/IO
Do not delay transport

If any suspicion of dehydration or UTI:
Fluid Bolus 1000mL
May repeat x 1

Cardiac Monitor

If miscarriage and fetus is recognizable, go to:
Neonatal Care

Respiratory

Adult Airway 46

Adult Failed Airway 47

Allergic Reaction 48

Rapid Sequence Induction 49

Respiratory Distress 50

Adult Airway

Assess ABC's, respiratory rate, effort, and adequacy

Adequate

Pulse Oximetry

Supplemental Oxygen

Inadequate

Pulse Oximetry
Capnography

Oxygen
Titrate SpO₂ to 94%

Basic Maneuvers
Open airway, NPA,
OPA, BVM

Intubation – Oral

Adult Failed Airway
Protocol

Foreign Body Airway
Obstruction

Abdominal Thrusts or CPR
as appropriate based on
mental status

Direct Laryngoscopy
Remove with Magill Forceps

Clinical Considerations

Preexisting Tracheostomy:

EMTs

- Has it been suctioned?

AEMTs

- Is it dislodged or occluded?
- Is the inner cannula in place?
- Is the cuff inflated, if there is one?

Paramedics

- If necessary, remove the device and intubate the stoma with a 6.0mm cuffed ETT

EMR

EMT

AEMT

Paramedic

Extended

Adult Failed Airway

Three (3) failed intubation attempts by most proficient technician on scene or anatomy inconsistent with intubation attempts. No more than three (3) attempts total!

Continue BVM with **Oxygen 15 LPM**

Good air movement with BVM Ventilation

No

Facial trauma or swelling?

No

Yes

Supraglottic Airway

Adequate airway?

Yes

Continue ventilation with device

No

Melker Cricothyrotomy (adult only)

Ventilate at 12 bpm
Apply ETCO₂ and maintain ETCO₂ above 20 if possible.

Allergic Reaction

Universal Patient Assessment

Adult Airway Protocol

Oxygen
Titrate SpO2 to 94%

Adult IV/IO
if patient is critical, do not delay treatment to initiate vascular access.

Cardiac Monitor

Mild
Localized swelling and redness only

Benadryl 25-50mg IV/IM
Slow IV

Moderate
Systemic swelling and redness, impending respiratory or circulatory compromise

Adult Epi-Pen 1 dose IM

Benadryl 25-50mg IV/IM
Slow IV

Consider DuoNeb
EMT Call-In Order

Solu-Medrol 125mg
IV/IO/IM

Capnography
Pulse Oximetry

Severe / Shock
Hypotension, respiratory compromise

BVM Assist

Adult Epi-Pen 1 dose IM

Benadryl 25-50mg IV/IM
Slow IV

DuoNeb
EMT Call-In Order

Solu-Medrol 125mg
IV/IO/IM

Fluid Bolus 1-2 Liters

Epinephrine Push-Dose
Pressor
0.5-2 mL every 2-5 min

Clinical Considerations

AEMTs and Paramedics

- Consider using 0.3mL (0.3mg) of Epinephrine 1:1,000 IM in place of epi-pen if needed.

EMR

EMT

AEMT

Paramedic

Extended

Rapid Sequence Induction

You must be a Paramedic specifically approved by your agency's chief and medical direction to perform RSI!

Universal Patient Assessment

Adult Airway Protocol

Adult IV or Humeral IO
Ensure patency and secure well

Cardiac Monitor

RSI Preparation Procedure

Prepare for 3 Plans (in order from A to C with BVM and OPA attempt between)

#1 **Plan A**
RSI Procedure

RSI Procedure
1 attempt at laryngoscopy

Able to ventilate?
Airway Secure?

Yes

Secure and maintain airway
Continuous reassessment of patency

#2 **Plan B**
Rescue Airway

RSI Procedure Fails

Supraglottic Airway

Patent Airway?

Yes

Secure supraglottic device and continue ventilating while reassessing patency

#3 **Plan C**
Emergency Airway

Inability to secure patent airway

Melker or Surgical Cricothyrotomy Procedure

No

No

EMR

EMT

AEMT

Paramedic

Extended

Respiratory Distress

Universal Patient Assessment

Adult Airway Protocol

Oxygen
Titrate SpO2 to 94%

Position of Comfort

Cardiac Monitor
12-Lead ECG
If **EMT** or STEMI, transmit

Adult IV/IO

Consider
CPAP 5 cmH2O
Watch for air trapping

**Known Asthmatic /
COPD Exacerbation /
Wheezes**

**Crackles and CHF
Signs with CHF History**

**Suspected Pneumonia /
Unknown / Other**

Consider
DuoNeb
EMT Call-In Order

Consider
CPAP 10 cmH2O

Support Symptoms

Consider
Solu-Medrol 125mg
IV/IO/IM

If hypertensive
Nitro Paste 1"
Or **Nitro Tab 0.4mg SL**
Repeat tab every 5 minutes.
Maintain SBP >100
EMTs may call-in for this order.

Clinical Considerations

If etiology of respiratory distress is unknown:

- Oxygenate
- Attempt CPAP
- Support symptoms
- Avoid overmedication, as some meds that are good for COPD are bad for CHF and vice versa.

Consider
Adult Epi-Pen 1 dose
EMT Call-In Order
if treating asthma with epi-pen

Clinical Considerations

- AEMTs and Paramedics**
- Consider using 0.3mL (0.3mg) of Epinephrine 1:1,000 IM in place of epi-pen if needed.

Known asthmatics, consider
Magnesium Sulfate 2g
IV/IO over 10 minutes

EMR

EMT

AEMT

Paramedic

Extended

Toxicological

Carbon Monoxide Poisoning 52

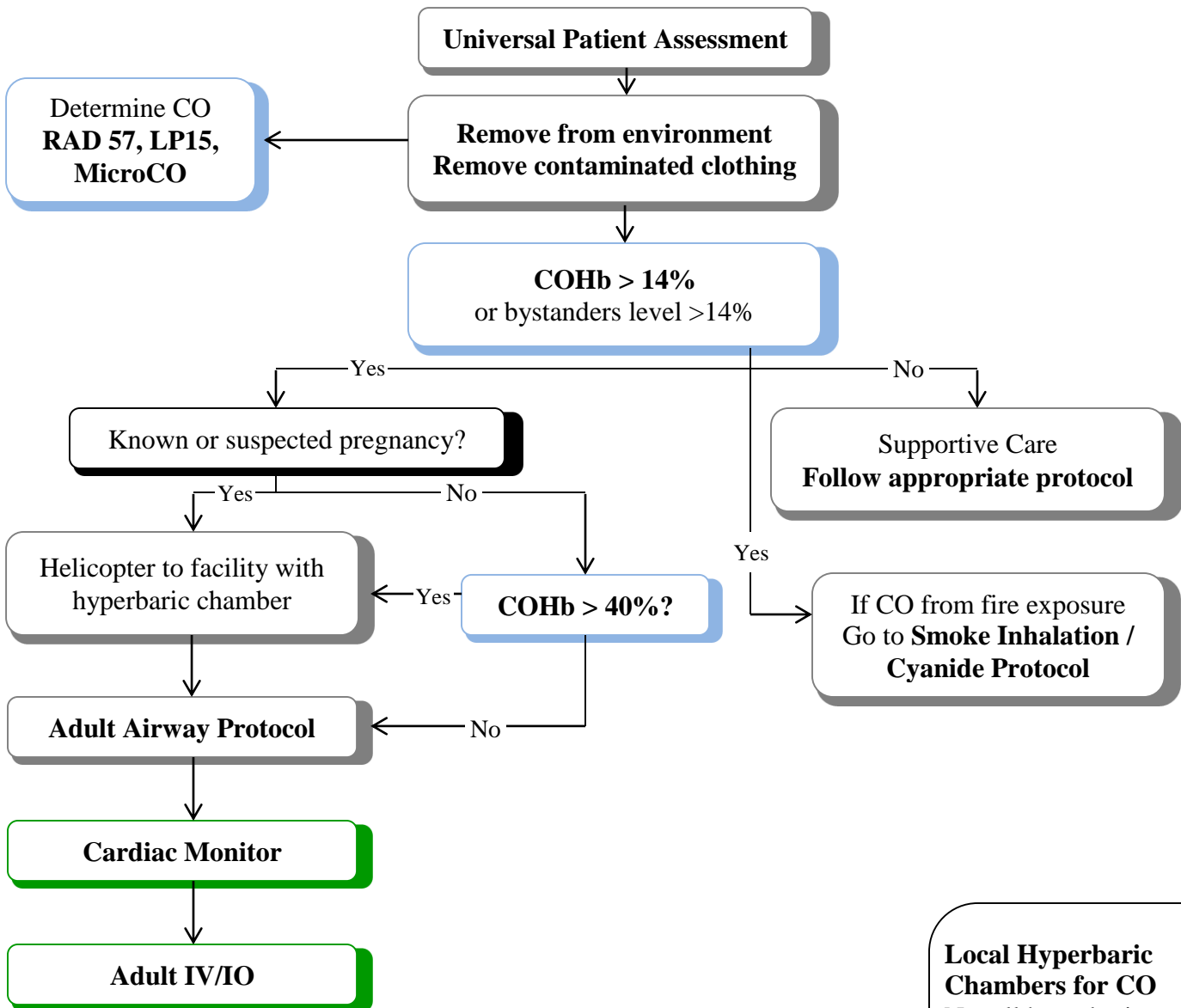
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Sepsis 54

Smoke Inhalation / Cyanide..... 55

Toxic Exposure 56

Carbon Monoxide Poisoning



Local Hyperbaric Chambers for CO
 Not all hyperbaric chambers are appropriate
 Consider:

- SEMC
- UPMC

Overdose

Universal Patient Assessment

Contact Poison Control
1-800-222-1222

Adult Airway Protocol

Adult IV/IO

Cardiac Monitor

Naloxone 2mg MAD

or

Naloxone 2-4mg IV/IO/IM

May repeat to max 8mg total as necessary. Consider IV route if respiratory depression secondary to narcotics.

Monitor QTI and QRS width

Tricyclic Ingestion?

Sodium Bicarbonate
1mEq/kg IV/IO

Beta blocker overdose?

Glucagon 2mg IVP
Zofran 4mg IVP

Hypotension, seizures,
ventricular arrhythmias, or
altered mental status?

Appropriate Protocol

Tricyclic Antidepressants

- Amitriptyline
- Imipramine
- Nortriptyline
- Doxepin
- Amoxapine

Beta Blockers

- Metoprolol
- Atenolol
- Esmolol
- Labetalol
- Carvedilol

Sepsis

Universal Patient Assessment



Oxygen

Titrate SpO₂ to 94%



Sepsis/SIRS Screening Criteria

Any 2 of the following with possible infection:

- Temperature >38° C (100.3° F) or < 36° C (96.8° F)
- Pulse > 90 bpm
- Respirations > 20/min
- SBP < 90 mmHg or MAP < 65 mmHg
- Abnormal skin findings (purpura, dehydration)

Yes

No

Notify receiving facility – sepsis alert
Report which criteria patient met

Consider Rapid Transport

Cardiac Monitor

12-Lead ECG if applicable
If **EMT** or STEMI, transmit

Adult IV/IO

Fluid Bolus

1000mL Normal Saline
repeat 2x
if lung sounds are clear.
Maintain SBP 90 mmHg

Still hypotensive

If systolic BP < 80 mmHg despite 3 Liters of fluid and you suspect septic shock:
Epinephrine Push-Dose Pressor
0.5-2 mL every 2-5 min

Epi Push-Dose Conversion

Once mixed properly to 10 mcg/mL, this is the conversion:

Every 2 Minutes

- 0.5mL q 2 min = 2.5 mcg/min
- 1mL q 2 min = 5 mcg/min
- 1.5mL q 2 min = 7.5 mcg/min
- 2mL q 2 min = 10 mcg/min

Every 5 Minutes

- 1mL q 5 min = 2 mcg/min
- 1.5mL q 5 min = 3 mcg/min
- 2mL q 5 min = 4 mcg/min

EMR

EMT

AEMT

Paramedic

Extended

Smoke Inhalation / Cyanide

Universal Patient Assessment

Adult Airway Protocol

Oxygen
10-15 LPM NRB Mask

Adult IV/IO

Cardiac Monitor

Pulse Oximetry

Determine CO
RAD 57, LP15, or MicroCO

Firefighter removed by RIT
or civilian extricated from burning building
Hydroxocobalamin 1 gram IV

Supportive Care

Transport to Trauma Center

EMR

EMT

AEMT

Paramedic

Extended

Toxic Exposure

Universal Patient Assessment

Adult Airway Protocol

Contact Chemtrec
1-800-424-9300

Adult IV/IO

Cardiac Monitor

Decontaminate Patient

Notify Hospital of Exposure

Organophosphate / Nerve Agent?

Hypotension, Seizures, Ventricular arrhythmias, altered mental status?

- Organophosphate SLUDGE Symptoms**
- Salivation
 - Lacrimation
 - Urination
 - Defecation
 - Gastrointestinal upset
 - Emesis

Atropine 2-5mg IV/IO every 15 min as needed
Seizure Protocol as needed

Appropriate Protocol

EMR

EMT

AEMT

Paramedic

Extended

Trauma

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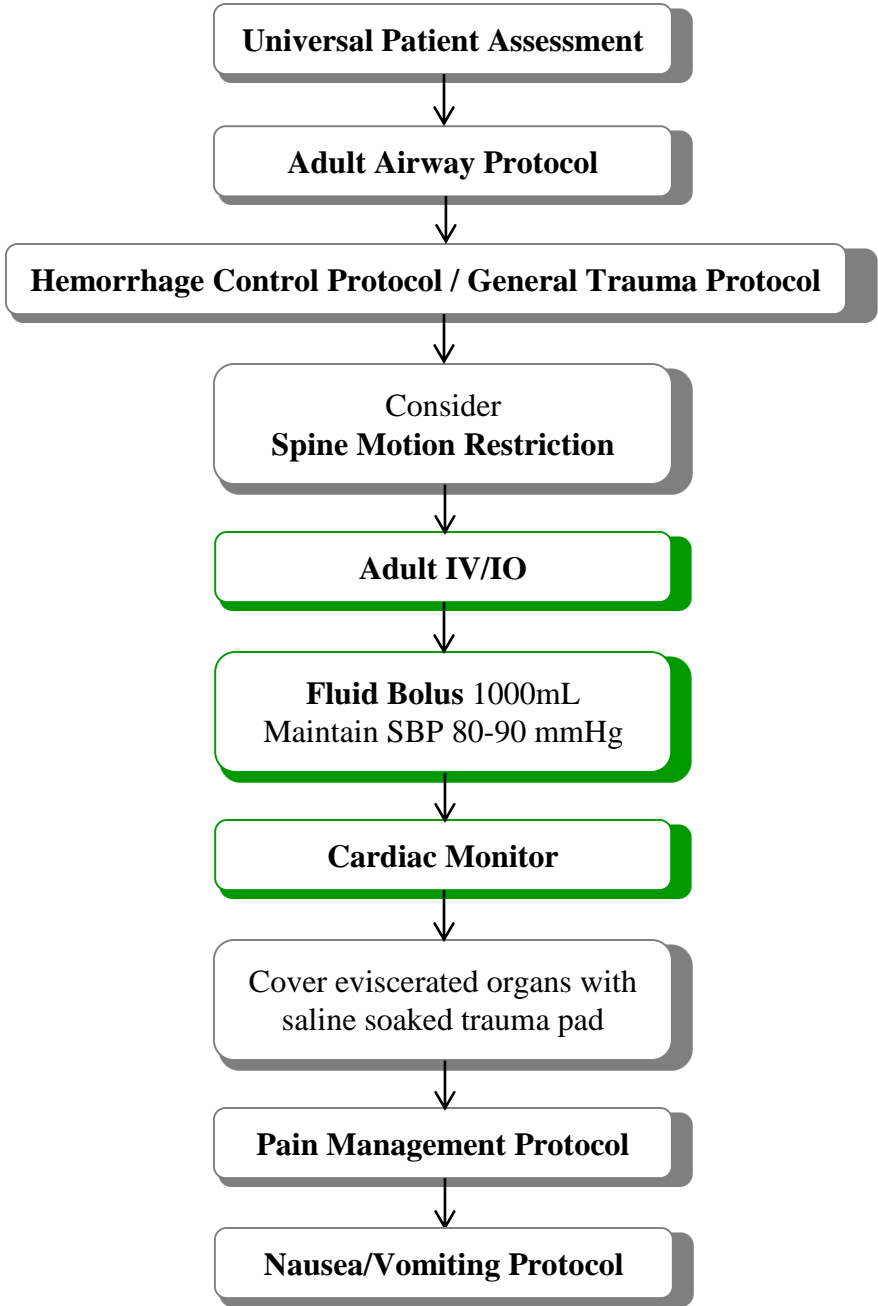
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Abdominal Trauma



EMR

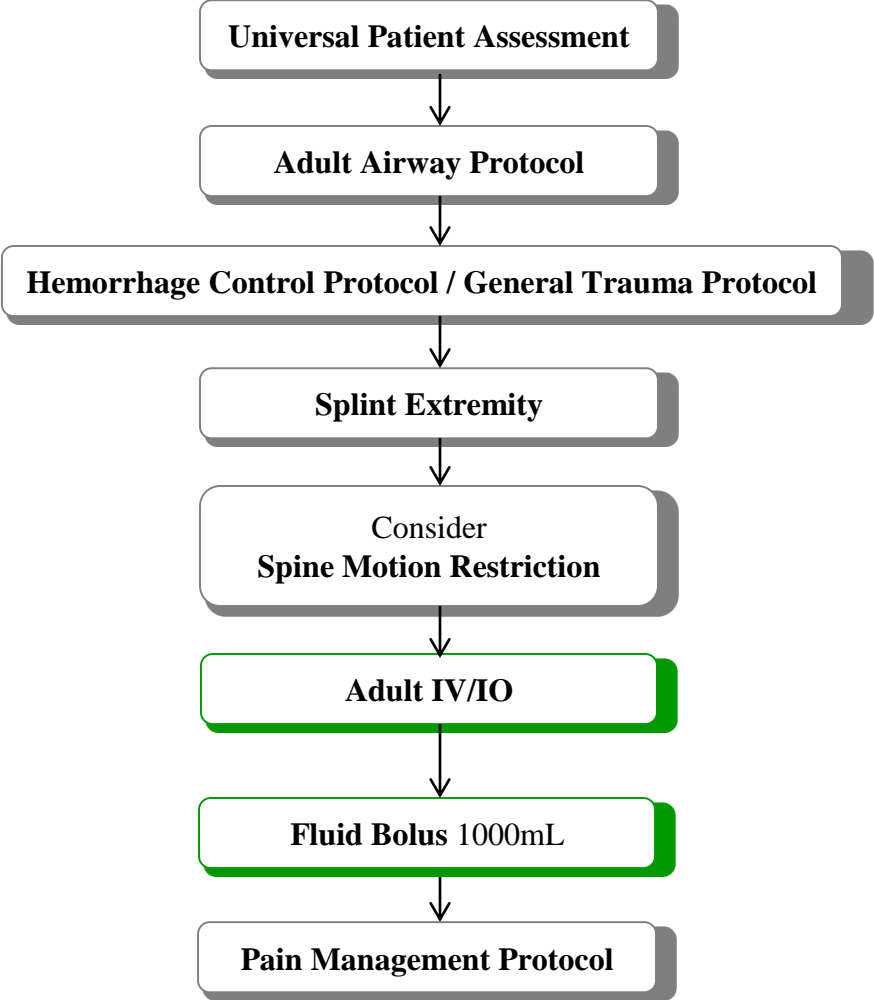
EMT

AEMT

Paramedic

Extended

Avulsion / Amputation



EMR

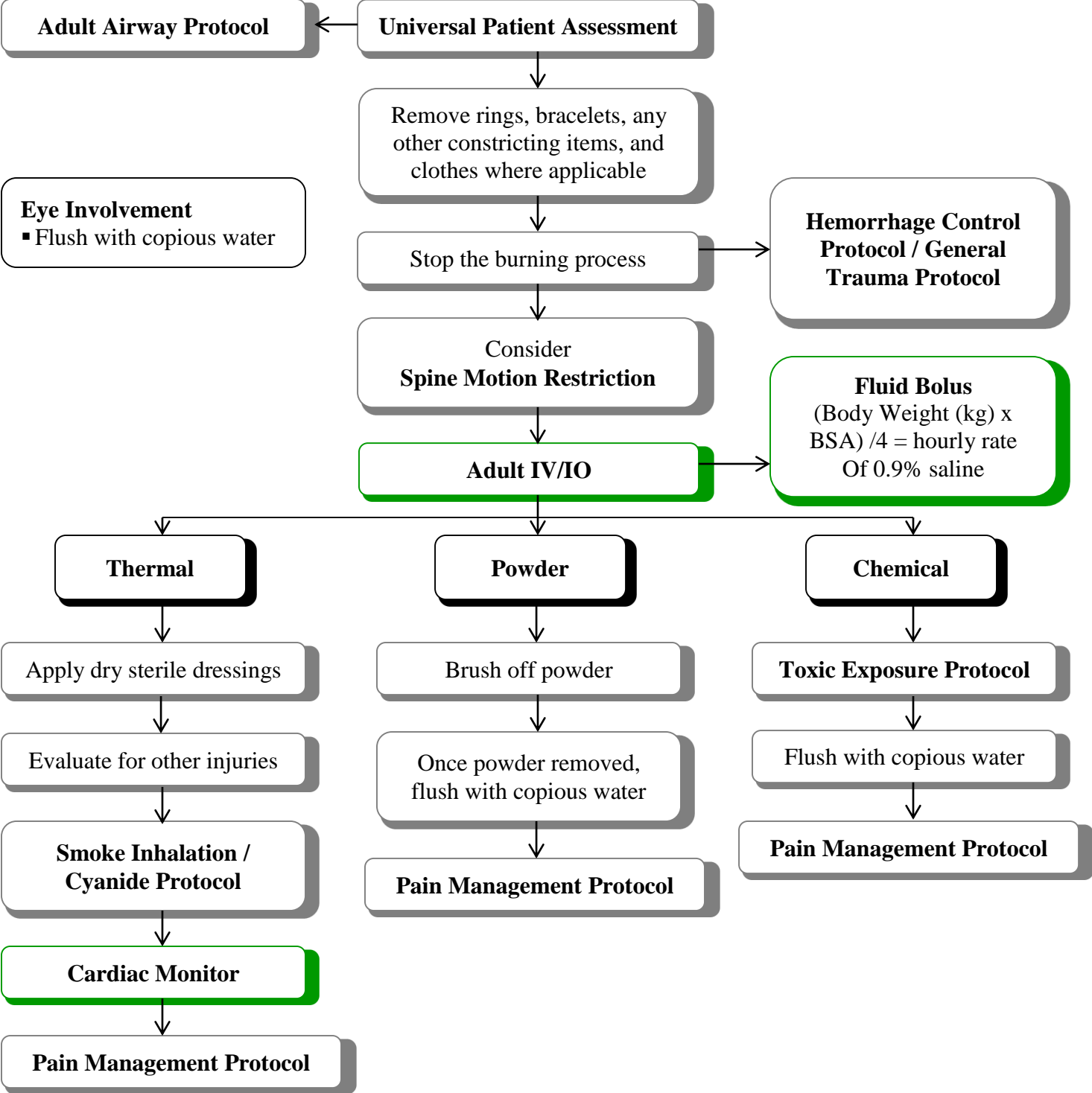
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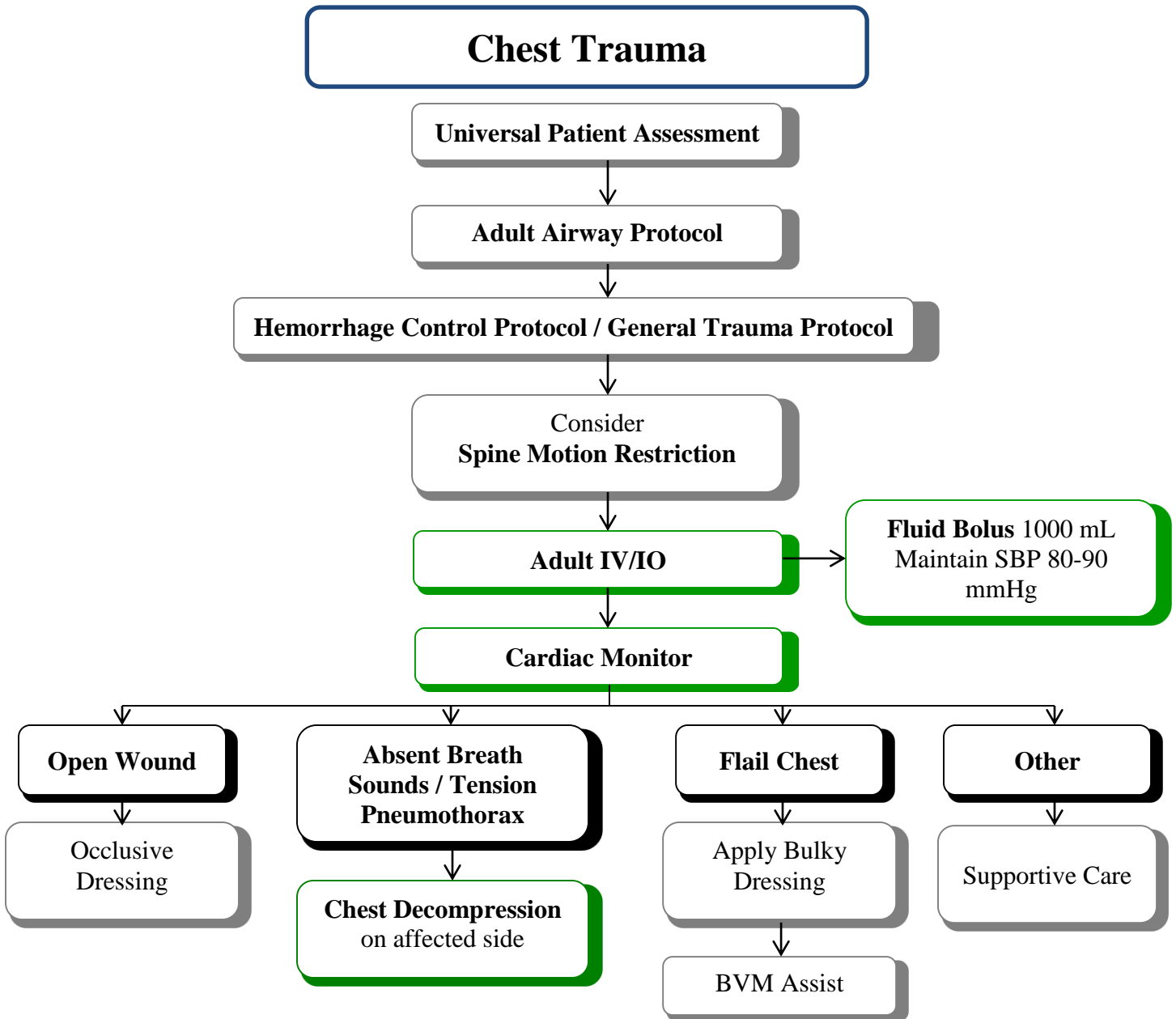
AEMT

Paramedic

Extended

Burns





General Trauma

Universal Patient Assessment / Patient Assessment-Trauma

Determine need for Trauma Center
If MCI event refer to START and JumpSTART guidelines

Meets *State of Ohio Trauma Criteria*

No

Yes

Follow Appropriate Protocol

Transport

Adult IV/IO

Hemorrhage Control Protocol

Follow Appropriate Protocol

Transport to appropriate level
trauma center.

Head Trauma

Universal Patient Assessment

Adult Airway Protocol

Hemorrhage Control Protocol / General Trauma Protocol

Consider Spine Motion Restriction

Elevate head of cot 30°

Adult IV/IO

Fluid Bolus 1000mL
Maintain SBP 100 mmHg

Cardiac Monitor

Intubation may be appropriate when:

- Persistently hypoxic
- No gag reflex
- Danger of losing the airway
- Rapidly decreasing LOC

Ventilate to ETCO₂ of 35 and 20 breaths per minute if signs of herniation are present.

Unequal Pupils

Ventilate at 20 bpm until dilated pupils constrict

Actively Seizing?

Consider Versed 10mg IM

Failed Airway Protocol

EMR

EMT

AEMT

Paramedic

Extended

Hemorrhage Control

Universal Patient Assessment

Adult Airway Protocol

General Trauma Protocol

Bleeding Controllable

Apply Direct Pressure

Direct Pressure fails, or
insufficient resources to hold
direct pressure

Apply Commercial Tourniquet

Pain Management Protocol

Bleeding Not Controllable

TXA Criteria Checklist

- Adult > 15 years old
- Hemorrhagic shock from multisystem trauma
- Trauma less than 1 hour old
- Sustained tachycardia >110bpm
- Minimum of 15 minute transport
- No known hypersensitivity to TXA

Adult IV/IO

Tranexamic Acid (TXA)

1 gram mixed in 50mL IV bag connected to
10gtts/mL administration set, and
administered over 10 minutes
(1 drop per second)

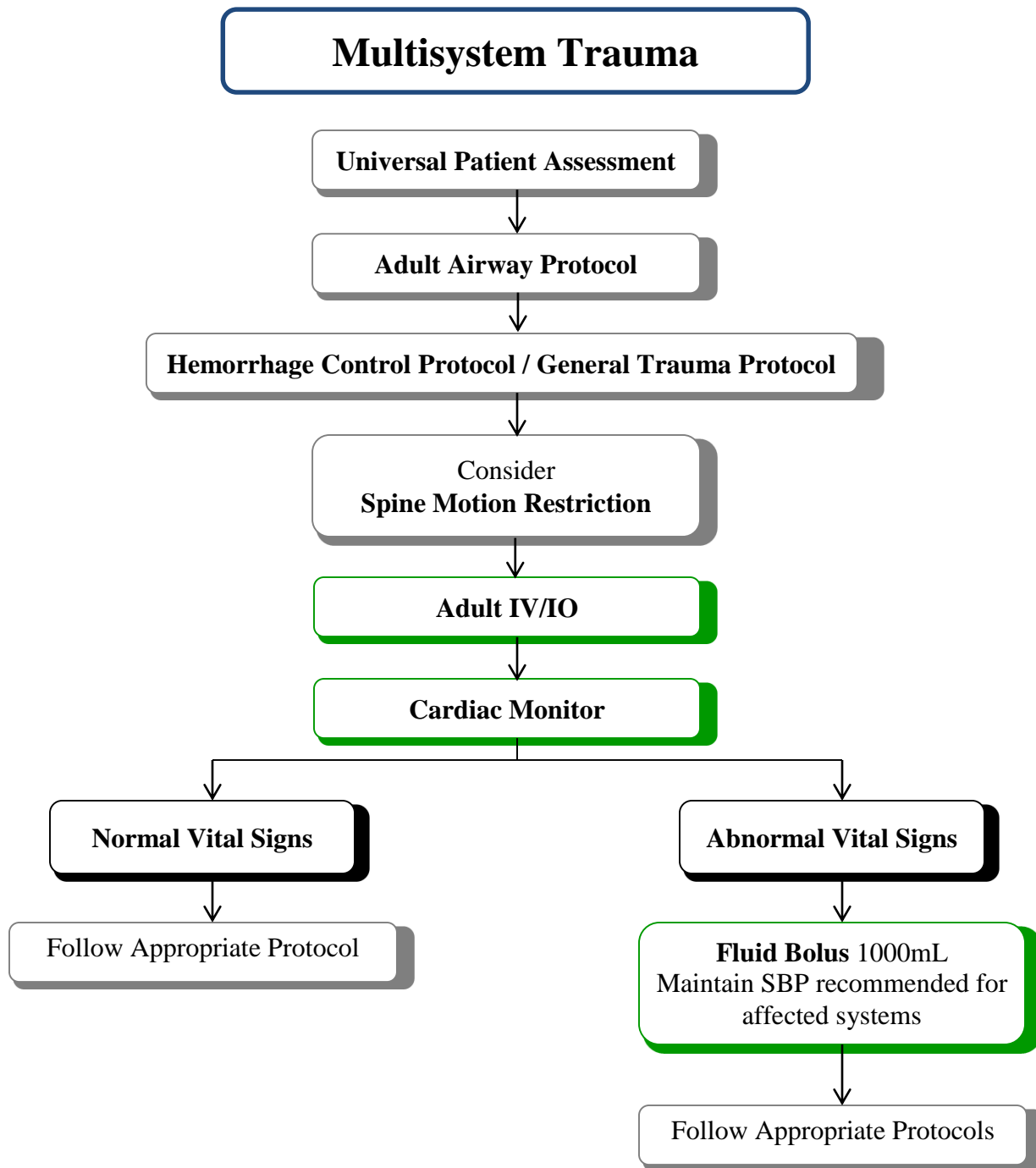
EMR

EMT

AEMT

Paramedic

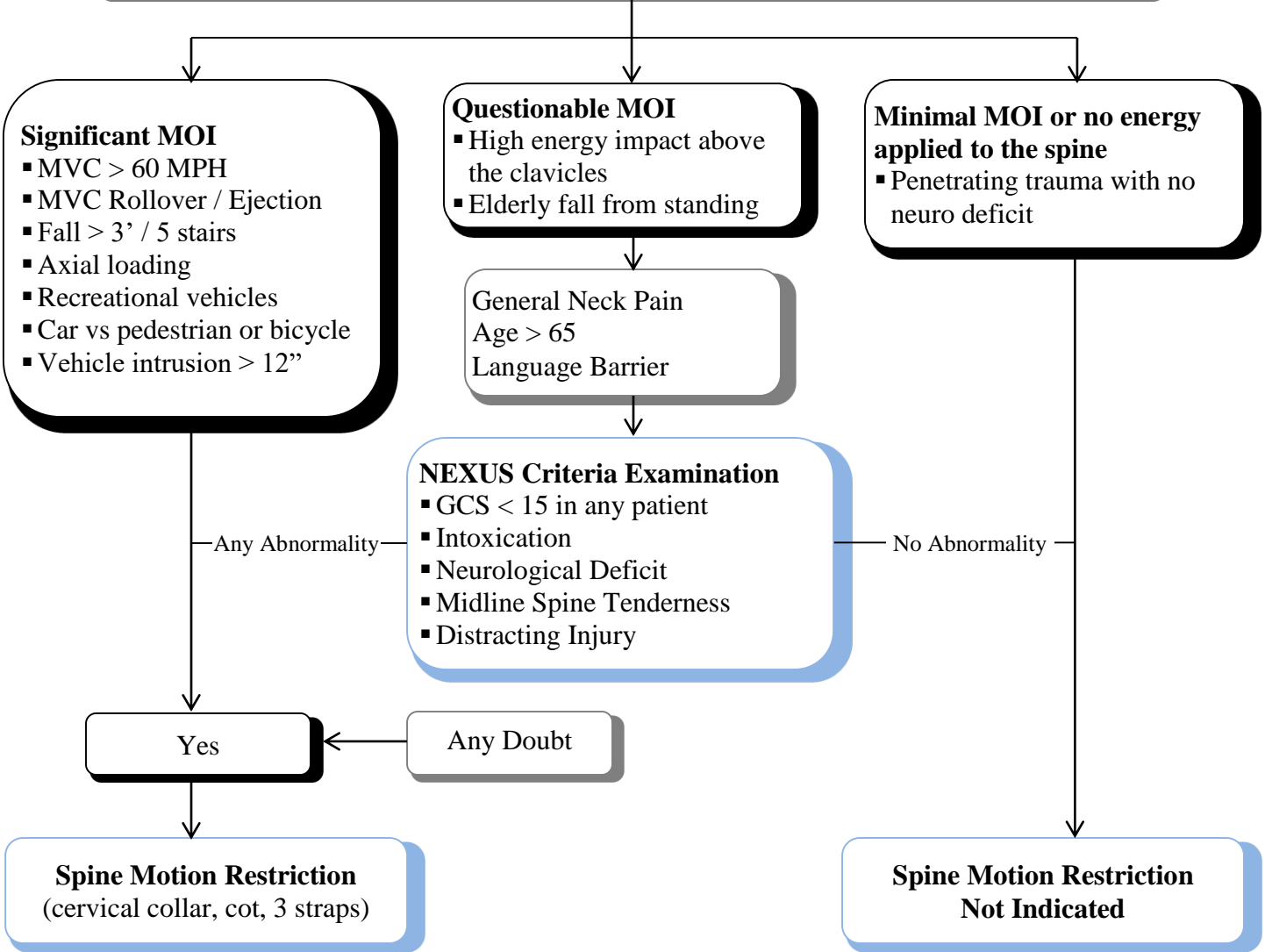
Extended



Spinal Assessment

- Clinical Considerations**
- C-spine control is used in almost all non-isolated trauma
 - Anyone who would have traditionally been backboarded will get a c-collar
 - The intent of the rigid spine board is to facilitate movement
 - Remove the rigid device prior to arrival at the receiving facility
 - There is no longer a place for the standing takedown
 - Patients who are ambulatory on scene should be instructed to sit on the cot
 - Providers must still actively use spinal precautions and document what precautions were taken
 - Providers should use a slide board to facilitate movement between the cot and other surfaces
 - If any doubt exists whether or not a patient has a spine injury, utilize spine motion restriction

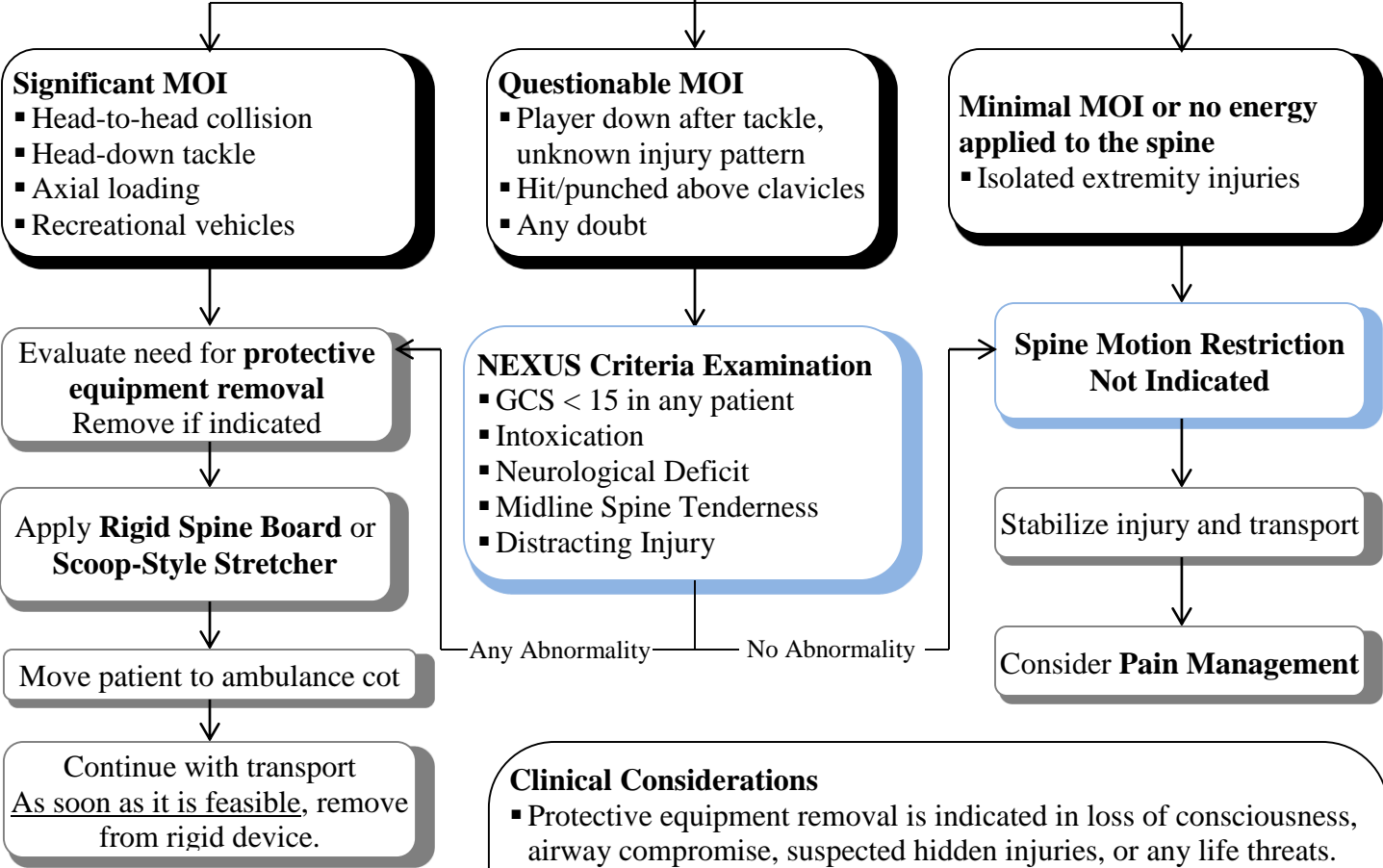
Apply manual c-spine control if any Mechanism of Injury for spine trauma exists

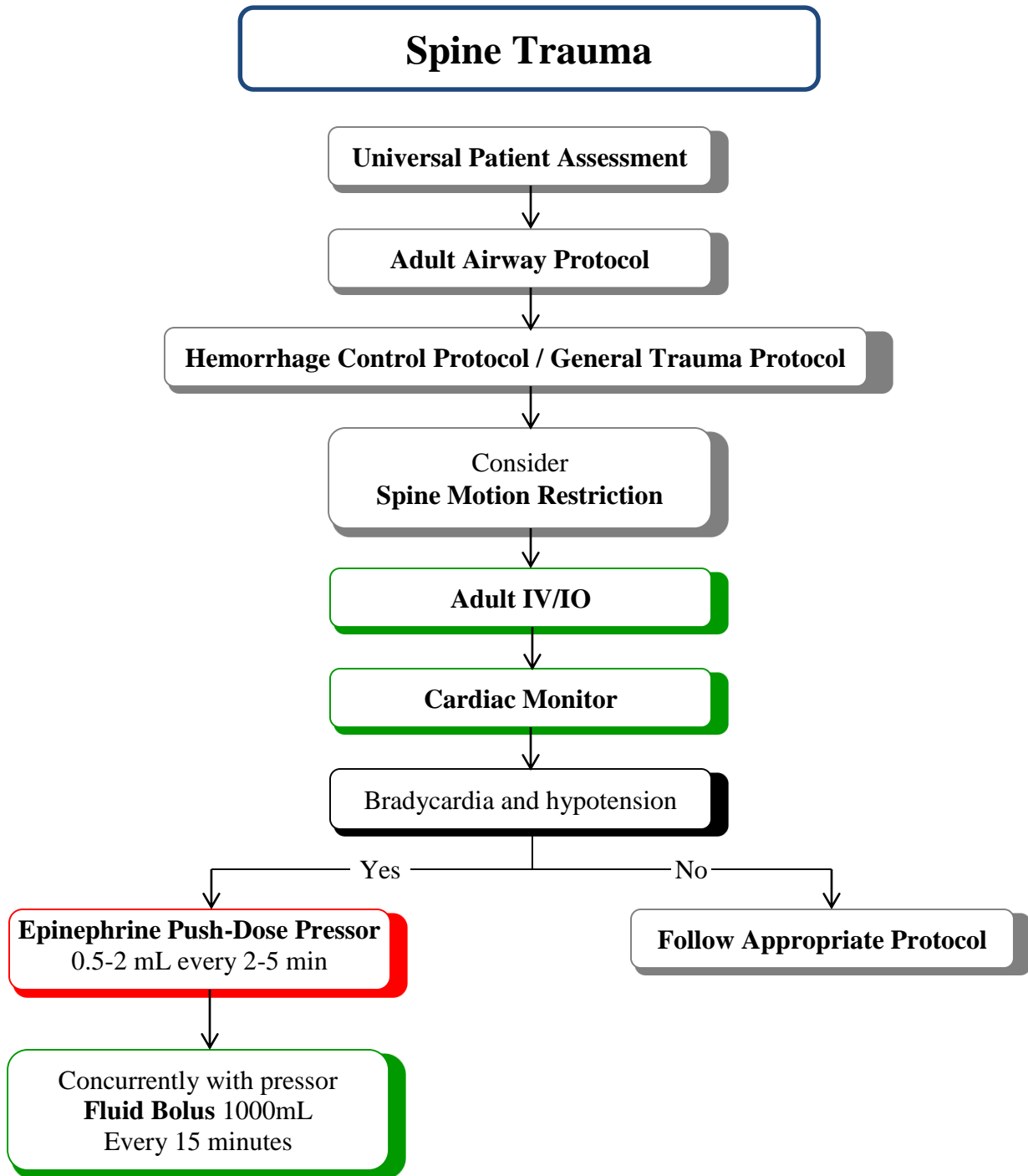


Spine Injured Athletes

- Clinical Considerations**
- Current NATA recommendations are designed to guide clinical judgment. They are not law.
 - Athletes with potential spine injury wearing protective gear complicates lifting, movement, and assessment
 - Care should be taken to move the spine injured athlete in the most effective way to reduce spine motion.
 - Patients who are ambulatory on scene should be instructed to sit on the cot.
 - The intent of the rigid spine board is to facilitate movement and extrication. It provides no benefit and may cause harm to a patient once they are on the ambulance cot.
 - Every effort should be taken to remove the patient from the rigid spine board as soon as it is possible
 - If any doubt exists whether or not a patient has a spine injury, utilize spine motion restriction

Apply manual c-spine control if any Mechanism of Injury for spine trauma exists





EMR

EMT

AEMT

Paramedic

Extended

Pediatric Protocols

Pediatric Cardiovascular

Pediatric Bradycardia..... 71

Pediatric Cardiac Arrest..... 72

Pediatric Pulseless Arrest..... 73

Pediatric SVT..... 74

Pediatric Bradycardia

Universal Pediatric Assessment

Identify and treat underlying cause

- Maintain airway, assist breathing
- Oxygen
- **Cardiac monitor**, BP, oximetry
- **IO/IV access**. Consider **Fluid Bolus** 20mL/kg
- **12-Lead ECG** if time permits, don't delay therapy

Cardiopulmonary
compromise continues

CPR if heart rate < 60 bpm
Despite oxygenation and ventilation

Bradycardia persists

Epinephrine 1:10,000 IV/IO 0.01mg/kg (0.1mL/kg)
Repeat every 3-5 minutes
Atropine IV/IO for increased vagal tone or 1° AVB
0.02 mg/kg. May repeat once.

Consider
Transcutaneous Pacing

If pulseless arrest develops:
Pediatric Pulseless Arrest

EMR

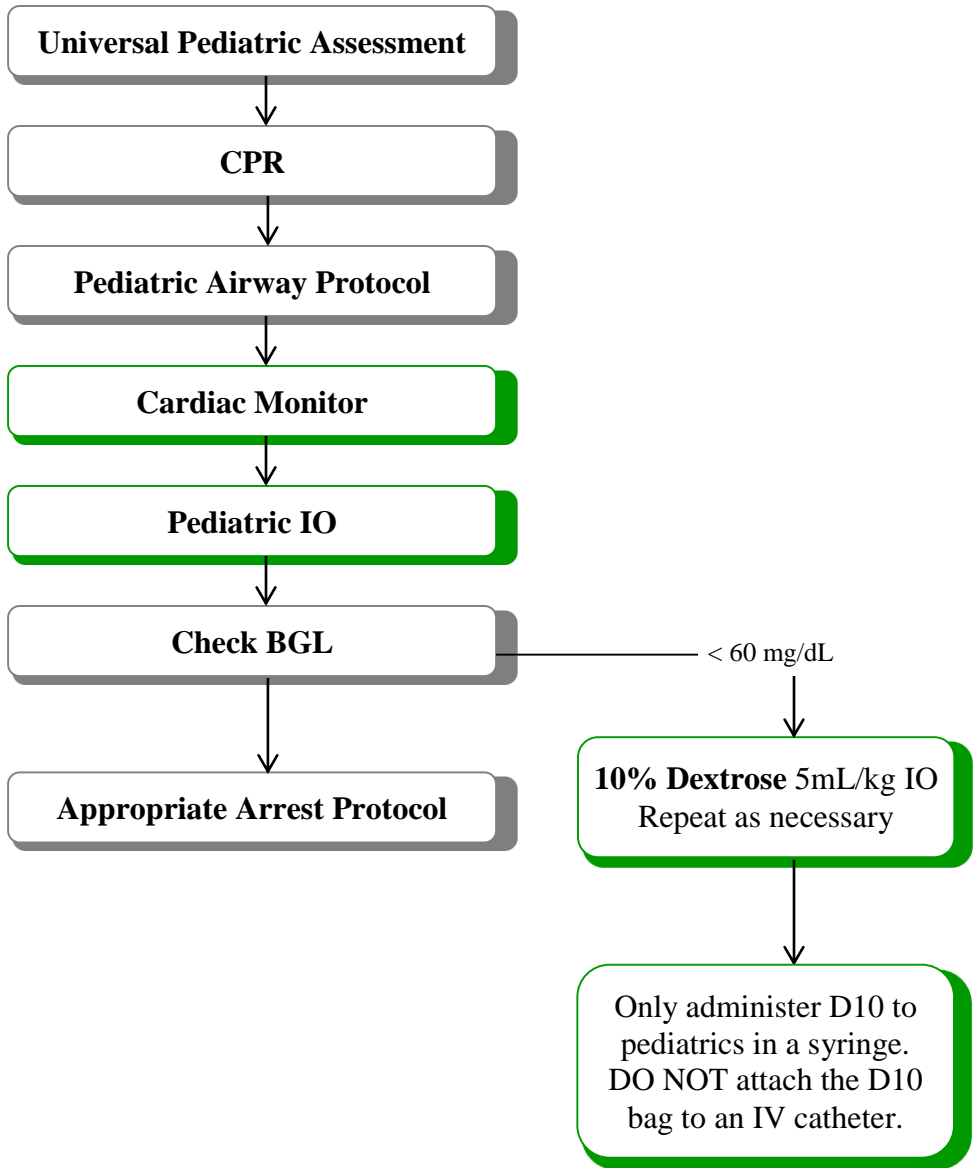
EMT

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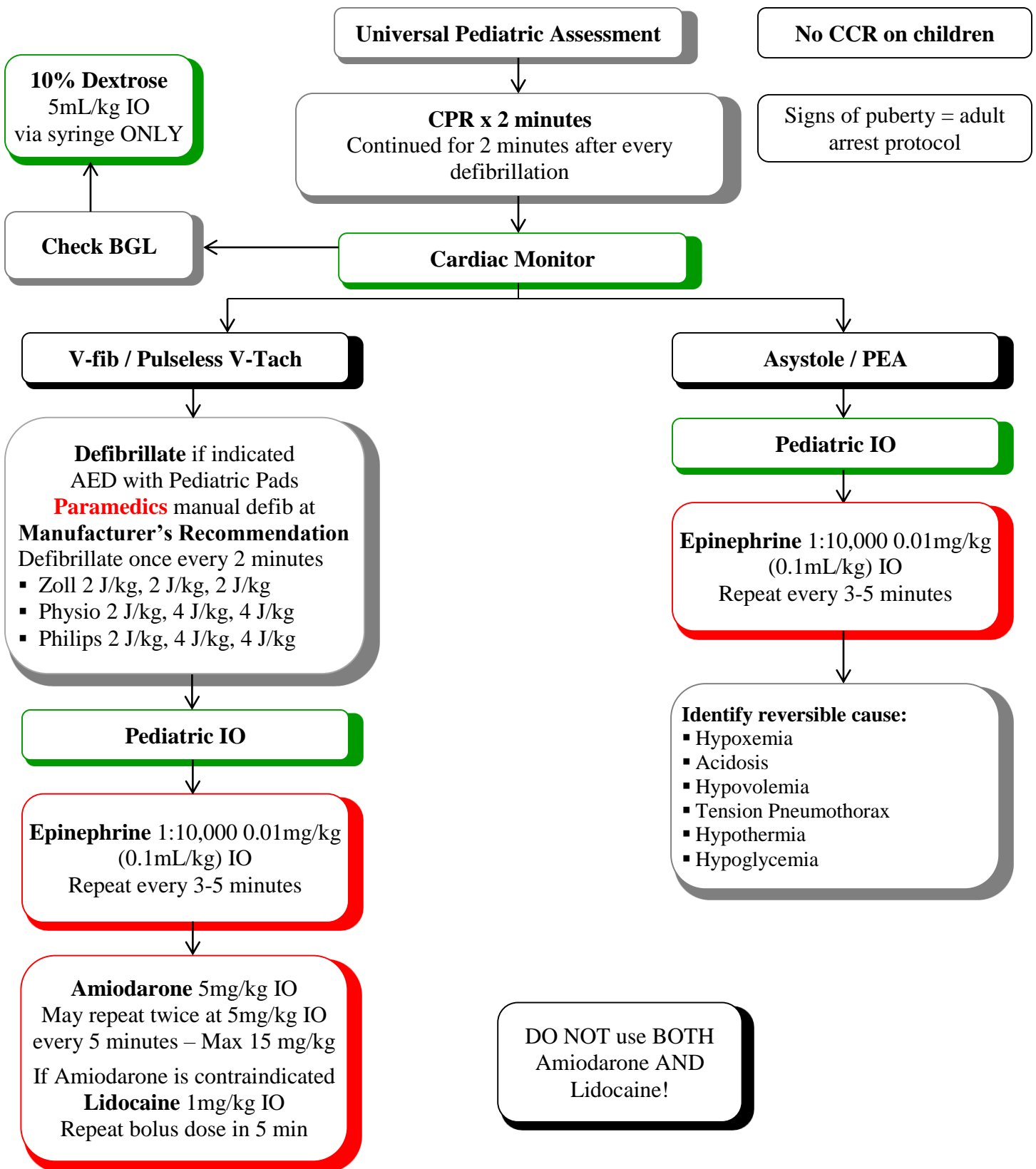
Paramedic

Extended

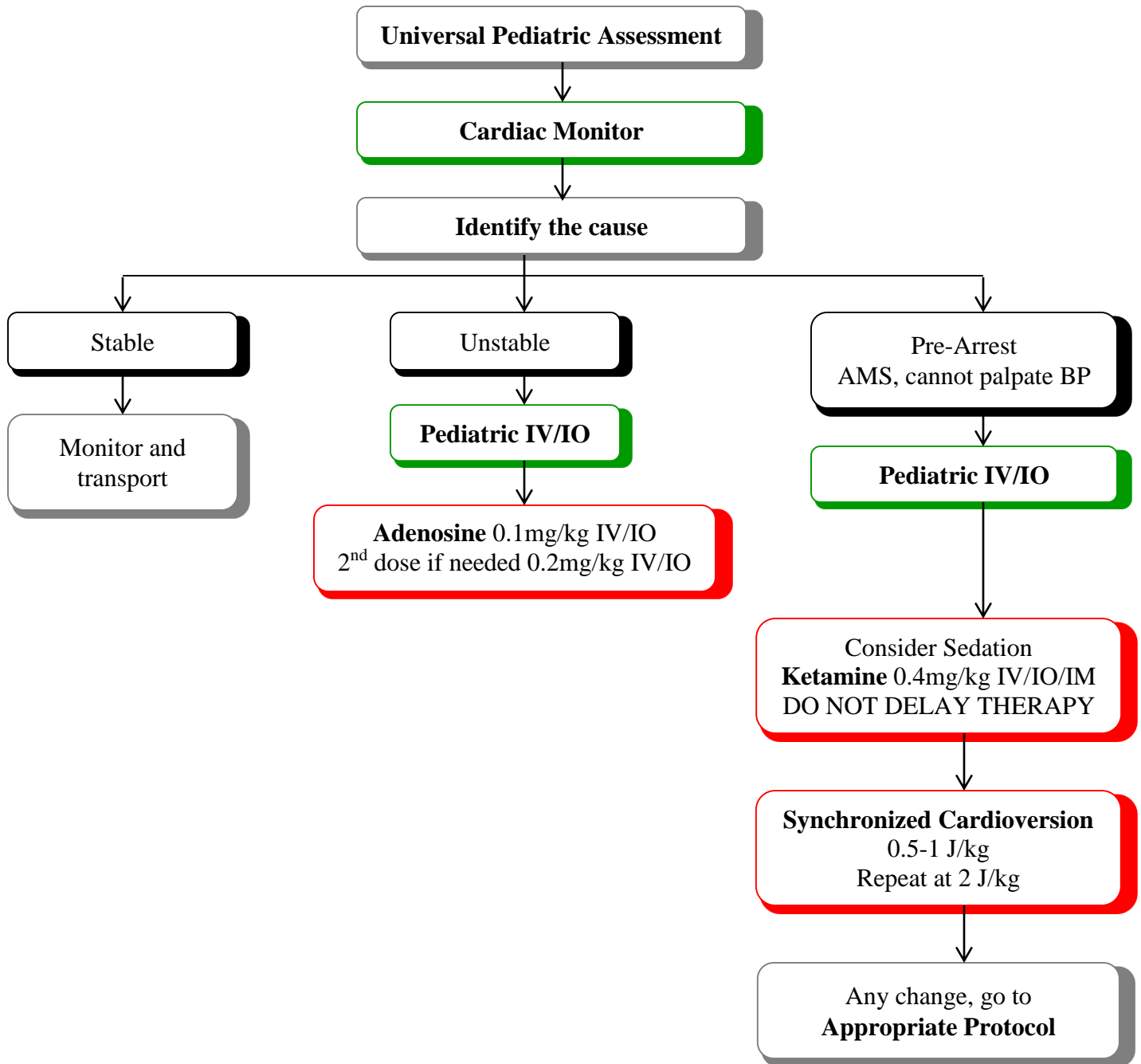
Pediatric Cardiac Arrest



Pediatric Pulseless Arrest



Pediatric SVT



EMR

EMT

AEMT

Paramedic

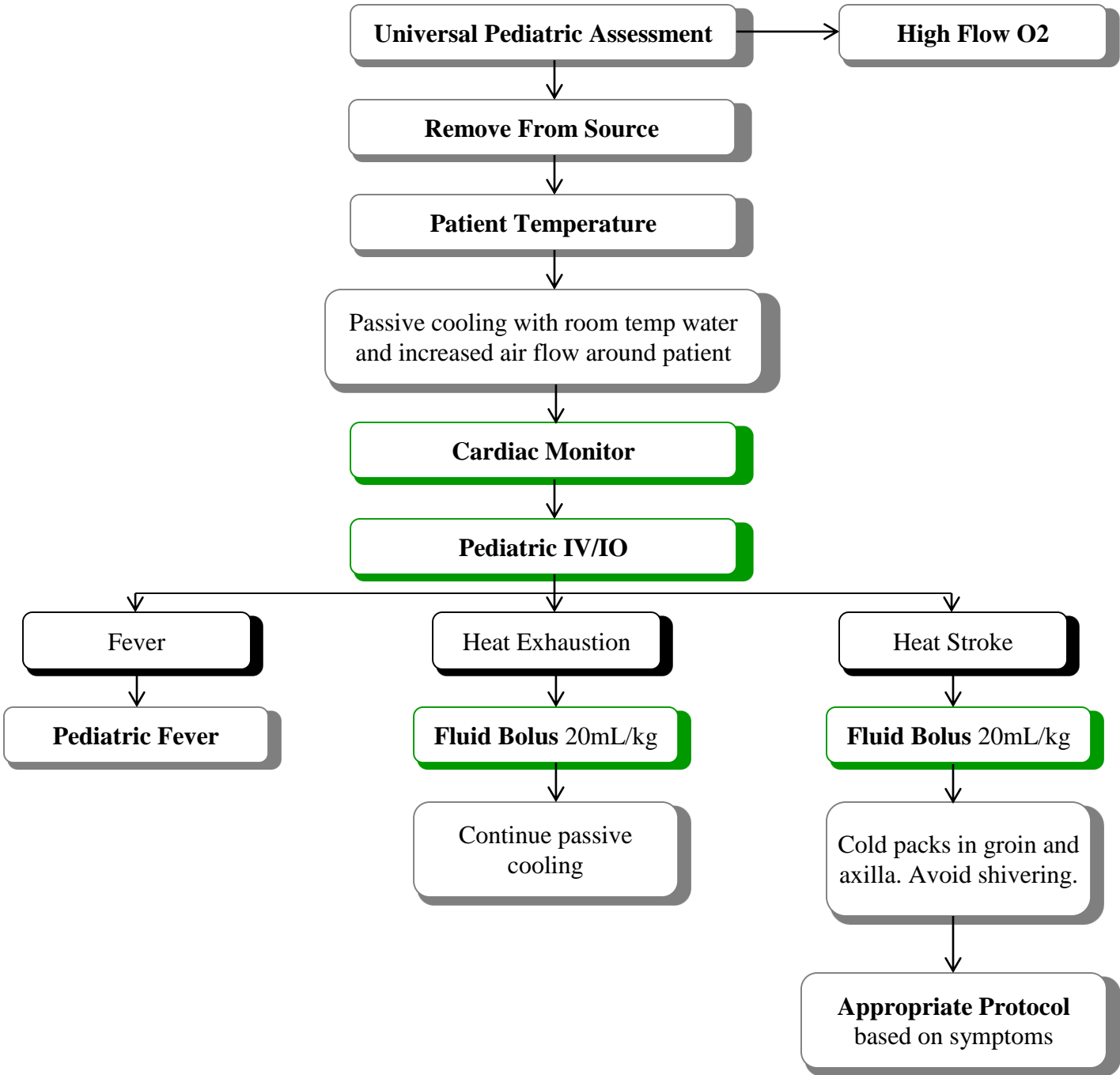
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Pediatric Environmental

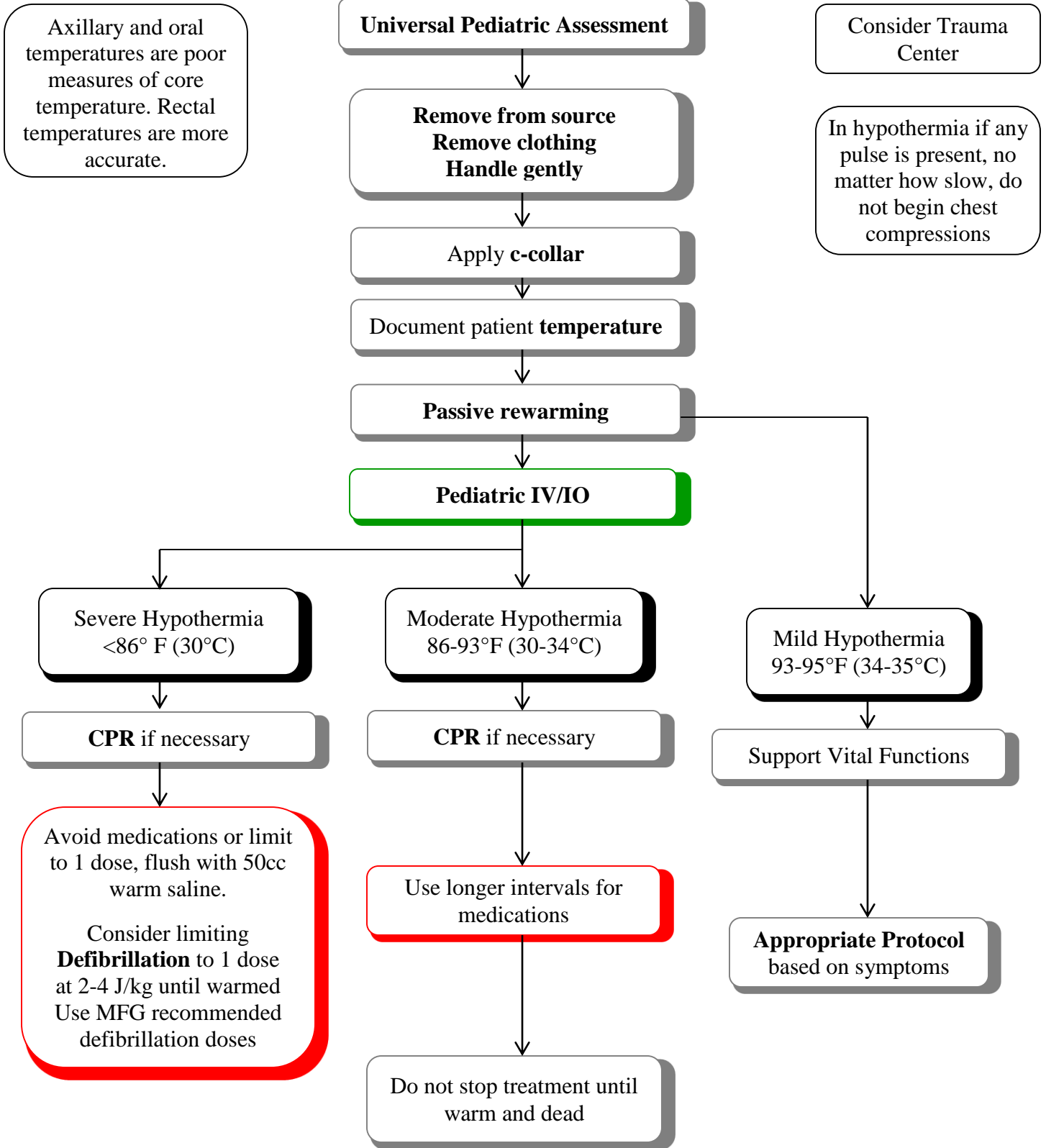
Pediatric Heat Illness 76

Pediatric Hypothermia 77

Pediatric Heat Illness



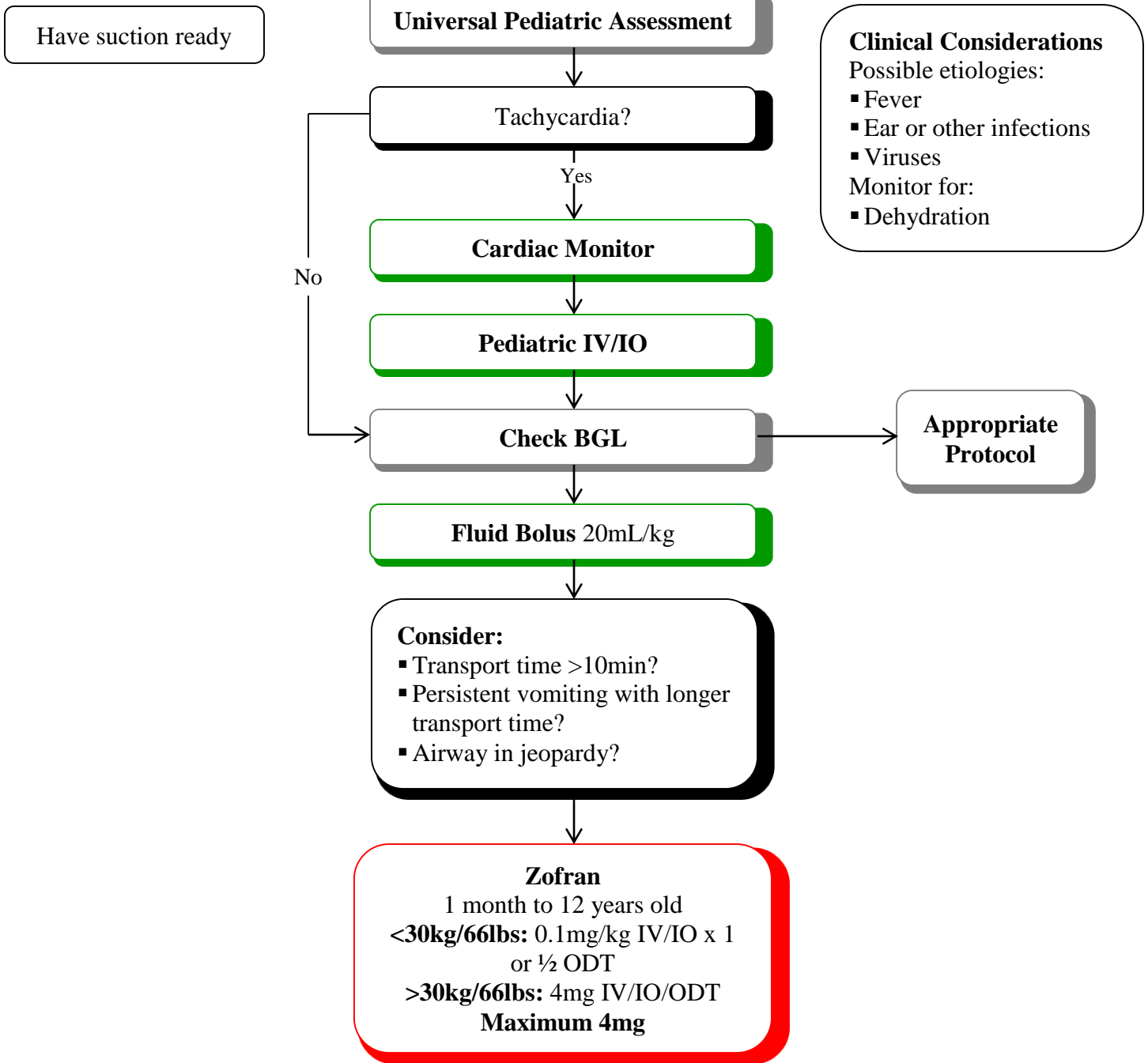
Pediatric Hypothermia



Pediatric Gastrointestinal

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Pediatric Vomiting



Pediatric General

Pediatric Fever 81

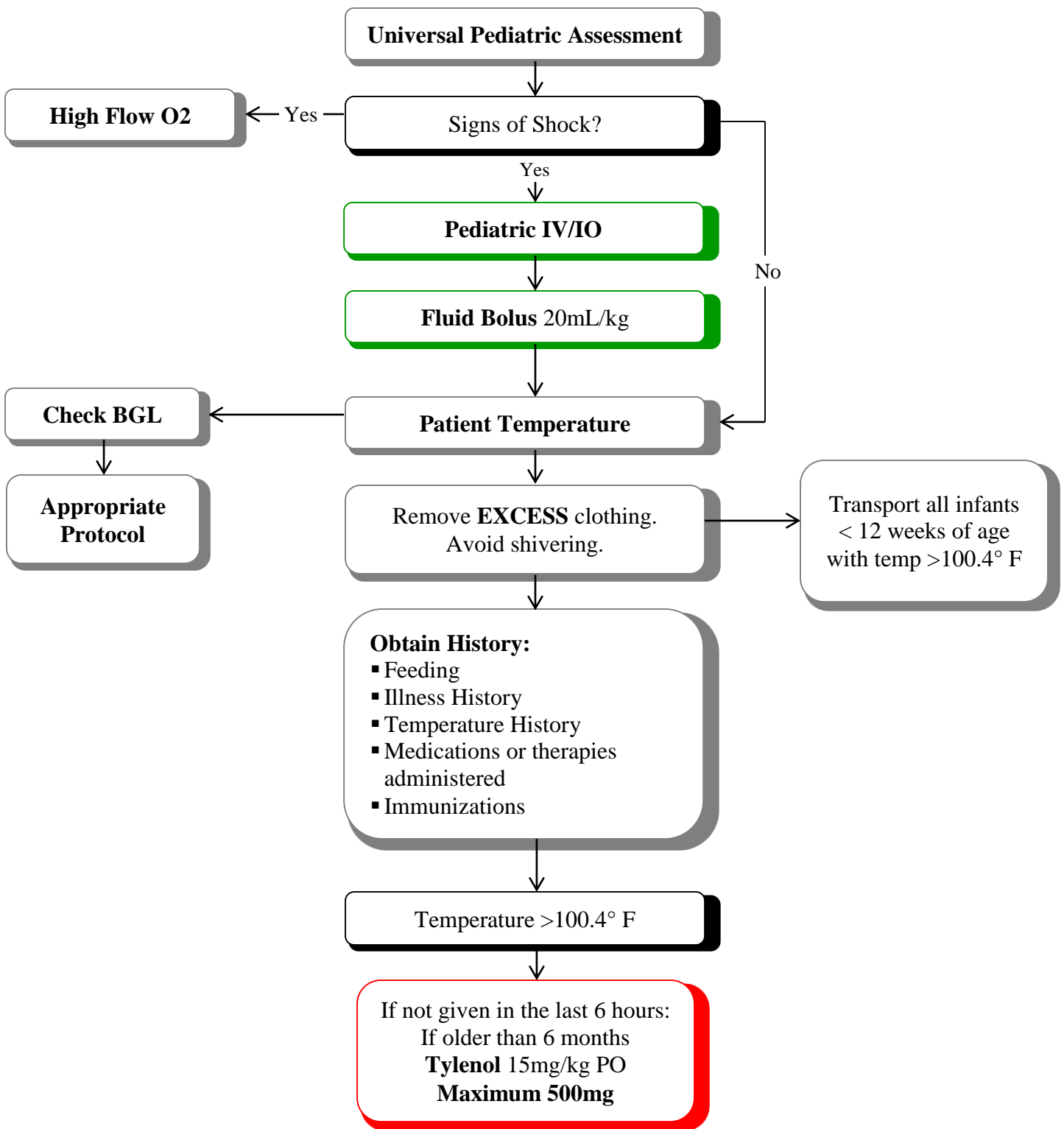
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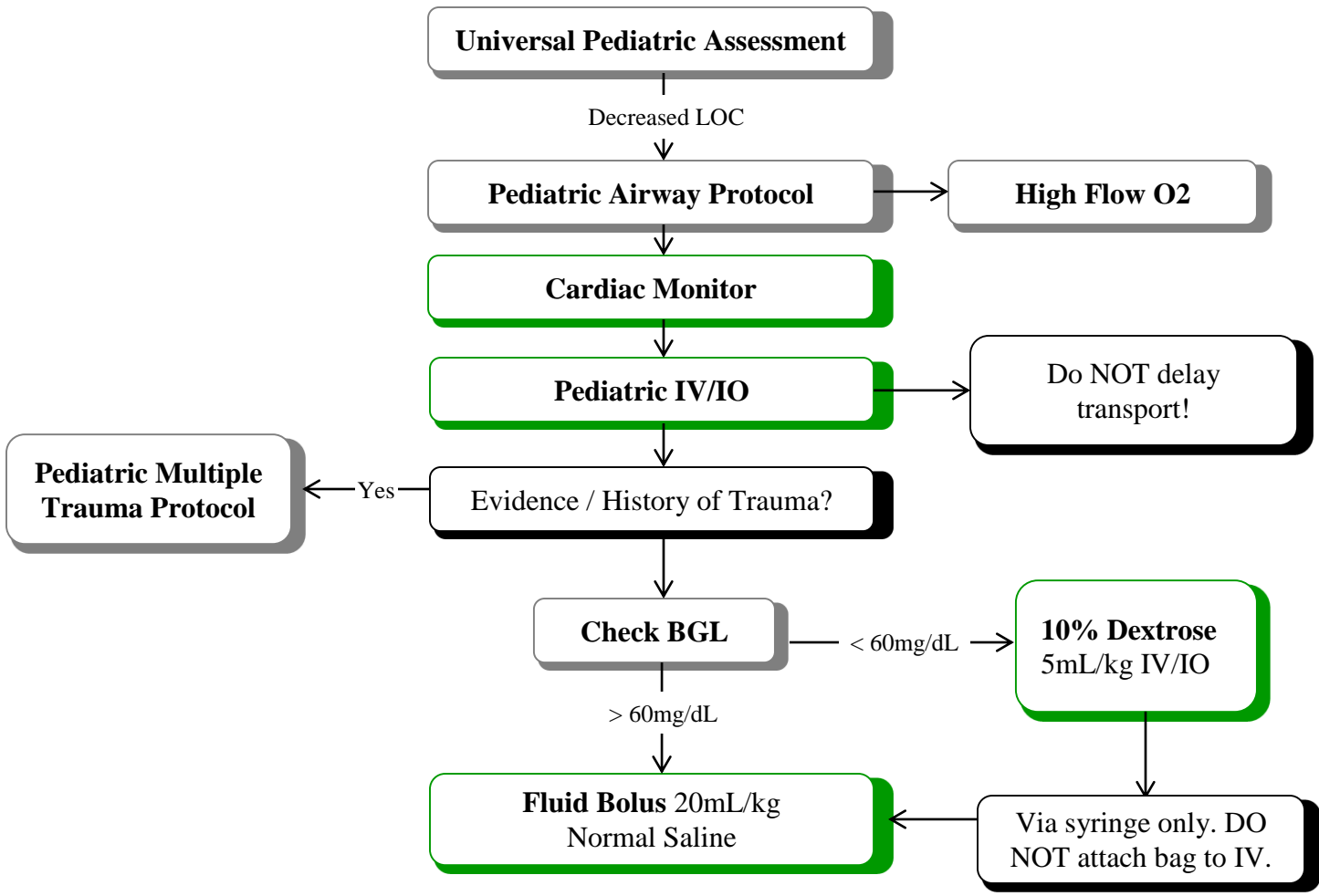
Pediatric Pain Control..... 84

Universal Pediatric Assessment..... 85

Pediatric Fever



Pediatric Hypovolemic Shock



Pediatric IV / IO

Universal Pediatric Assessment

Assess need for IV 0.9 NS
Emergent or potentially emergent
medical or trauma condition
Never use D5W

Peripheral IV

Three (3) IV attempts in 90
seconds

In severe blood loss or shock,
consider **fluid replacement**
20mL/kg bolus via stopcock
and 50mL syringe

Unsuccessful

Intraosseous EZ-IO
If truly needed

Monitor infusion

Clinical Considerations

EZ-IO sites (Pediatric):

- Proximal Humerus
- Proximal Tibia
- Distal Tibia
- Distal Femur
- BIG or Jamshidi
- Proximal Tibia

Clinical Considerations

Pediatric Approved IO Devices:

- EZ-IO
- Jamshidi or Illinois
- BIG

EMR

EMT

AEMT

Paramedic

Extended

Pediatric Pain Control

Clinical Considerations

- Ketamine IV/IO must be diluted to 5mg/mL
- Do not dilute ketamine for MAD or IM routes
- Ketamine may be less effective via MAD or IM
- Alternative routes are offered to minimize patient anxiety and facilitate administration
- Bioavailability of alternative routes guides the dose ranges

Universal Pediatric Assessment

Keep patient calm

Use Wong-Baker Faces pain scale

Determine cause of pain

Pediatric IV/IO

< 16 years old

Clinical Considerations

Make parents aware:

- Ketamine is a hallucinogen
 - Ketamine causes nystagmus
- Second dose must be clearly justified

Clinical Considerations

Ketamine Contraindications:

- Patients < 2 months old
- Schizophrenia
- Allergy to ketamine

Visceral Pain
Non-obvious Sources

If not given in the last 6 hours:
If older than 6 months:
If clearly justified:
Tylenol 15mg/kg PO
Maximum 500mg

Orthopedic Pain
Obvious Sources of Pain

Ketamine 0.2mg/kg IV/IO/IM
or
Ketamine 0.3 mg/kg Nebulized
or
Ketamine 1 mg/kg via MAD
Repeat IV/IO dose in 10 minutes if source of obvious pain

Zofran
1 month to 12 years old
<30kg/66lbs: 0.1mg/kg IV/IO x 1
or ½ an ODT
>30kg/66lbs: 4mg IV/IO/ODT
Maximum 4mg

Painful Procedures
Cardioversion
TCP

Consider
Ketamine 0.4mg/kg IV/IO/IM
Maximum 40mg.
Be prepared for side effects

- Hallucinations
- Nausea
- Nystagmus

Clinical Considerations

Never delay a lifesaving therapy such as cardioversion or TCP to provide sedation.

EMR

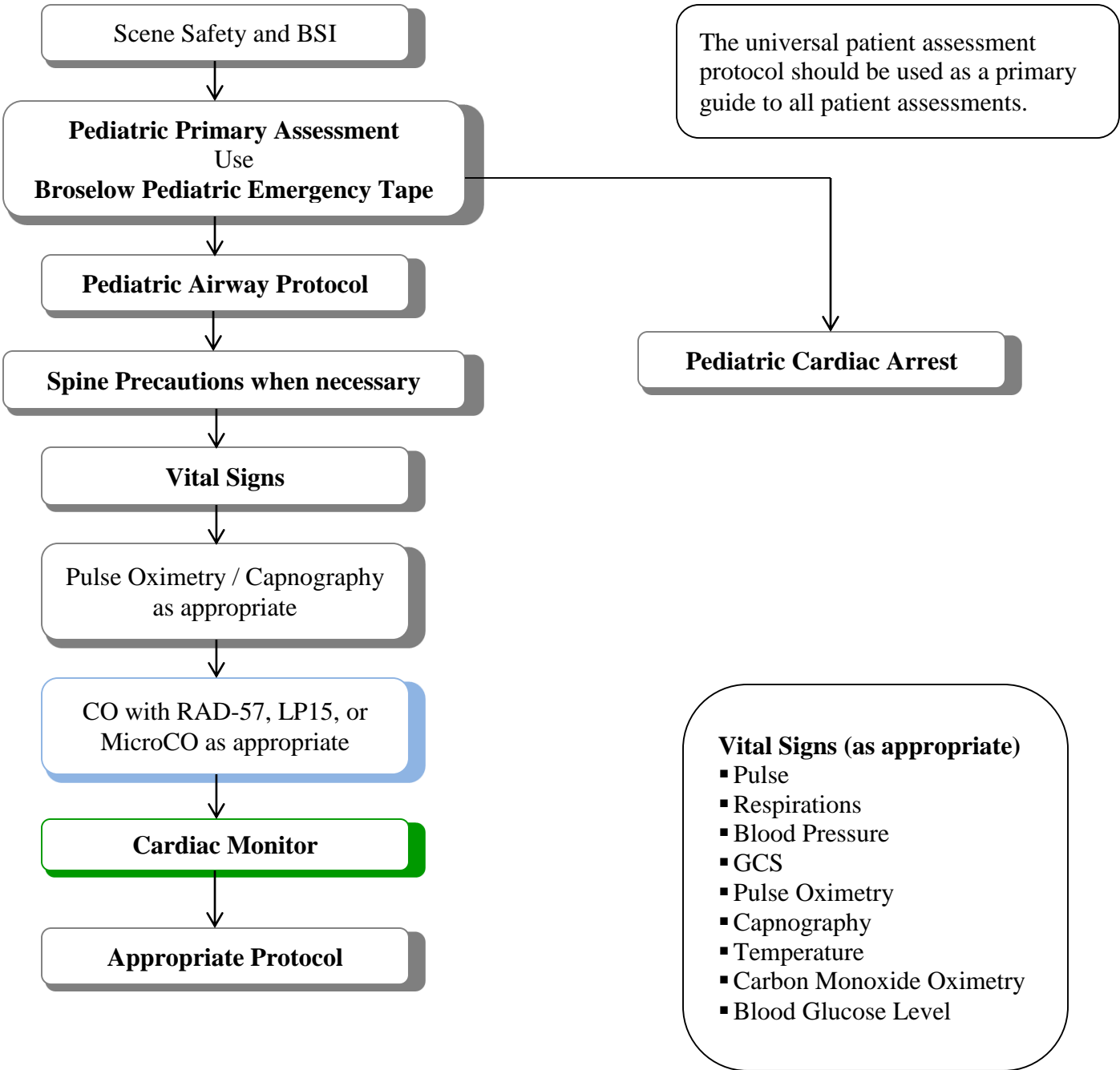
EMT

AEMT

Paramedic

Extended

Universal Pediatric Assessment



Pediatric Neonatal

Pediatric Neonatal Care 87

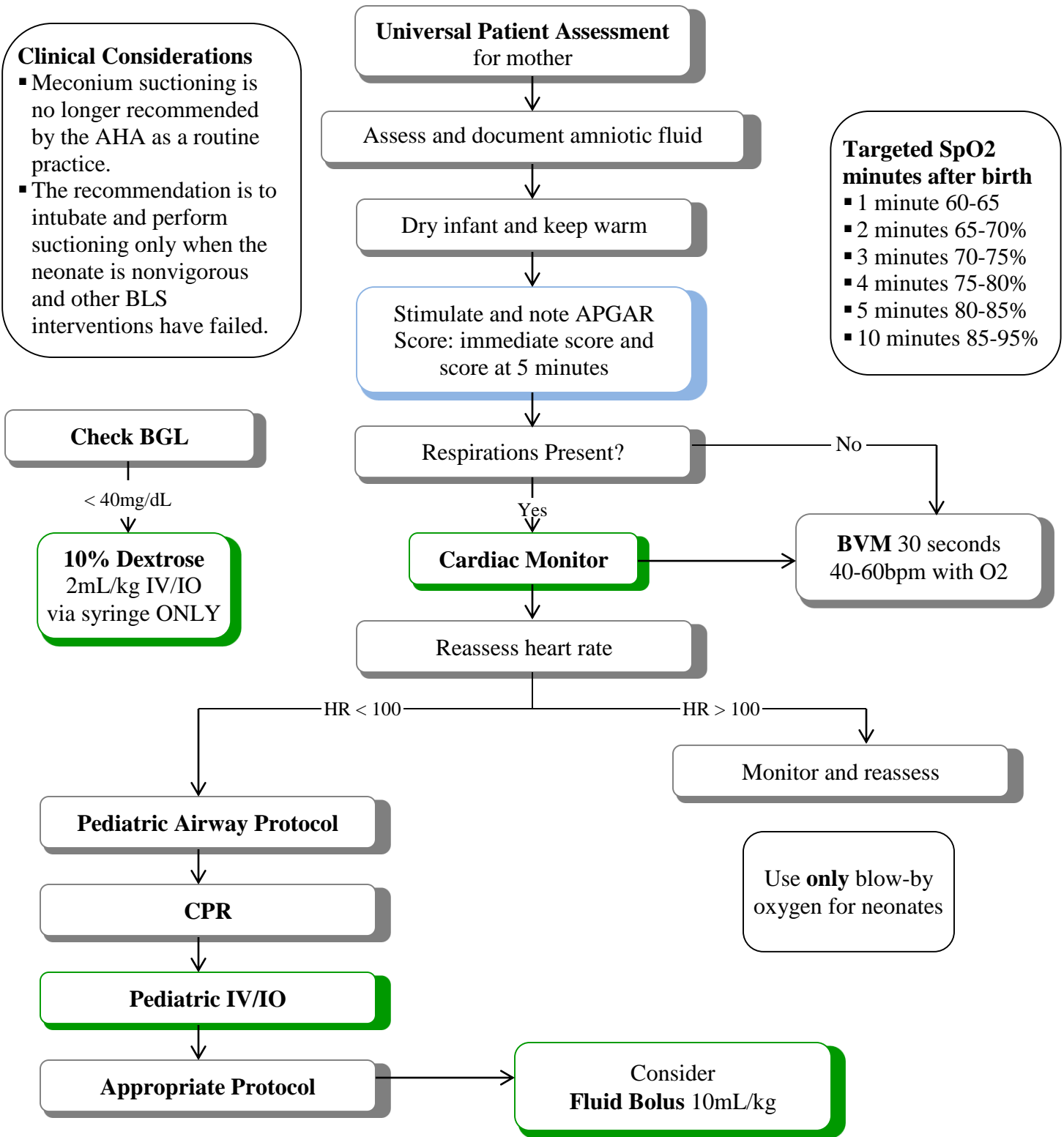
Pediatric Neonatal Care

Clinical Considerations

- Meconium suctioning is no longer recommended by the AHA as a routine practice.
- The recommendation is to intubate and perform suctioning only when the neonate is nonvigorous and other BLS interventions have failed.

Targeted SpO2 minutes after birth

- 1 minute 60-65
- 2 minutes 65-70%
- 3 minutes 70-75%
- 4 minutes 75-80%
- 5 minutes 80-85%
- 10 minutes 85-95%



Pediatric Neurological

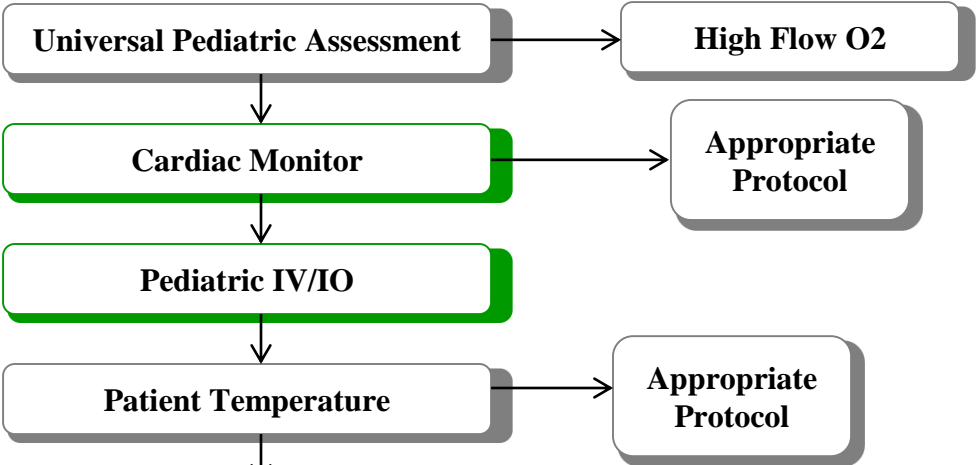
Pediatric Altered Mental Status 89

Pediatric Seizure 90

Pediatric Altered Mental Status

Clinical Consideration:
 There is approximately 20g of glucose in:

- 12oz of non-diet soda
- 12oz orange juice
- 12oz apple juice
- 12oz whole milk
- Consider food allergies



Check BGL

< 60mg/dL for a child > 1 month

60-250mg/dL

> 500mg/dL

Food, drink, or oral glucose is preferred if patient is conscious and can swallow.
Glucose 0.5-1g/kg orally

Narcan 0.1mg/kg IV/IO/IM
EMR or EMT
Narcan ½ syringe via MAD

Fluid Bolus 20mL/kg

10% Dextrose 5mL/kg IV/IO
 via syringe **ONLY**

Avoid in infants < 1 month

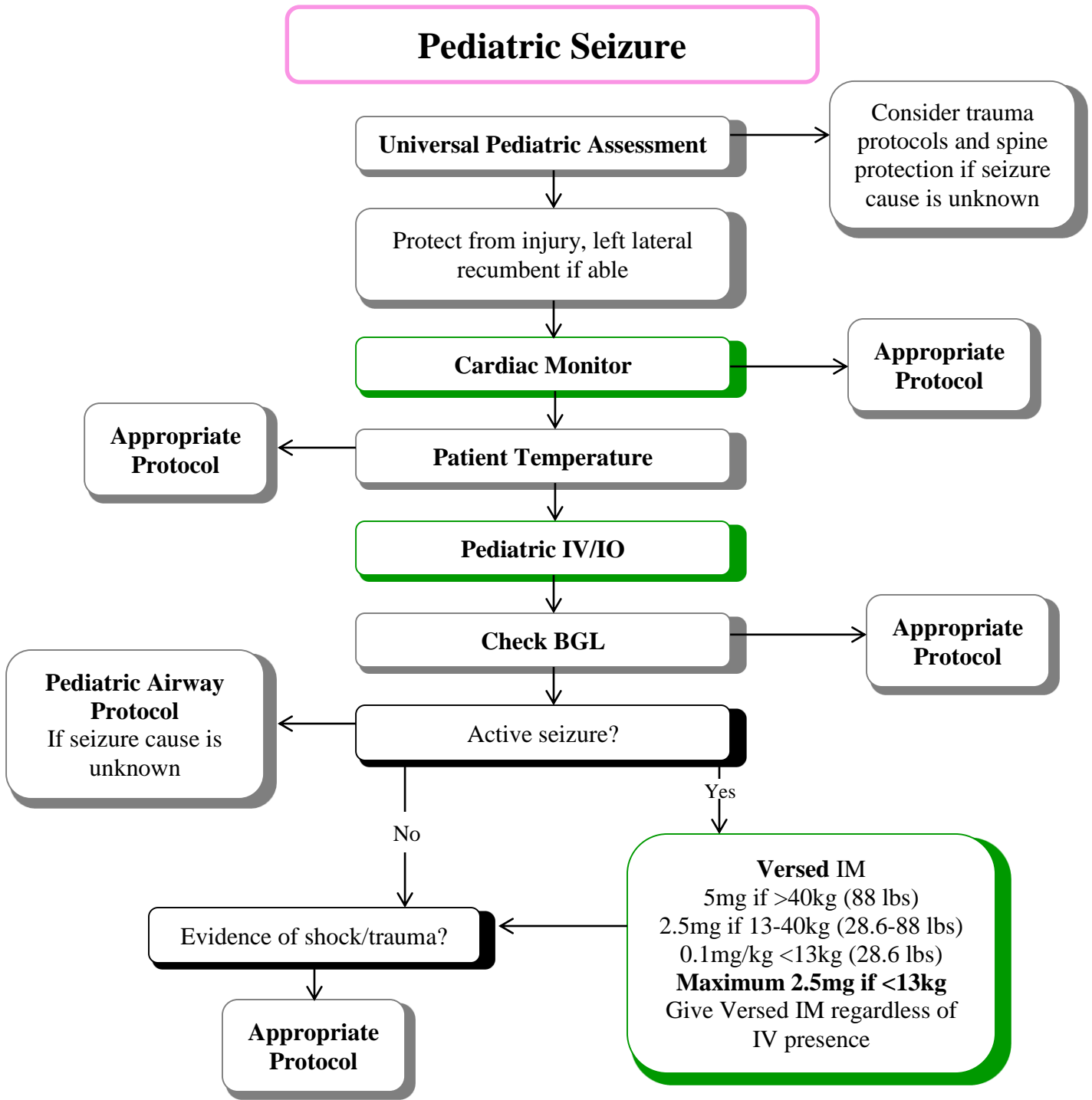
Glucagon 0.05mg/kg IM

Any potential child exposure to Suboxone requires transport!

Possible causes of AMS:

- Hypoxemia
- Meningitis
- Head trauma
- Poisoning, overdose
- Hypovolemia
- Seizures
- CO Poisoning
- Metabolic Disturbances (Hyponatremia, hypoglycemia)

Pediatric Seizure



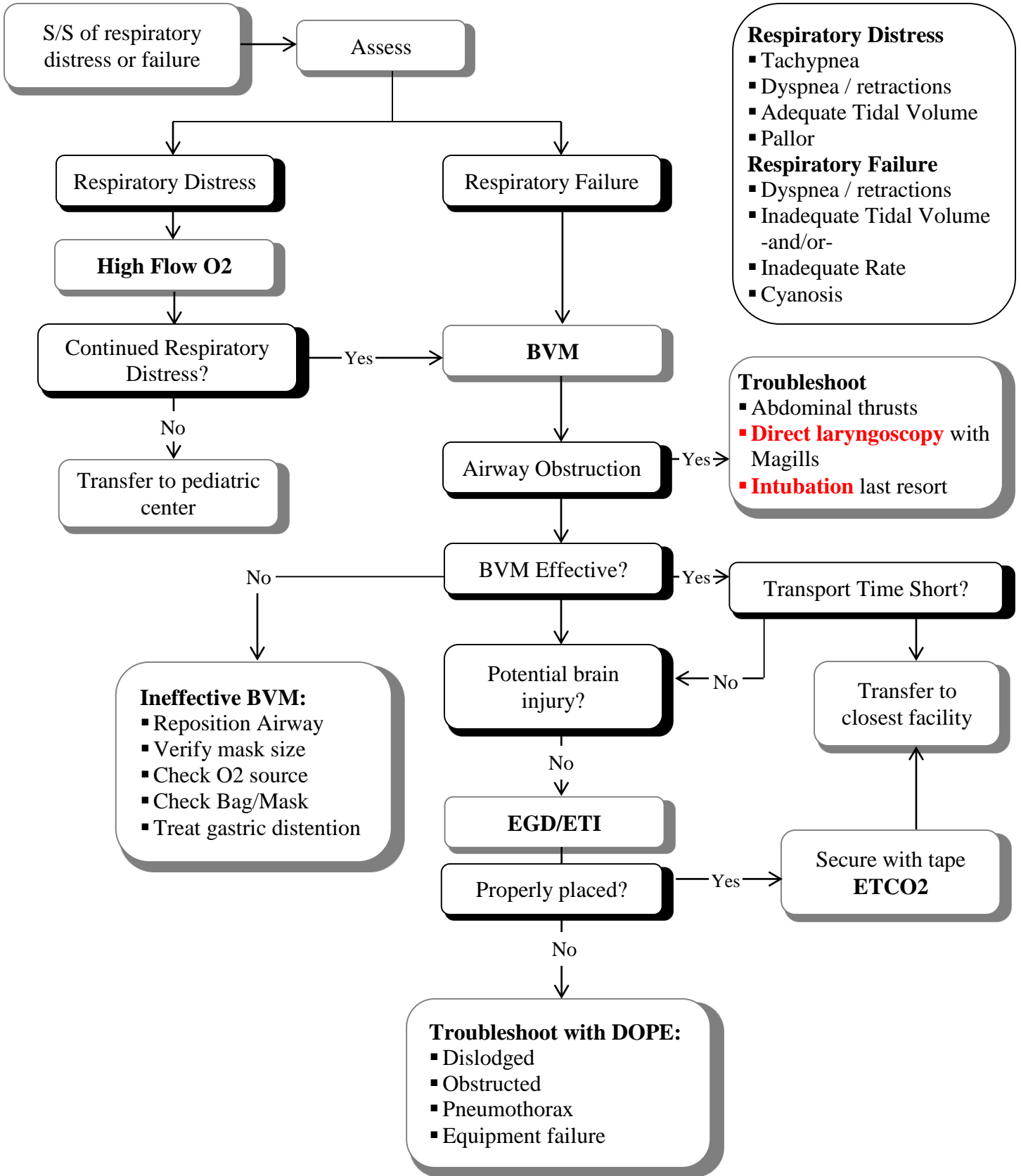
Pediatric Respiratory

Pediatric Airway 92

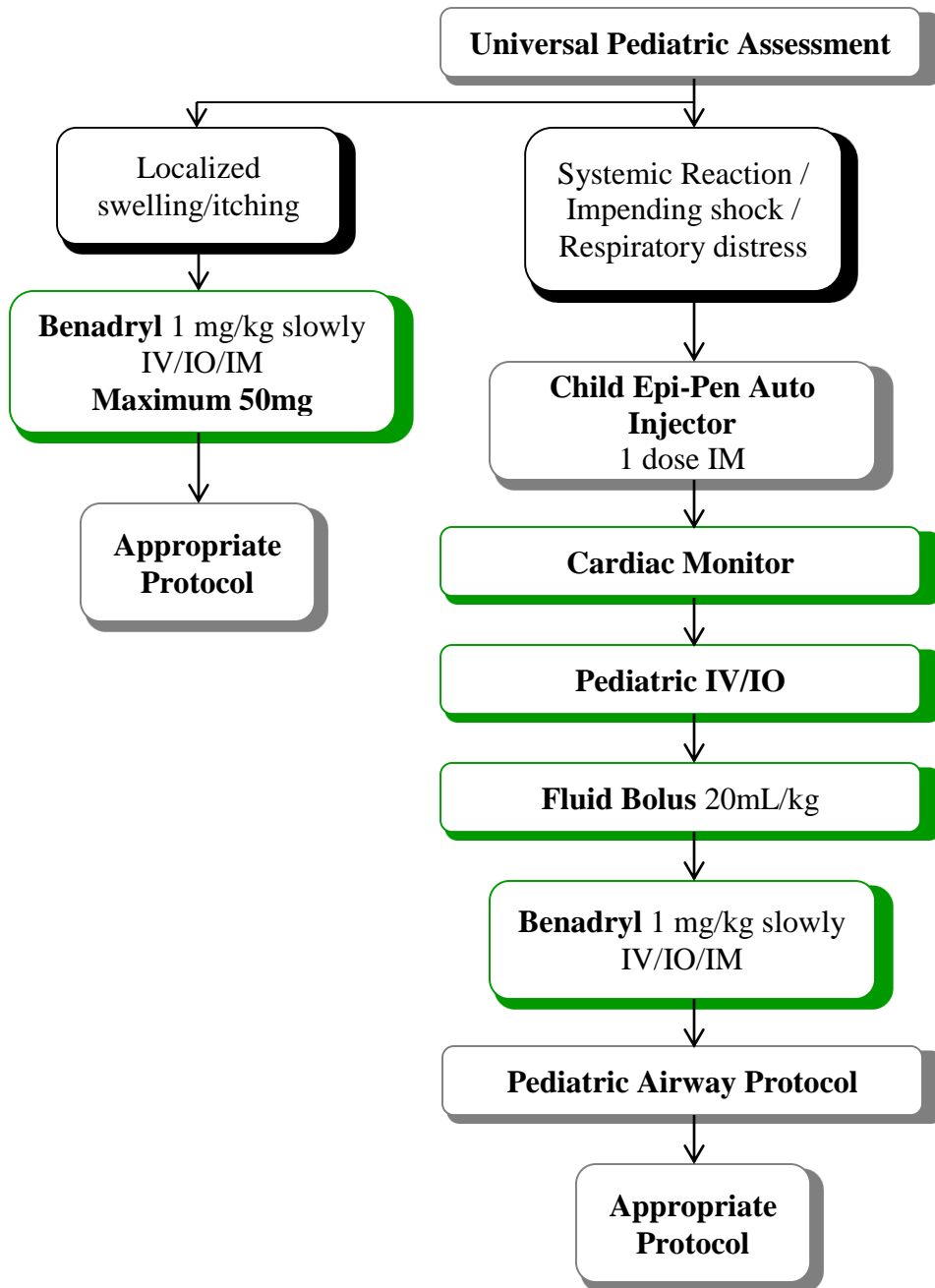
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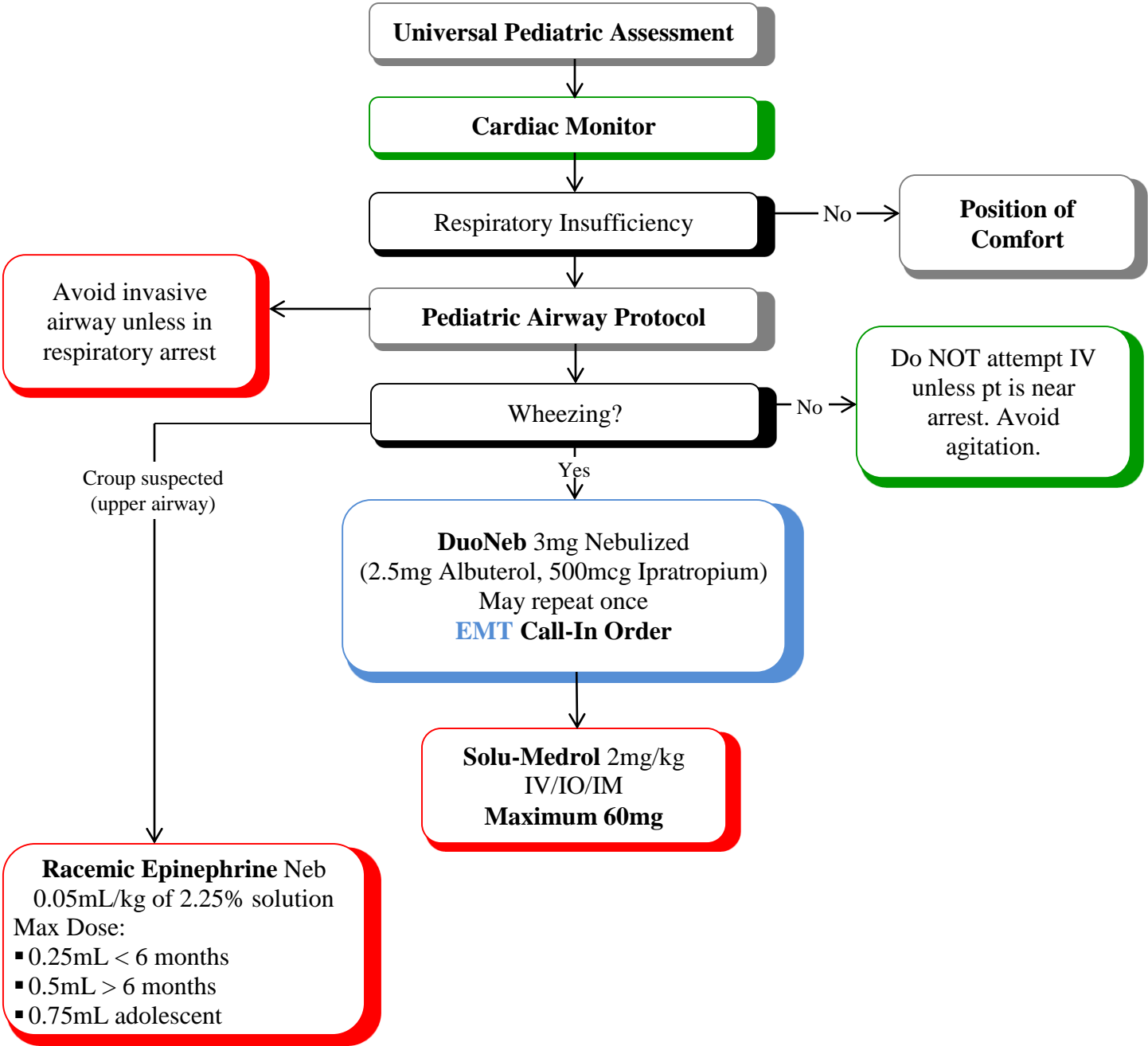
Pediatric Airway



Pediatric Allergic Reaction



Pediatric Respiratory Distress (Lower Airway)

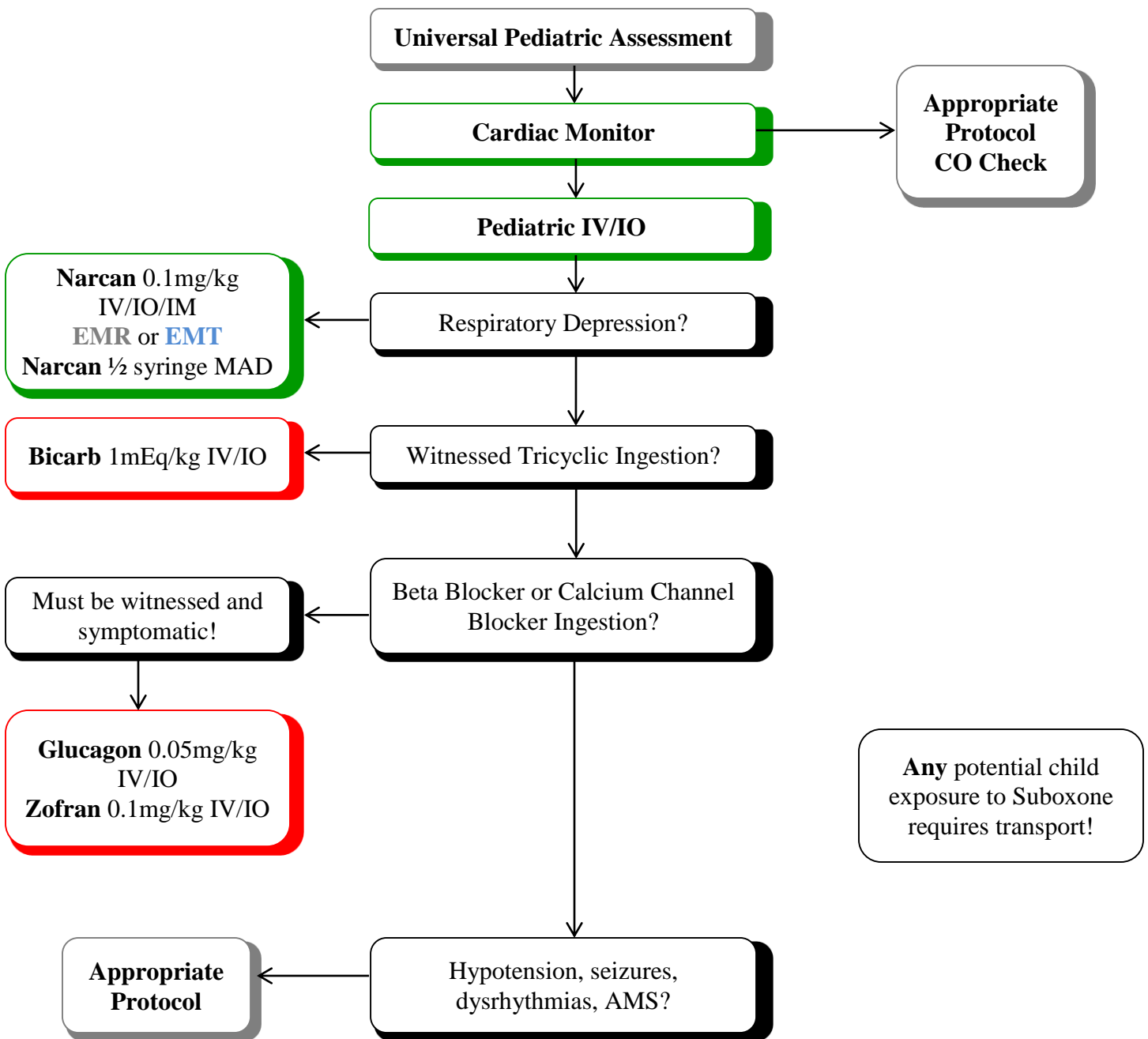


Pediatric Toxicology

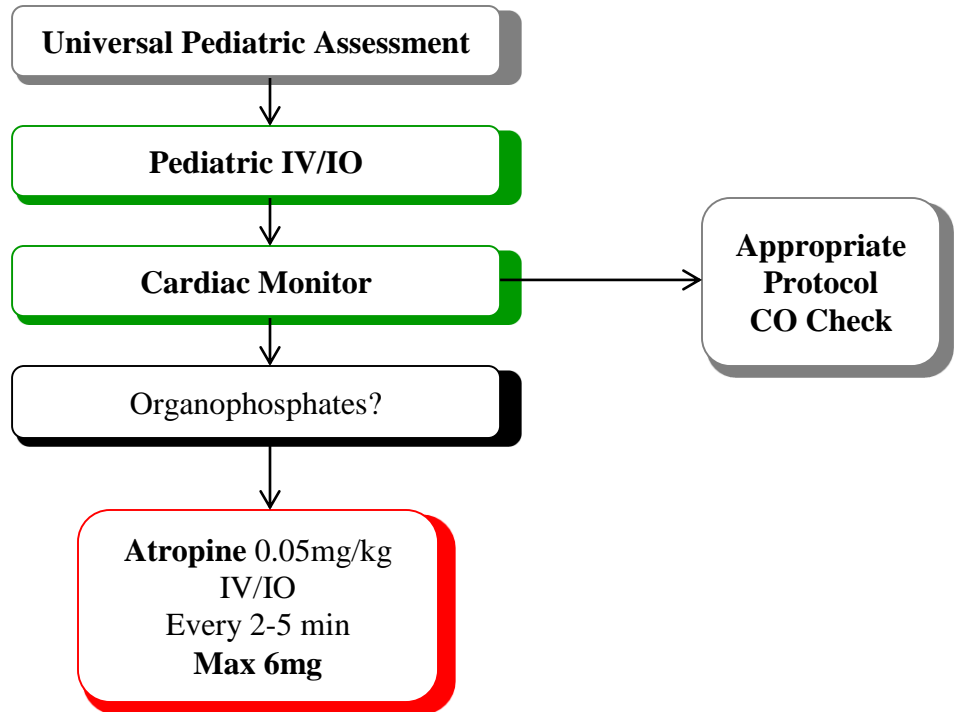
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Pediatric Overdose



Pediatric Toxic Overdose



EMR

EMT

AEMT

Paramedic

Extended

Pediatric Trauma

Pediatric Abdominal Trauma 99

Pediatric Apparent Life Threatening Event 100

Pediatric Avulsion/Amputation 101

Pediatric Burns 102

Pediatric Chest Trauma 103

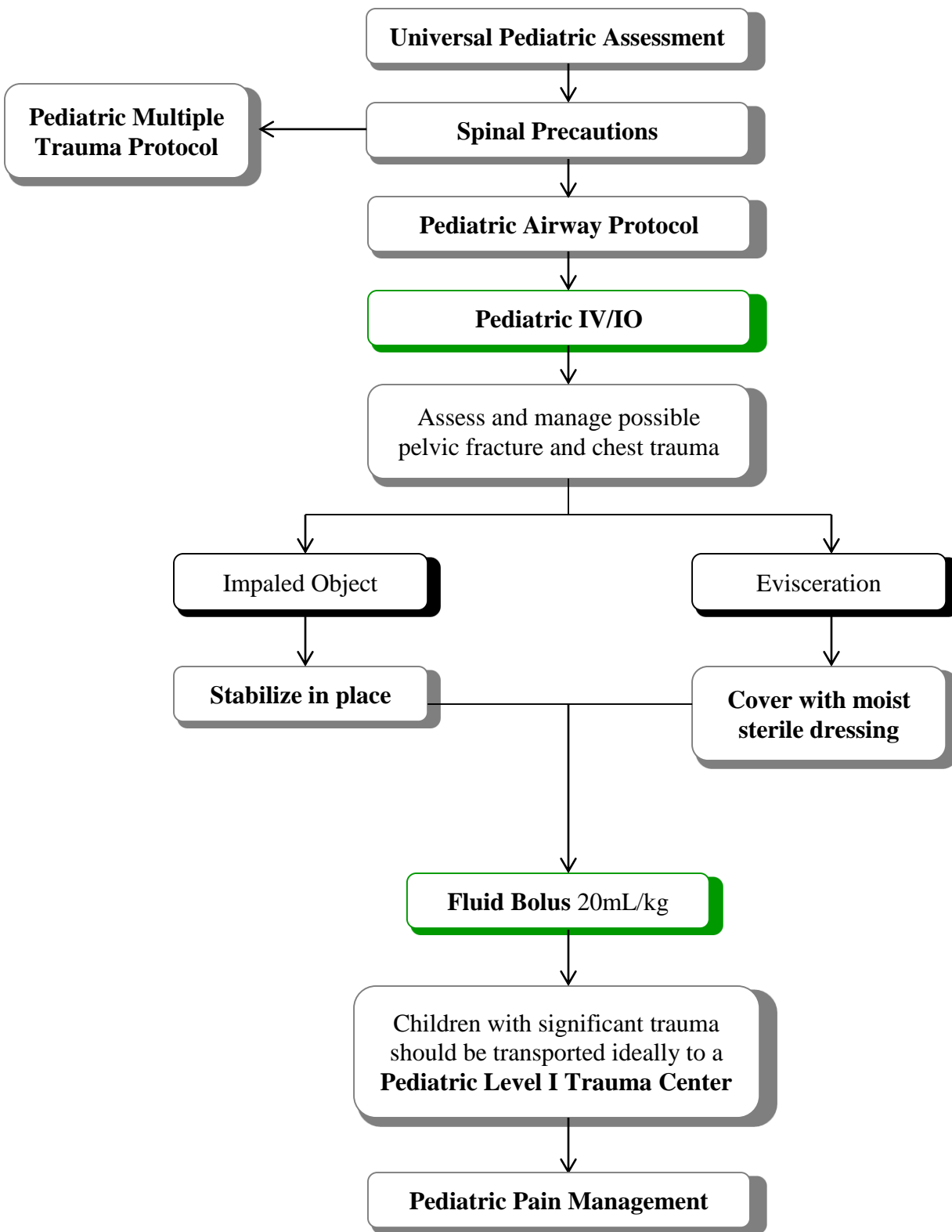
Pediatric Extremity Trauma 104

Pediatric Head Trauma 105

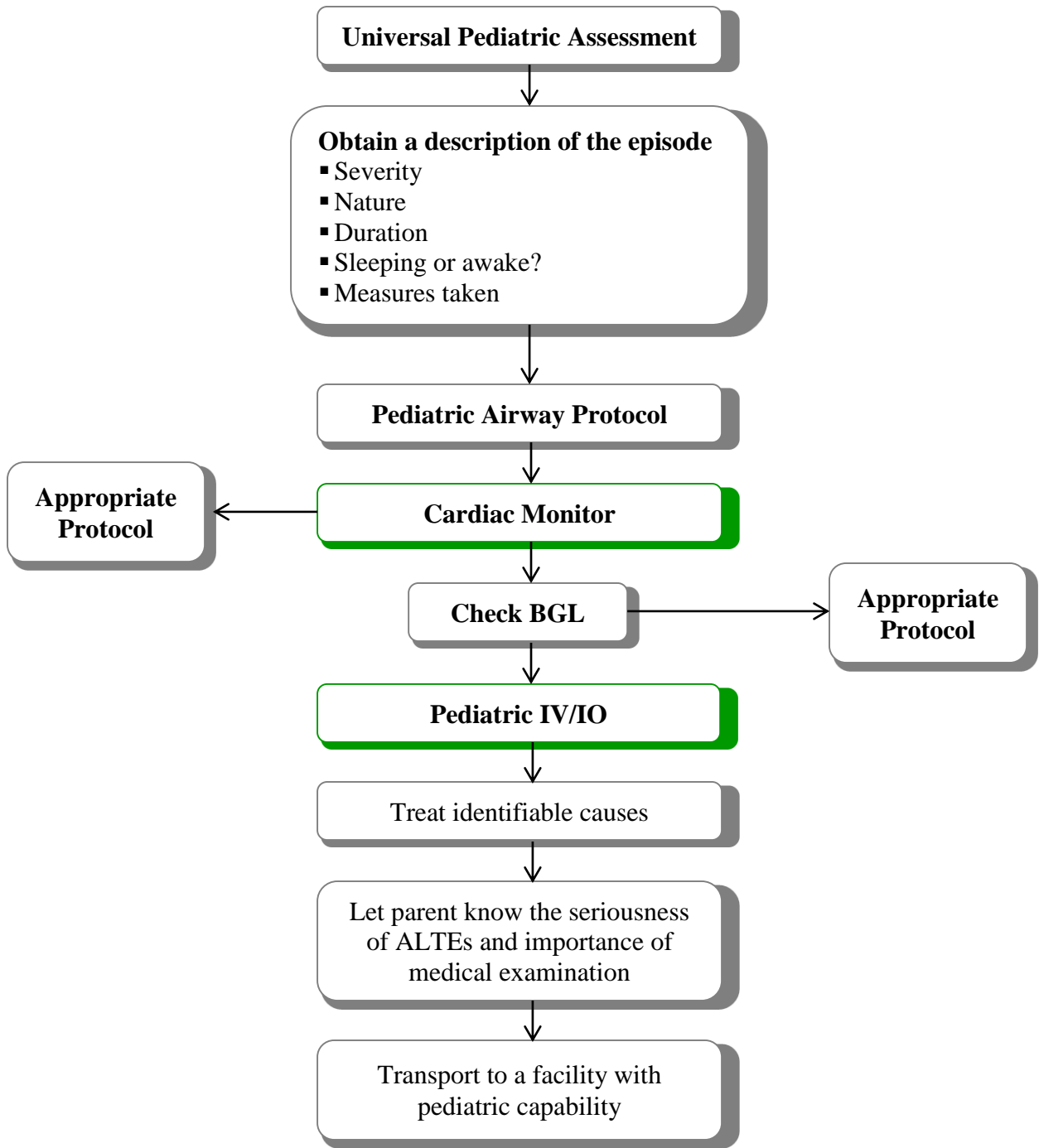
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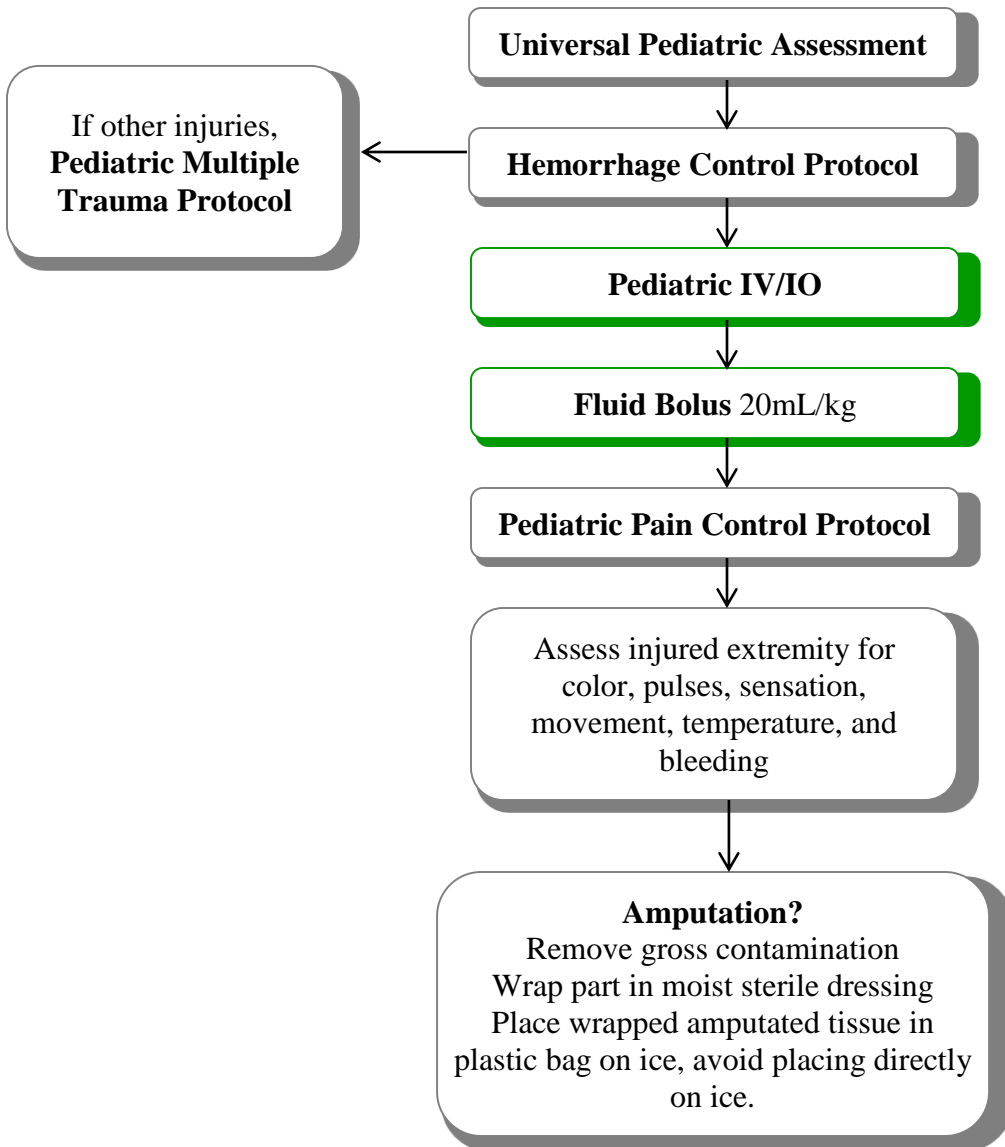
Pediatric Abdominal Trauma



Pediatric Apparent Life Threatening Event



Pediatric Avulsion / Amputation



EMR

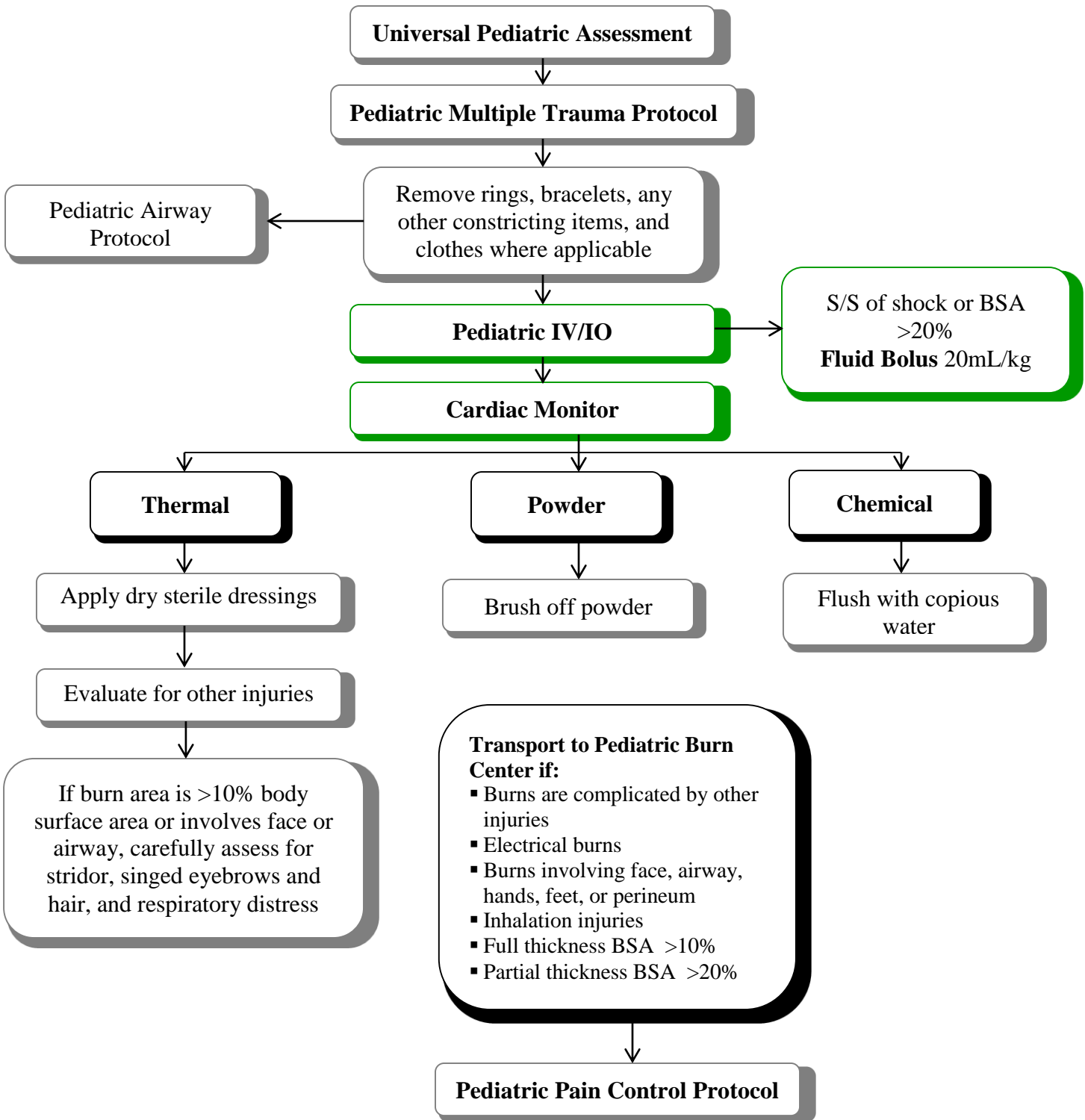
EMT

AEMT

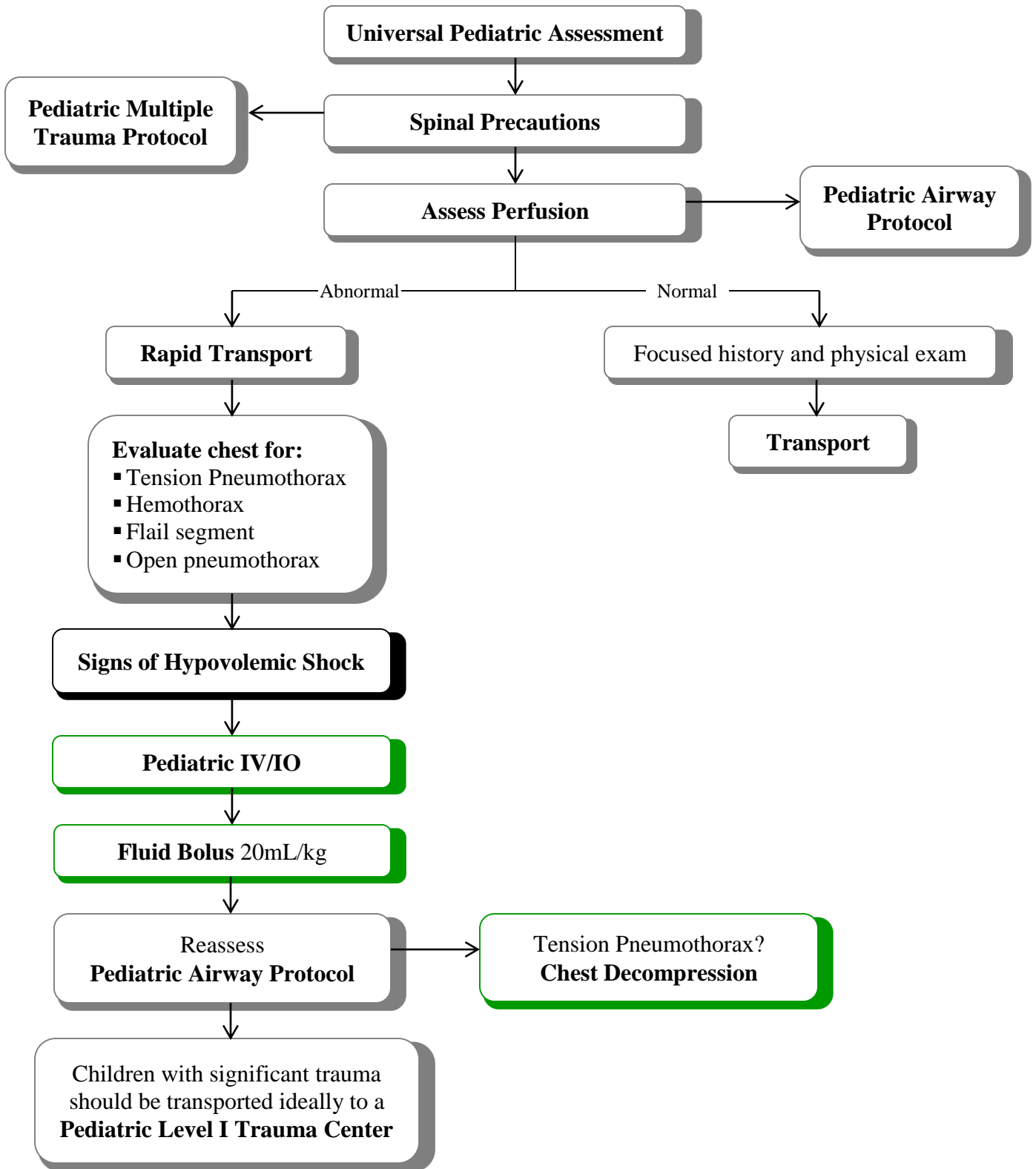
Paramedic

Extended

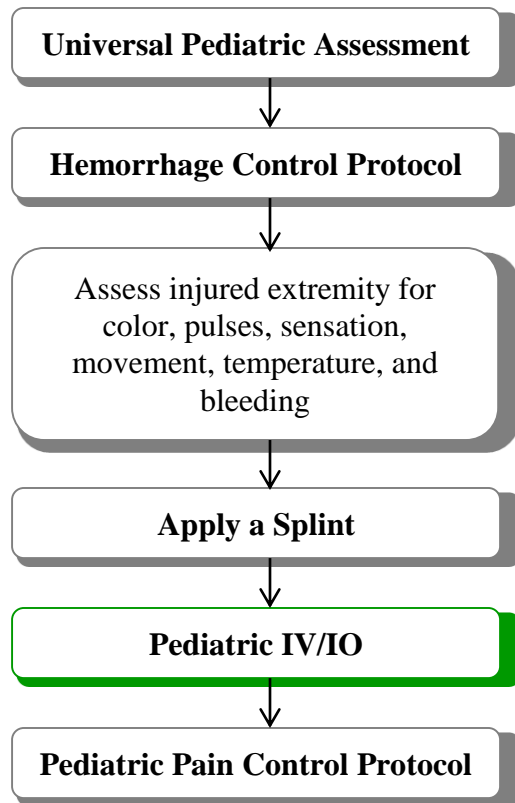
Pediatric Burns



Pediatric Chest Trauma



Pediatric Extremity Trauma



EMR

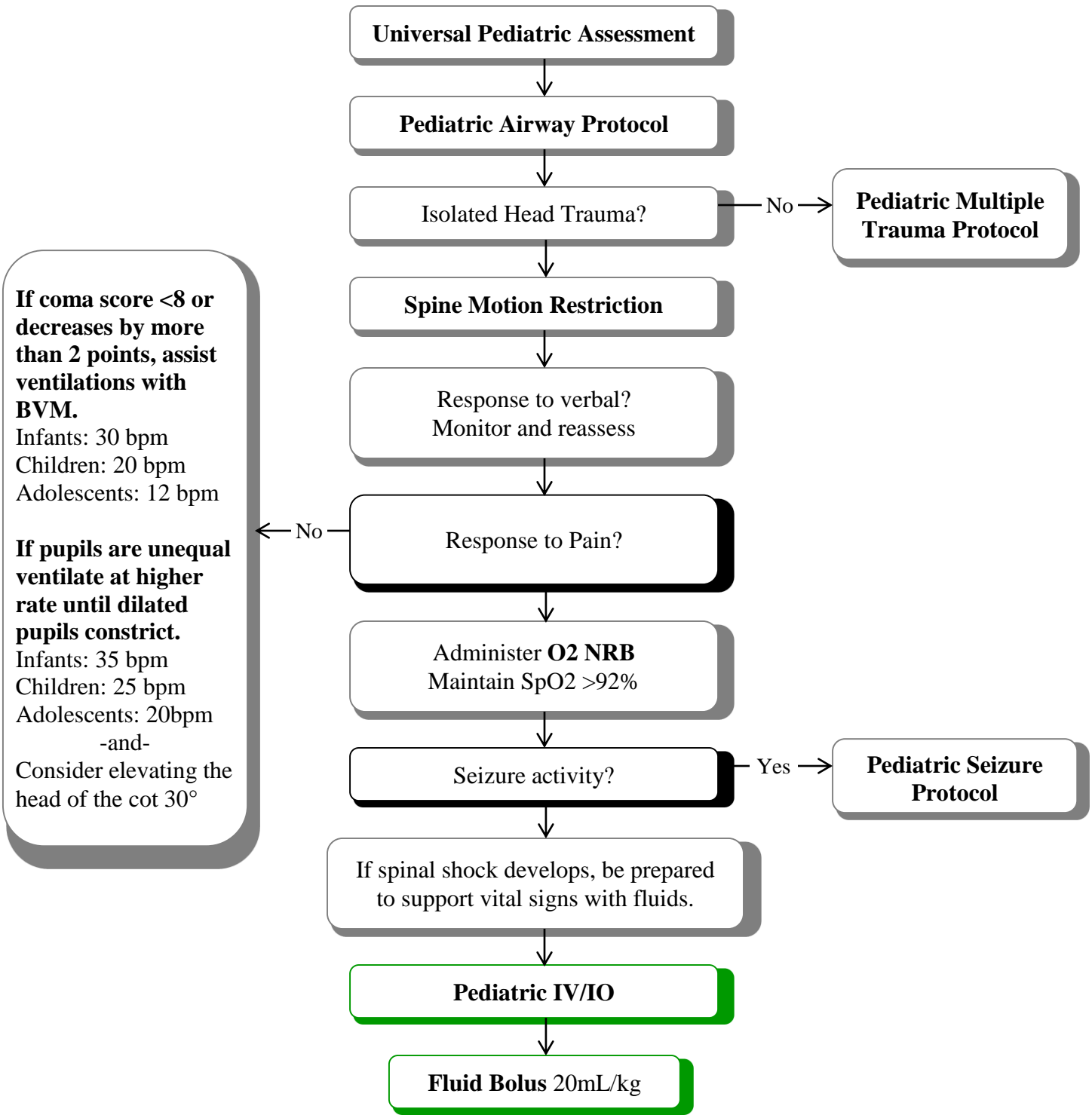
EMT

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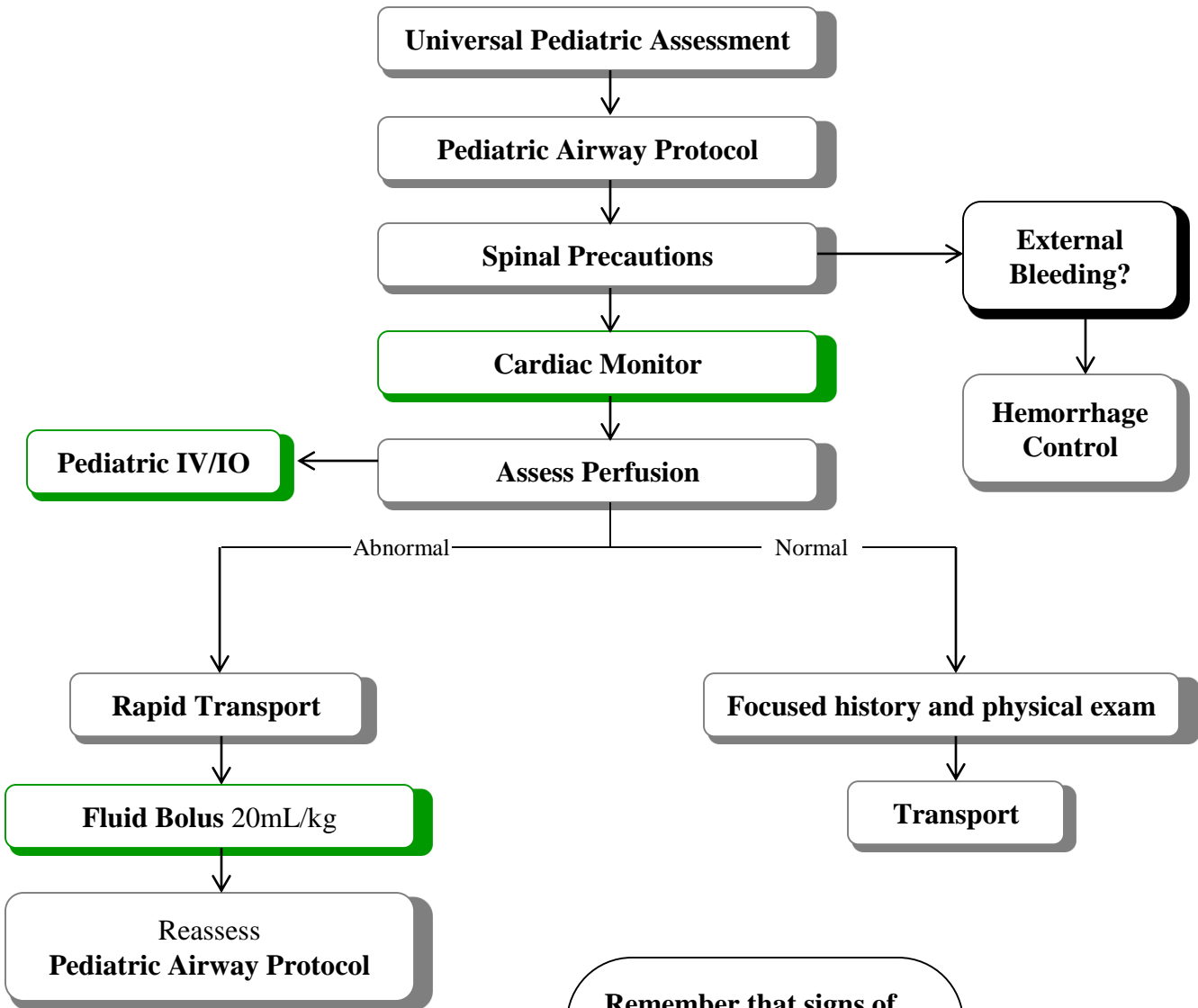
Paramedic

Extended

Pediatric Head Trauma



Pediatric Multiple Trauma

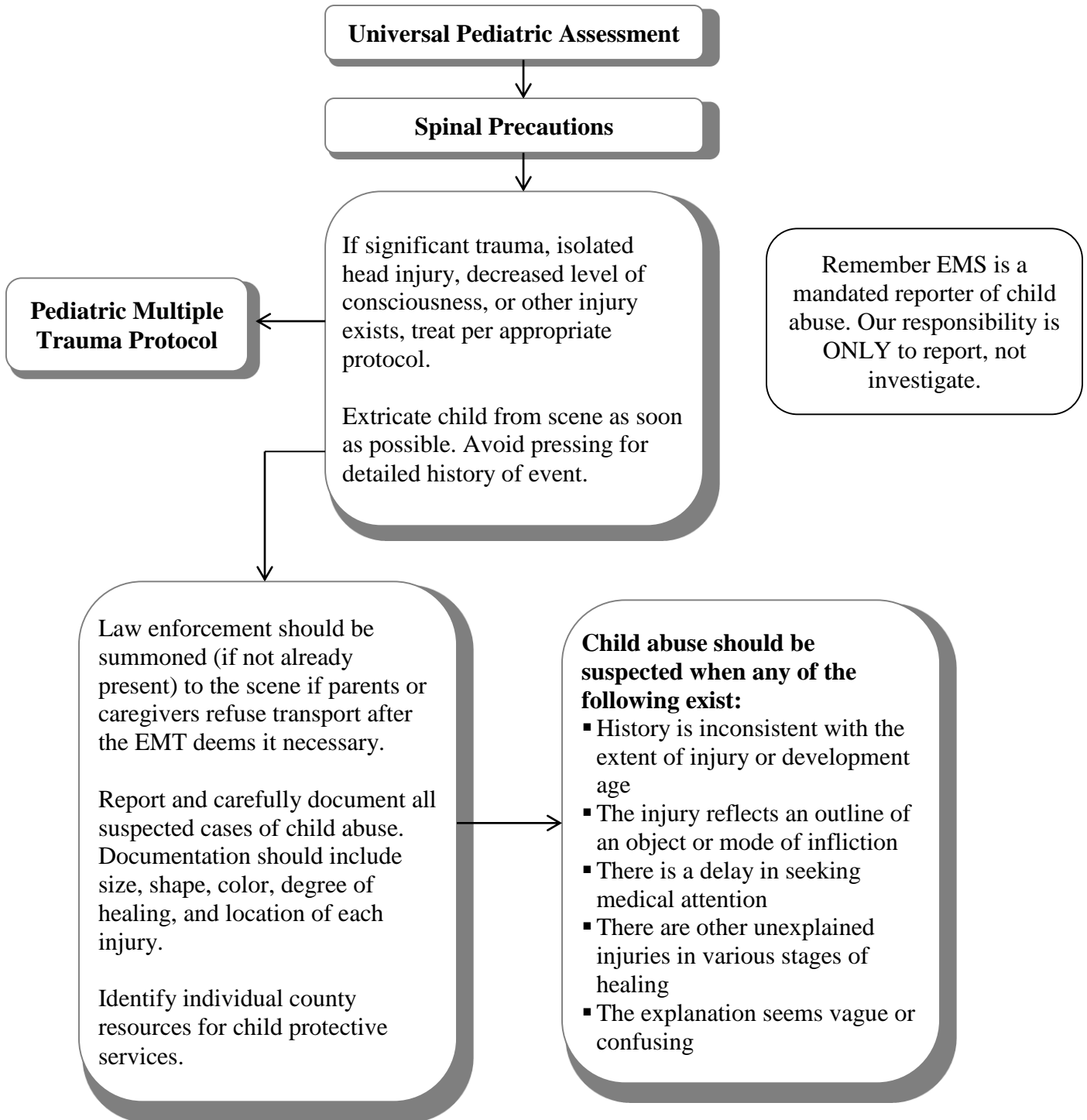


Remember that signs of hypovolemic shock are subtle and may include:

- Tachycardia
- Tachypnea
- Restlessness
- Poor peripheral perfusion

Hypotension is a LATE and ominous sign

Pediatric Suspected Child Abuse



Procedures

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12 Lead ECG

Steps	Performed?	
	Yes	No
1. Prepare ECG monitor and connect patient cable with electrodes.	<input type="checkbox"/>	<input type="checkbox"/>
2. Enter the required patient information into the 12-Lead ECG device. <ul style="list-style-type: none"> ▪ First and Last Name ▪ Date of Birth ▪ Age ▪ Gender ▪ Cardiologist (if able to enter) 	<input type="checkbox"/>	<input type="checkbox"/>
3. Expose chest (respecting modesty) and prep as necessary. Poor quality can be caused by lack of skin preparation. Use a gauze pad to vigorously rub the site, to remove the outer layer of dead skin. Dry the site. Alcohol preps can remove creams or lotions. Remove excess hair as needed.	<input type="checkbox"/>	<input type="checkbox"/>
4. Attach limb leads on or near the limbs. Avoid attaching to the torso. Attaching leads to the torso produces a cleaner rhythm, but may limit evaluation of ECG. Some changes that may occur are: <ul style="list-style-type: none"> ▪ Cardiac axis shift to the right ▪ R wave becomes smaller in Lead I ▪ Less prominent Q waves in inferior leads 	<input type="checkbox"/>	<input type="checkbox"/>
5. Apply chest leads and extremity leads using the following landmarks: <ul style="list-style-type: none"> <li style="width: 50%;">▪ RA – Right arm <li style="width: 50%;">▪ V2 – 4th ICS at sternal border <li style="width: 50%;">▪ LA – Left arm <li style="width: 50%;">▪ V3 – Directly between V2 and V4 <li style="width: 50%;">▪ RL – Right leg <li style="width: 50%;">▪ V4 – 5th ICS at midclavicular line <li style="width: 50%;">▪ LL – Left leg <li style="width: 50%;">▪ V5 – Level with V4 at anterior axillary line <li style="width: 50%;">▪ V1 – 4th ICS at sternal border <li style="width: 50%;">▪ V6 – Level with V5 at midaxillary line 	<input type="checkbox"/>	<input type="checkbox"/>
6. Instruct patient to remain still.	<input type="checkbox"/>	<input type="checkbox"/>
7. Press the appropriate button to acquire the 12-Lead ECG.	<input type="checkbox"/>	<input type="checkbox"/>
8. If the provider is an EMT or AEMT without a Paramedic present, transmit the 12-Lead. If a Paramedic is present and the 12-Lead shows STEMI or a life threatening arrhythmia, transmit to the receiving facility. <ul style="list-style-type: none"> ▪ If the Paramedic identifies a STEMI, activate the cath lab by calling the receiving facility and identifying your unit, then stating “I have a STEMI.” Then explain the situation, including the leads with ST elevation, and verbally activate the cath lab. 	<input type="checkbox"/>	<input type="checkbox"/>
9. If the tracing displays too much artifact, consider the following: <ul style="list-style-type: none"> <li style="width: 50%;">▪ Check cable connection <li style="width: 50%;">▪ Is there poor adhesion? <li style="width: 50%;">▪ Is the equipment functioning properly? <li style="width: 50%;">▪ Are the cables touching a metal surface? <li style="width: 50%;">▪ Is there interference from external electrical equipment? <li style="width: 50%;">▪ Are the cables entangled or hanging? <li style="width: 50%;">▪ Are the electrodes dry? <li style="width: 50%;">▪ Is the snap connection secure? 	<input type="checkbox"/>	<input type="checkbox"/>
10. Monitor the patient while continuing with the treatment protocol.	<input type="checkbox"/>	<input type="checkbox"/>

11. Document the procedure, time, and results on the patient care report.



EMR

EMT

AEMT

Paramedic

Extended

Adult Primary Assessment

Steps	Performed?	
	Yes	No
1. Quickly assess level of consciousness using the AVPU Method. <ul style="list-style-type: none"> ▪ Alert: Eyes Open ▪ Verbal: Responds to vocal stimuli ▪ Pain: Responds only to pain ▪ Unresponsive: No response to verbal or painful stimuli. 	<input type="checkbox"/>	<input type="checkbox"/>
2. Assess the airway (protect c-spine if uncertain) <ul style="list-style-type: none"> ▪ Responsive – no intervention needed, proceed to step 3. ▪ Unresponsive – use the appropriate medical or trauma maneuver to open the airway. ▪ If airway remains partially or totally obstructed, continue attempts to clear the airway. 	<input type="checkbox"/>	<input type="checkbox"/>
3. Assess adequacy of breathing <ul style="list-style-type: none"> ▪ Observe chest rise and fall, auscultate breath sounds anteriorly, posteriorly, and peripherally. ▪ Observe for signs of distress – use of accessory muscles, cyanosis ▪ Count the respiratory rate and obtain pulse oximeter reading if available ▪ If breathing is adequate – go to step 4 ▪ If breathing is inadequate and patient is unresponsive – assist breathing with appropriate device ▪ If breathing is inadequate and patient is responsive, administer oxygen if available. 	<input type="checkbox"/>	<input type="checkbox"/>
4. Assess the circulation / perfusion <ul style="list-style-type: none"> ▪ Assess rate and quality of pulses – peripheral and central pulses ▪ Stop any active bleeding, assess skin color, temperature, and condition. ▪ If there is no palpable pulse or rate is too slow to maintain cerebral blood flow, begin CPR ▪ If bleeding is present – manage bleeding 	<input type="checkbox"/>	<input type="checkbox"/>
5. Provide care for any compromise in airway, breathing, circulation, or neurological status per protocol and perform basic life support as per current American Heart Association Guidelines.	<input type="checkbox"/>	<input type="checkbox"/>
6. Identify priority patients and make a transport decision. <ul style="list-style-type: none"> ▪ Priority patients include those with compromises in airway, level of consciousness, breathing, or circulation, which are not easily remedied with basic intervention. 	<input type="checkbox"/>	<input type="checkbox"/>
7. Further Assessments, go to Patient Assessment – Medical or Patient Assessment - Trauma	<input type="checkbox"/>	<input type="checkbox"/>

Bag Mask Ventilations

Steps	Performed?	
	Yes	No
1. Perform the appropriate Primary Assessment	<input type="checkbox"/>	<input type="checkbox"/>
2. Properly open the airway, considering the nature of the call (trauma or medical)	<input type="checkbox"/>	<input type="checkbox"/>
3. If secretions or vomitus are present, suction using the appropriate device <ul style="list-style-type: none"> ▪ Be sure to insert suction catheter before applying suction ▪ Apply suction once at the proper depth ▪ Suction on withdrawal of the catheter for no longer than 15 seconds 	<input type="checkbox"/>	<input type="checkbox"/>
4. Attempt insertion of the appropriate airway adjunct <ul style="list-style-type: none"> ▪ Oropharyngeal airways are contraindicated in conscious patients or patients with an intact gag reflex ▪ Nasopharyngeal airways are contraindicated in severe facial trauma or patients with suspected basilar skull fracture 	<input type="checkbox"/>	<input type="checkbox"/>
5. Ventilate the patient using a BVM device <ul style="list-style-type: none"> ▪ The first ventilation should be given within 30 seconds of patient contact, but ensure that an attempt at clearing the airway has been made prior to ventilating ▪ Do not connect to oxygen if the patient is a neonate ▪ In all other patients, consider supplemental oxygenation 	<input type="checkbox"/>	<input type="checkbox"/>
6. Continuous reassessment <ul style="list-style-type: none"> ▪ Ventilations adequate? Chest rise and fall? ▪ Airway Clear? ▪ Adjunct functioning properly? ▪ Mask seal adequate? 	<input type="checkbox"/>	<input type="checkbox"/>
7. Take extra care not to overventilate. Try counting to 5 as you squeeze the bag, then count to 10 prior to squeezing again (once every 6 seconds).	<input type="checkbox"/>	<input type="checkbox"/>

Blood Glucose

Steps	Performed?	
	Yes	No
1. Assess for clinical indications <ul style="list-style-type: none"> ▪ Diabetic emergency ▪ Altered mental status ▪ Change in mental status from any baseline ▪ Bizarre behavior ▪ Syncope ▪ Generalized weakness ▪ Provider’s judgment 	<input type="checkbox"/>	<input type="checkbox"/>
2. Gather and prepare equipment	<input type="checkbox"/>	<input type="checkbox"/>
3. Blood samples for performing glucose analysis should be obtained simultaneously with intravenous access or by finger stick. <ul style="list-style-type: none"> ▪ Note that a device meant for capillary blood may have a 20% range of inaccuracy with venous samples. If ever unsure, use capillary blood on a capillary meter and venous blood on a venous meter. 	<input type="checkbox"/>	<input type="checkbox"/>
4. Place correct amount of blood on reagent strip or site on glucometer per the manufacturer’s instructions.	<input type="checkbox"/>	<input type="checkbox"/>
5. Time the analysis as instructed by the manufacturer.	<input type="checkbox"/>	<input type="checkbox"/>
6. Document the glucometer reading (ex. 100mg/dL) and treat the patient as indicated by the analysis and protocol.	<input type="checkbox"/>	<input type="checkbox"/>
7. Repeat glucose analysis as indicated for reassessment after treatment and as per protocol.	<input type="checkbox"/>	<input type="checkbox"/>

Capnography

Clinical Indications:

- All endotracheal or supraglottic airways, and any patient who is sedated.

Steps	Performed?	
	Yes	No
1. Attach capnography sensor to endotracheal tube or nasal cannula device.	<input type="checkbox"/>	<input type="checkbox"/>
2. Note CO2 level and waveform changes. These will be documented on reach respiratory failure, sedated, or cardiac arrest patient. <ul style="list-style-type: none"> ▪ Perfusing patients should have an ETCO2 of 35-45 mmHg ▪ Maintain head injury patient's ETCO2 above 20 mmHg ▪ Maintain cardiac arrest patient's ETCO2 above 10 mmHg ▪ If fluid enters any type of CO2 detector, remove and replace. 	<input type="checkbox"/>	<input type="checkbox"/>
3. The capnometer shall remain in place with the airway and be monitored throughout the prehospital care and transport.	<input type="checkbox"/>	<input type="checkbox"/>
4. Any loss of CO2 detection or waveform indicates an airway problem and should be documented.	<input type="checkbox"/>	<input type="checkbox"/>
5. The capnogram should be monitored as procedures are performed to verify or correct the airway problem.	<input type="checkbox"/>	<input type="checkbox"/>
6. Document the procedure and results on the Patient Care Report (PCR)	<input type="checkbox"/>	<input type="checkbox"/>
7. If using colorimetric capnography, ensure color change from Purple to Yellow, and document accordingly.	<input type="checkbox"/>	<input type="checkbox"/>

Cardioversion

Clinical Indications:

- Unstable patients with a tachydysrhythmia require cardioversion.
- For pulseless patients with tachydysrhythmia, refer to Defibrillation.

Steps	Performed?	
	Yes	No
1. Ensure the patient is attached properly to a monitor/defibrillator capable of synchronized cardioversion.	<input type="checkbox"/>	<input type="checkbox"/>
2. Have all equipment prepared for adverse effects if the patient fails to cardiovert or if the condition worsens (ex: loss of pulse).	<input type="checkbox"/>	<input type="checkbox"/>
3. Consider the use of pain or sedating medications (20-40mg of Ketamine per protocol). ▪ Do NOT delay cardioversion of a life-threatening condition to premedicate the patient!	<input type="checkbox"/>	<input type="checkbox"/>
4. Set monitor/defibrillator to the appropriate energy based on the manufacturer's recommendations. ▪ Zoll – 75 J, 120 J, 150 J, 200 J, 200 J, 200 J ▪ Physio – 50-100 J, 150 J, 200 J, 200 J, 200 J ▪ Philips – 50-100 J, 150 J, 200 J, 200 J, 200 J	<input type="checkbox"/>	<input type="checkbox"/>
5. Set monitor/defibrillator to synchronized cardioversion mode ▪ Note that some ventricular tachyarrhythmias may not synchronize ▪ Torsades de Pointes can be cardioverted asynchronously (defibrillated)	<input type="checkbox"/>	<input type="checkbox"/>
6. Make certain all personnel are clear of patient or any wet or metal items the patient may be touching.	<input type="checkbox"/>	<input type="checkbox"/>
7. Press the button to cardiovert. Stay clear of the patient until you are certain the energy has been delivered. ▪ Note that the monitor may not discharge immediately. Some devices require several cycles prior to discharge. Some devices also require the provider to hold the Shock button until these cycles are complete. Know your equipment and use your head.	<input type="checkbox"/>	<input type="checkbox"/>
8. Note patient response and perform immediate unsynchronized cardioversion (defibrillation) if the patient's rhythm has deteriorated into pulseless VT or VF.	<input type="checkbox"/>	<input type="checkbox"/>
9. If the patient's condition is unchanged, repeat steps 2 to 8 above.	<input type="checkbox"/>	<input type="checkbox"/>
10. Consider drug therapy if the patient's condition has not improved after cardioversion. Refer to the appropriate protocol.	<input type="checkbox"/>	<input type="checkbox"/>
11. Note procedure, response, and time in the patient care report (PCR).	<input type="checkbox"/>	<input type="checkbox"/>

CCR

Indication: Cardiopulmonary resuscitation with passive insufflation for sudden cardiac arrest

Contraindications: Trauma, Overdose, Children, Drownings, Respiratory Arrest, Obstetrical

Steps		Performed?	
		Yes	No
Component	Recommendations		
Recognition	Unresponsive Adults		
	No breathing or no normal breathing (i.e., gasping)	<input type="checkbox"/>	<input type="checkbox"/>
	No palpated pulse within 5-10 seconds		
CCR	Circulation to the brain takes several compressions to initiate	<input type="checkbox"/>	<input type="checkbox"/>
Compression Rate	100-120/minute	<input type="checkbox"/>	<input type="checkbox"/>
Compression Depth	2-2.4 inches	<input type="checkbox"/>	<input type="checkbox"/>
Chest Wall Recoil	Allow complete recoil between compressions Rotate compressors every 2 minutes	<input type="checkbox"/>	<input type="checkbox"/>
Compression Interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to < 10 seconds	<input type="checkbox"/>	<input type="checkbox"/>
Airway	Passive oxygen insufflation with NRB at 100% FiO ₂	<input type="checkbox"/>	<input type="checkbox"/>
Compression to Ventilation Ratio (until advanced airway is placed)	200 continuous compressions x 4 cycles	<input type="checkbox"/>	<input type="checkbox"/>
Ventilation with Advanced Airway	Withheld until 4 CCR cycles are complete	<input type="checkbox"/>	<input type="checkbox"/>
Defibrillation	Performed between cycles of compressions if indicated. Minimize interruptions in chest compressions before and after shock. Resume compressions immediately after each shock.	<input type="checkbox"/>	<input type="checkbox"/>
Drugs	IO Epinephrine 1:10,000 1mg between compression cycles.	<input type="checkbox"/>	<input type="checkbox"/>

Chest Decompression

Steps	Performed?	
	Yes	No
1. Assess for clinical indications <ul style="list-style-type: none"> ▪ Progressive severe respiratory distress and/or cyanosis ▪ Hyperresonance on percussion of the affected area ▪ Tracheal shift away from the affected side ▪ Distended neck veins ▪ Hypotension ▪ Suddenly difficulty when attempting to ventilate the patient ▪ Reduced or absent breath sounds over the affected lung 	<input type="checkbox"/>	<input type="checkbox"/>
2. Administer 100% Oxygen to patients with suspected tension pneumothorax	<input type="checkbox"/>	<input type="checkbox"/>
3. Expose entire chest area and clean the site vigorously with an antibacterial/antiseptic wipe. Prepare large bore over-the-needle catheter, 14 gauge or larger (16-18 gauge for children) with 10mL or larger syringe with 3-4 mL of fluid attached via PRN extension set.	<input type="checkbox"/>	<input type="checkbox"/>
4. Insert catheter into the second intercostal space on the midclavicular line while withdrawing the plunger of the syringe. Ensure that the needle slides over the top of the third rib until it reaches the parietal space. Air bubbles will enter the syringe when the needle is at the appropriate depth.	<input type="checkbox"/>	<input type="checkbox"/>
5. Once depth is confirmed, insert catheter and withdraw needle. If air is under tension, it will exit under pressure.	<input type="checkbox"/>	<input type="checkbox"/>
6. If no air is obtained, leave the catheter in place with syringe attached, and secure.	<input type="checkbox"/>	<input type="checkbox"/>
7. With a simple or open pneumothorax that shows no signs of tension, needle thoracocentesis is of no value and may be harmful! Continuously reassess adequacy of ventilation.	<input type="checkbox"/>	<input type="checkbox"/>
8. When possible, leave syringe attached to catheter via PRN adapter extension set and secure the syringe to the patient's chest. Withdraw air as needed to prevent further tension pneumothoraces.	<input type="checkbox"/>	<input type="checkbox"/>

Child Birth

Steps	Performed?	
	Yes	No
1. Ensure imminent delivery with crowning	<input type="checkbox"/>	<input type="checkbox"/>
2. Ensure mother's ABC's and oxygenate if necessary.	<input type="checkbox"/>	<input type="checkbox"/>
3. Obtain a quick history	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> <li style="width: 50%; margin-right: 50%;">▪ Gestational Age? <li style="width: 50%;">▪ Has the water broken? <li style="width: 50%; margin-right: 50%;">▪ Prior complications? <li style="width: 50%;">▪ Contractions? (frequency, duration) 	<input type="checkbox"/>	<input type="checkbox"/>
4. Place a roll of blankets or pillow under buttocks to facilitate delivery.	<input type="checkbox"/>	<input type="checkbox"/>
5. Once the head delivers, consider suction via bulb syringe.	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> ▪ Note that this is no longer common practice, but if excessive secretions appear to occlude the airways please briefly suction. 	<input type="checkbox"/>	<input type="checkbox"/>
6. Check for the presence of the umbilical cord around the neck.	<input type="checkbox"/>	<input type="checkbox"/>
<ul style="list-style-type: none"> ▪ If present, gently slip the cord over the neck (may have multiple wraps). ▪ If the cord is wrapped too tightly, carefully clamp and cut the cord. 	<input type="checkbox"/>	<input type="checkbox"/>
7. Deliver the shoulders by gently applying downward traction of the baby's head.	<input type="checkbox"/>	<input type="checkbox"/>
8. Once delivered, keep the infant at the same level as the uterus until the cord is clamped.	<input type="checkbox"/>	<input type="checkbox"/>
9. Clamp the cord at 7" and 10" and cut between the clamps. Follow the Neonatal Care Protocol for further treatment.	<input type="checkbox"/>	<input type="checkbox"/>
10. Birth time should be recorded and the infant given APGAR scores at 1 and 5 minutes.	<input type="checkbox"/>	<input type="checkbox"/>
11. Perform neonatal resuscitation as needed.	<input type="checkbox"/>	<input type="checkbox"/>
12. Place the baby across the mother's chest and keep warm. Allow the placenta to deliver and save. Do not pull on the cord.	<input type="checkbox"/>	<input type="checkbox"/>
13. If the mother loses an excessive amount of blood post-delivery, refer to the appropriate protocol.	<input type="checkbox"/>	<input type="checkbox"/>

CO RAD-57

Indications:

- Patients suffering from exposure to byproducts of combustion, including fire victims of smoke inhalation, exposure to CO, firefighters during rehab activities, patients or families with complaints of general illness or headaches.
- If atmospheric CO is detected at 10ppm or greater concentration, consider persons occupying the structure be evacuated and evaluated for carboxyhemoglobin.

Precautions:

- Very low perfusion at the monitored site may result in inaccurate readings. Consider another location.
- A misapplied sensor or a sensor that becomes dislodged may cause inaccurate readings.
- Do not use tape to secure the sensor to the site.

Steps	Performed?	
	Yes	No
1. Press the green power On/Off button to activate unit	<input type="checkbox"/>	<input type="checkbox"/>
2. Place sensor on patient finger (observe top/bottom of sensor). Do NOT place on thumb or 5 th digit. If available, use the pediatric sensor if pt weighs less than 30kg (66 lbs).	<input type="checkbox"/>	<input type="checkbox"/>
3. Four green LED's below power button indicate battery level.	<input type="checkbox"/>	<input type="checkbox"/>
4. Sensor calibrated to penetrate mid-nail, not cuticle area. No NOT force finger in too far	<input type="checkbox"/>	<input type="checkbox"/>
5. RAD-57 will calibrate on the patient in about 5-8 seconds.	<input type="checkbox"/>	<input type="checkbox"/>
6. Displays will come up in pulse oximeter (SpO2) mode.	<input type="checkbox"/>	<input type="checkbox"/>
7. Pt graph will display perfusion strength.	<input type="checkbox"/>	<input type="checkbox"/>
8. Display will show "SEN OFF" until sensor is on finger.	<input type="checkbox"/>	<input type="checkbox"/>
9. Press orange "SpCO" button.	<input type="checkbox"/>	<input type="checkbox"/>
10. Display will show SpCO level.	<input type="checkbox"/>	<input type="checkbox"/>
11. Record levels on PCR.	<input type="checkbox"/>	<input type="checkbox"/>
12. Press and hold the green power button to turn off unit.	<input type="checkbox"/>	<input type="checkbox"/>
13. For specific operations or troubleshooting, refer to owner's manual.	<input type="checkbox"/>	<input type="checkbox"/>

CPAP

Indications:

- Acute respiratory distress other than pneumothorax. Particularly pulmonary edema, asthma, COPD.
- Patient is alert and oriented.
- Is over 12 years of age and CPAP mask has proper seal.
- Has ability to maintain open airway.
- Has a systolic pressure above 90mmHg.
- Uses accessory muscles during respirations.
- Signs and symptoms consistent with pulmonary edema, asthma, COPD, pneumonia.

Contraindications:

- Patient is in respiratory arrest.
- Patient is suspected of having a pneumothorax.
- Decreased cardiac output and gastric distention.
- Hypotension secondary to hypovolemia.

Precautions:

- Watch for impairment of mental status during therapy.
- Patients with upper GI bleeds.
- History of recent gastric surgery. Use 5 cm H₂O and no higher in these patients.
- Complaints of nausea or vomiting. Discontinue immediately and ensure patent airway.
- Patient has inadequate respiratory effort or excessive secretions.
- Patient has facial deformity that inhibits proper CPAP mask seal.

Steps	Performed?	
	Yes	No
1. Assure spontaneous respirations. Perform appropriate patient assessment including vital signs, pulse oximeter, and heart monitor.	<input type="checkbox"/>	<input type="checkbox"/>
2. Ensure that the proper valve or flow rate is to be applied. Typically, start with 5 cm H ₂ O and increase to 10cm H ₂ O. Ensure that the filter is attached to prevent infection. Many devices have a conversion chart from LPM to cmH ₂ O. Know your equipment.	<input type="checkbox"/>	<input type="checkbox"/>
3. Remove mask from inner bag and attach circuit. Turn on oxygen.	<input type="checkbox"/>	<input type="checkbox"/>
4. Explain the procedure to the patient. <ul style="list-style-type: none"> ▪ Advise the patient that they will feel strange at first, then they should experience relief. ▪ Flip head strap forward and place mask on face. 	<input type="checkbox"/>	<input type="checkbox"/>
5. Flip head strap back over patient's head, bring tabs forward on top head strap and adjust equally to proper fit. Attach bottom 2 clips and repeat above sequence.	<input type="checkbox"/>	<input type="checkbox"/>
6. Adjust as necessary, or per the manufacturer's recommendations. DO NOT OVERTIGHTEN HEAD STRAP.	<input type="checkbox"/>	<input type="checkbox"/>
7. Success is highly dependent upon patient tolerance and provider's ability to coach the patient. <ul style="list-style-type: none"> ▪ Anticipate and control anxiety ▪ Verbally coach breathing as needed ▪ Consider having the patient hold the mask to reduce anxiety. The provider may also hold the mask. 	<input type="checkbox"/>	<input type="checkbox"/>
8. Adjust flow rates as necessary.	<input type="checkbox"/>	<input type="checkbox"/>

CPR

Indications: Pulseless patients who do not meet CCR or obvious death criteria.

- Children
- Respiratory Etiology
- Overdose
- Trauma
- Drowning
- Obstetrical

Steps

Performed?
Yes No

Component	Recommendations				
	Adults	Children	Infants		
Recognition	Unresponsive Adults				
	No breathing or no normal breathing (i.e., gasping)			<input type="checkbox"/>	<input type="checkbox"/>
	No palpated pulse within 5-10 seconds				
CPR Sequence	C-A-B (Circulation-Airway-Breathing)			<input type="checkbox"/>	<input type="checkbox"/>
Compression Rate	100-120/minute			<input type="checkbox"/>	<input type="checkbox"/>
Compression Depth	2-2.4 inches	At least 1/3 AP diameter (2 inches)		<input type="checkbox"/>	<input type="checkbox"/>
Chest Wall Recoil	Allow complete recoil between compressions Rotate compressors every 2 minutes			<input type="checkbox"/>	<input type="checkbox"/>
Compression Interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to < 10 seconds			<input type="checkbox"/>	<input type="checkbox"/>
Airway	Passive oxygen insufflation with NRB at 100% FiO ₂			<input type="checkbox"/>	<input type="checkbox"/>
Compression to Ventilation Ratio (until advanced airway is placed)	30:2 1 or 2 Rescuers	30:2 Single Rescuer 15:2 2 Rescuers		<input type="checkbox"/>	<input type="checkbox"/>
Ventilation with Advanced Airway	1 breath every 6-8 seconds, asynchronous with compressions About 1 second per breath – visible chest rise			<input type="checkbox"/>	<input type="checkbox"/>
Defibrillation	Attach and use defibrillator or AED as soon as available. Minimize interruptions in chest compressions before and after shock. Resume compressions immediately after each shock.			<input type="checkbox"/>	<input type="checkbox"/>

Cricothyrotomy - Melker

Clinical Indications:

- Emergency airway access when other airway techniques have failed.
- Inability to adequately ventilate or secure the airway by endotracheal intubation.

Steps	Performed?	
	Yes	No
1. Have suction ready	<input type="checkbox"/>	<input type="checkbox"/>
2. Identify the cricothyroid membrane between the cricoid and thyroid cartilages. Prep the area with an antiseptic wipe.	<input type="checkbox"/>	<input type="checkbox"/>
3. Attach the supplied syringe to either the introducer needle or the catheter introducer needle.	<input type="checkbox"/>	<input type="checkbox"/>
4. Carefully palpate the cricothyroid membrane and while stabilizing the cartilage, advance the needle through the cricothyroid membrane into the airway at a 45 degree angle in a caudal direction, in the midline. Entrance into the airway can be confirmed by aspiration on the syringe, resulting in free air return.	<input type="checkbox"/>	<input type="checkbox"/>
5. If using the catheter introducer needle, remove the syringe and needle, leaving the catheter in place. If using the introducer needle, remove only the syringe, leaving the needle in place.	<input type="checkbox"/>	<input type="checkbox"/>
6. Advance the soft, flexible end of the guide wire through the catheter or needle and into the airway several centimeters.	<input type="checkbox"/>	<input type="checkbox"/>
7. Remove the catheter or needle, leaving the guide wire in place.	<input type="checkbox"/>	<input type="checkbox"/>
8. Make a vertical incision in the midline where the wire enters the skin. Note: Ensure that the incision is sufficiently large to allow passage of the dilator and airway catheter.	<input type="checkbox"/>	<input type="checkbox"/>
9. Advance the handled dilator, tapered end first, into the connector end of the airway catheter until the handle stops against the connector. Note: This step may be performed prior to beginning the procedure. Use of lubrication in the surface of the dilator may enhance fit and placement of the airway catheter.	<input type="checkbox"/>	<input type="checkbox"/>
10. Advance the airway catheter/dilator assembly over the guide wire until the proximal stiff end of the wire guide is completely through and visible at the handle end of the dilator. It is important to continually visualize the proximal end of the wire guide during the airway insertion procedure to prevent its inadvertent loss into the trachea.	<input type="checkbox"/>	<input type="checkbox"/>
11. Maintaining wire guide position, continue to advance the airway catheter/dilator assembly over the wire guide and into the trachea. Take care not to advance the tip of the dilator beyond the tip of the wire guide within the trachea.	<input type="checkbox"/>	<input type="checkbox"/>
12. Remove the wire guide and dilator simultaneously.	<input type="checkbox"/>	<input type="checkbox"/>
13. Fix the airway catheter in place with tracheostomy tape strip in standard fashion.	<input type="checkbox"/>	<input type="checkbox"/>
14. Connect the airway catheter, using its standard 15mm connector, to appropriate ventilator device.	<input type="checkbox"/>	<input type="checkbox"/>

Defibrillation

Steps	Performed?	
	Yes	No
1. Confirm pulseless arrest in ventricular tachycardia or ventricular fibrillation.	<input type="checkbox"/>	<input type="checkbox"/>
2. After application of an appropriate conductive agent (if needed), apply defibrillation paddles or hands free pads to the patient’s chest in the proper position (right of sternum at 2 nd intercostal space and anterior axillary line at 5 th intercostal space).	<input type="checkbox"/>	<input type="checkbox"/>
3. Set the appropriate energy level per the manufacturer’s recommendation: <ul style="list-style-type: none"> ▪ Adult Biphasic <ul style="list-style-type: none"> ✓ Zoll – 120J, 150J, 200J, 200J, 200J ✓ Physio – 200J, 300J, 360J, 360J, 360J ✓ Philips – 150J, 150J, 150J, 150J, 150J ▪ Pediatric Biphasic <ul style="list-style-type: none"> ✓ Zoll – 2 J/kg, 2 J/kg, 2 J/kg, 2 J/kg ✓ Physio – 2 J/kg, 4 J/kg, 4 J/kg, 4 J/kg ✓ Philips – 2 J/kg, 4 J/kg, 4 J/kg, 4 J/kg ▪ Perform 2 minutes of CPR between shocks 	<input type="checkbox"/>	<input type="checkbox"/>
4. Charge the defibrillator to the selected energy level.	<input type="checkbox"/>	<input type="checkbox"/>
5. Assure proper placement of the paddles or pads.	<input type="checkbox"/>	<input type="checkbox"/>
6. Assure proper contact by applying 25 pounds of pressure on each handle, or make sure combipads have good skin contact.	<input type="checkbox"/>	<input type="checkbox"/>
7. Assertively state “CLEAR” and visualize that no one, including yourself, is in contact with the patient or any wet or metal surface the patient may be touching.	<input type="checkbox"/>	<input type="checkbox"/>
8. Deliver the countershock by depressing the discharge button(s) when using paddles, or depress the shock button for hands free operation.	<input type="checkbox"/>	<input type="checkbox"/>
9. After 2 minutes of CPR immediately following defibrillation, assess the patient’s response.	<input type="checkbox"/>	<input type="checkbox"/>
10. Document the dysrhythmia and the response to defibrillation with ECG strips on/with the PCR.	<input type="checkbox"/>	<input type="checkbox"/>
11. Repeat the procedure as indicated by patient response and ECG rhythm.	<input type="checkbox"/>	<input type="checkbox"/>

Epi-Pen Autoinjector

Steps	Performed?	
	Yes	No
1. Use body substance isolation precautions.	<input type="checkbox"/>	<input type="checkbox"/>
2. Verify clinical indications <ul style="list-style-type: none"> ▪ Anaphylaxis ▪ Allergen or asthma related severe dyspnea ▪ Systemic reaction to an allergen 	<input type="checkbox"/>	<input type="checkbox"/>
3. Check expiration date. If medication is expired, cloudy, empty, or malfunctioning, do not use.	<input type="checkbox"/>	<input type="checkbox"/>
4. Remove cap and select an injection site (side of thigh or shoulder). Take care not to touch either end of the Epi-Pen.	<input type="checkbox"/>	<input type="checkbox"/>
5. Push firmly against site and hold for 10 seconds.	<input type="checkbox"/>	<input type="checkbox"/>
6. The dosage for the Adult Epi-Pen is 0.3mg; The dosage for the Pediatric Epi-Pen is 0.15mg, and should be used on children under 12 years or under 100 pounds.	<input type="checkbox"/>	<input type="checkbox"/>
7. Properly discard injector.	<input type="checkbox"/>	<input type="checkbox"/>
8. Monitor the patient while transporting.	<input type="checkbox"/>	<input type="checkbox"/>

Epi Push-Dose Pressor

Steps	Performed?	
	Yes	No
1. Use body substance precautions.	<input type="checkbox"/>	<input type="checkbox"/>
2. Unpack a 10mL Normal Saline flush and waste 1mL, leaving 9mL in the syringe. Attach an 18ga 1.5” intramuscular needle to the saline syringe.	<input type="checkbox"/>	<input type="checkbox"/>
3. Unpack a 1:10,000 epinephrine prefilled syringe and draw 1mL of the epinephrine into the saline flush syringe via the rubber plunger.	<input type="checkbox"/>	<input type="checkbox"/>
4. Shake the new diluted saline/epinephrine syringe briefly to mix.	<input type="checkbox"/>	<input type="checkbox"/>
5. Place an orange sticker on the syringe and label “Epinephrine 10mcg/mL”	<input type="checkbox"/>	<input type="checkbox"/>
6. To administer, start an IV/IO line of normal saline and connect the syringe to the appropriate IV tubing connector using aseptic technique.	<input type="checkbox"/>	<input type="checkbox"/>
7. Administer 0.5-2mL every 2-5 minutes. This equates to an infusion of 2-10mcg/min.	<input type="checkbox"/>	<input type="checkbox"/>
8. Monitor the heart rate and blood pressure closely.	<input type="checkbox"/>	<input type="checkbox"/>
9. Document the procedure, times, dosages, and any patient response in the Patient Care Report (PCR).	<input type="checkbox"/>	<input type="checkbox"/>

Consider the following conversions, once the dilution of 10mcg/mL is achieved:	
<p style="text-align: center; margin: 0;"><u>Every 2 Minutes</u></p> <ul style="list-style-type: none"> ▪ 0.5mL q 2 min = 2.5 mcg/min ▪ 1mL q 2 min = 5 mcg/min ▪ 1.5mL q 2 min = 7.5 mcg/min ▪ 2mL q 2 min = 10 mcg/min <p style="text-align: center; margin: 10px 0 0 0;"><u>Every 3 Minutes</u></p> <ul style="list-style-type: none"> ▪ 0.5mL q 3 min = 1.7 mcg/min * ▪ 1mL q 3 min = 3.3 mcg/min ▪ 1.5mL q 3 min = 5 mcg/min ▪ 2mL q 3 min = 6.7 mcg/min 	<p style="text-align: center; margin: 0;"><u>Every 4 Minutes</u></p> <ul style="list-style-type: none"> ▪ 0.5mL q 4 min = 1.3 mcg/min * ▪ 1mL q 4 min = 2.5 mcg/min ▪ 1.5mL q 4 min = 3.8 mcg/min ▪ 2mL q 4 min = 5 mcg/min <p style="text-align: center; margin: 10px 0 0 0;"><u>Every 5 Minutes</u></p> <ul style="list-style-type: none"> ▪ 0.5mL q 5 min = 1 mcg/min * ▪ 1mL q 5 min = 2 mcg/min ▪ 1.5mL q 5 min = 3 mcg/min ▪ 2mL q 5 min = 4 mcg/min
*Subtherapeutic dosages, not recommended.	

External Transcutaneous Pacing

Steps	Performed?	
	Yes	No
1. Identify clinical indications <ul style="list-style-type: none"> ▪ Critical patient secondary to bradycardia (AMS, hypotension, pulmonary edema) ▪ Other methods of correcting the critical bradycardia failed, or patient has a high degree (2° type II or 3°) AV block. 	<input type="checkbox"/>	<input type="checkbox"/>
2. Clean and dry skin sites for pacing electrodes.	<input type="checkbox"/>	<input type="checkbox"/>
3. Recommended placement of pads: <ul style="list-style-type: none"> ▪ Anterior electrode placed over the cardiac apex (approx. the V2-V3 position on a 12-Lead) ▪ Posterior electrode placed on the left posterior chest beneath the scapula, behind the heart ▪ Avoid placing the pads directly over bony prominences such as the sternum and scapula 	<input type="checkbox"/>	<input type="checkbox"/>
4. Rate, mode, and amperage will be adjusted by the crew to achieve an adequate degree of perfusion as indicated by the assessment of peripheral circulation. <ul style="list-style-type: none"> ▪ Set heart Rate no less than 60, no more than 80 bpm ▪ Assess for electrical capture (a wide complex following every pacer spike) ▪ Assess for mechanical capture (corresponding pulse with every paced beat) ▪ Assess mental status, capillary refill, blood pressure 	<input type="checkbox"/>	<input type="checkbox"/>
5. Pediatric Patients: Increase to the minimum amperage necessary to maintain electromechanical capture, criteria same as adult	<input type="checkbox"/>	<input type="checkbox"/>
6. Synchronize pacer with intrinsic rhythm to avoid inducing ventricular arrhythmias.	<input type="checkbox"/>	<input type="checkbox"/>

Foreign Body Airway Obstruction

Steps	Performed?	
	Yes	No
Conscious Patient		
1. If respirations are present but compromised, provide supportive care. <ul style="list-style-type: none"> ▪ Encourage patient to cough forcefully ▪ Consider oxygenation, IV, ECG ▪ Transport 	<input type="checkbox"/>	<input type="checkbox"/>
2. If respirations are absent, or patient is increasingly hypoxic: <ul style="list-style-type: none"> ▪ Administer abdominal thrusts until foreign body expelled or patient loses consciousness 	<input type="checkbox"/>	<input type="checkbox"/>
3. If airway is cleared: <ul style="list-style-type: none"> ▪ Reassess ABC's ▪ Oxygenate, titrate SpO2 to 94% ▪ Initiate IV and ECG ▪ Transport 	<input type="checkbox"/>	<input type="checkbox"/>
Unconscious Patient		
1. Attempt ventilation, reposition head and try to ventilate	<input type="checkbox"/>	<input type="checkbox"/>
2. Attempt visualization of object. If the object can be seen, perform a finger sweep to remove it. If visualization is performed via laryngoscopy, remove with Magill forceps.	<input type="checkbox"/>	<input type="checkbox"/>
3. If object cannot be visualized, initiate chest compressions. If object is dislodged, repeat step 2.	<input type="checkbox"/>	<input type="checkbox"/>
4. If object is not becoming dislodged via BLS means or unable to remove object with Magill Forceps, consider advanced airway. <ul style="list-style-type: none"> ▪ Orotracheal Intubation ▪ Melker Cricothyrotomy 	<input type="checkbox"/>	<input type="checkbox"/>
4. If airway is cleared: <ul style="list-style-type: none"> ▪ Reassess ABC's ▪ Oxygenate, titrate SpO2 to 94% ▪ Initiate IV and ECG ▪ Transport 	<input type="checkbox"/>	<input type="checkbox"/>

Fundal / Uterus Massage

Steps	Performed?	
	Yes	No
1. Ensure Clinical Indications: <ul style="list-style-type: none"> ▪ Excessive vaginal bleeding following delivery (>500mL) ▪ Mother is unable to breastfeed, or bleeding continues despite breastfeeding ▪ Mother displays signs and symptoms consistent with hypovolemia 	<input type="checkbox"/>	<input type="checkbox"/>
2. Explain the procedure to the patient.	<input type="checkbox"/>	<input type="checkbox"/>
3. Place one hand over the proximal end of the symphysis pubis and apply pressure.	<input type="checkbox"/>	<input type="checkbox"/>
4. Locate the fundus with the other hand and “knead” it with firm pressure.	<input type="checkbox"/>	<input type="checkbox"/>
5. Monitor for changes in hemodynamic status.	<input type="checkbox"/>	<input type="checkbox"/>
6. Continue with hemorrhage control protocol.	<input type="checkbox"/>	<input type="checkbox"/>

Intraosseous EZ-IO

Clinical Indications:

- EZ-IO Blue Needle: >3kg (>7 lbs)
- EZ-IO Pink Needle: 3-39kg (7-86 lbs)
- EZ-IO Yellow Needle: >40 kg (>88lbs); excessive tissue over site; proximal humerus
- Clinically unstable patient and emergent need for intravenous access; and peripheral IV access cannot be obtained in this critical patient within 2 IV attempts or 90 seconds
- May be considered prior to IV access in cardiac arrest, severe clinical instability, or profound hypovolemia with alteration of mental status

Contraindications:

- Fracture of the bone selected for IO infusion, or IO within 24 hours (consider alternate site)
- Excessive tissue at insertion site with the absence of anatomical landmarks (consider alternate site)
- Previous significant orthopedic procedures (consider alternate site)
- Infection at the selected site (consider alternate site)

Steps	Performed?	
	Yes	No
1. Select a site (Proximal Humerus preferred)	<input type="checkbox"/>	<input type="checkbox"/>
2. Prep the skin with an antiseptic solution	<input type="checkbox"/>	<input type="checkbox"/>
3. Prepare the EZ-IO driver and appropriate needle set	<input type="checkbox"/>	<input type="checkbox"/>
4. Stabilize the site and insert appropriate needle set	<input type="checkbox"/>	<input type="checkbox"/>
5. Remove EZ-IO driver from needle set while stabilizing catheter hub	<input type="checkbox"/>	<input type="checkbox"/>
6. Remove stylet from catheter, place stylet in shuttle or approved sharps container	<input type="checkbox"/>	<input type="checkbox"/>
7. Confirm placement, place commercial stabilizing device if available.	<input type="checkbox"/>	<input type="checkbox"/>
8. Connect primed EZ-Connect	<input type="checkbox"/>	<input type="checkbox"/>
9. Adults – slowly administer 20-40mg of Lidocaine 2% (preservative free) for pain relief Pediatrics – slowly administer 0.5mg/kg (< 20mg) Lidocaine 2% (preservative free) Do not exceed 40mg of Lidocaine 2% (preservative free) for pain relief in adults	<input type="checkbox"/>	<input type="checkbox"/>
10. Attach pressure bag or infusion pump for continuous infusions (unless humeral IO)	<input type="checkbox"/>	<input type="checkbox"/>
11. Begin infusion, dress site, secure tubing, and monitor site for patency or complications	<input type="checkbox"/>	<input type="checkbox"/>
12. Due to the anatomy of the IO space you will note flow rates slower than those achieved with IV catheters unless the proximal humerus is used	<input type="checkbox"/>	<input type="checkbox"/>

A similar procedure may be followed with manual insertion of the Jamshidi or Illinois IO needles in children, or the Bone Injection Gun or the NIO if an EZ-IO is not available.

Intubation – Oral

Clinical Indications:

- An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort
- Any patient medicated for rapid sequence intubation

Steps	Performed?	
	Yes	No
1. Prepare all equipment and have suction ready	<input type="checkbox"/>	<input type="checkbox"/>
2. Preoxygenate the patient when able by ventilating for 60 seconds attached to 15 LPM O2. Consider passive oxygenation with 10 LPM O2 via NC during preoxygenation and during the intubation attempt	<input type="checkbox"/>	<input type="checkbox"/>
3. Open the patient’s airway and holding the laryngoscope in the left hand, insert the blade into the right side of the mouth and sweep the tongue to the left.	<input type="checkbox"/>	<input type="checkbox"/>
4. Use the blade to lift the tongue and epiglottis (either directly with the straight blade or indirectly with the curved blade).	<input type="checkbox"/>	<input type="checkbox"/>
5. If patient has a c-collar in place unfasten collar and have second provider control c-spine from below.	<input type="checkbox"/>	<input type="checkbox"/>
6. Once the glottic opening is visualized, slide the tube through the cords and continue to visualize until the cuff is past the cords.	<input type="checkbox"/>	<input type="checkbox"/>
7. Remove the stylet and inflate the cuff with approximately 10mL of air (until no cuff leak).	<input type="checkbox"/>	<input type="checkbox"/>
8. After the trachea is intubated, proper placement must be assured by: <ul style="list-style-type: none"> ▪ Observing rise and fall of both sides of the chest wall ▪ Confirming the presence of bilateral breath sounds ▪ Negative gastric sounds ▪ Appropriate color change noted on an end tidal CO₂ detector during ventilation ▪ Attachment to EtCO₂ monitor/detector with appropriate response 	<input type="checkbox"/>	<input type="checkbox"/>
9. Secure the tube.	<input type="checkbox"/>	<input type="checkbox"/>
10. Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient’s teeth or lips on/with the patient care report. Document all devices used to confirm initial tube placement. Also document positive or negative breath sounds before and after each movement of the patient. Monitor and document capnography post intubation.	<input type="checkbox"/>	<input type="checkbox"/>

IV Therapy

Clinical Indications:

- Any patient where intravenous access is indicated
- To administer intravenous medications
- To administer intravenous fluids
- To obtain a venous blood sample where applicable

Steps	Performed?	
	Yes	No
1. Inspect the IV fluid for the appropriate type, expiration date, discoloration, cloudiness, leaks, or the presence of particles.	<input type="checkbox"/>	<input type="checkbox"/>
2. Select the appropriate catheter and administration set.	<input type="checkbox"/>	<input type="checkbox"/>
3. Using aseptic technique, connect the IV tubing to the bag. Fill the drip chamber halfway and flush the air bubbles from the tubing. If using a flush with a PRN adapter, ensure aseptic technique when connecting, and flush all bubbles from syringe and adapter.	<input type="checkbox"/>	<input type="checkbox"/>
4. Prepare equipment such as tape, Tegaderm, or Veni-gard, antiseptic solution, body substance isolation, and tourniquet.	<input type="checkbox"/>	<input type="checkbox"/>
5. Apply the tourniquet proximal to an acceptable site. Keep in mind mastectomy patients, patients on renal dialysis, or any other condition in which restriction of blood flow could cause complications.	<input type="checkbox"/>	<input type="checkbox"/>
6. Palpate a suitable vein.	<input type="checkbox"/>	<input type="checkbox"/>
7. Cleanse the site with an antiseptic solution.	<input type="checkbox"/>	<input type="checkbox"/>
8. Perform venipuncture. <ul style="list-style-type: none"> ▪ Advance needle and catheter into the vein. DO NOT reinsert needle through catheter. ▪ Note flashback ▪ Occlude vein proximal to catheter ▪ Remove needle and dispose into the proper container without recapping ▪ Connect IV tubing or prepared/flushed PRN adapter 	<input type="checkbox"/>	<input type="checkbox"/>
9. Release tourniquet.	<input type="checkbox"/>	<input type="checkbox"/>
10. Open the IV to assure free flow of the fluid and adjust the rate per protocol.	<input type="checkbox"/>	<input type="checkbox"/>
11. Cover the site with a sterile dressing and secure the IV and tubing.	<input type="checkbox"/>	<input type="checkbox"/>
12. Document the procedure, time, and result (success) on/with the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>

KED

Steps	Performed?	
	Yes	No
1. Take body substance isolation precautions	<input type="checkbox"/>	<input type="checkbox"/>
2. Take manual in-line stabilization	<input type="checkbox"/>	<input type="checkbox"/>
3. Assess motor, sensory, and circulatory functions in each extremity	<input type="checkbox"/>	<input type="checkbox"/>
4. Apply appropriately sized c-collar	<input type="checkbox"/>	<input type="checkbox"/>
5. Open the KED and place it between the patient's buttocks and the seat	<input type="checkbox"/>	<input type="checkbox"/>
6. Center the KED on the patient and position the KED snugly under the patient's armpits	<input type="checkbox"/>	<input type="checkbox"/>
7. Pad voids as appropriate. Fasten the chest and abdominal straps	<input type="checkbox"/>	<input type="checkbox"/>
8. Secure the ischial straps	<input type="checkbox"/>	<input type="checkbox"/>
9. Secure the head	<input type="checkbox"/>	<input type="checkbox"/>
10. Reassess motor, sensory, and circulatory functions in each extremity	<input type="checkbox"/>	<input type="checkbox"/>

Ketamine Dilution for IV Pain Management

Steps	Performed?	
	Yes	No
1. Use body substance precautions and use aseptic technique. Explain the procedure and any potential side effects to the patient or family where appropriate.	<input type="checkbox"/>	<input type="checkbox"/>
2. Unpack a 10mL Normal Saline flush and waste 1mL, leaving 9mL in the syringe. Attach a hypodermic needle to the saline syringe.	<input type="checkbox"/>	<input type="checkbox"/>
3. Unpack your Ketamine 500mg per 10mL vial that is NOT shrink wrapped and draw 1mL of the Ketamine into the saline flush syringe via the rubber plunger.	<input type="checkbox"/>	<input type="checkbox"/>
4. Shake the new diluted saline/Ketamine syringe briefly to mix.	<input type="checkbox"/>	<input type="checkbox"/>
5. Place an orange sticker on the syringe and label "Ketamine 5mg/mL"	<input type="checkbox"/>	<input type="checkbox"/>
6. To administer, start an IV/IO line of normal saline and connect the syringe to the appropriate IV tubing connector using aseptic technique.	<input type="checkbox"/>	<input type="checkbox"/>
7. Administer up to a maximum of 2mL for adults, preferably IV but you can administer IM in the absence of an IV. The 2mL equates to 10mg of Ketamine.	<input type="checkbox"/>	<input type="checkbox"/>
8. Monitor the heart rate, blood pressure, airway, and respirations closely.	<input type="checkbox"/>	<input type="checkbox"/>
9. Document the procedure, times, dosages, and any patient response in the Patient Care Report (PCR).	<input type="checkbox"/>	<input type="checkbox"/>

Mucosal Atomizer Device (MAD)

Medications to consider:

- Naloxone 2mg/2mL for adult overdose
- Fentanyl 50mcg/mL for adult pain management
- Versed 10mg/2mL for seizures (IM is much preferred)
- Ketamine 100mg/mL diluted to 10mg/mL for pediatric pain management (IV is much preferred)

Steps	Performed?	
	Yes	No
1. Load syringe with appropriate mL volume of medication (1mL maximum per nostril). Consider adding 0.1 mL of volume per nostril to account for dead space.	<input type="checkbox"/>	<input type="checkbox"/>
2. Attach the Mucosal Atomizer Device (MAD).	<input type="checkbox"/>	<input type="checkbox"/>
3. Place the MAD tip within nostril approximately 1.5cm.	<input type="checkbox"/>	<input type="checkbox"/>
4. Briskly compress syringe to administer ½ of the volume as atomized spray. Do not use more than 1mL per nostril. More than 1mL per nostril may result in medication drainage from the nostril.	<input type="checkbox"/>	<input type="checkbox"/>
5. Remove and repeat in other nostril, so all medication is administered.	<input type="checkbox"/>	<input type="checkbox"/>

Nebulizer

Scope of Practice Notes:

- AEMTs have standing orders to administer nebulized bronchodilators.
- EMTs must obtain a verbal order from online medical direction or the direct supervision of a Paramedic on scene.

Steps	Performed?	
	Yes	No
1. Gather the necessary equipment <ul style="list-style-type: none"> ▪ Mask or Pipe Nebulizer setup ▪ Oxygen tubing ▪ DuoNeb Bullet 	<input type="checkbox"/>	<input type="checkbox"/>
2. Assemble the nebulizer kit.	<input type="checkbox"/>	<input type="checkbox"/>
3. Instill the contents of the bullet into the reservoir of the nebulizer.	<input type="checkbox"/>	<input type="checkbox"/>
4. Connect the nebulizer device to oxygen at 6-8 liters per minute.	<input type="checkbox"/>	<input type="checkbox"/>
5. Instruct the patient to breathe calmly, deeply, and evenly throughout the treatment. If using a pipe nebulizer, ensure the patient has a good lip seal around the mouthpiece and observe the mist at the end of the reservoir to make sure it disappears with inspiration.	<input type="checkbox"/>	<input type="checkbox"/>
6. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in utilizing all of the solution.	<input type="checkbox"/>	<input type="checkbox"/>
7. Monitor the patient for medication effects. This should include the assessment of the patient's response to the treatment and reassessment of vital signs, ECG, and breath sounds.	<input type="checkbox"/>	<input type="checkbox"/>
8. Document the treatment, dose, and route on/with the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>

Orthostatic Vitals

Clinical Indications:

- Patient situations with suspected blood / fluid loss / dehydration
- Patients > 8 years of age, or patients larger than the Broselow-Luten tape

Steps	Performed?	
	Yes	No
1. Assess the need for orthostatics.	<input type="checkbox"/>	<input type="checkbox"/>
2. Obtain the patient's pulse and blood pressure while supine.	<input type="checkbox"/>	<input type="checkbox"/>
3. Have patient stand for one minute.	<input type="checkbox"/>	<input type="checkbox"/>
4. Obtain patient's pulse and blood pressure while standing.	<input type="checkbox"/>	<input type="checkbox"/>
5. If diastolic blood pressure decreased by 10mmHg or systolic blood pressure decreased by 20mmHg, the orthostatics are considered positive.	<input type="checkbox"/>	<input type="checkbox"/>
6. If patient is unable to stand, orthostatics may be taken while the patient is sitting with feet dangling.	<input type="checkbox"/>	<input type="checkbox"/>
7. If positive orthostatic changes occur while sitting, DO NOT continue to the standing position.	<input type="checkbox"/>	<input type="checkbox"/>
8. Document the time and vital signs for supine and standing positions on the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>
9. Determine appropriate treatment based on protocol.	<input type="checkbox"/>	<input type="checkbox"/>

Pain Assessment - Adult

Clinical Considerations:

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

Steps	Performed?	
	Yes	No
1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient's self-report.	<input type="checkbox"/>	<input type="checkbox"/>
2. Pain should be assessed and documented during initial assessment, before starting pain control treatment, and with each set of vitals.	<input type="checkbox"/>	<input type="checkbox"/>
3. Pain should be assessed using the appropriate approved scale.	<input type="checkbox"/>	<input type="checkbox"/>
4. 0-10 Scale: the most familiar scale used by EMS for rating pain in adults. Avoid coaching the patient. Simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain and 10 is the worst pain ever.	<input type="checkbox"/>	<input type="checkbox"/>

Patient Assessment – Medical

Steps	Performed?	
	Yes	No
1. History of Present Illness including but not limited to: <ul style="list-style-type: none"> ▪ O – Onset of the problem (how fast did it occur) ▪ P – Provocation/Palliation (what makes it better or worse) ▪ Q – Quality (Crushing, Pressure, Stabbing) ▪ R – Radiation (does the pain go anywhere) ▪ S – Severity (1-10 scale) and intermittence ▪ T – Time of onset (when did this start) 	<input type="checkbox"/>	<input type="checkbox"/>
2. Provide appropriate interventions as per protocols. Splint injured, painful, or swollen extremities. Apply dressings and bandage all wounds. Consult medical control with any questions, further treatments, or omission of interventions as written.	<input type="checkbox"/>	<input type="checkbox"/>
Priority Medical Patients Rapid Assessment		
1. Rapidly assess the patient from “head to toe” (60-90 seconds total) <ul style="list-style-type: none"> ▪ HEENT Exam: Check ears for fluid and foreign bodies, check eyes for pupillary response, check nose for fluid and patency, check neck for pain, stiffness, injury, distended veins, tracheal deviation, pulse, or any other signs of trauma. Consider the need for a cervical collar. 	<input type="checkbox"/>	<input type="checkbox"/>
2. Chest and Abdomen <ul style="list-style-type: none"> ▪ Check chest for visible injury, assess breath sounds as well as chest movement, symmetry, and effort. The chest should be palpated for pain. The abdomen should be assessed for visible injury, pain, tenderness, rigidity, and guarding. The pelvis should be palpated for stability if any history of trauma or possible dislocation. 	<input type="checkbox"/>	<input type="checkbox"/>
3. Extremities and Back <ul style="list-style-type: none"> ▪ The lower as well as the upper extremities should be examined and assessed for presence of pulses, sensation, and motor function. Note if edematous or signs of poor perfusion exist. The back should be examined for signs of pain. For patients with possible spine injury, assess the back during the logroll procedure. 	<input type="checkbox"/>	<input type="checkbox"/>
4. A SAMPLE history should also be obtained if possible. This should include: <ul style="list-style-type: none"> ▪ S – Signs and Symptoms ▪ A – Allergies ▪ M – Medications ▪ P – Past medical history ▪ L – Last oral intake ▪ E – Events of the injury or illness 	<input type="checkbox"/>	<input type="checkbox"/>
5. Obtain baseline vital signs and prepare the patient for transport.	<input type="checkbox"/>	<input type="checkbox"/>

Patient Assessment – Trauma

Steps	Performed?	
	Yes	No
Non-Priority Trauma Patients		
1. Assess injuries based on chief complaint <ul style="list-style-type: none"> ▪ Obtain Vital Signs ▪ Provide care based on signs and symptoms ▪ Continue with Detailed Assessment as appropriate 	<input type="checkbox"/>	<input type="checkbox"/>
Priority Trauma Patients Rapid Trauma Assessment		
1. Rapidly assess the patient ‘head to toe’ (60-90 seconds total) <ul style="list-style-type: none"> ▪ HEENT Exam: The head should be examined for signs of abnormality. The ears should be examined for presence of fluid and foreign bodies. The pupils should be checked for symmetry and response to light. The nose should be examined for presence of fluid and patency. Examine the throat for signs of obstruction, redness, and patency. The neck should be examined for pain, stiffness, or injury. The neck veins should be assessed for signs of extreme distention. If there is any evidence of neck injury, employ cervical spine precautions. Assess for any signs of trauma. 	<input type="checkbox"/>	<input type="checkbox"/>
2. Chest and Abdomen <ul style="list-style-type: none"> ▪ The chest should be examined for signs of visible injury. Assess for breath sounds as well as chest movement, symmetry, and effort. The chest should be palpated for pain. The abdomen should be assessed for signs of injury, pain, tenderness, rigidity, and guarding. The pelvis should be palpated for stability if any history of trauma. 	<input type="checkbox"/>	<input type="checkbox"/>
3. Extremities and Back <ul style="list-style-type: none"> ▪ The lower as well as the upper extremities should be examined and assessed for presence of pulses, sensation, and motor function. Note if edematous or signs of poor perfusion exist. The back should be examined for signs of pain. For patients with possible spinal injury, assess the back during the log roll procedure. 	<input type="checkbox"/>	<input type="checkbox"/>
4. Neurological Survey <ul style="list-style-type: none"> ▪ If not already done, a neurological evaluation as well as a history should be obtained. The pupils should be assessed for equality and reaction to light. The level of consciousness should be assessed using the AVPU method. 	<input type="checkbox"/>	<input type="checkbox"/>
5. A SAMPLE history should be obtained if possible. This should include: <ul style="list-style-type: none"> ▪ S – Signs and Symptoms ▪ A – Allergies ▪ M – Medications ▪ P – Past illnesses ▪ L – Last oral intake ▪ E – Events of the injury or illness 	<input type="checkbox"/>	<input type="checkbox"/>
6. Exposure <ul style="list-style-type: none"> ▪ A thorough exam cannot be accomplished without properly exposing a patient. Make sure to keep the patient warm in the process of exposure and examination. 	<input type="checkbox"/>	<input type="checkbox"/>
7. Perform a Continuous Reassessment as appropriate to identify change in status.	<input type="checkbox"/>	<input type="checkbox"/>

Pediatric Primary Assessment

Clinical Indication:

- Any child that can be measured with the Broselow-Luten Resuscitation Tape.

Steps	Performed?	
	Yes	No
<p>1. Scene size-up</p> <ul style="list-style-type: none"> ▪ Universal precautions, scene safety, environmental hazards, need for additional resources, by-stander safety, and patient/caregiver interaction. Consider the number of patients, mechanism of injury or nature of the illness. Request additional help if necessary. 	<input type="checkbox"/>	<input type="checkbox"/>
<p>2. Priorities of management are established on a life-threatening basis.</p> <ul style="list-style-type: none"> ▪ Begin an ABC approach to the patient to form a general impression and establish the presence of a life threatening injury or illness. Obtain and record the chief complaint of the patient. Quickly assess level of consciousness using the AVPU method. 	<input type="checkbox"/>	<input type="checkbox"/>
<p>3. Evaluate for the presence of increased intracranial pressure.</p> <ul style="list-style-type: none"> ▪ In the infant, increased ICP may be manifested by a full or bulging anterior fontanel, a weak, shrill, or irritable cry, and poor muscle tone. Pupillary responses, level of consciousness, recognition of parents, and Glasgow Coma Score should also be documented. 	<input type="checkbox"/>	<input type="checkbox"/>
<p>4. Assess the airway (protect c-spine if uncertain)</p> <ul style="list-style-type: none"> ▪ When establishing an airway, remember the differences between the adult and pediatric airway. The young child has a disproportionately large tongue, which can easily occlude the airway. A small amount of blood or vomitus can also obstruct the airway. Deciduous, or “baby teeth”, are poorly anchored and easily dislodged. ▪ If responsive – no intervention needed ▪ If unresponsive – use the appropriate medical or trauma maneuver to open the airway ▪ If airway remains partially or totally obstructed, continue steps to clear the airway 	<input type="checkbox"/>	<input type="checkbox"/>
<p>5. Assess adequacy of breathing</p> <ul style="list-style-type: none"> ▪ If patient is not breathing, ventilate patient ▪ Observe chest rise and fall; auscultate breath sounds, observe for signs of distress – use of secondary muscles, nasal flaring, and tripod position. If oxygen is indicated and the child has a patent airway and good respiratory effort, administer oxygen via NRB. ▪ If the child requires ventilatory assistance, administer 100% oxygen via bag valve mask. It is strongly recommended to use the appropriate size mask for the patient. ▪ When possible, monitor oxygen saturation with continuous pulse oximetry and document findings as appropriate. 	<input type="checkbox"/>	<input type="checkbox"/>
<p>6. Assess circulation/perfusion</p> <ul style="list-style-type: none"> ▪ Assess rate and quality of pulses – peripheral and central pulses. Early signs and symptoms of shock in children include a rapid heart rate and respiratory rate (remember age-related vital signs), agitation, and poor peripheral perfusion (capillary refill >2sec). Hypotension is a LATE and ominous finding. Document vital signs (including temperature and blood pressure if appropriate) and peripheral perfusion. ▪ Stop any active bleeding, assess skin color, temperature, and obtain blood pressure. ▪ If there is no palpable pulse or rate is too slow to maintain cerebral blood flow, begin CPR. 	<input type="checkbox"/>	<input type="checkbox"/>
<p>7. Further assessments, go to Patient Assessment – Medical or Patient Assessment – Trauma</p>	<input type="checkbox"/>	<input type="checkbox"/>

Procedure for Reporting a Death

Clinical Indications:

- Obvious Death (lividity, rigor mortis, decapitation, injuries inconsistent with life)
- Field Termination of Resuscitation
- Any death encountered in the field which is not transported to a hospital should be reported by the EMS agency

Steps	Performed?	
	Yes	No
1. Ensure the clinical indications are met and gather pertinent information <ul style="list-style-type: none"> ▪ Once the determination of death is made in the field, no one will come into contact with the patient’s body without permission of the coroner’s office representative ▪ Ensure the evidence is preserved in a potential crime scene ▪ Ensure police are en route, if not on scene already 	<input type="checkbox"/>	<input type="checkbox"/>
2. Contact the Trumbull County Coroner’s Office at (330) 675-2516 and report: <ul style="list-style-type: none"> ▪ Name, age, race, and sex of the decedent ▪ Address and location of the incident ▪ Telephone number and location of next of kin ▪ The time of pronouncement, and who made the pronouncement ▪ If the individual was transported, who made the transport ▪ A brief narrative of the circumstances surrounding the death ▪ Where the decedent was found and by whom, if known ▪ Any past medical history ▪ Current medications, if known ▪ The name and telephone number of the attending physician, if known Ensure no delay in notification, even when all of the information cannot be obtained	<input type="checkbox"/>	<input type="checkbox"/>
3. Ensure the coroner’s office representative will: <ul style="list-style-type: none"> ▪ Contact the family physician and request that they sign the death certificate ▪ Arrange transport of the patient’s body 	<input type="checkbox"/>	<input type="checkbox"/>
4. In a potential crime scene, ensure the police have taken control	<input type="checkbox"/>	<input type="checkbox"/>
5. Once the coroner’s office has been notified and the EMS crew has received confirmation that the coroner’s office representative will arrange transport, the EMS crew may choose to: <ul style="list-style-type: none"> ▪ Return to service for pending 911 calls ▪ Return to a more centralized location for the purpose of adequate 911 response ▪ Remain on scene for grievance counseling (if trained) or customer service 	<input type="checkbox"/>	<input type="checkbox"/>

Pulse Oximetry

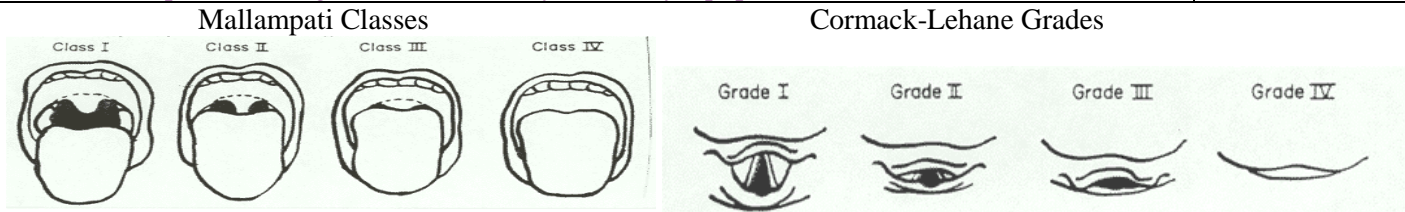
Steps	Performed?	
	Yes	No
1. Turn the machine on and allow for self-tests.	<input type="checkbox"/>	<input type="checkbox"/>
2. Apply probe to patient's finger or any other digit as recommended by the device manufacturer.	<input type="checkbox"/>	<input type="checkbox"/>
3. Allow machine to register saturation level.	<input type="checkbox"/>	<input type="checkbox"/>
4. Record time and initial saturation percent on room air if possible on the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>
5. Verify pulse rate on machine with actual pulse of the patient.	<input type="checkbox"/>	<input type="checkbox"/>
6. Monitor critical patients continuously until arrival at the hospital. If recording a one-time reading, monitor patients for a few minutes as oxygen saturation can vary.	<input type="checkbox"/>	<input type="checkbox"/>
7. Document percent of oxygen saturation every time vital signs are recorded and in response to therapy to correct hypoxemia.	<input type="checkbox"/>	<input type="checkbox"/>
8. Normal Saturation is 94-100%. Below 94% in a healthy individual or below 92% in a patient with COPD.	<input type="checkbox"/>	<input type="checkbox"/>
9. Use the pulse oximeter as an added tool for patient evaluation. Treat the patient, not the data provided by the device.	<input type="checkbox"/>	<input type="checkbox"/>
10. The pulse oximeter reading should never be used to withhold oxygen from a patient in respiratory distress.	<input type="checkbox"/>	<input type="checkbox"/>
11. Factors which may reduce the reliability of the pulse oximetry reading include: <ul style="list-style-type: none"> ▪ Poor peripheral circulation (blood volume, hypotension, hypothermia) ▪ Excessive pulse oximeter sensor motion ▪ Fingernail polish (may be removed with acetone pad) ▪ Carbon monoxide bound to hemoglobin ▪ Irregular heart rhythms (atrial fibrillation, SVT, etc) ▪ Jaundice 	<input type="checkbox"/>	<input type="checkbox"/>

Rapid Sequence Induction Preparation

Clinical Indications:

- Paramedics approved by EMS Medical Director only.
- Patient is in a hypoxic and combative state where implied consent would be utilized.
- Critical illness or injury that requires immediate control of the airway by intubation to prevent mortality or severe morbidity **AND** the airway cannot be controlled by conventional means of orotracheal intubation without sedation or paralysis (the patient is fighting away other airway techniques because of their hypoxic state).

Steps	Performed?	
	Yes	No
1. If patient is so hypoxic that they become combative to more basic airway techniques, this protocol is warranted under implied consent. This is NOT an elective procedure. Confirm DNR status when able.	<input type="checkbox"/>	<input type="checkbox"/>
2. Confirm indications for the procedure. <ul style="list-style-type: none"> ▪ Inadequate ventilatory effort, rate, or volume. ▪ Oxygenation failure (such as CHF nonresponsive to CPAP and nitrates). ▪ Patient fights away other airway techniques because of their hypoxic state. 	<input type="checkbox"/>	<input type="checkbox"/>
3. Confirm no contraindications for the procedure. <ul style="list-style-type: none"> ▪ Inadequate personnel on scene to manage the patient. ▪ Allergies or contraindications to any of the RSI medications. ▪ High likelihood of not being able to intubation due to physical, mechanical, or traumatic alterations of the anatomy. ▪ Lack of patent, well secured IV access. ▪ Lack of appropriate equipment or knowledgeable assistant. ▪ Dangerous environment that may require moving the patient before the airway is secured. ▪ Presence of a valid DNR order or refusal of procedure by the patient. 	<input type="checkbox"/>	<input type="checkbox"/>
4. Perform assessment of the airway anatomy to determine difficulty (LEMON). <ul style="list-style-type: none"> ▪ Look at the patient’s neck for deformities, abnormal growths, adipose tissue, foreign objects, scars, stomas, height, and width. Can you effectively provide bag-mask ventilations? ▪ Evaluate with the 3-3-2 method. 3 fingers between the teeth, 3 fingers from the tip of the chin (mentum) to the hyoid, and 2 fingers from the hyoid to the thyroid cartilage indicates the potential for easier airway access. ▪ Mallampati and Cormack-Lehane grades. ▪ Obstruction such as swelling, burns, foreign bodies, excessive adipose tissue. ▪ Neck mobility assessment, such as ability to position the airway as needed. 	<input type="checkbox"/>	<input type="checkbox"/>
5. Check equipment. <ul style="list-style-type: none"> ▪ Functional laryngoscope, tube, bougie, and suction. ▪ Bag- mask device and oxygen supply. ▪ Oximeter and heart monitor. Continuous waveform capnography is strongly recommended. ▪ Drug dosages calculated and drawn into syringes, labeled appropriately. ▪ Back up device, surgical or fast cricothyroidotomy equipment available. 	<input type="checkbox"/>	<input type="checkbox"/>



- EMR
- EMT
- AEMT
- Paramedic
- Extended

Rapid Sequence Induction

Steps	Performed?	
	Yes	No
1. Follow Rapid Sequence Induction Preparation Procedure	<input type="checkbox"/>	<input type="checkbox"/>
2. Pre-treatment <ul style="list-style-type: none"> ▪ Pre-oxygenation via NRB, BVM, or CPAP (provider's discretion). Attempt CPAP prior to RSI in any case where CPAP is not otherwise contraindicated. ▪ Remove cervical collar if in place 	<input type="checkbox"/>	<input type="checkbox"/>
3. Apneic Oxygenation <ul style="list-style-type: none"> ▪ Prior to laryngoscopy, place the patient on 15 lpm O₂ via nasal cannula to maintain oxygen saturation during the intubation attempt. 	<input type="checkbox"/>	<input type="checkbox"/>
4. If elevated intracranial pressure is suspected, then: <ul style="list-style-type: none"> ▪ Administer Lidocaine 1.5 mg/kg slow IVP over 1 minute prior to the intubation attempt. 	<input type="checkbox"/>	<input type="checkbox"/>
5. Administer Fentanyl 3 mcg/kg via IVP. Skip this step in shock patients.	<input type="checkbox"/>	<input type="checkbox"/>
6. Administer Ketamine 2 mg/kg via IVP.	<input type="checkbox"/>	<input type="checkbox"/>
7. Ensure effective sedation. Consider noxious stimulus to confirm. Continue talking to the patient as if they can hear you.	<input type="checkbox"/>	<input type="checkbox"/>
8. Once sedation is ensured, Succinylcholine 1 mg/kg via IVP. <ul style="list-style-type: none"> ▪ Contraindications to succinylcholine include recent spine injury, thermal/multisystem trauma greater than 24 hours old, massive crush injury, penetrating eye injury, hyperkalemia, patients with neuromuscular disease (previous hemiplegic CVA, Parkinson's Disease, ALS (Lou Gehrig's Disease)). 	<input type="checkbox"/>	<input type="checkbox"/>
9. Visualize the glottis with a laryngoscope, insert bougie device through the chords first , then perform Orotracheal Intubation, inflate cuff, confirm tube placement. <ul style="list-style-type: none"> ▪ Continuous Waveform Capnography is the most accurate confirmation device. ▪ Other methods include direct visualization, presence of bilateral lung sounds, absence of epigastric sounds, adequate tidal volume upon ventilation, condensation in the tube, change of colorimetric device from purple to yellow, pulse oximetry maintains. 	<input type="checkbox"/>	<input type="checkbox"/>
10. In the setting of trauma, apply cervical collar. If collar was removed to intubate, reapply cervical collar at this point.	<input type="checkbox"/>	<input type="checkbox"/>
11. Consider the need for additional sedative if necessary. Ensure sedation throughout transport. Muscle movement in ketamine sedation is normal. The patient may need additional sedation if tachycardia presents. <p>Consider:</p> <ul style="list-style-type: none"> ▪ Versed 5-10mg slow IVP if SBP > 90mmHg 	<input type="checkbox"/>	<input type="checkbox"/>
12. Continuously assess patency of the patient's airway. Recognize a dislodged tube IMMEDIATELY and provide corrective action.	<input type="checkbox"/>	<input type="checkbox"/>

Spine Motion Restriction

Steps	Performed?	
	Yes	No
1. Gather cot and c-collar appropriate for patient's size	<input type="checkbox"/>	<input type="checkbox"/>
2. Explain the procedure to the patient and that their movement could affect their condition	<input type="checkbox"/>	<input type="checkbox"/>
3. Place the patient in an appropriately sized c-collar while maintaining in-line stabilization of the c-spine. This stabilization to be provided by a second rescuer, should not involve retraction or tension, but rather simply maintaining the head in a neutral, midline position, while the first rescuer applies the collar.	<input type="checkbox"/>	<input type="checkbox"/>
4. Once the collar is secure, re-emphasize that the patient needs to maintain a neutral position of their head and neck as they are moved and positioned to the cot.	<input type="checkbox"/>	<input type="checkbox"/>
5. Place or have the patient move themselves onto the cot in a position of comfort, preferably supine but fowler's/semifowler's is acceptable (any patient with a history of car sickness should be transported fowler's/semifowler's). Utilize the safest method to get them on the cot as possible. Note: do not force a patient into a non-neutral position to immobilize them; a patient's anatomy should be taken into account.	<input type="checkbox"/>	<input type="checkbox"/>
6. Prophylactic Zofran if car sickness is a problem.	<input type="checkbox"/>	<input type="checkbox"/>
7. Secure the patient to the cot utilizing all straps per the manufacturer's recommendation.	<input type="checkbox"/>	<input type="checkbox"/>
8. Document the time of the procedure in the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>

EMR

EMT

AEMT

Paramedic

Extended

Spine Protection – Spine Boards

Clinical Indications

- To facilitate movement of the spine injured patient.

Steps	Performed?	
	Yes	No
1. Gather a backboard, straps, c-collar appropriate for patient’s size, tape, and head rolls or similar device to secure the head.	<input type="checkbox"/>	<input type="checkbox"/>
2. Explain the procedure to the patient.	<input type="checkbox"/>	<input type="checkbox"/>
3. Place the patient in an appropriately sized c-collar while maintaining in-line stabilization of the c-spine. This stabilization, to be provided by a second rescuer, should not involve traction or tension, but rather simply maintaining the head in a neutral, midline position, while the first rescuer applies the collar.	<input type="checkbox"/>	<input type="checkbox"/>
4. Once the collar is secure, the second rescuer should still maintain their position to ensure stabilization.	<input type="checkbox"/>	<input type="checkbox"/>
5. Place the patient on the long spine board with the log-roll technique if the patient is supine or prone. For the patient in a vehicle or otherwise unable to be placed prone or supine, place them on a backboard by the safest method available that allows maintenance of in-line spinal stability.	<input type="checkbox"/>	<input type="checkbox"/>
6. Stabilize the patient with straps and head rolls/tape or other similar device. Once the head is secured to the backboard, the second rescuer may release manual in-line stabilization.	<input type="checkbox"/>	<input type="checkbox"/>
7. NOTE: Some patients, due to size or age, will not be able to be immobilized through in-line stabilization with standard backboards and c-collars. Never force a patient into a non-neutral position to immobilize them.	<input type="checkbox"/>	<input type="checkbox"/>
8. Patient will be removed from backboard prior to arrival at receiving facility.	<input type="checkbox"/>	<input type="checkbox"/>
9. If c-collar is affecting patient’s airway it should be removed and alternative c-spine precautions taken.	<input type="checkbox"/>	<input type="checkbox"/>
10. Document the time of the procedure in the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>

Splinting

Clinical Indications

- Immobilization of an extremity for transport, either due to suspected fracture, sprain, or injury.
- Immobilization of an extremity for transport to secure medically necessary devices such as intravenous catheters.

Steps	Performed?	
	Yes	No
1. Assess and document pulses, sensation, and motor function prior to placement of the splint. If no pulses are present and a fracture is suspected, consider reduction of the fracture prior to placement of the splint.	<input type="checkbox"/>	<input type="checkbox"/>
2. Remove all clothing from the extremity.	<input type="checkbox"/>	<input type="checkbox"/>
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed.	<input type="checkbox"/>	<input type="checkbox"/>
4. Do not secure the splint directly over the injury or device.	<input type="checkbox"/>	<input type="checkbox"/>
5. Place the splint and secure with Velcro, straps, or bandage material (e.g. kling, kerlex, cloth bandage, etc) depending on the splint and manufacturer design.	<input type="checkbox"/>	<input type="checkbox"/>
6. Document pulses, sensation, and motor function after placement of the splint. If there has been a deterioration in any of these 3 parameters, reassess for the cause.	<input type="checkbox"/>	<input type="checkbox"/>
7. If a femur fracture is suspected and there is no evidence of pelvic fracture or instability, the following procedure may be followed for placement of a femoral traction splint: <ul style="list-style-type: none"> ▪ Assess neurovascular function as in Step 1. ▪ Secure the ankle device to the ankle. ▪ Secure the proximal device to the extremity, being careful not to put undue pressure on the genitalia or open wounds. ▪ Extend the distal part of the splint at least 6 inches beyond the foot. ▪ Attach the ankle device to the traction crank. ▪ Twist until moderate resistance is met. ▪ Reassess alignment, pulses, sensation, and motor function. If there has been deterioration in any of these 3 parameters, reassess for the cause. 	<input type="checkbox"/>	<input type="checkbox"/>
8. Document the time, type of splint, and the pre and post assessment of pulse, sensation, and motor function in the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>
9. Suggested Splints <ul style="list-style-type: none"> ▪ Long bone fracture: Board splint, vacuum splint, air splint ▪ Femur fracture: traction splint, long board splint ▪ Pelvic fracture: Antishock garment at low pressure, sheet splint ▪ Shoulder, humerus, clavicle: sling and swathe ▪ Supracondylar humeral fracture: carefully immobilize as found ▪ Joint fracture: Board splint, vacuum splint, pillow splint 	<input type="checkbox"/>	<input type="checkbox"/>

Suction – Basic

Steps	Performed?	
	Yes	No
1. Ensure suction device is in proper working order with suction tip in place.	<input type="checkbox"/>	<input type="checkbox"/>
2. Preoxygenate the patient as is possible.	<input type="checkbox"/>	<input type="checkbox"/>
3. Explain the procedure to the patient if they are coherent.	<input type="checkbox"/>	<input type="checkbox"/>
4. Examine the oropharynx and remove any potential foreign bodies or material which may occlude the airway if dislodged by the suction device.	<input type="checkbox"/>	<input type="checkbox"/>
5. If applicable, remove ventilation devices from the airway.	<input type="checkbox"/>	<input type="checkbox"/>
6. Use the suction device to remove any secretions, blood, or other substance. Do not suction for longer than 15 seconds.	<input type="checkbox"/>	<input type="checkbox"/>
7. The alert patient may assist with this procedure.	<input type="checkbox"/>	<input type="checkbox"/>
8. Reattach ventilation device (e.g. bag-valve mask) and ventilate or assist the patient.	<input type="checkbox"/>	<input type="checkbox"/>
9. Record the time and result of the suctioning in the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>

Supraglottic Airway

Clinical Indications:

- Failed intubation attempt
- Unresponsive patient in need of ventilatory assistance
- Bag mask ventilations are delivering insufficient volume despite clearing the airway and OPA/NPA placement

Steps	Performed?	
	Yes	No
1. Recognize the need for SGA placement, consider clinical indications	<input type="checkbox"/>	<input type="checkbox"/>
2. Preoxygenate patient as is possible	<input type="checkbox"/>	<input type="checkbox"/>
3. Prepare SGA device <ul style="list-style-type: none"> ▪ Ensure appropriate size device based on device chart ▪ Check cuffs for leaks, where applicable ▪ Lubricate device as appropriate per manufacturer’s recommendations 	<input type="checkbox"/>	<input type="checkbox"/>
4. Position the head as appropriate to perform a tongue-jaw lift. Consider c-spine precautions.	<input type="checkbox"/>	<input type="checkbox"/>
5. Insert device to the appropriate depth, per manufacturer’s recommendations. <ul style="list-style-type: none"> ▪ Most modern SGA devices have two to three black lines that serve as a depth indicator 	<input type="checkbox"/>	<input type="checkbox"/>
6. Inflate the cuffs with the manufacturer recommended volume of air	<input type="checkbox"/>	<input type="checkbox"/>
7. Ventilate patient and confirm proper ventilation <ul style="list-style-type: none"> ▪ Adequate tidal volume ▪ Equal chest rise and fall considering other factors which would prevent this (tension pneumo, flail chest) ▪ Absence of epigastric sounds and presence of breath sounds 	<input type="checkbox"/>	<input type="checkbox"/>
8. Adjust ventilation as necessary <ul style="list-style-type: none"> ▪ Adjust depth of device, check cuffs, ventilate through secondary lumen, etc 	<input type="checkbox"/>	<input type="checkbox"/>
9. Apply capnography to ensure initial and continued placement	<input type="checkbox"/>	<input type="checkbox"/>
10. Secure the device with tape or a commercial holder	<input type="checkbox"/>	<input type="checkbox"/>
11. Continue to ventilate the patient at the appropriate rate	<input type="checkbox"/>	<input type="checkbox"/>

Termination of Resuscitation

Clinical Indications:

- A patient currently receiving the CCR protocol
- Four rounds of 200 compressions provided with ACLS support protocols
- Persistent asystole following the four rounds of CPR/ACLS

Steps	Performed?	
	Yes	No
13. Ensure the CCR protocol is being followed <ul style="list-style-type: none"> ▪ Four rounds of 200 compressions with ACLS support ▪ Persistent asystole is confirmed on the ECG 	<input type="checkbox"/>	<input type="checkbox"/>
14. Once four rounds of CCR have been followed with no success, begin explaining the situation to the family and prepare them for the next steps	<input type="checkbox"/>	<input type="checkbox"/>
15. Continue with the CCR protocol while contacting Trumbull Memorial Hospital and requesting to speak with an attending ER physician for field termination of resuscitation	<input type="checkbox"/>	<input type="checkbox"/>
16. Provide the ER physician with the following information: <ul style="list-style-type: none"> ▪ Patient name, age, sex ▪ Location of the incident ▪ Time patient was last seen normal ▪ Length and content of resuscitation effort (CPR, epi, defib, etc) ▪ Results of resuscitation effort (persistent asystole, no change, etc) ▪ Request termination of resuscitative efforts 	<input type="checkbox"/>	<input type="checkbox"/>
17. If given a time of pronouncement, cease resuscitation efforts <ul style="list-style-type: none"> ▪ Document the time of pronouncement and the physician's name 	<input type="checkbox"/>	<input type="checkbox"/>
18. Contact the Trumbull County Coroner's Office at (330) 675-2516 and follow the Procedure for Reporting a Death	<input type="checkbox"/>	<input type="checkbox"/>
19. Ensure the coroner's office representative will: <ul style="list-style-type: none"> ▪ Contact the family physician and request that they sign the death certificate ▪ Arrange transport of the patient's body 	<input type="checkbox"/>	<input type="checkbox"/>
20. If given permission by the coroner's office, prepare the body for the family to mourn <ul style="list-style-type: none"> ▪ Remove medical devices and cover the patient's body with a blanket as appropriate 	<input type="checkbox"/>	<input type="checkbox"/>
21. Once the coroner's office has been notified and the EMS crew has received confirmation that the coroner's office representative will arrange transport, the EMS crew may choose to: <ul style="list-style-type: none"> ▪ Return to service for pending 911 calls ▪ Return to a more centralized location for the purpose of adequate 911 response ▪ Remain on scene for grievance counseling (if trained) or customer service 	<input type="checkbox"/>	<input type="checkbox"/>

Tourniquet Application

Clinical Indications:

- Life-threatening hemorrhage from an extremity that cannot be controlled by direct pressure (whether direct pressure alone is inadequate, or inadequate resources exist to hold pressure while attending to the patient)

Clinical Considerations:

- Recent science has indicated that tourniquet use is very safe if released within a two hour window
- Recent science has also indicated that tourniquets may be used in place of direct pressure, if resources on scene to maintain pressure while providing adequate patient care are limited
- Tourniquets are painful. Provide pain management.

Steps	Performed?	
	Yes	No
1. Apply commercial tourniquet to the skin proximal to the area of bleeding <ul style="list-style-type: none"> ▪ 2” proximal when able ▪ Do not apply to a joint 	<input type="checkbox"/>	<input type="checkbox"/>
2. Secure the tourniquet in place with the Velcro strap	<input type="checkbox"/>	<input type="checkbox"/>
3. Continue to tighten the tourniquet until hemorrhage is controlled <ul style="list-style-type: none"> ▪ Depending on the severity of the bleed, it may be very uncomfortable for the patient ▪ Avoid over-tightening the tourniquet, only apply as much pressure is needed to control the hemorrhage 	<input type="checkbox"/>	<input type="checkbox"/>
4. Note the time the tourniquet was applied in the patient care report	<input type="checkbox"/>	<input type="checkbox"/>
5. Continuously reassess the extremity for bleeding	<input type="checkbox"/>	<input type="checkbox"/>
6. If bleeding recurs, leave the initial tourniquet in place and consider: <ul style="list-style-type: none"> ▪ Direct pressure ▪ Application of a second tourniquet proximal to the first 	<input type="checkbox"/>	<input type="checkbox"/>
7. After reassessment, follow pain management protocol and document effect.	<input type="checkbox"/>	<input type="checkbox"/>
8. Notify the receiving hospital that a tourniquet is in place.	<input type="checkbox"/>	<input type="checkbox"/>

Vagal Maneuvers

Clinical Indications:

- PSVT requiring conversion

Clinical Considerations:

- Vagal Maneuvers will not work on tachycardias originating in the atria (Afib/Aflutter)
- This protocol is for the Valsalva maneuver

Steps

Performed?

	Yes	No
1. Ensure the clinical indications are met	<input type="checkbox"/>	<input type="checkbox"/>
2. Explain the need for the procedure to the patient	<input type="checkbox"/>	<input type="checkbox"/>
3. Instruct the patient to: <ul style="list-style-type: none"> ▪ Inhale deeply ▪ Flex abdominal and chest muscles ▪ “Bear down” as if making a bowel movement or cough deeply ▪ Results are typically seen in 10-15 seconds 	<input type="checkbox"/>	<input type="checkbox"/>
4. If the procedure is ineffective, wait 1 minute, obtain vital signs, and repeat step 3.	<input type="checkbox"/>	<input type="checkbox"/>
5. Document the time and results of the procedure in the patient care report.	<input type="checkbox"/>	<input type="checkbox"/>

EMR

EMT

AEMT

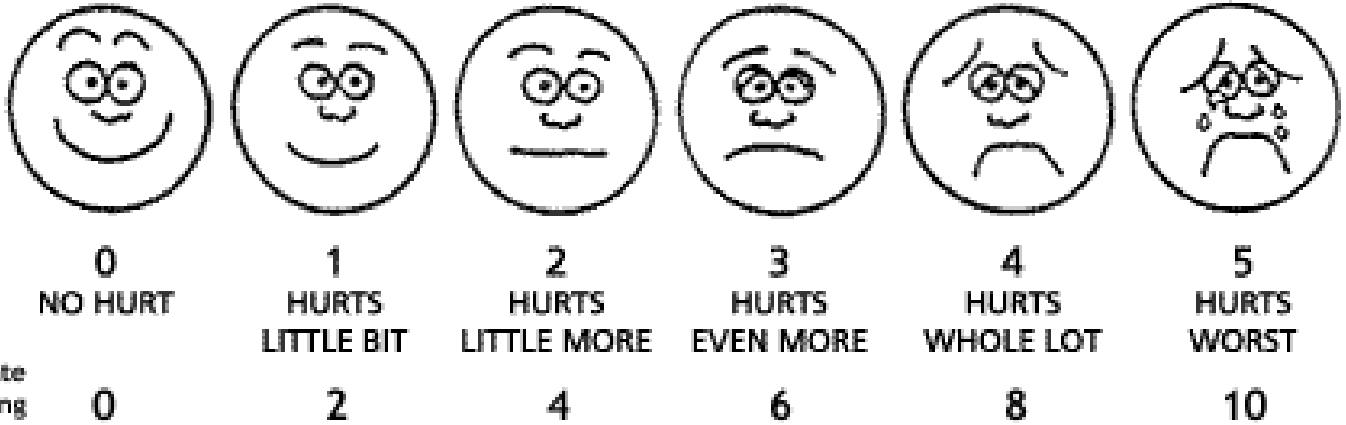
Paramedic

Extended

Wong-Baker Faces Scale

Clinical Indications:

- Assessment of pediatric pain



Wound Care

Clinical Indications:

- Active bleeding

Steps	Performed?	
	Yes	No
1. Use BSI precautions as indicated	<input type="checkbox"/>	<input type="checkbox"/>
2. Observe for and control obvious bleeding	<input type="checkbox"/>	<input type="checkbox"/>
3. Evaluate and treat all life threatening injuries first	<input type="checkbox"/>	<input type="checkbox"/>
4. Control bleeding by (as appropriate): <ul style="list-style-type: none"> ▪ Direct pressure ▪ Tourniquet ▪ Splinting 	<input type="checkbox"/>	<input type="checkbox"/>
5. Uncontrolled bleeding: <ul style="list-style-type: none"> ▪ Assess for life threatening injuries and resuscitate if necessary ▪ Apply tourniquet for extremity injuries ▪ Watch for signs and symptoms of hypoperfusion 	<input type="checkbox"/>	<input type="checkbox"/>
6. Obtain history <ul style="list-style-type: none"> ▪ Time of injury ▪ Area of occurrence and infection risk ▪ Mechanism of injury ▪ Amount of blood loss ▪ Severity of pain ▪ Patient's medical history and medications ▪ Tetanus immunization 	<input type="checkbox"/>	<input type="checkbox"/>
7. Wound care <ul style="list-style-type: none"> ▪ Assess for size, depth, location, contamination, and type of wound <ul style="list-style-type: none"> ▪ Abrasion, avulsion, contusion, incised, laceration, puncture ▪ Irrigate wound if necessary ▪ Apply appropriate dressing ▪ Secure dressing 	<input type="checkbox"/>	<input type="checkbox"/>
8. Further Evaluation and Care: Many times open wounds need further evaluation and care by a physician, including: <ul style="list-style-type: none"> ▪ Neural, muscular, or vascular ▪ Tendon or ligament compromise ▪ Contamination ▪ Foreign bodies ▪ Medical history – diabetes, immunocompromised, etc ▪ Vascular problems 	<input type="checkbox"/>	<input type="checkbox"/>

Guidelines

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Children Requiring Evaluation/Transport

NHTSA Recommendations for the Safe Transport of Pediatric Patients

The National Highway Traffic Safety Administration (NHTSA), Department of Transportation, is the federal agency responsible for establishing and monitoring safety criteria for child restraints and vehicles. Federal Motor Vehicle Safety Standard 213 (FMVSS 213) sets child restraints performance standards during dynamic sled tests using child dummies of various sizes. Car seat manufacturers must self-certify that their products comply with performance criteria established by applicable Federal Motor Vehicle Safety Standards.

Currently, there are no Federal Motor Vehicle Safety Standards to define performance criteria for child restraint use in ambulance patient compartments. Although research regarding crash dynamics in ambulances is limited, "fundamental principles of occupant restraint can still be used to develop useful and effective procedures" in ambulances.

In 2009, NHTSA initiated its "Solutions for Safely Transporting Children in Emergency Vehicles" project, a partnership between the NHTSA Occupant Protection Division and NHTSA's Office of Emergency Medical Services. The objectives of this project were to develop a set of recommendations for the EMS community on how to safely and appropriately transport children in a ground ambulance from the scene of a crash or other emergency. Components of this two-year project include a literature review, the development of draft recommendations, and the convening of a national meeting to discuss and finalize the recommendations. The overarching goal was to provide a set of consistent recommendations that would be embraced by local, State and national EMS and stakeholder organizations. These recommendations were the basis for the development of a course for EMS providers entitled "Improving Occupant Protection for Non-Critical Pediatric Patients in Ambulances".

NHTSA currently recommends that non-critical pediatric patients be properly restrained in either a size appropriate, conventional safety seat on the cot or on the attendant's seat or in an integrated child restraint located in the attendant's seat. Use of a convertible child safety seat on a locked, front facing attendant's seat is the same configuration as that in a normal passenger car.

Recommendations for the use of conventional "convertible" child restraints on ambulance cots is based on the findings of research conducted and policies developed by the Automotive Safety Program at Riley Hospital for Children in Indianapolis, Indiana in collaboration with the University of Michigan Transportation Research Institute (UMTRI). Recommendations based on crash testing were published by Bull et. al (2001) entitled: "Crash Protection for Children in Ambulances", 45th Annual Proceedings, AAAM, Sept. 2001.

According to the Automotive Safety Program's test results, convertible child safety seats can be used on an ambulance cot and crash test results are compliant with FMVSS 213. The fact that convertible child restraints have two separate belt paths makes them compatible with ambulance cot use as they can be tightly secured to the cot with the upper torso cot strap and lower leg cot strap.

EMR

EMT

AEMT

Paramedic

Extended

Critical Injuries – Load and Go

1. Airway obstruction unrelieved by mechanical methods (i.e. suction, forceps, etc)
2. Conditions resulting in possible inadequate breathing:
 - a. Large open chest wound (sucking chest wound)
 - b. Large flail chest
 - c. Tension pneumothorax
 - d. Major blunt chest injury
3. Traumatic cardiopulmonary arrest – transport to the nearest ED. Do not wait for a helicopter.
4. Shock – severe:
 - a. Hemorrhagic
 - b. Spinal
 - c. Myocardial contusion
 - d. Pericardial tamponade
5. Head injury with decreased level of consciousness.
6. Any traumatic condition with:
 - a. Respiratory difficulty
 - b. Signs and symptoms of shock
 - c. Decreased level of consciousness
7. Scene times on critical injuries should be as short as possible. If the patient requires transport to a trauma center, burn unit, or children’s hospital, consider helicopter transport.

Dead at Scene

1. There could be two instances when EMS would not attempt resuscitation of a lifeless patient: potential crime scene, or a patient found when the time down is unknown. In either event, no attempt at resuscitation will be made if the patient exhibits any of the following:
 - a. Decapitation or brain matter showing
 - b. Exsanguination
 - c. Lividity
 - d. Any sign of decomposition
2. If no resuscitation is to be attempted, no EMS personnel will approach the body; the scene will be left with the police department
3. If there is any doubt as to the viability of the patient, an assessment will be conducted by as few personnel as possible until a determination of viability can be made.
4. If resuscitation is in progress prior to arrival of the EMS unit, resuscitation will continue unless the patient meets any of the following:
 - a. Decapitation or brain matter showing
 - b. Exsanguination
 - c. Lividity
 - d. Any sign of decomposition
 - e. DNR paperwork is presented
 - f. Patient is unresponsive to resuscitative efforts
 - g. Termination of resuscitation and time of pronouncement is provided by the attending TMH emergency physician

EMR

EMT

AEMT

Paramedic

Extended

Do Not Resuscitate / Supportive Care

BACKGROUND

In 1999, the Ohio Department of Health successfully established a Do-Not-Resuscitate Comfort Care (DNR

Comfort Care) Protocol within the Ohio Revised Code. In the past, do-not-resuscitate (DNR) orders could not be honored without contacting medical direction when EMS or the 911 system was activated. The DNR Comfort Care Protocol will permit EMS to honor DNR orders without immediately contacting medical direction and provides guidelines for the prehospital management of these patients.

A DNR Comfort Care patient has completed a living will or has been issued a DNR order. The DNR Comfort Care protocol can be performed immediately by EMS for these patients. There is a subset of patients who are DNR Comfort Care-Arrest patients. This protocol is to be activated only in the event of a cardiac or respiratory arrest for these patients. EMS should follow the State of Ohio EMS Guidelines for these cases unless they present as a cardiac or respiratory arrest. In the event of a cardiac or respiratory arrest in a DNR Comfort Care-Arrest patient, the patient care should then be diverted to the Do Not Resuscitate (Comfort Care) Protocol. For the purposes of this protocol, a cardiac arrest is defined as the absence of a palpable pulse, and a respiratory arrest is defined as the absence of spontaneous respirations or presence of agonal respirations. The patient's DNR order or DNR identification should be checked very carefully to distinguish between the DNR Comfort Care and the DNR Comfort Care-Arrest classifications.

A DNR Comfort Care designation does not imply that the patient does not want to be treated for illnesses or injuries unrelated to a terminal disease process. For example, if the patient sustained a bee sting and was developing anaphylaxis, EMS providers should follow the anaphylaxis protocol. Medical direction should be contacted as soon as possible for further guidance and potential temporary revocation of the DNR Comfort Care order.

A reasonable effort should be made to positively identify the patient with DNR orders, but it is not required for the performance of this protocol. Patients of health care facilities do not require verification of identity when the DNR order is present on the patient chart. Acceptable methods of patient identification verification include a driver's license, passport, picture ID, institution identification band, or personal identification by a family member, caregiver, friend, or health care worker.

A patient's DNR Comfort Care or DNR Comfort Care-Arrest status can be confirmed by one of the following:

1. A DNR Comfort Care card or form completed for the patient.
2. A completed State of Ohio living will (declaration) form that states that the patient does not want CPR (in the case of a patient who has been determined by two doctors to be in a terminal or permanently unconscious state).
3. A DNR Comfort Care necklace or bracelet bearing the DNR Comfort Care official logo.
4. A DNR order signed by the patient's attending physician or, when authorized by section 2 133.211 of the Ohio Revised Code, a certified nurse practitioner (CNP) or clinical nurse specialist (CNS).
5. A verbal DNR order is issued by the patient's attending physician, CNP, or CNS.

EMS providers are not required to search a patient to locate DNR identification. Copies of the documents listed under items 1, 2, or 4 are sufficient. The EMS provider must verify the identity of a physician or CNP/CNS issuing a verbal DNR order. Acceptable methods of verification include personal knowledge of the physician or CNP/CNS, a return telephone call to verify the information provided, or a list of practitioners with other identifying information such as addresses.

Do Not Resuscitate / Supportive Care (Cont'd)

A DNR order is considered current if it is present in a health care facility's records or patient chart. A DNR order for a patient outside of a health care facility is considered current unless it is revoked by the patient or by the patient's attending physician or CNP/CNS. EMS providers are not required to research whether a DNR order that appears to be current has been discontinued.

The DNR Comfort Care patient always retains the right to request resuscitation even if the protocol has been activated. A request for resuscitation by the patient revokes the DNR Comfort Care status and the EMS providers should immediately follow the resuscitation procedures in the State of Ohio EMS Guidelines.

Once the DNR Comfort Care protocol has been activated, the wishes of family members or bystanders demanding or requesting resuscitation should not be honored. Any and all resuscitative measures should continue to be withheld. Attempts should be made to help the family understand the dying process and the patient's choice not to be resuscitated.

When the DNR Comfort Care Protocol has been activated, EMS personnel will provide the following care as clinically indicated:

1. Suction the airway.
2. Administer oxygen.
3. Position for comfort.
4. Splint or immobilize.
5. Control bleeding.
6. Provide pain medication.
7. Provide emotional support.
8. Contact medical direction.
9. Contact other appropriate health care providers such as hospice, home health, attending physician, CNP/CNS as time or patient scenario permits.

When the DNR Comfort Care Protocol has been activated, EMS personnel will not perform the following:

1. Administer chest compressions.
2. Insert an artificial airway.
3. Administer resuscitative drugs.
4. Defibrillate or cardiovert.
5. Provide respiratory assistance other than the methods listed above.
6. Initiate resuscitative IV access.
7. Initiate cardiac monitoring.

NOTE: If any of these actions have been initiated prior to confirmation of the patient's DNR Comfort Care status, discontinue them when the DNR Comfort Care protocol is activated. Any and all respiratory assistance, IV medications, or other therapies that have been part of a patient's ongoing course of treatment for an underlying disease may be continued.

Do Not Resuscitate / Supportive Care (Cont'd)

When the DNR Comfort Care protocol is performed, the suggested documentation on the patient care report should include the following information:

1. The document identifying the DNR Comfort Care status of the patient.
2. The method of verification of the patient's identity, if any was found through reasonable efforts.
3. DNR Comfort Care or DNR Comfort Care-Arrest classification.
4. All actions taken to implement the DNR Comfort Care protocol.
5. Any and all unusual events occurring enroute or on scene including interactions with family members, bystanders, or health care providers.

Any and all questions or concerns that arise during the management of DNR Comfort Care patients may be directed to and discussed with medical direction for assistance and guidance.

Documentation

1. An EMS report will be generated on each patient evaluated by the EMS crew. To be included are assists when the patient is evaluated for an injury, or a medical condition is suspected.
2. Documentation will include, but not be limited to:
 - a. Initial and repeat vital signs
 - b. Initial assessment, including “view from the door” and repeat vital assessments
 - c. All necessary interventions and the results of those interventions
 - d. Abnormal occurrences, such as a combative patient, patient condition, or location requiring extended scene time, etc
 - e. Equipment failure
 - f. Chemical or physical restraint of a patient
 - g. Discussion with patient that refused any or all treatment and transport
 - Will include:**
 - i. Advisement of potential consequences
 - ii. Advisement of alternative medical care
 - iii. Advisement to call EMS if he or she desires treatment or transport
 - h. Discussion with patient that did not refuse treatment but was not transported
 - Will include:**
 - i. Alternative transportation documented, if needed
 - ii. Detailed description of instructions given to patient
 - iii. Advisement to call EMS if he or she desires treatment or transport
 - i. When dispatched for a possible ill or injured person who states he/she did not request assistance, document the following:
 - i. The individual states he/she did not request or want assistance
 - ii. Who (if known) called for assistance
 - iii. The individual does not appear to need aid
 - iv. The individual does not appear to be under the influence of alcohol or mind altering drugs
 - j. Status of patient upon arrival at the emergency department or landing zone
 - k. Bed that patient was placed in
 - l. Who report was given to (name preferred)

EMS Transportation

EMT

1. The decision to transport should be a crew decision, with the patient's best interest in mind. **The highest trained, in-charge person is ultimately responsible.** The patient has the right to refuse treatment and transport as described under the Patient Rights section.
2. The patient's condition and their needs should help determine method of transportation and destination. Consideration should include, but not limited to, need for Paramedic versus time to closest hospital, number of crew on your vehicle, and appropriateness of closest hospital.
3. Medical helicopter transportation shall be considered on policies set forth under the Helicopter Transportation section.
4. During transport, treatment shall continue and reassessment of the patient shall continue.
5. All patients with acute mental status changes that have any life threatening complaint or condition are to be transported to the hospital by EMS. A person with altered mental status cannot refuse transport if they have a condition that is a threat to life or limb. **A suicidal patient has a life threatening condition and is not considered to be in a normal state of mind; therefore all suicidal patients should get transported to the most appropriate facility for evaluation.** If they have a medical condition that requires treatment or monitoring then EMS must transport. **EMS cannot legally take an alert, oriented, and medically competent person against their will without a civil commitment (pink slip), even if they express suicidal tendencies.** Family and friends are not to transport suicidal patients once EMS has gotten involved, unless the patient refused care and there is no pink slip. In any situation that a patient with altered mental status or suicidal/homicidal tendencies tries to refuse care, get law enforcement involved immediately.

AEMT

1. All guidelines for EMT's shall apply to AEMT's.
2. If IV's are in place, they are to be monitored.

Paramedic

1. All guidelines for EMT's and AEMT's shall apply to Paramedics.

EMT Responsibilities

This protocol represents a revision of the previously established guidelines and changes must be noted by each individual that works under these directives. It is the responsibility of each EMR, EMT, AEMT, and Paramedic to read and understand the changes that have been made. Changes are effective November 1, 2014.

The first point of order is that all providers must be familiar with the Ohio State EMS Scope of Practice for their appropriate level and only function at the level allowed by this EMS protocol. Any order within the provider's scope of practice that requires a call-in permission may be performed after receiving direct online medical control or with the direction and direct supervision of an on-scene Paramedic. Deviation beyond your scope of practice or this protocol may warrant disciplinary or even legal actions to be taken.

Secondly, there will also, at some point, be a tiered protocol for Paramedics. This protocol includes some procedures that are designated for these "Category 2" Paramedics. Every Paramedic working under this protocol will be cleared as a "Category 1" Paramedic, but eventually we will be designating a select few as "Category 2" Paramedics after completion of some specialized training. The selection of "Category 2" Paramedics will be based on a number of factors including years of experience, annual run involvement, approval by the appropriate Chief Officer, EMS Coordinator, and Medical Director. Becoming a "Category 2" Paramedic is strictly on a volunteer basis, applies only to the designated procedures and in no way alters the chain of command. Those procedures labeled as 'only for Category 2 Paramedics' are otherwise off limits to those not approved as Category 2 Paramedics. Any deviation or practice outside of your approved scope of practice will lead to disciplinary and possibly legal actions.

My signature indicates that I have read and understand this statement as well as the medical protocol to which it pertains.

Name _____

Signature _____ Date _____

EMR

EMT

AEMT

Paramedic

Extended

Equipment

The appropriate available equipment is to be summoned and utilized at the outset of all EMS encounters. This means that for any given call that is dispatched, the appropriate equipment is to be utilized early if possible. **For all ALS runs the cardiac monitor, oxygen, and house bag is the minimal equipment required; they are to be taken into the scene on the first entry.** On cases that may require an emergent airway, the airway kit and drug box is to be taken into the residence as well.

EMR

EMT

AEMT

Paramedic

Extended

Helicopter Transport

When to call:

1. To transport any patient that requires rapid transport to a specialized hospital (Trauma Center, Burn Unit, etc)
2. For manpower in multiple victim runs
3. For search and rescue (medical reasons only)
4. For delayed ground transport due to weather or traffic.
5. Factors for possible use:
 - a. MVA in which extrication > 15 minutes
 - b. Pedestrian struck and thrown > 15 feet
 - c. MVA with patient ejected from vehicle
 - d. Smooth rapid transport required
 - e. MVA with death in same car
 - f. Fall from > 15 feet
 - g. 2nd and 3rd degree burns over 15% of body surface

How to call:

1. Ask dispatch to put helicopter on standby. This is to be used if the need is not yet certain. This improves the response time when / if you need the helicopter. If you do not need the helicopter, cancel the standby.
-or-
1. Start helicopter or helicopters to your location. One critical patient or two stable patients per helicopter.
2. Helicopter dispatcher should be given:
 - a. Number of patients
 - b. Location
 - c. Radio frequencies to be used
 - d. Give any specific information that may be needed
3. Prepare landing zone (LZ) free from wires, trees, and stumps on a fairly level ground. Clear area should be marked with flares in a minimum of 60' x 60' to 100' x 100'.
4. Monitor radio for helicopter call. Give them the LZ information and any update that they may need to know. Do not approach the aircraft without helicopter crew approval. Work with the crew to ensure smooth transfer of patient care.

Multiple Casualty Incident

1. Triage starts by the first EMS provider on the scene. Note the number of victims, severity of injuries, and resources needed to complete the incident.
2. Incident Command System (ICS) shall be set up as soon as possible.
3. The first EMS provider begins triage and assumes the position of Incident Commander. It is his/her responsibility to oversee the operation until higher-ranking officers are available to take over.
4. Triage starts by asking the non-injured and those only slightly injured to move to an area set up for them. Have them stay in a group.
5. The triage officer moves quickly through the victims manually opening airways only. Do not stop to do treatment.
6. A second EMS provider starts behind the triage officer and assesses patients with primary ABC's. At this time the patient receives a ribbon. Attempt to place ribbons consistently on the same limb, or in obvious view.

Black	Dead or has no chance for survival
Red	Is in very critical condition and needs first treatment and transportation
Yellow	Serious condition, can wait for treatment and transport
Green	Good condition, can wait until last to be treated

No treatment can be provided yet if limited on help.

7. It is very important to complete steps 5 and 6 before tying yourself up with treatment. This is particularly true when very short staffed.
8. The next sector needs to be assigned to the treatment area. The red tags shall be treated first. The most critical patients shall be given to the next sector officer (transportation officer).
9. The transportation officer has the responsibility to ensure that adequate and appropriate transportation is available (squads, medics, helicopters). It is very important that the transportation officer keeps close records of names and / or tag numbers of all patients transported and where they were sent.
10. This is the basic plan of action to be taken when you encounter multiple victims with limited help. This plan of action can be altered by the Incident Commander on the scene. As help arrives on the scene, more EMS personnel can be assigned to each sector officer as needed. As a sector finishes their task, they can be reassigned. In some cases more sector officers may need to be added for other jobs such as extrication, supply, staging, etc.

Incident Commander
*
Triage Sector
*
Tagging Sector
*
Treatment Sector
*
Transportation Sector
(Sectors can be added or deleted as needed.)



On-Scene Intervener

On an EMS run where an unknown first responder, EMT, physician, or other person rendering aid is not from the responding EMS agency the following steps should be initiated:

1. Ideally, if no further assistance is needed, the offer for assistance should be courteously declined.
2. If the intervener is known to EMS and assistance may significantly contribute to patient care, aid may be rendered in accordance with this Trumbull Memorial Hospital EMS protocol.
3. Material aid should not be provided to any provider unknown to the EMS crew.
4. Notation of intervener name and address must be documented on the run report.

In cases of the Physician in his/her office or urgent care center:

1. EMS should perform its duties as usual under the supervision of medical direction or by protocol.
2. The physician may elect to treat the patient in his/her office.
3. The EMS provider should not provide any treatment under the physician's direction, and if asked, the EMS provider should courteously decline until contact is made with medical direction.
4. Once the patient has been transferred into the squad, the patient's care comes under medical direction.

EMR

EMT

AEMT

Paramedic

Extended

Patient Refusal of Treatment and/or Transport

A patient who is alert and oriented and is their own power of attorney may refuse any and all treatment and/or transport.

1. Alert and oriented means being able to describe where they are, distinguish the time of day and period of the year, answer common-knowledge questions (who is the President, what is the state capital, etc), knows the events which lead to the emergency they experienced, and generally will be able to carry on a conversation in a lucid manner.
2. Being their own power of attorney (POA) means that they are at least eighteen years of age or have been emancipated by a court, have not been deemed incompetent by a court, or have not signed POA over to someone else.

If a patient does not meet the criteria set forth in item 1, they may not refuse treatment.

3. If they continue to refuse and you feel the patient sincerely needs medical treatment, request law enforcement to the scene and/or contact medical control for advice.
4. A patient who has threatened to harm themselves may refuse transport. Only law enforcement or an otherwise authorized health care officer can force an alert, oriented, competent psychiatric patient to go to the hospital unwillingly.
5. When a patient refuses any treatment and/or transport, a Patient Refusal must be completed.

EMR

EMT

AEMT

Paramedic

Extended

Patient Rights

Consent to serve.

1. All patients 18 years of age or older must give consent verbally or nonverbally, or in writing to be treated.
2. Unconscious patients 18 years of age or older give permission to treat by implied consent.
3. Patients 18 years of age or older may refuse treatment unless in your best judgment you feel the patient cannot make this decision based on psychiatric conditions, suicidal ideations, intoxication, or impaired judgment secondary to their current condition. The patient must be alert and oriented to refuse treatment. It is otherwise implied that the patient would want help if he/she was of sound mind.
4. Patients under 18 years of age cannot refuse treatment if the EMS provider feels the treatment is needed. The consent to treat or refuse treatment can only be given for a minor by his/her parents or parent, blood relative, or legal guardian. A parent or guardian cannot refuse treatment of a critically ill minor. If legal consent cannot be obtained, the EMS provider has the responsibility to make the decision for the minor.

Withdrawal of consent.

1. A mentally competent adult can withdraw consent at any time. This is true even after treatment has been started.
2. If an unconscious patient or mentally confused patient becomes alert and oriented he/she can withdraw consent.

Release of liability.

1. If a person refuses treatment or transport, he/she must be informed of the possible consequences for the lack of treatment or transport.
2. The person must sign the report for refusal. This should be done in the presence of a witness. If the patient refuses to sign the report, a witness other than one of our personnel, if possible, should sign stating that the patient refused to sign and was informed.

Pediatric Intubation Guidelines

These are general guidelines for all EMS personnel to assist in the decision making process when dealing with a critically ill or injured child. There are no absolute rules that mandate if any given child requires definitive airway versus conservative assistance such as oral airway with BVM. There are many factors that determine the need for definitive airway and all have to be considered.

Nature of the situation: Is there a corrective action that may quickly improve the condition (glucose for hypoglycemia, naloxone for narcotic overdose, aerosols for severe bronchospasm) or is the condition going to worsen over time (head trauma, hemorrhagic shock, airway edema / obstruction).

Skill level of the available providers: If the available medics are unsure of their pediatric intubation skills and the child is oxygenating well, with adequate airway protection, there should not be an imminent urgency to attempt intubation.

Oxygenation and patent airway are the most important issues in determining the need for pediatric intubation. Hypercarbia (high CO₂) and Glasgow Coma Scale are determinants used in the hospital but these should not be extrapolated to the field. If a child has a patent airway and is oxygenating well, intubation is not mandatory.

If intubation of a child is needed remember the following:

1. Use a cuffed tube whenever possible but in children under 8 only inflate if needed to oxygenate / ventilate due to air leak
2. Tube size = $\frac{\text{Age} + 16}{4}$
Length = 12 + age/2

Physician at the Scene

1. Physicians known to EMS may assist crews.
 - a. The physicians may only treat to the extent that the EMS crew may treat in accordance with the Trumbull Memorial Hospital EMS Protocol.
2. EMS will not lend any material aid to a physician on the scene not known to them. This includes equipment, drugs, or any other patient care items.
 - a. Politely decline to follow the physician's command unless instructed otherwise by medical control.
 - b. Politely inform the physician that, if they wish to treat the patient en route to the hospital and the patient consents, they may transport the patient in their own vehicle with their own equipment.

EMR

EMT

AEMT

Paramedic

Extended

Restraint Policy

Transportation of a violent or uncooperative patient may require physical or pharmacologic restraints. The top priority during these transports is maintenance of personal safety and injury prevention of the prehospital care providers and of the patient. Prehospital care providers should not attempt to enter or control a scene where physical violence or weapons are potentially present. The local law enforcement agency should be contacted immediately and advised of the scenario. Prehospital care providers may enter the scene for the provision of patient care after safety of the scene is confirmed by law enforcement personnel.

All restrained patients should be placed on a stretcher with adequate foam padding. Extremity restraints should be secured to the stationary portion of the stretcher frame in a fashion where they can be removed quickly in the event of an emergency. Restraints that require a key or use multiple knots are unacceptable. Stretcher straps should be placed on all patients as these serve as seatbelts during transport. Restraint of the extremities in a spread eagle fashion significantly reduces the strength the patient can generate from the large muscle groups. Restraints that may restrict chest wall motion are prohibited.

Prehospital care providers reserve the right to refuse elective transport of patients who are deemed too violent or uncooperative to be controlled by the restraint methods and devices permitted by the Trumbull Memorial Hospital EMS Protocols. The safety of prehospital care providers will be maintained at all times during transport. The prehospital care provider reserves the right to request completion of transport by law enforcement personnel. The prehospital care provider may administer an appropriate dose of Haldol and Versed as a pharmacological restraint prior to transport of the patient. Patient must be monitored by ALS after administration of medications. A decision to refuse elective transport of a violent or uncooperative patient may be made by any member of the prehospital care team or their supervisor. Medical direction may be contacted at any time for advice.

There are two acceptable positions for transport of the violent or uncooperative patient. The patient may be transported in the supine position in four or five restraints. All four extremities should be restrained to the stationary portion of the stretcher frame. A fifth restraint may be placed around the thighs just above the knees to secure that patient to the frame of the stretcher. A sheet or stretcher strap may be used for this purpose. Placement of the stretcher in the sitting position is preferable as aspiration is less likely and the strength generated by flexion of the abdominal muscle groups is reduced.

More physically uncooperative patients should be restrained in the supine or lateral decubitus position. All four extremities should be restrained to the stationary portion of the stretcher frame. The upper extremities should be positioned with one hand below the waist and one hand above the head. Additional sheets or stretcher straps may be placed around the lower lumbar region, below the buttocks, or around the thighs, knees, and legs to prevent flexion and extension of the torso, hips, and legs.

Physical assessment of all restrained patients must be performed during the entire transport. The airway, respiratory and mental status should be noted. In addition, the skin condition of the patient and the capillary refill and pulses of the extremities distal to the restraints should be noted. Pulse oximetry should be performed continuously. The physical assessment should be continuously performed and documented in writing on the prehospital care report. Cot straps and extremity restraints should be adjusted as needed to permit unrestricted respirations and adequate circulation to distal extremities.

For restraints that require a key, law enforcement must be present to adjust or remove them as needed.

Resuscitation of Patients

1. Living Wills are not honored in the prehospital setting. Only the Do Not Resuscitate order, that is filled out and signed by the doctor, the patient, and notarized shall be accepted.
2. If there is any doubt to the paperwork and the orders of paperwork, full resuscitation efforts shall be started. The patient has implied consent for help until paperwork is proven.
3. Hospice patients that have proper paperwork do not require that EMS be contacted or treated.
4. Obvious signs of a patient that are not appropriate for resuscitation do not require treatment to begin. If unsure about starting treatment, efforts should begin. See **Termination of Resuscitation**.
5. Hypothermic patients are warmed before the determination of death.

EMR

EMT

AEMT

Paramedic

Extended

Routine for all EMS Runs

EMR

1. Crews will use universal precautions as outlined in departmental policy on all patients.
2. It is the responsibility of the highest trained personnel on scene to determine if adequate personnel are on the scene, or on the way to the scene, to handle the emergency.
3. Perform skills as appropriate at the EMR level: Manual airway maneuvers, OPA/NPA, Manual removal of obstructed airway, oral suctioning, BVM ventilation, CPR/AED, Medical and Trauma Assessment, Oxygen administration, Hemorrhage control, and splinting.
4. Drug therapy shall be administered per your training as outlined in this protocol.
5. Any other items outlined in the Ohio EMS Scope of Practice.

EMT

1. Per your training at this level, as well as all guidelines set forth for EMRs, perform the primary survey on your patient. Note level of consciousness, c-spine precautions as necessary, and airway, breathing, and circulation assessment.
2. Obtain a history of facts to determine the patient's needs.
3. Treatment should begin as soon as the primary survey is completed and/or a problem is found. Treatment continues throughout the secondary survey. Vitals are to be obtained and all findings and treatment shall be noted on the report and passed on to the person(s) assuming care of the patient.
4. The airway shall be managed by the means that are approved under your EMT license.
5. Oxygen therapy shall be by appropriate device and percentage.
6. Heart monitors may be used by EMTs only if a Paramedic is coming to assist or the EMT plans on transmitting the 12-Lead ECG to the receiving facility. Pulse oximeter and glucometers may be used by the EMT and any abnormality should prompt calling for a Paramedic. Despite device readings, if a patient clinically appears to be critical, a Paramedic should be called. It is to be made clear to the patient or family that you are gathering information for the Paramedic.
7. All other EMT skills that are needed shall be performed according to this protocol and the Ohio EMS Scope of Practice.
8. Drug therapy shall be administered per your training as outlined in this protocol.

AEMT

1. Per your training at this level, as well as all guidelines set forth for EMTs, you are to initiate patient treatment as required.
2. In addition to EMT skills, you are to establish IV lines of appropriate size and number.
3. Drug therapy shall be administered per your training as outlined in this protocol.

Paramedic

1. Per your training at this level, as well as guidelines set forth for the EMT and AEMT, you are to initiate patient treatment as required.
2. In addition to EMT and AEMT guidelines you shall manage the airway with orotracheal intubation, needle cricothyrotomy, or Melker cricothyrotomy as outlined in this protocol.
3. Drug therapy shall be administered per your training as outlined in this protocol.

Extended Paramedic

1. In addition to EMT, AEMT, and Paramedic guidelines you shall manage the airway with rapid sequence intubation or surgical cricothyrotomy.
2. Drug therapy shall be administered per your training as outlined in this protocol.

All personnel according to your training level will follow these guidelines and will complete a report of treatment and findings. This report will be completed in full and a copy given to the person or persons accepting responsibility for the patient. Any deviation of this protocol will be documented in a written statement given by the entire crew.

EMR

EMT

AEMT

Paramedic

Extended

Transport of Arrestees

Transportation of arrestees presents a unique challenge to prehospital care providers. Arrestees may be a flight risk to society and a safety risk to prehospital care providers.

The safety of prehospital care providers will be maintained at all times during transport. For this specific patient population, restraints that require a key may be necessary. The restraint device selected should never interfere or delay appropriate patient treatment during transport. The custodial law enforcement officer must accompany the patient in the transport vehicle during the entire transport when restraints that require a key are in use. All restraint devices selected should be applied and secured prior to the initiation of transport. Prehospital care providers may not accept primary responsibility for possession or use of the key for the restraining device. Restraints that may restrict chest wall motion are prohibited. The acceptable positions for transport of the patient are outlined in the restraint policy. Prehospital care providers may request complete or partial removal of a restraint device if a medical emergency arises and the restraint device interferes with patient care and treatment. Physical assessment of the restrained arrestee should be performed in accordance with the restraint policy.

The decision to refuse elective transport of an arrestee may be made by any member of the prehospital care team or a supervisor at any time the arrestee is too violent or uncooperative to be controlled by the restraint methods and devices permitted by the Trumbull Memorial Hospital EMS Protocols. The prehospital care provider reserves the right to suggest to medical facilities the use of adequate pharmacological restraints prior to acceptance of the patient. The prehospital care provider reserves the right to request completion of transport by the custodial law enforcement personnel. The prehospital care provider may administer an appropriate dose of Haldol and Versed as a pharmacological restraint prior to transport of the patient. Medical direction may be contacted at any time for advice or for pharmacological orders.

Trauma Triage Guidelines

Measure Vitals and LOC

- GCS \leq 13
- SBP < 90mmHg
- Respiratory Rate <10 or >29
- Needs ventilator support
- Respiratory rate < 20 in infants

No
↓

Assess Anatomy of Injury

- Penetrating injury to head, neck, torso, extremity proximal to elbow or knee
- Chest wall instability
- Two or more proximal long bone fractures
- Crushed, degloved, mangled, pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

No
↓

Assess Mechanism of Injury

- Falls >20ft adult, >10ft children or 2-3x height
- High risk MVA with ejection, intrusion >12", ejection, death of passenger, vehicle telemetry data reports risk
- Motorcycle crash >20mph
- Vehicle vs pedestrian >20mph

No
↓

Special Considerations

- Older adults
- Children
- Anticoagulants
- Burns
- Pregnancy >20 weeks
- EMS provider judgment

Yes →

Transport to a trauma center, preferentially the highest level of care in the trauma system.

Yes →

Transport to any level trauma center.

Yes →

Transport to a trauma center or hospital capable of timely evaluation and initial management of potentially serious injuries.

EMR

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AEMT

Paramedic

Extended

Ventilator Transportation

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Ventilator Troubleshooting

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Vital Signs

Obtaining and Documenting Vital Signs

1. Every patient evaluated by EMS personnel will have his or her baseline vital signs assessed. The initial vital signs must be obtained manually. Baseline vital signs include the following:
 - a. Pulse
 - b. Respirations
 - c. Blood pressure
 - i. Blood pressures on infants and small toddlers may be difficult to obtain without upsetting the patient; therefore, the blood pressure may be omitted for these patients when the patient is stable.
2. It is not necessary to obtain vital signs on someone who did not request assistance or directly ask for aid when the following applies:
 - a. The individual does not appear to be ill or injured and there does not appear to be a need for treatment.
 - b. The individual is of sound mind and does not appear under the influence of alcohol or mind altering drugs.
3. Additional vital signs will be obtained as the patient's condition warrants. Examples are:
 - a. Pulse oximetry
 - b. Carbon monoxide oximetry
 - c. Capnography
 - d. Temperature
4. Each patient that is transported will have his or her vital signs reassessed at least once during transport. The only exception is a patient with a minor injury, such as a minor laceration. Patients requiring advanced care will have their vital signs reassessed every 3-5 minutes.
5. Patients that receive medications will have his or her vital signs reassessed 2-3 minutes after administration of the medication(s). Patients receiving IV boluses will have his or her vital signs assessed 1-2 minutes after the bolus is administered.
6. Repeat vital signs may be obtained via monitoring equipment. However, if there is a significant discrepancy, a manual set will be immediately obtained for comparison, and the appropriate action taken.
7. **All** vital signs must be documented.

Pharmacology

EMR

EMT

AEMT

Paramedic

Extended

List of Medications

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Acetaminophen (Tylenol®)

Action
Analgesic

Onset
Peak effect 0.5-2 hours

Indications

Pediatric Fever, Pediatric Pain Control

Adult Dose

Not Indicated

Pediatric Dose

Children ages 2-11 weighing at least 11kg (24 pounds)
15 mg/kg PO via oral syringe, if not given in last 5-6 hours

Contraindications

Hypersensitivity, Avoid in patients with severe liver disease

Adverse Reactions

Hypothermia, GI bleeding

Precautions

None

EMR

EMT

AEMT

Paramedic

Extended

Adenosine (Adenocard®)

Action
Antiarrhythmic

Onset
Half life < 10sec

Indications

Narrow Complex Tachycardia
Pediatric SVT

Adult Dose

6 mg rapid IVP
If ineffective, wait 2 minutes and administer 12 mg rapid IVP
If any change after the first 12 mg, repeat 12 mg rapid IVP as needed

Pediatric Dose

0.1 mg/kg rapid IVP (Max 6 mg)
0.2 mg/kg rapid IVP for second dose (Max 12 mg)

Contraindications

2nd and 3rd degree AVB, sick sinus syndrome, bradycardia or normal pulse rate, hypersensitivity to adenosine

Adverse Reactions

Cardiovascular: Facial flushing, headache, sweating, palpitations, chest pain, hypotension

Respiratory: Shortness of breath, chest pressure, hyperventilation

Central Nervous System: Lightheadedness, dizziness, tingling, numbness, apprehension, blurred vision, burning sensation, heaviness in arms, neck, and back

Gastrointestinal: Nausea, metallic taste, tightness in throat, pressure in groin

Precautions

Adenosine will not convert atrial fib, atrial flutter, or VT to NSR. May be rarely associated with VF. The effects of adenosine are antagonized by methylxanthines such as caffeine and theophylline. In their presence, larger doses may be required or adenosine may not be effective. At the time of conversion to a sinus rhythm, a variety of new rhythms may occur. Generally these last a short period and are normally corrected on their own with no intervention.

Considerations

Adults: Flush with 20mL NS after each dose

Pediatrics: Flush with 5mL NS after each dose

IV at antecubital site is important.

EMR

EMT

AEMT

Paramedic

Extended

Albuterol with Ipratropium (DuoNeb®)

Action
Bronchodilator

Onset
Albuterol: Relief in 5 minutes
Ipratropium: Peak effect in 1.5-2 hours

Indications

Wheezes on auscultation
Known asthmatic or COPD patient who is short of breath

Adult Dose

1 Bullet (Albuterol 2.5mg and Ipratropium 0.5mg) nebulized with 6-8 LPM O2

Pediatric Dose

1 Bullet (Albuterol 2.5mg and Ipratropium 0.5mg) nebulized with 6-8 LPM O2

Contraindications

Hypersensitivity to atropine or its derivatives, or albuterol. Use with caution in tachydysrhythmias.

Adverse Reactions

Cardiovascular: Palpitations, tachycardia, hypertension
Central Nervous System: Tremors, dizziness, nervousness, headache, insomnia, blurred vision, ocular tremors
Gastrointestinal: Nausea, vomiting
Oral: Dry mouth
Respiratory: Bronchospasm, cough, bronchitis, wheezing

Precautions

Use with caution in patients with significant cardiac history, convulsive disorders, hyperthyroidism, diabetes mellitus, or glaucoma.

Considerations

None.

EMR

EMT

AEMT

Paramedic

Extended

Amiodarone (Cordarone®)

Action

Antiarrhythmic
Potassium/Sodium/Calcium Channel Blocker

Onset

1-5 minutes
Peak effect 30 minutes

Indications

Pulseless VT/VF
Ventricular Tachycardia

Adult Dose

300mg Initial Cardiac Arrest Dose
150mg Second Cardiac Arrest Dose

Pediatric Dose

5mg/kg, not to exceed adult dose in Cardiac Arrest
Repeat at 5mg/kg up to 2 times. Max dose 15 mg/kg in Cardiac Arrest

Contraindications

Hypersensitivity to amiodarone or iodine, cardiogenic shock, heart blocks, sinus node dysfunction, bradycardia

Adverse Reactions

Cardiovascular: Bradycardia, hypotension, heart block, prolonged QT interval, congestive heart failure
Central Nervous System: Visual disturbances, photosensitivity, abnormal smell sensation, paresthesia, abnormal gait, involuntary movement, hallucinations, parkinsonian symptoms, dizziness, malaise, tremors
Gastrointestinal: Nausea, vomiting
Integumentary: Rash
Oral: Dry mouth
Respiratory: Pulmonary inflammation, edema, shortness of breath, pleural effusion

Precautions

Use with caution in renal impaired patients, or patients taking medications to control blood pressure.
Amiodarone may interact with most opioid pain medications.

Considerations

Pregnancy category D.

EMR

EMT

AEMT

Paramedic

Extended

Aspirin

Action

Antiplatelet
Pain reliever
Anti-inflammatory

Onset

Peak effect: 15 minutes to 2 hours

Indications

Chest Pain / MI

Adult Dose

324 mg chewable PO (4x81mg tabs if baby aspirin)

Pediatric Dose

Do not give aspirin to children who are febrile, for fear of developing Reye's syndrome (swelling of the liver and brain)

Contraindications

Febrile children, hypersensitivity, ulcers, GI disorders, other bleeding disorders

Adverse Reactions

GI bleeding, nausea, vomiting, bronchospasm

Precautions

Use cautiously in patients with asthma or pregnancy. A one-time dose is safe if patient is on Coumadin.

Considerations

If the patient already took aspirin today and you believe the patient is experiencing an MI, have the patient take the full dose of aspirin regardless of how recent their last dose was taken.

If the patient is on Coumadin and you believe they are experiencing an MI, a one-time dose of aspirin is safe. 324 mg of aspirin is a relatively low dose. Extra strength aspirin contains 1000mg per dose.

EMR

EMT

AEMT

Paramedic

Extended

Atropine

Action

Anticholinergic
Increases heart rate

Onset

Peak effect 2-4 minutes

Indications

Symptomatic Bradycardia (Adult and Ped)
Toxic Overdose of Organophosphates (Adult and Ped)
Rapid Sequence Intubation (RSI)

Adult Dose

Cardiac: 0.5 mg IV/IO
Toxic Exposure: 2-5 mg IV/IO every 15 minutes as needed to control secretions and heart rate

Pediatric Dose

Cardiac: 0.02 mg/kg IV/IO, minimum dose 0.1mg and maximum dose 0.5 mg
Toxic Exposure: 0.01 mg/kg IV/IO every 15 minutes, maximum single dose 2 mg and max dose total 6 mg

Contraindications

Hypersensitivity, glaucoma, tachycardia, acute hemorrhage with cardiac complications, obstructive disease

Adverse Reactions

Cardiovascular: Palpitations, bradycardia, tachycardia
CNS: Headache, flushing, nervousness, drowsiness, weakness, dizziness, fever, mental confusion (elderly), restlessness, tremor
Gastrointestinal: Nausea, vomiting, heartburn

Precautions

May produce drowsiness, dizziness, or blurred vision. Use cautiously in patients with asthma or allergies. Use caution in histories of coronary artery disease, CHF, cardiac arrhythmias, tachycardia, hypertension, infants, small children, or debilitated patients with chronic lung disease

Considerations

Use caution in patients with asthma, allergies, CAD, CHF, HTN, infants, small children, and persons with down's syndrome

EMR

EMT

AEMT

Paramedic

Extended

Dextrose 10% Solution

Action
Natural sugar

Onset
1-2 minutes

Indications

Hypoglycemia / unresponsiveness (Adult and Pediatric)
Altered Mental Status (Adult and Pediatric)
Hypoglycemia induced seizures (Adult and Pediatric)
Pediatric Hypovolemic Shock
Cardiac Arrest with Hypoglycemia (Adult and Pediatric)

Adult Dose

Infuse via IV/IO drip until mental status improves
Alternative: Draw D10 into a syringe and bolus IVP/IO as necessary

Pediatric Dose

Neonatal Hypoglycemia 2 mL/kg via syringe ONLY
Pediatric Hypoglycemia 5 mL/kg via syringe ONLY

Contraindications

Hypersensitivity, hemorrhagic CVA, cerebral edema, hyperglycemia, delirium tremors if patient is dehydrated
Do not coadminister simultaneously with blood products

Adverse Reactions

Febrile response, infection at injection site, venous thrombosis or phlebitis, extravasation, hypervolemia, confusion or unresponsiveness. Use the largest available peripheral vein. May produce allergic reactions in corn-sensitive persons.

Precautions

Use no more than the required amount to gain the desired effect.
NEVER connect the D10 bag to an IV/IO line in a PEDIATRIC patient. Administer via SYRINGE bolus ONLY.
Never leave the D10 bag connected once an adult's mental status has improved. Once mental status has improved and patient is able to swallow, it is best if the person raise their blood glucose level naturally (eating, drinking carbohydrates). Refer to hypoglycemia protocol.
Do not administer via IM or SQ route.
If thrombosis or extravasation occur, stop the infusion.

Considerations

Do not use Dextrose in an IV site that is questionable.
Perform blood glucose analysis prior to administration and 5-15 minutes after initial analysis.

EMR

EMT

AEMT

Paramedic

Extended

Diphenhydramine (Benadryl®)

Action
Antihistamine

Onset
Onset < 15 min
Peak effect 1-4 hours

Indications

Allergic Reaction (Localized and Systemic) (Adult and Pediatric)
Extrapyramidal Side Effects

Adult Dose

25-50 mg slow IV/IO, or IM, repeat 25 mg after 10 minutes if no response (Max 50 mg total)

Pediatric Dose

1 mg/kg slow IV/IO, or IM, maximum 25 mg

Contraindications

Hypersensitivity, nursing mothers (unless life threatening reaction)

Adverse Reactions

Cardiovascular: Hypotension, headache, palpitations, tachycardia, premature heart contractions
CNS: Sedation, sleepiness, dizziness, fatigue, confusion, restlessness, excitation, nervousness, tremor, irritability, blurred vision, vertigo, tinnitus, convulsions
Gastrointestinal: Nausea, vomiting, diarrhea
Respiratory: Thickening of bronchial secretions, tightness of chest and wheezing, nasal congestion

Precautions

Has atropine-like action and should be used with caution in patients with a history of bronchial asthma, increased intraocular pressure, cardiovascular disease, or hypertension. Use caution with lower respiratory disease, including asthma.

Considerations

Promethazine (Phenergan), Haldol, and Reglan may cause extrapyramidal side effects.

Epinephrine 1:1,000

Action
Sympathomimetic

Onset
< 5 minutes

Indications

Anaphylaxis
Severe Asthma Attack

Adult Dose

0.3mg Epi 1:1,000 IM

Pediatric Dose

0.01 mg/kg Epi 1:1,000 IM
Maximum single dose 0.3mg IM

Contraindications

Known hypersensitivity

Adverse Reactions

Cardiac: arrhythmias, hypertension, angina
Other: Cerebral hemorrhage, hemiplegia, subarachnoid hemorrhage

Precautions

Protect from light. Do not use if discolored or contains precipitate.

Considerations

Use IM only. Never administer Epi 1:1,000 intravenously or via intraosseous devices under any circumstances.

EMR

EMT

AEMT

Paramedic

Extended

Epinephrine 1:10,000

Action
Sympathomimetic

Onset
< 5 minutes

Indications

Asystole/PEA, Cardiac Arrest, CCR
Vfib/Pulseless Vtach
Pediatric Arrest, Pediatric Symptomatic Bradycardia
Epi Push-Dose Pressor (diluted with 10 mL NS) See **Epi Push-Dose Pressor Procedure**

Adult Dose

Cardiac Arrest: 1 mg of 1:10,000 IVP/IO every 3-5 min
Epi Push-Dose Pressor (once diluted properly): 0.5-2 mL every 2-5 minutes (2-10 mcg/min)

Pediatric Dose

0.01 mg/kg (0.1 mL/kg) IV/IO every 3-5 min

Contraindications

Known hypersensitivity

Adverse Reactions

Cardiac: arrhythmias, hypertension, angina
Other: Cerebral hemorrhage, hemiplegia, subarachnoid hemorrhage

Precautions

Protect from light. Do not use if discolored or contains precipitate.

Considerations

Flush IV tubing well before/after using Sodium Bicarbonate through the same line. If patient has a perfusing rhythm, Epinephrine 1:10,000 should be diluted 10 times prior to using intravenously.

EMR

EMT

AEMT

Paramedic

Extended

Epi-Pen[®] Adult

Action
Sympathomimetic

Onset
6-12 minutes IM

Indications

Allergic reaction, severe asthma
Patients > 30 kg (> 66 lbs)

Adult Dose

1 Autoinjector (0.3mg epinephrine) IM

Pediatric Dose

Do not use.

Contraindications

Known hypersensitivity

Adverse Reactions

Anxiety, headache, fear, and palpitations. Repeated injections can result in necrosis at injection sites.

Precautions

May be used with asthma in severe cases that show no hope for improvement with other bronchodilators. Use caution with patients over 45 years of age or with heart disease. You should still give it when indicated, just monitor the patient for changes once you do!

Considerations

Hold autoinjector against site for 10 seconds to ensure delivery of the medication
Only inject into anterolateral aspect of the thigh (vastus lateralis). Do not inject into the buttock or intravenously.

Epi-Pen Jr[®]

Action
Sympathomimetic

Action
6-12 minutes IM

Indications

Allergic reaction, severe asthma
Patients < 30 kg (< 66 lbs)

Adult Dose

Do not use.

Pediatric Dose

1 Autoinjector (0.15 mg epinephrine) IM

Contraindications

Known hypersensitivity

Adverse Reactions

Anxiety, headache, fear, and palpitations. Repeated injections can result in necrosis at injection sites.

Precautions

May be used with asthma in severe cases that show no hope for improvement with other bronchodilators.

Considerations

Hold autoinjector against site for 10 seconds to ensure delivery of the medication
Only inject into anterolateral aspect of the thigh (vastus lateralis). Do not inject into the buttock or intravenously.

EMR

EMT

AEMT

Paramedic

Extended

Fentanyl (Sublimaze®)

Action
Narcotic analgesic

Onset
Immediate
Maximal analgesic and respiratory effect may take several minutes

Indications

Pain Control

Adult Dose

1 mcg/kg IV/IO/MAD

3 mcg/kg IV/IO/MAD maximum 300 mg for patients who are opioid tolerant (cancer, chronic pain, etc)

0.5 mcg/kg IV/IO/MAD for frail elderly patients

Remember 1 mL maximum per nostril via MAD route

Pediatric Dose

Do not use.

Contraindications

Known intolerance or hypersensitivity to the drug. Use caution in BP < 100mmHg and have a plan to maintain BP. Respiratory rate < 14 bpm. Oxygen saturation < 90% and/or significant respiratory depression.

Adverse Reactions

Respiratory: Respiratory depression, apnea, laryngospasm

Cardiovascular: bradycardia, hypotension, hypertension

CNS: Dizziness, blurred vision

Gastrointestinal: nausea and vomiting

Other: muscle rigidity, diaphoresis

Precautions

Use caution in patients with head injuries and elevated ICP. Use caution with bradycardia, COPD, and decreased respiratory reserve patients, as well as patients already on narcotics. Fentanyl should be reduced in frail elderly patients. Use caution in patients with elevated BP. Fentanyl in high doses (> 2-3 mcg/kg) can result in “stiff chest” with inability to ventilate patient. Stiff chest is treated with a paralytic during RSI.

Considerations

Studies show that fentanyl is very hemodynamically neutral compared to other narcotic analgesics. If the patient is in pain, even post trauma or abdominal pain, please provide pain relief. Prepare to manage the blood pressure after administration.

EMR

EMT

AEMT

Paramedic

Extended

Glucagon

Action

Promotes glycolysis in the liver

Onset

Patient response within 15 minutes

Indications

Hypoglycemia (Adult and Ped)
Beta Blocker Overdose (Adult and Ped)

Adult Dose

Hypoglycemia: 1 mg IM
Beta Blocker Overdose: 1-10 mg IVP

Pediatric Dose

Hypoglycemia: 0.05 mg/kg IM, maximum 1 mg
Beta Blocker Overdose: 0.05 mg/kg IVP, maximum 10 mg

Contraindications

Hypersensitivity, hyperglycemia, allergies to beef or porcine proteins, insulinoma

Adverse Reactions

Nausea, vomiting, especially in doses above 1 mg or rapid injection. Increase in blood pressure and pulse rate may occur. Allergic reactions are rare but may occur.

Precautions

Use caution in patients with diabetic patients who have coronary artery disease. Glucagon can cause hypertension.

Considerations

Patients who receive glucagon IV for the purpose of beta blocker overdose should be given ondansetron immediately afterward to manage vomiting.
Do not mix with saline.

EMR

EMT

AEMT

Paramedic

Extended

Haloperidol (Haldol®)

Action

Blocks CNS dopamine receptors

Onset

20-30 minutes IM

Indications

Agitation / Combativeness unrelated to Excited Delirium or Dementia

Adult Dose

5 mg IM

Repeat at 5mg IM in 10 minutes

Pediatric Dose

Do not use in patients less than 16 years old.

Contraindications

Hypersensitivity, seizures, hemodynamic instability, pregnancy

Adverse Reactions

CNS: extrapyramidal reactions, restlessness, anxiety, agitation, lethargy, fatigue, weakness, tremor, headache, confusion, vertigo, grand mal seizures

Cardiovascular: tachycardia, prolonged QTI and other ECG changes, hypotension

Gastrointestinal: dry mouth, nausea, vomiting, diarrhea

Other: blurred vision

Precautions

Patients with arrhythmia or seizures

Considerations

Haloperidol administration to pregnant females may lead to birth defects.

EMR

EMT

AEMT

Paramedic

Extended

Hydroxocobalamin (Cyanokit®)

Action
Binds with cyanide ions

Onset
Immediate

Indications

Smoke inhalation / Cyanide

Adult Dose

5 grams IVP/IO over 15 minutes

Pediatric Dose

Consult medical control

70 mg/kg IVP/IO over 15 minutes, Maximum 5 grams (5,000mg)

Contraindications

Hypersensitivity to hydroxocobalamin or cyanocobalamin

Adverse Reactions

Abnormal color of urine, erythema (red skin), rash, increased blood pressure, nausea, headache, an injection site reactions.

Precautions

Do not administer diazepam, dopamine, or sodium thiosulfate through the same line.

If administering other medications, do so through a separate IV line.

Considerations

Hydroxocobalamin interferes with some clinical laboratory blood tests performed at hospitals.

Use on any firefighter removed from a structure via RIT who had their mask off at any point.

Mothers breastfeeding should discontinue until out of their system (approx. 24 hours)

EMR

EMT

AEMT

Paramedic

Extended

Ketamine (Ketalar®)

Action

Dissociative anesthetic
Stimulates opioid receptors

Onset

IV 1 minute
IM 4-5 minutes

Indications

Pain Control (Adult and Ped)
Painful Procedures / Extrication
Excited Delirium
RSI

Adult Dose

Pain Control: 0.1-0.2 mg/kg IVP/IO/IM, Maximum 20mg
Painful Procedures/Extrication: 0.4 mg/kg IVP/IO/IM, Maximum 40mg
Excited Delirium: 5 mg/kg IM or 2 mg/kg IVP/IO if the line is already established
RSI: 2 mg/kg IVP/IO

Pediatric Dose

Pain Control: 0.2 mg/kg IVP/IO or 0.3mg/kg Nebulized or 2 mg/kg MAD

Contraindications

Hypersensitivity to the drug, schizophrenia, children < 2 months old.

Adverse Reactions

Cardiovascular: BP and pulse rate are frequently elevated following administration. Hypotension and bradycardia have been observed, and arrhythmia has also occurred.

Gastrointestinal: Nausea, vomiting, increased salivation.

Neurological: Enhanced musculoskeletal tone may be manifested by tonic and clonic movements sometimes resembling seizures. Nystagmus is common.

Respiratory: Although respiration is frequently stimulated, severe depression of the respiration or apnea may occur following rapid IV administration of high doses. Laryngospasms and other forms of airway obstruction have occurred, but can be managed via BVM.

Precautions

Resuscitative equipment should be ready for use. IV dose should be administered over 1 minute. More rapid administration may result in respiratory depression or apnea and enhanced pressor response. Use caution in chronic alcoholics and the acutely alcohol-intoxicated patient.

Considerations

Monitor vital signs frequently. Use caution with elderly and pediatric patients.

EMR

EMT

AEMT

Paramedic

Extended

Lidocaine

Action
Anti-arrhythmic
Sodium Channel Blocker

Onset
30-90 seconds

Indications

Vfib / Pulseless Vtach (Adult and Ped)
RSI

Adult Dose

Cardiac Arrest: 1-1.5 mg/kg IVP/IO. Repeat doses at 5 minutes are half the initial (0.5-0.75 mg/kg), Maximum 3 mg total
RSI: TBD

Pediatric Dose

Cardiac Arrest: 1-1.5 mg/kg IVP/IO. Repeat doses at 5 minutes are half the initial (0.5-0.75 mg/kg), Maximum 3 mg/kg total
RSI: TBD

Contraindications

Known hypersensitivity, Stokes-Adams Syndrome, Wolff-Parkinson-White Syndrome, or severe degrees of sinoatrial, atrioventricular, or intraventricular block in the absence of an artificial pacemaker

Adverse Reactions

Cardiovascular: Bradycardia, hypotension, cardiovascular collapse which may lead to arrest
CNS: Lightheadedness, nervousness, apprehension, euphoria, confusion, dizziness, drowsiness, tinnitus, blurred or double vision, vomiting, sensations of heat, cold, or numbness, twitching, tremors, convulsions, unconsciousness, respiratory depression, and arrest
Other: allergic reactions as a result of sensitivity to lidocaine are extremely rare. There have been cases of permanent injury to extraocular muscles requiring surgical repair

Precautions

Use caution in patients with severe liver or kidney disease because accumulation of the drug or metabolites may occur. Use caution in patients with hypovolemia, severe CHF, shock, and all forms of heart block. Elimination of ventricular ectopic beats without prior acceleration in heart rate may promote more frequent ventricular arrhythmias or complete heart block. Dosage for pediatric and debilitated and/or elderly patients should be reduced.

Considerations

Observe closely for drug toxicity: dizziness, confusion, delirium, seizures.
Treatment for toxicity is management of symptoms until the drug is removed from the body.

EMR

EMT

AEMT

Paramedic

Extended

Magnesium Sulfate

Action

Electrolyte
Anticonvulsant
Calcium Channel Blocker

Onset

Immediate

Indications

Vfib / Pulseless Vtach
Torsades de Pointes
Pre-Eclampsia / Eclampsia
Severe asthma unresponsive to other bronchodilators

Adult Dose

Cardiac: 2 grams IVP/IO over 5-10 minutes.
Pre-Eclampsia / Eclampsia: 2 grams IVP/IO over 5-10 minutes.

Pediatric Dose

Not indicated.

Contraindications

Heart block or myocardial damage, known hypersensitivity, dialysis patients

Adverse Reactions

Flushing, sweating, hypotension, hypothermia, respiratory depression, hypocalcemia, circulatory collapse, cardiac depression, CNS depression

Precautions

Use caution on renal impairment patients because drug is solely removed by the kidneys. Clinical indications of a safe dosage regimen include the presence of the patellar reflex (knee jerk) and absence of respiratory depression. When barbiturates, narcotics, or other hypnotics are given in conjunction with magnesium, their dosage should be adjusted because of the additive central depressive effects. Use caution in patients receiving digitalis. Stop infusion if hypotension develops, difficulty breathing, decreased deep tendon reflexes, or paralysis.

Considerations

Not compatible with sodium bicarbonate.

EMR

EMT

AEMT

Paramedic

Extended

Methylprednisolone (Solu-Medrol®)

Action
Anti-inflammatory

Onset
1-2 hours

Indications

Respiratory Distress

Adult Dose

125 mg IVP/IO (slowly) or IM

Pediatric Dose

2 mg/kg IVP/IO (slowly), Maximum 60mg

Contraindications

Hypersensitivity, GI Bleed, Severe Infection

Adverse Reactions

Fluid and Electrolyte Disturbances: CHF in susceptible patients, HTN

Musculoskeletal: Weakness

Neurological: Convulsions, headache, vertigo

Metabolic: Nausea and vomiting

Cardiovascular: Arrhythmias, hypotension

Skin: Sweating

Precautions

Nonspecific ulcerative colitis, impending perforation or abscess or other infection, peptic ulcer, renal insufficiency, hypertension, osteoporosis, myasthenia gravis (weakness of muscles)

EMR

EMT

AEMT

Paramedic

Extended

Midazolam (Versed®)

Action
Sedative, Amnesic
Short acting benzodiazepine

Onset
2-5 minutes

Indications

Seizure
Agitation / Combativeness

Adult Dose

Seizure: 10 mg IM only, consider 5 mg if frail elderly or chronic illness
Agitation / Combativeness: 4 mg IM only

Pediatric Dose

5 mg IM if > 40 kg (88 lbs)
2.5 mg IM if 13-40 kg (28.6-88 lbs)
0.1 mg/kg IM if < 13kg (28.6 lbs), Maximum 2.5 mg

Contraindications

Hypersensitivity, glaucoma, acute alcoholic intoxication with depressed vital signs

Adverse Reactions

Fluctuations in vital signs were most frequently seen. Decreased tidal volume and/or respiratory rate, apnea, variations in blood pressure

Precautions

Doses should be decreased in frail elderly and debilitated patients.

Considerations

Consider reducing the dose on frail elderly and debilitated patients. These patients may take longer to recover from the drug. Always have airway equipment available when using.

EMR

EMT

AEMT

Paramedic

Extended

Naloxone (Narcan[®])

Action
Narcotic antagonist

Onset
2 minutes

Indications

Unresponsiveness (Adult or Ped)
Overdose (Adult or Ped)

Adult Dose

4 mg IVP/IO (slowly) or IM, may repeat once in 5 minutes if no effect
2 mg via MAD (1 mL per nostril maximum)

Pediatric Dose

0.1 mg/kg IVP/IO/MAD, may repeat in 5 minutes if no effect. Maximum 2 mg.

Contraindications

Known hypersensitivity.

Adverse Reactions

Nausea, vomiting, sweating, tachycardia, increased blood pressure, tremulousness, seizures, and cardiac arrest

Precautions

Several instances of hypotension, hypertension, ventricular tachycardia and fibrillation, and pulmonary edema have been reported. Most of whom had pre-existing cardiac disease. Have means to physically control the patient prior to administering the narcan.

Considerations

Short half-life. All patients receiving narcan regardless of state of consciousness or alertness must be transported to the hospital. They may revert to their original state when the effects of narcan diminish.

EMR

EMT

AEMT

Paramedic

Extended

Nitroglycerin (Tab, Paste)

Action
Vasodilator

Onset
2 minutes

Indications

Chest Pain / MI
Pulmonary Edema / CHF

Adult Dose

1 tab (0.4 mg) SL every 5 minutes, maintain SBP > 100 mmHg
1” of paste, maintain SBP > 100 mmHg. If hypotension occurs, wipe paste off chest.

Pediatric Dose

Not indicated.

Contraindications

Known hypersensitivity, pericardial tamponade, restrictive cardiomyopathy, constrictive pericarditis, do not administer if patient has taken the following drugs in the hours stated:

Drug	Hours
Cialis	48
Levitra	24
Viagra	24

Adverse Reactions

Most are dose related to results from nitroglycerin’s activity as a vasodilator. Headache most common. Transient episodes of lightheadedness, sometimes related to hypotension may occur. Hypotension is infrequent but may be severe in some patients. Syncope, crescendo angina, and rebound hypertension may occur but they are uncommon.

Precautions

Severe hypotension and shock can occur even with smaller doses. Use caution with volume depleted patients. Hypotension induced by nitroglycerin can be accompanied by hypotension and increased angina pectoris.

Considerations

Check for transdermal patch prior to administration.

EMR

EMT

AEMT

Paramedic

Extended

Normal Saline

Action

Isotonic Crystalloid

Onset

Onset depends on dose and desired effect

Indications

Blood pressure management
Flushing IV ports

Adult Dose

Dose depends on the use. For blood pressure control, consider 1000mL boluses.

Pediatric Dose

Dose depends on the use. For blood pressure control, consider 20mL/kg boluses.

Contraindications

None known. Large boluses are contraindicated in pulmonary edema.

Adverse Reactions

None known.

Precautions

Avoid large boluses in the presence of pulmonary edema.
Normal Saline does not carry oxygen.

EMR

EMT

AEMT

Paramedic

Extended

Ondansetron (Zofran®)

Action
Antiemetic

Onset
Rapid

Indications

Nausea / Vomiting

Adult Dose

4 mg IVP/IO/IM/ODT

Repeatable once to maximum of 8mg IVP/IO/IM/ODT in adults

Pediatric Dose

1 month to 12 years old

< 30kg/66lbs: 0.1 mg/kg IV/IO x 1 or ½ ODT

> 30kg/66lbs: 4 mg IV/IO/ODT, Maximum 4 mg

Contraindications

Hypersensitivity

Adverse Reactions

Headache, dizziness, diarrhea, constipation, fever, pruritis, dry mouth, increased liver function tests, malaise, fatigue, anaphylaxis, ECG alterations: arrhythmias, prolonged PR, QRS, and QT

Precautions

Not a drug that stimulates gastric or intestinal peristalsis. Transient ECG changes including QT prolongation. Use with caution in nursing women.

EMR

EMT

AEMT

Paramedic

Extended

Oral Glucose (Glucose-15[®])

Action
Glucose

Onset
Improvement typically within 15 minutes

Indications

Hypoglycemia in the alert patient able to swallow

Adult Dose

1 tube (15g of glucose) buccal (between gum and cheek)

Pediatric Dose

1 tube (15g of glucose) buccal

Contraindications

Hypersensitivity, delirium tremens with dehydration, intracranial hemorrhage, inability to swallow.

Adverse Reactions

Airway compromise if solution enters the glottic opening

Precautions

Make sure the patient is capable of swallowing the solution to protect their own airway

Considerations

Consider alternate oral nutrition, such as sugary drinks, or cake frosting. Keep patient food allergies in mind.

EMR

EMT

AEMT

Paramedic

Extended

Oxygen

Action
Many

Onset
Immediate

Indications

Hypoxemia

Adult Dose

2-6 liters per minute via nasal cannula

10-15 liters per minute via non-rebreather or partial non-rebreather mask

15 liters per minute via BVM / ETT

Pediatric Dose

Blow-by oxygen as needed for younger children. Avoid persistent oxygenation of neonates.

2-6 liters per minute via nasal cannula

10-15 liters per minute via non-rebreather or partial non-rebreather mask

15 liters per minute via BVM / ETT

Contraindications

None.

Adverse Reactions

Toxicity, depressed hypercarbic drive

Precautions

None.

EMR

EMT

AEMT

Paramedic

Extended

Racemic Epinephrine

Action
Sympathomimetic

Onset
Immediate

Indications

Asthma (in the presence of albuterol or ipratropium allergy)
Suspected Croup

Adult Dose

0.5mL – 1mL

Pediatric Dose

0.05 mL/kg of 2.25% solution nebulized with 6-8 liters per minute of oxygen

Max Doses:

- 0.25mL < 6 months
- 0.5mL > 6 months
- 0.75mL adolescent

Contraindications

Hypersensitivity, epiglottitis, otherwise no contraindications in a life-threatening situation.

Adverse Reactions

Tachycardia, nervousness, increased blood pressure

Precautions

Not indicated for epiglottitis (may irritate the epiglottis and cause further swelling)

EMR

EMT

AEMT

Paramedic

Extended

Sodium Bicarbonate

Action
Reverses blood pH

Onset
Immediate

Indications

Adult Pulseless Arrest
Tricyclic Antidepressant Overdose (Adult and Ped)

Adult Dose

Prolonged Cardiac Arrest: 1 mEq/kg IVP/IO of 8.4%
Tricyclic Antidepressant Overdose: 1 mEq/kg IVP/IO of 8.4%

Pediatric Dose

Pediatric Tricyclic Antidepressant Overdose: 1 mEq/kg IVP/IO 8.4% if > 11 lbs)

Contraindications

Patients losing chloride by vomiting or continuous gastrointestinal suction, metabolic and respiratory alkalosis

Adverse Reactions

Alkalosis and/or hypokalemia, extravasation of IV, tissue necrosis, ulceration, or sloughing at site

Precautions

Overdose and alkalosis should be avoided, may cause vascular irritation or sloughing if given extravascularly, avoid scalp vein use. Risks of overdose and alkalosis should be avoided. Use caution in patients with CHF or other edematous sodium-retaining states.

Considerations

Flush IV tubing before and after administration.

Succinylcholine (Anectine®)

Action

Depolarizing Neuromuscular Blocking Agent

Onset

1 minute

Indications

Rapid Sequence Induction after anesthesia is achieved.

Adult Dose

1mg/kg rapid IV Push

Pediatric Dose

Do Not Use

Contraindications

Hyperkalemia, allergy, history of malignant hyperthermia, crush injuries, glaucoma, penetrating eye injuries, neuromuscular disease, spinal trauma, abdominal sepsis, CVA, Parkinson's Disease, Lou Gehrig's Disease (ALS), presence of burns more than 24 hours old.

Side Effects and Adverse Reactions

Muscular fasciculation (disorganized muscular contractions), respiratory depression, muscle relaxation, increased ICP, rhabdomyolysis, decrease in heart rate, hyperkalemia, dysrhythmias, excessive salivation, rash.

Precautions

A proper screening for potential hyperkalemia should be performed prior to succinylcholine administration. Some considerations in potential hyperkalemic patients include tall, peaked T-waves on the ECG, paresthesia and weakness, patients who receive hemodialysis, patients taking potassium supplements (KCl, Klor-Con), patients on certain medications for blood pressure control or heart failure (digitalis, amlodipine, ACE inhibitors). Use caution in patients with closed head injuries.

Considerations

Ensure a GCS of 3 prior to succinylcholine administration. Your patient should be asleep before you paralyze them. Neuromuscular blocking agents induce paralysis; the patient's senses are still intact, unless proper anesthesia is achieved.

EMR

EMT

AEMT

Paramedic

Extended

Tranexamic Acid (TXA)

Action
Antifibrinolytic

Onset
Immediate
3 hour half-life

Indications

Multisystem trauma with internal hemorrhage

Adult Dose

1 g mixed in 50 mL IV bag connected to 10 gtts/mL administration set, and administer over 10 minutes (1 drop per second)

Pediatric Dose

Not indicated.

Contraindications

Isolated traumatic brain injury, more than 3 hours since injury, patients < 15 years of age, nontraumatic shock

Adverse Reactions

Hypersensitivity

Precautions

Monitor for symptoms of severe allergic reaction and changes in vision

EMR

EMT

AEMT

Paramedic

Extended

EMR EMT AEMT Paramedic Extended