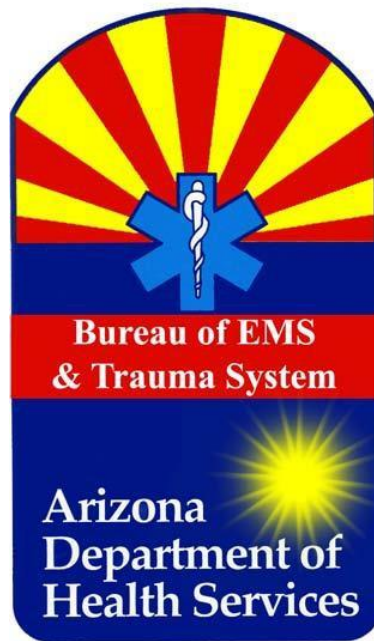


TRIAGE, TREATMENT AND TRANSPORT GUIDELINES

As recommended by the

**Bureau of Emergency Medical Services
& Trauma System**



Arizona Department of Health Services

**April 2011
[Revised June 2012]**

Table of Contents	Page
Disclaimer	1
Adult Chest Pain of Probable Cardiac Origin	2
Adult Bradycardia, Symptomatic	3
Adult Tachycardia with Pulse	4
Adult Pulseless Arrest-Cardiocerebral Resuscitation (CCR)	5
Adult Pulseless Arrest – Cardiopulmonary Resuscitation (CPR)	6
Adult Termination of Resuscitation Efforts	7
Adult Dead On Scene	8
Adult Transport to Designated Cardiac Arrest Center/Cardiac Arrest Post-Resuscitation	9
Adult Respiratory Difficulty	10
Adult Unconscious/Unresponsive	11
Adult Behavioral Emergency – Violent or Combative Patient	12
Poison-Ingestion/Inhalation	13
Poison-Bites and Stings	14
Poison – Snakebite	15
Adult Seizures	16
Hyperthermia	17
Hypothermia	18
Suspected Stroke	19
Trauma-General Management	20
Trauma-Amputated Parts	21
Trauma-Extremity Fractures, Dislocation, and Sprains	22
Trauma-Head Injury	23
Spinal Immobilization	24
Trauma-Field Triage Decision Scheme	25
Arizona Ground and Air Ambulance Mode of Transport Guidelines	27
High Risk OB	28
Pediatric Shortness of Breath	29
Pediatric Heat Exposure	30

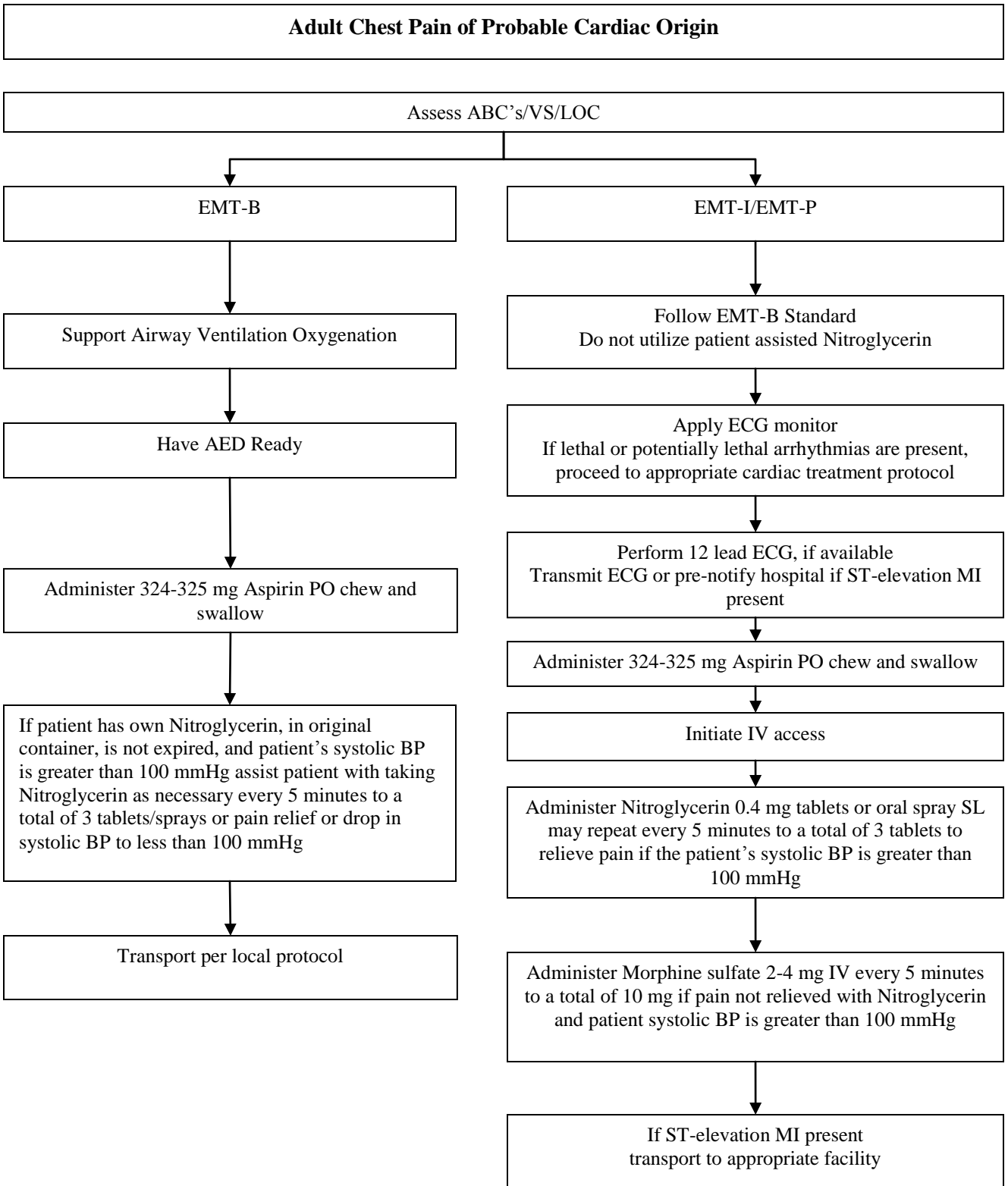
Pediatric Anaphylaxis/Allergic Reaction	31
Newborn Resuscitation	32
Pediatric Pulseless Electrical Activity(PEA)/Asystole	33
Pediatric Bradycardia, Unstable	34
Pediatric Supraventricular Tachycardia	35
Pediatric Ventricular Fibrillation/Pulseless Ventricular Tachycardia	36
Pediatric Seizures	37
Pediatric Altered Mental Status	38
Pediatric Shock	39
Pediatric Submersion Injury	40

DISCLAIMER

These protocols are designed to be a resource document for use by Medical Direction Authorities responsible for the administrative, organizational and on-line medical direction of pre-hospital EMS personnel. It is specifically recognized that regional variations from the guidelines contained within are not only acceptable, but also appropriate, depending on the individual circumstances of the involved areas and organizations.

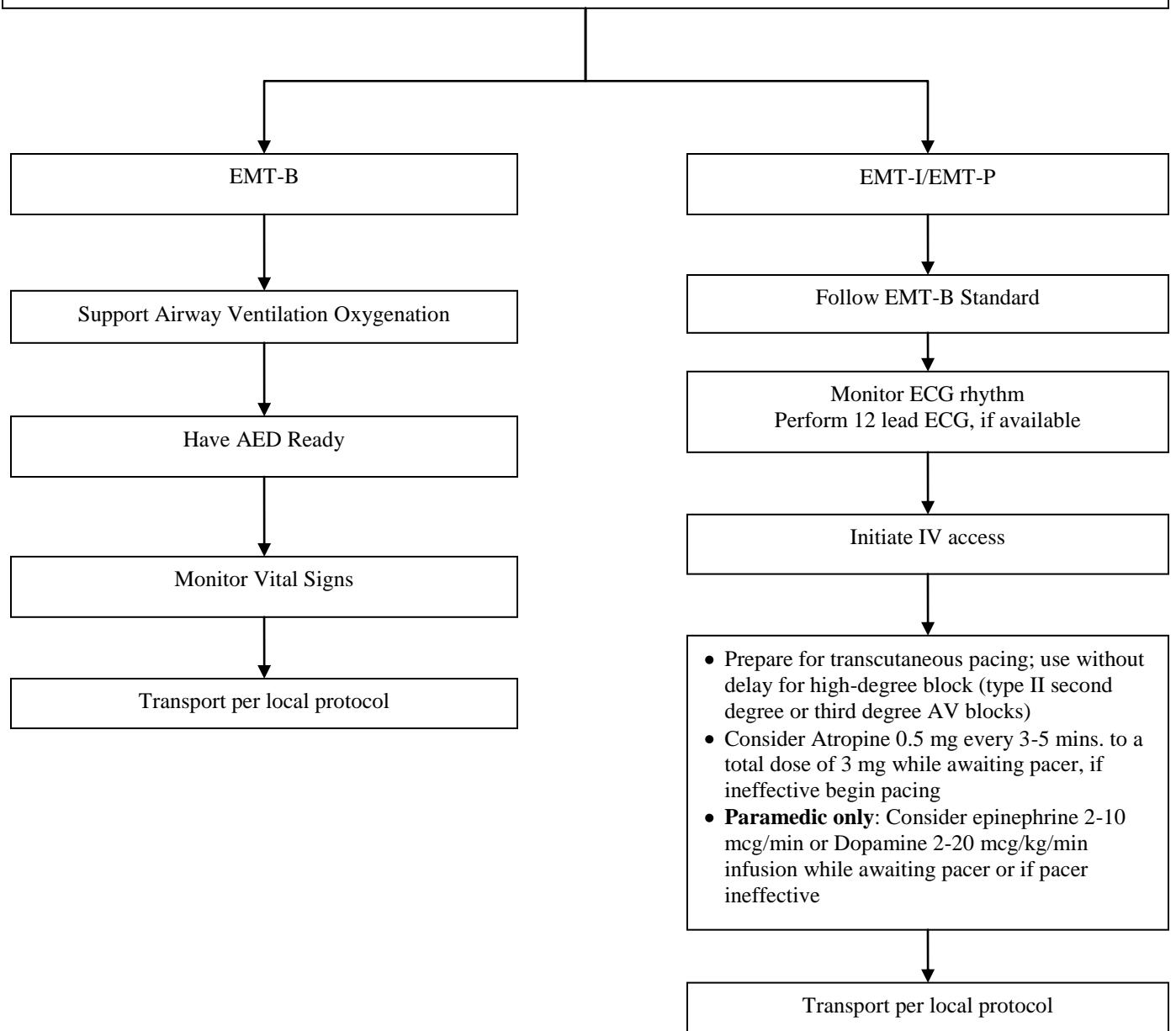
By Statute and Rule, all advanced life support pre-hospital EMS personnel shall have administrative and on-line medical direction. These guidelines are not meant to act as a substitute, proxy or alternative to that medical direction. Any conflict between these guidelines and the individual EMS provider's medical direction shall default to the Administrative or on-line medical direction.

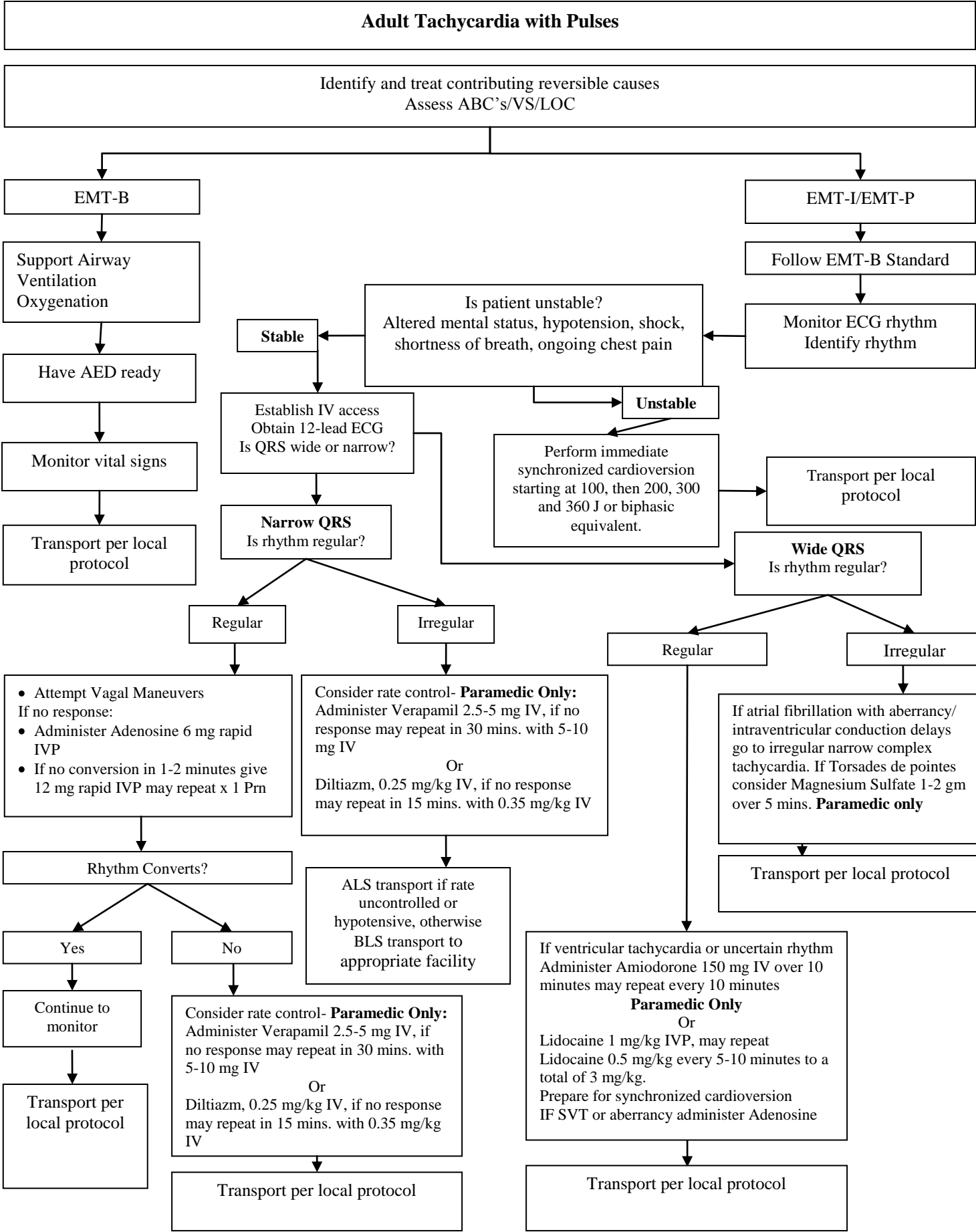
These protocols are set forth guidelines deemed by the Bureau of EMS and Trauma System to be within the acceptable standard of medical care. It is specifically recognized that there are acceptable regional variations from these procedures and protocols, which may also satisfy the standard of care. This manual does NOT define, limit, expand, or otherwise purport to establish the legal standard of care.



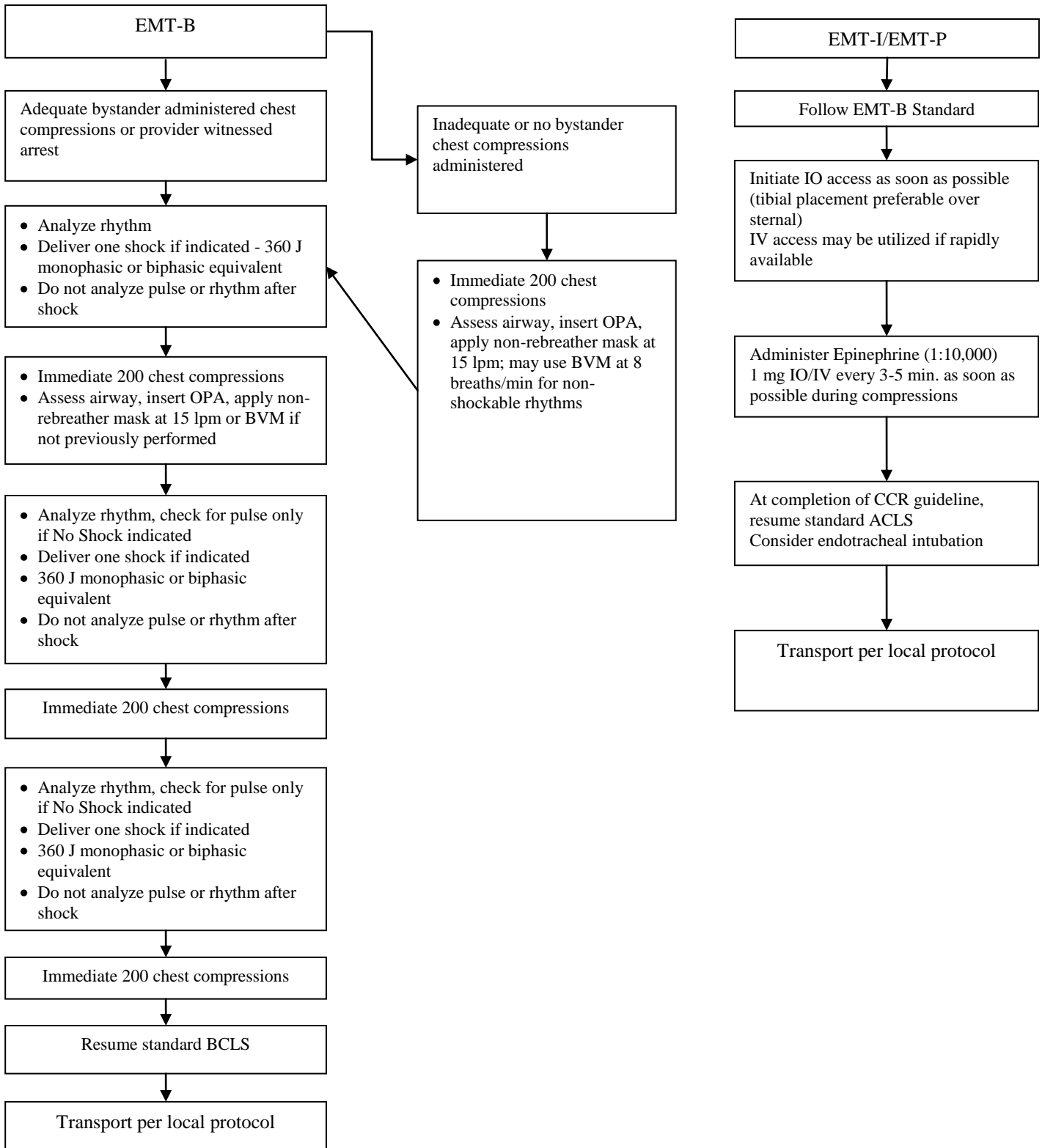
Adult Bradycardia, Symptomatic

Assess ABC's/Vs/LOC

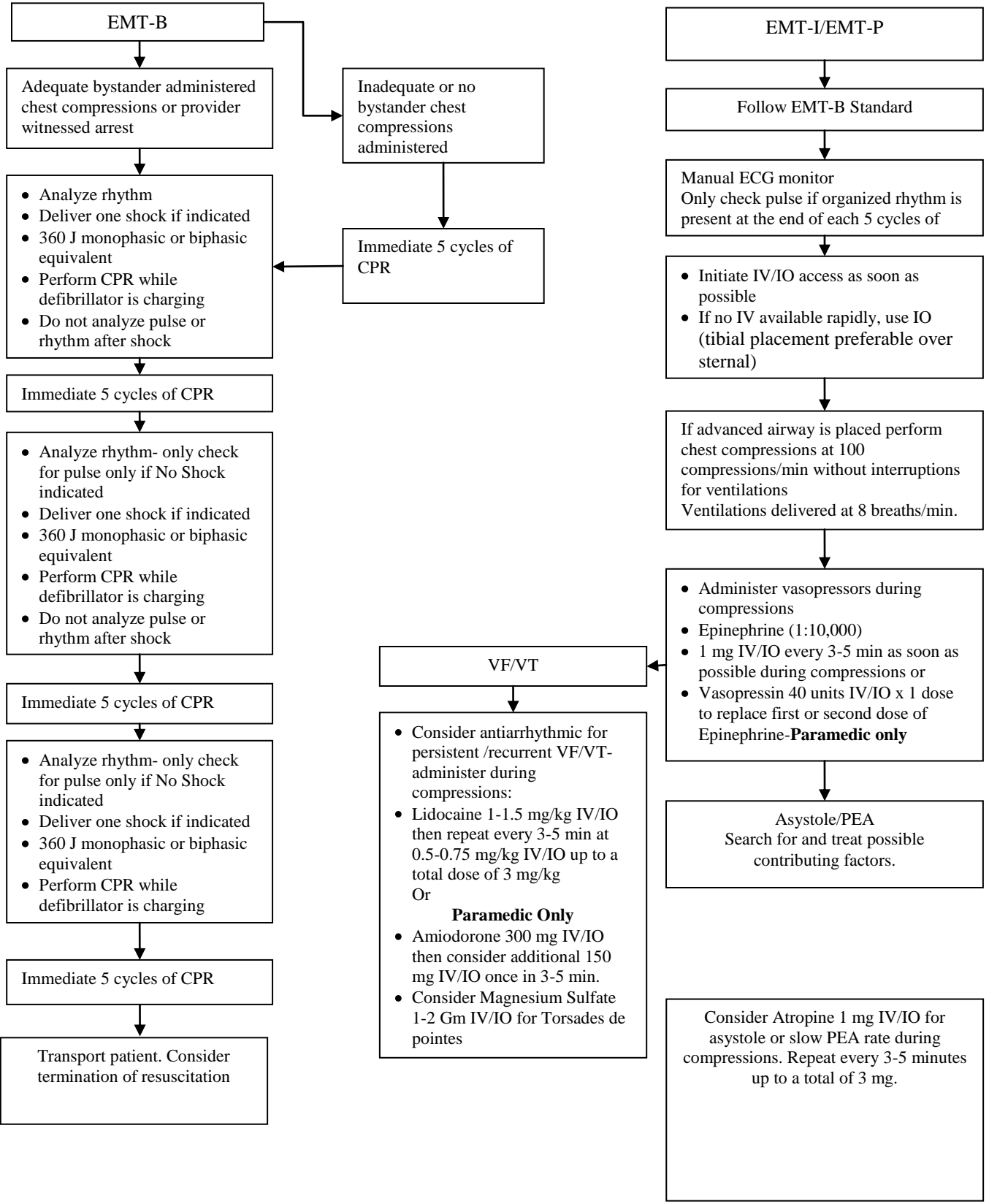




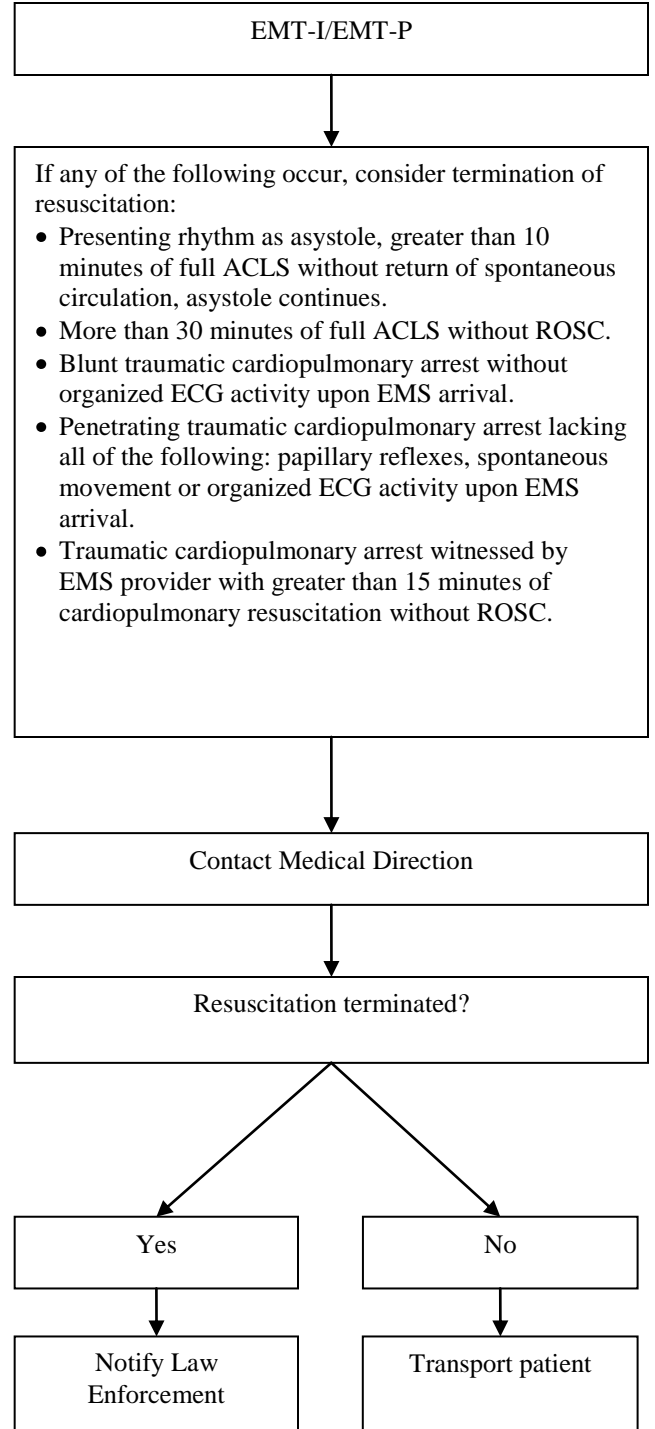
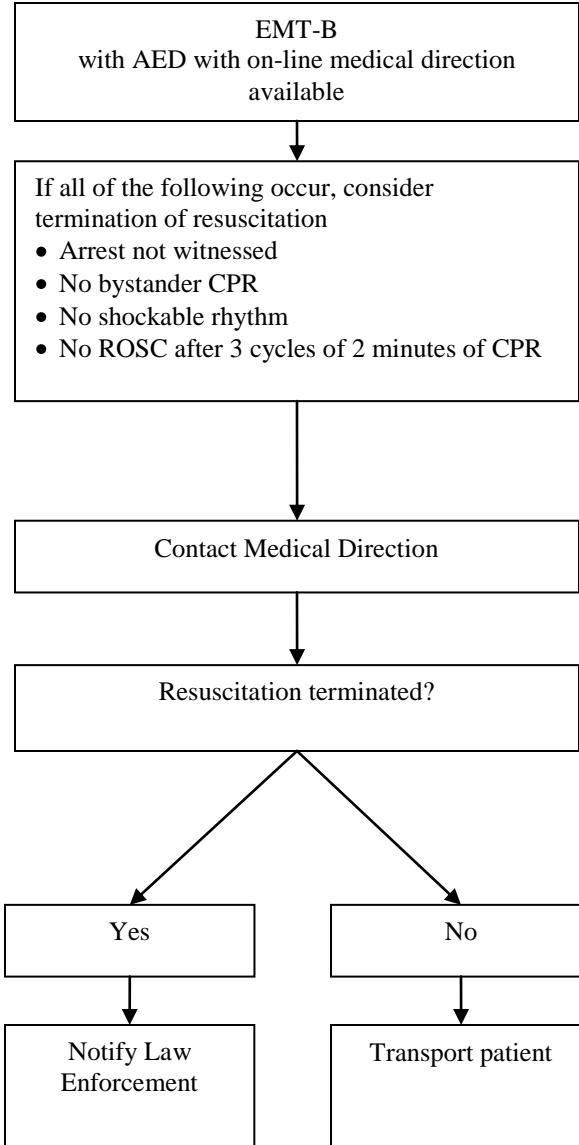
Adult Pulseless Arrest-Cardiocerebral Resuscitation



Adult Pulseless Arrest



Adult Termination of Resuscitation Efforts
 [Environmental Hypothermia not Present]

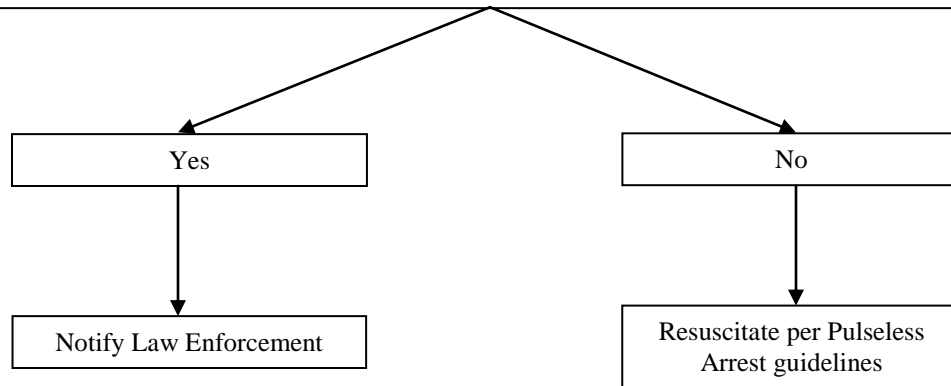


Adult Dead On-Scene

Assess patient for:

- Decapitation
- Decomposition
- Burned beyond recognition
- Rigor mortis and/or dependent lividity with apnea, pulseless, asystole in more than 1 lead or No Shock indicated on AED

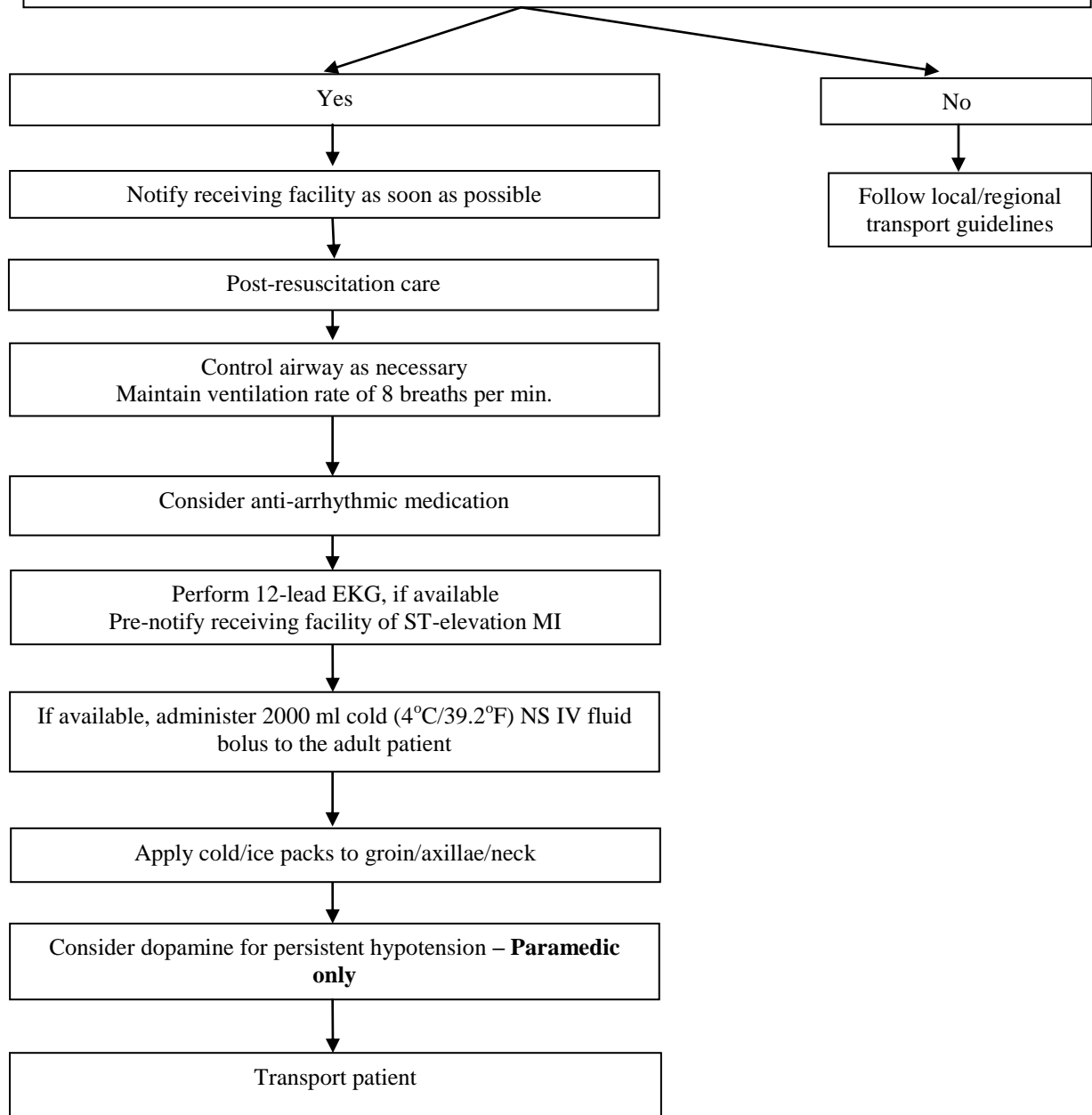
Are any of these indicated?



Adult Transport to Designated Cardiac Arrest Center/Cardiac Arrest Post-Resuscitation

Inclusion Criteria:

- Non-traumatic OHCA with return of palpable central pulses or other evidence of spontaneous circulation
- GCS less than 8 after ROSC
- Transport to CAC when feasible, resources available, and will add less than 15 minutes to transport time compared to transport to non-CAC
- Less than 30 minutes CPR prior to arrival of EMS
- Female patients not pregnant
- No uncontrolled hemorrhage
- No persistent unstable arrhythmia
- Patient does not appear to have severe environmental hypothermia related arrhythmia
- No DNR paperwork identified during resuscitation



Adult Respiratory Difficulty

Assess ABC's/VS/LOC
Oxygen 15 lpm via Non-rebreather Mask (NRM)

EMT-B

Support Airway Ventilation
Oxygenation

Maintain position of comfort

Transport per local protocol

EMT-I/EMT-P

Follow EMT-B Standard
with Capnography if available

Pulmonary Edema

- IV NS TKO SBP above 100 mmHg give 1 NTG 0.4 mg SL q 5 minutes x 3.
- Give Morphine Sulfate and/or diuretics per local protocol

If no improvement or patient deteriorates, contact medical direction.

Consider CPAP (EMT-P only), BVM or intubation if respiratory rate less than 8, SPO2 less than 80% with oxygen or pt has decreased LOC

Transport to closest appropriate facility

COPD/Asthma

- Albuterol 2.5 mg +Atrovent/NS unit dose SVN q 5 min PRN IV NS TKO
- Methylprednisolone 125 mg IV if no improvement after 1st SVN
- ASTHMA: Consider epinephrine (1:1000) 0.3 mg SQ if less than 30 y/o

Adult Unconscious/Unresponsive
[Non-Traumatic Adult ≥ 15 Y/O]

Assess ABC's, VS, LOC, Cardiac monitor, O2 Sat, FSBS
And Initiate immediate supportive care

EMT-B

O2 to keep Sat >90%

Call for ALS transport

EMT-I/EMT-P

O2 to keep Sat >90%

- Establish IV NS @ TKO rate
- Consider
- Naloxone per local protocol
- If FSBS < 60mg/dl = Consider
 - Dextrose
 - Glucagon
 - Thiamine

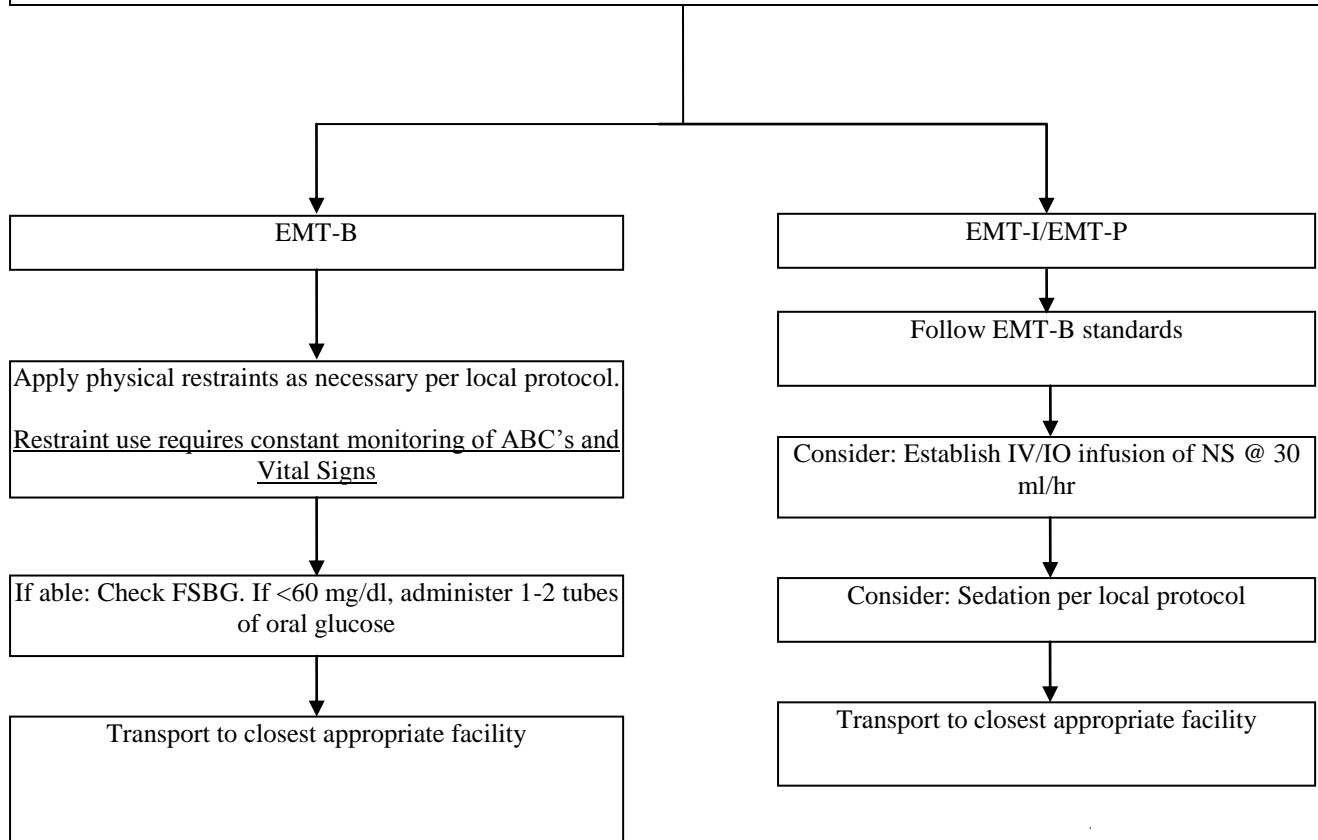
If patient condition improves may
transport to closest appropriate facility

- Consider intubation if:
- Patient condition does not improve
 - Respiratory rate <8 or
 - Patient unable to protect airway

If patients condition
deteriorates, contact medical
direction per local protocol

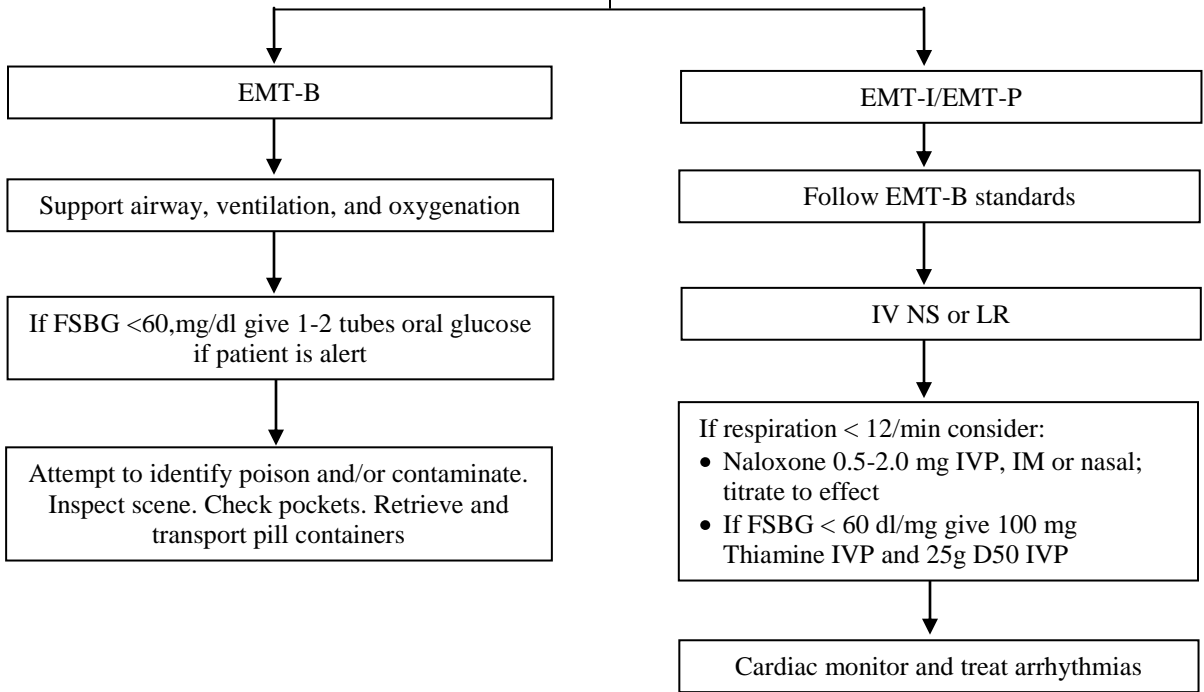
Adult Behavioral Emergency – Violent or Combative Patient

If patient is an immediate threat to the crew or bystanders, step away from scene and call for police assistance.
If able, assess ABC's, VS, LOC

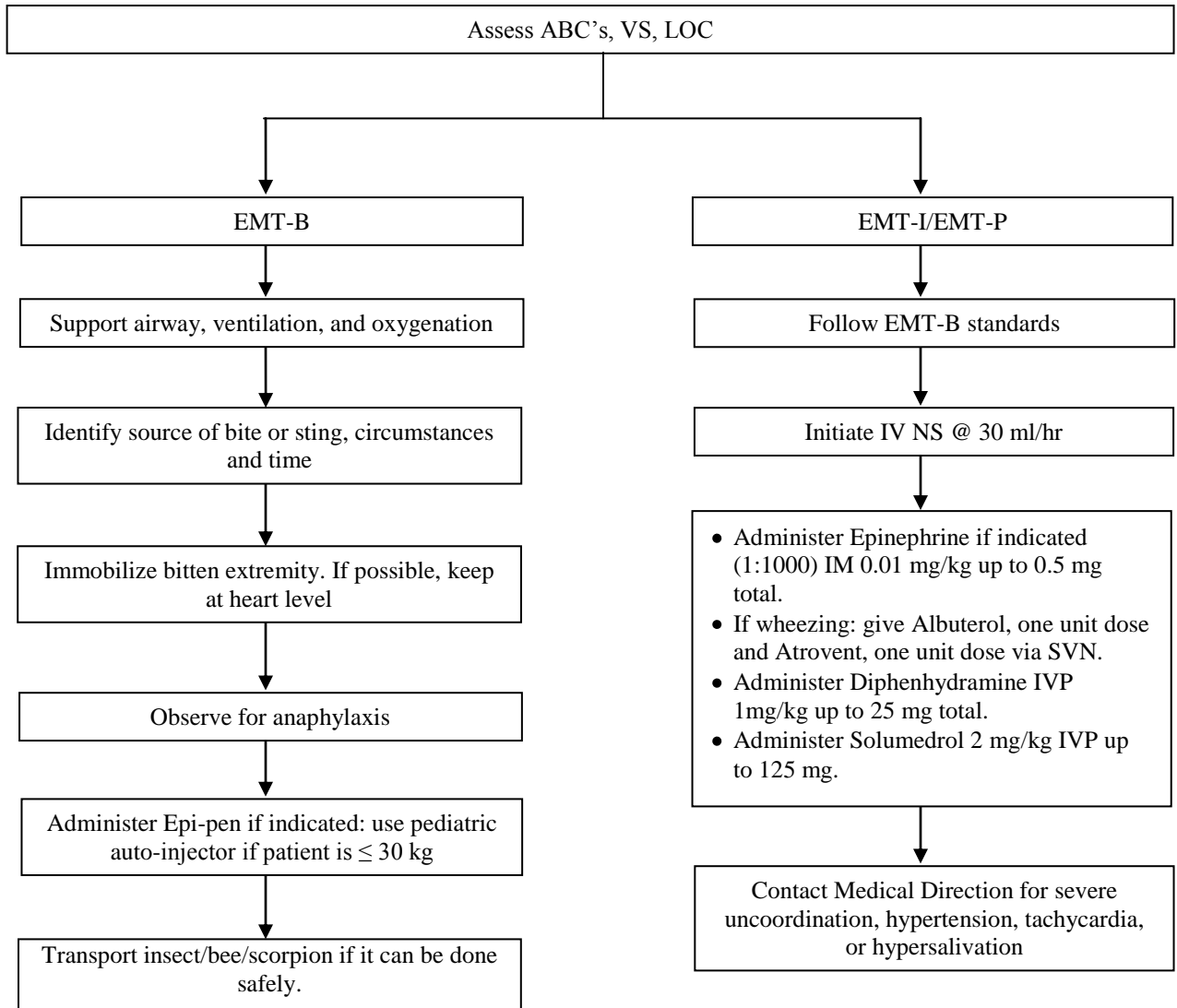


Poison Ingestion/Inhalation

Protect medical personnel PRN
Assess ABC's, VS, LOC

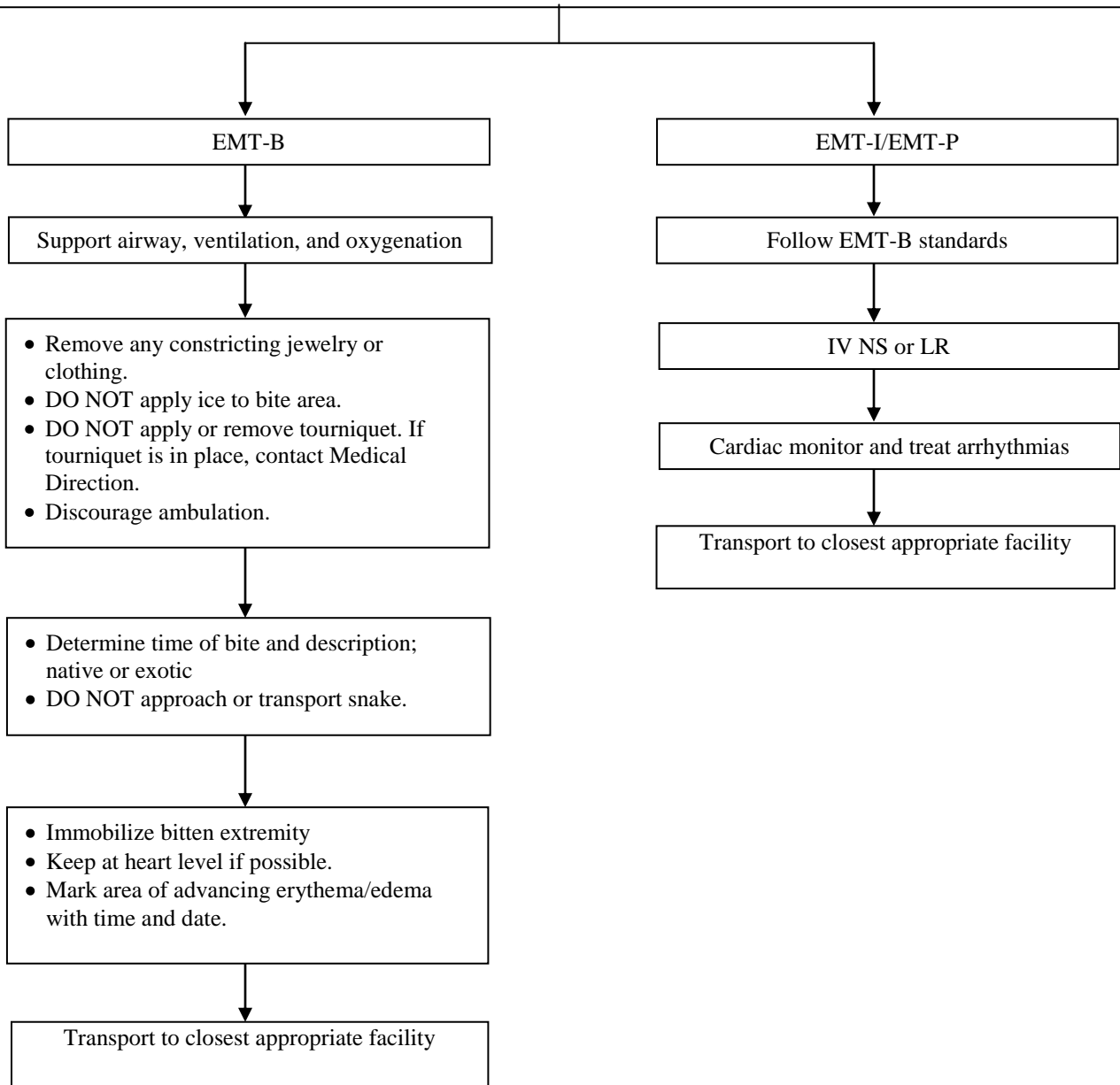


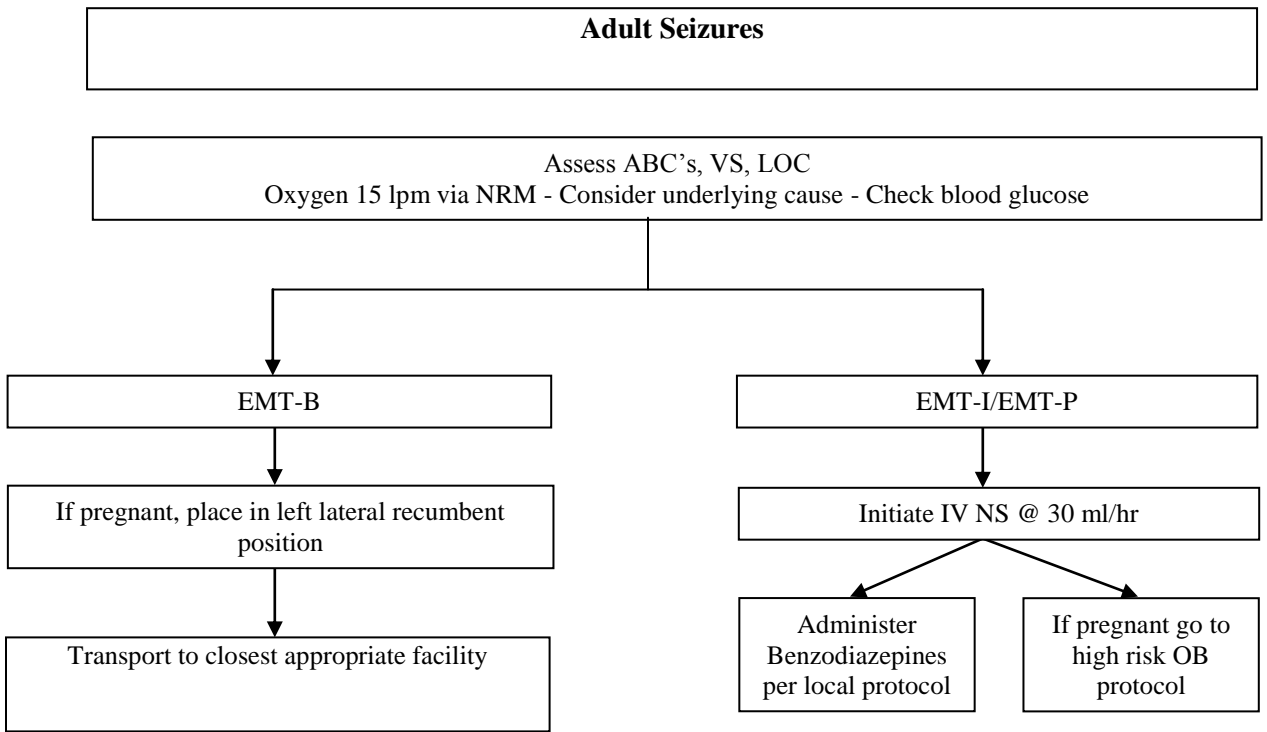
Adult Poison - Bites and Stings

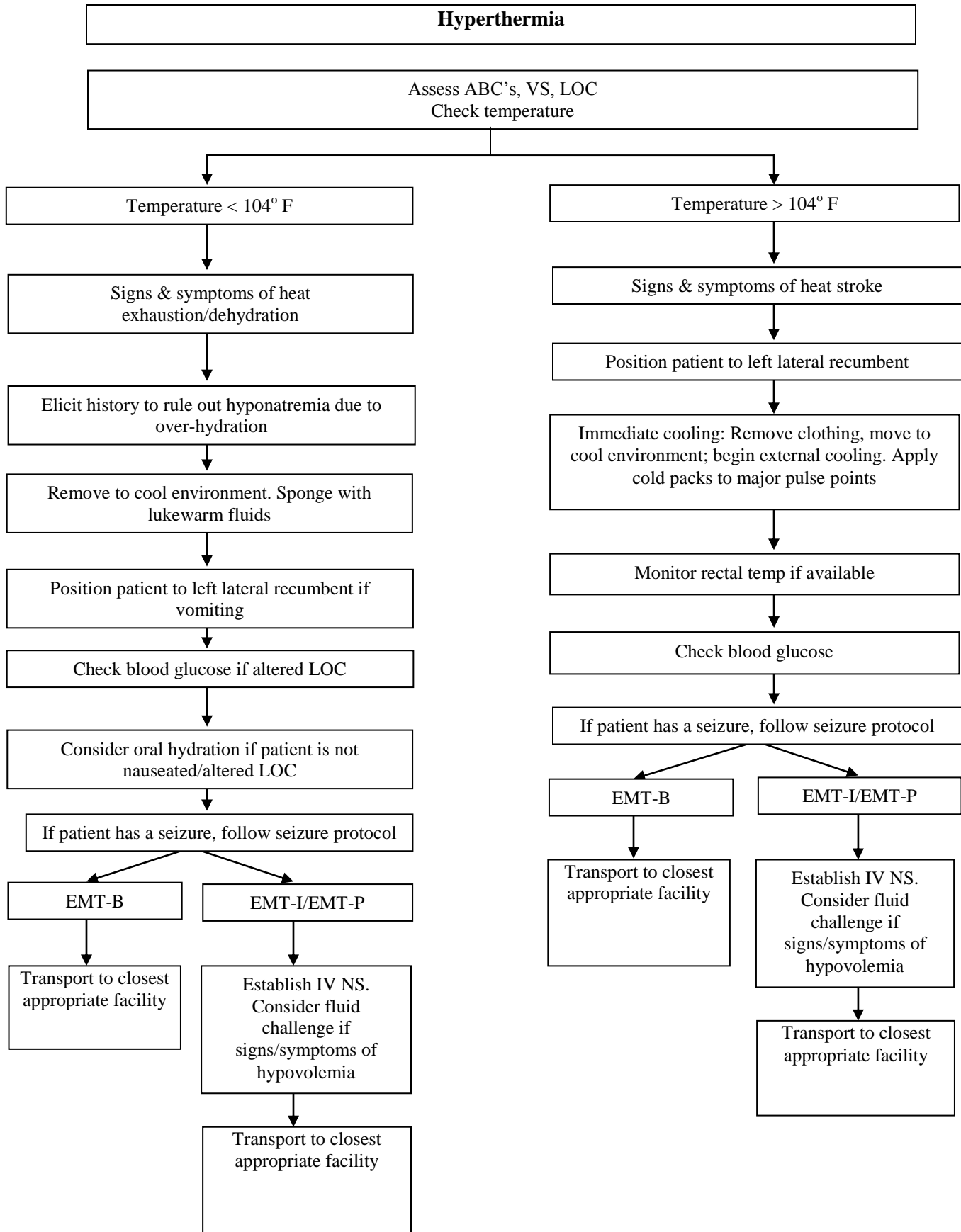


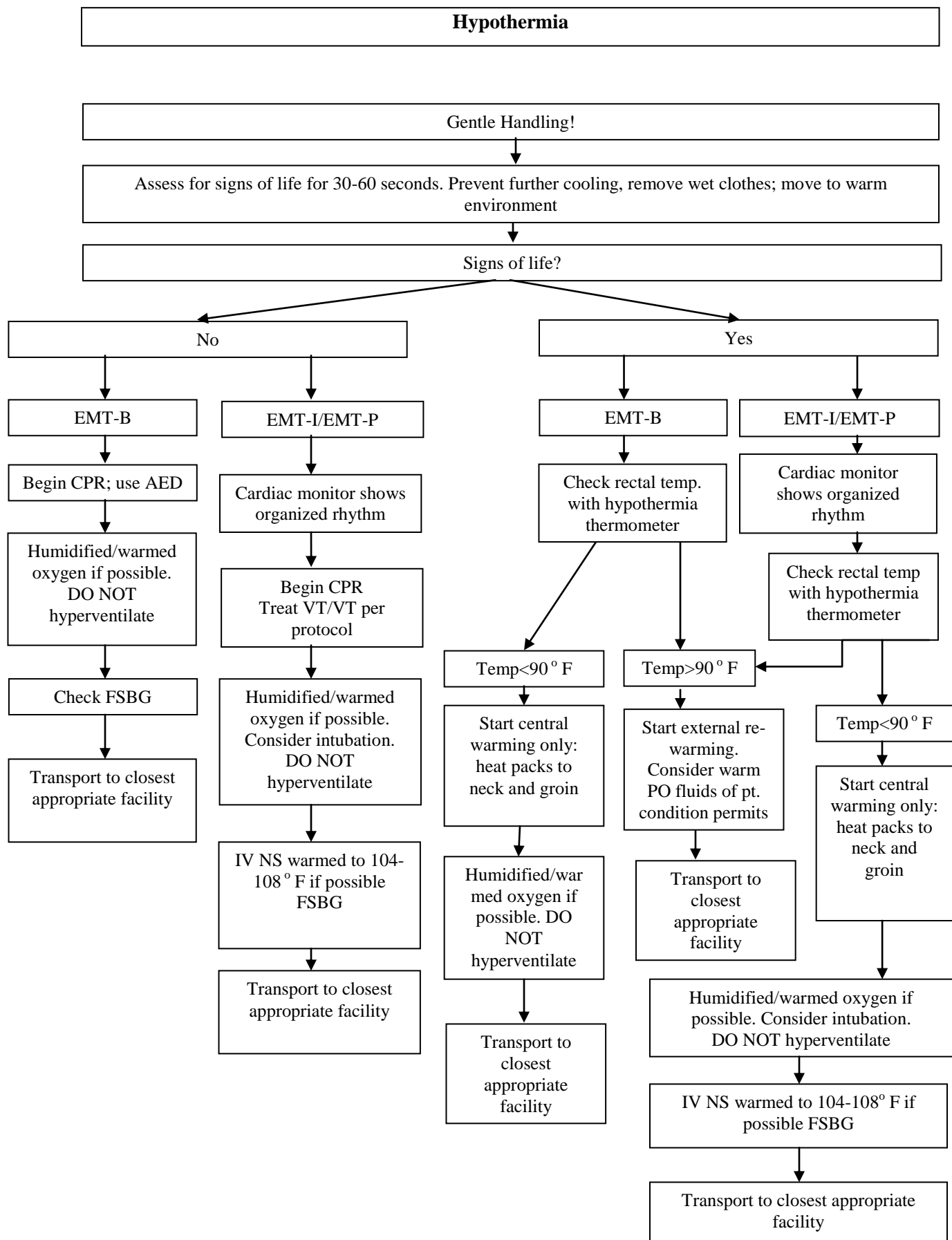
Poison – Snakebite

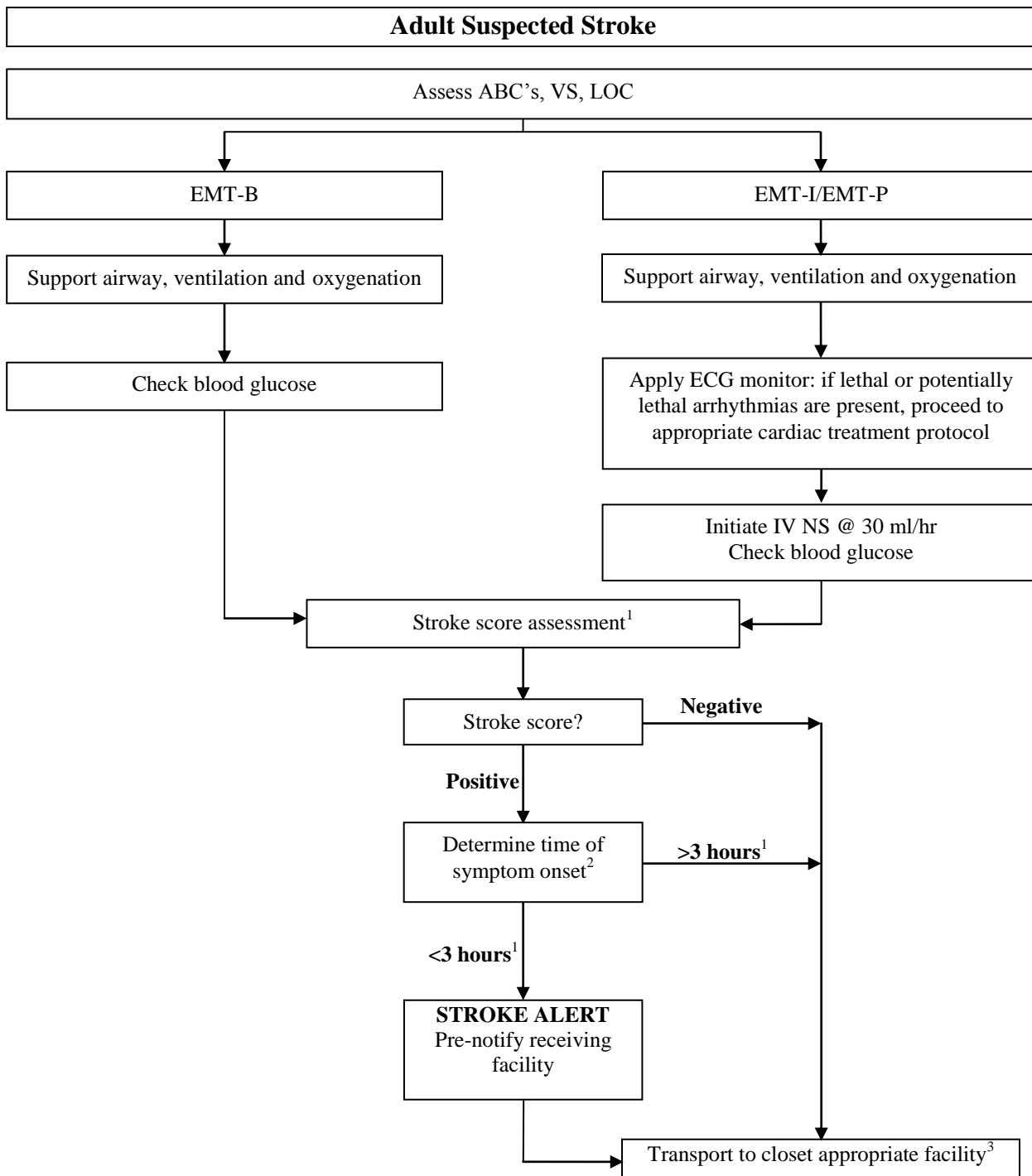
Protect medical personnel PRN
Assess ABC's, VS, LOC







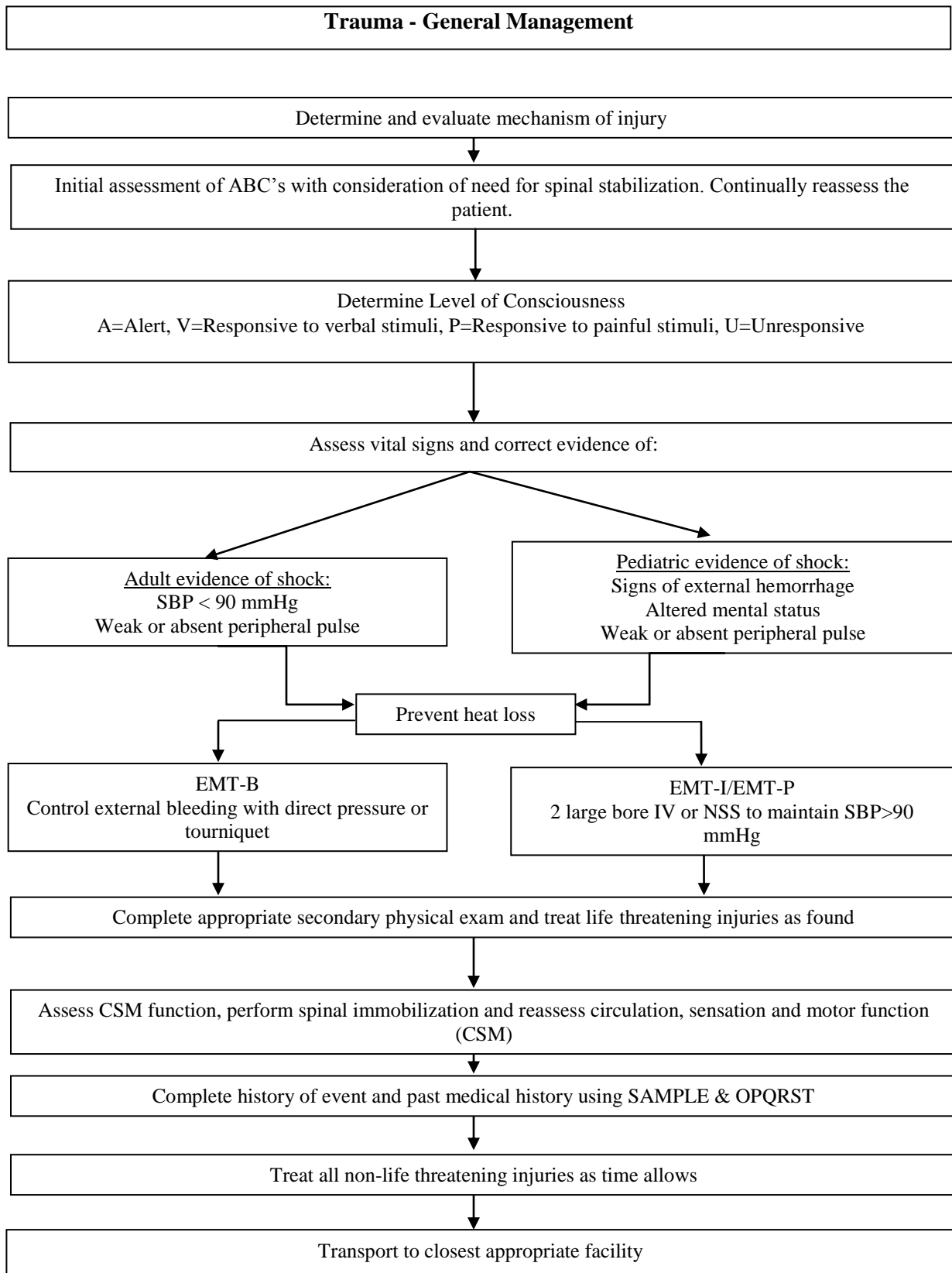




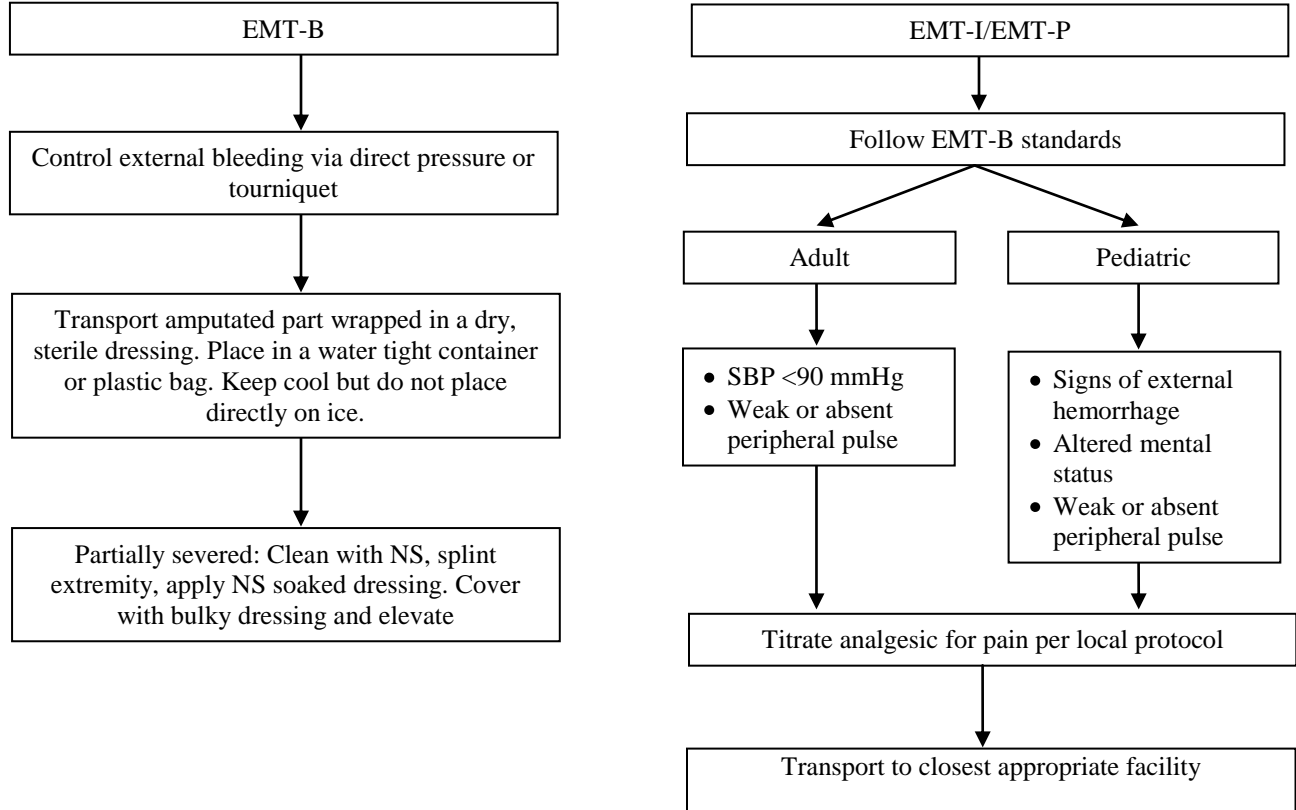
¹method determined by regional medical guidelines

²last normal if time of onset unknown

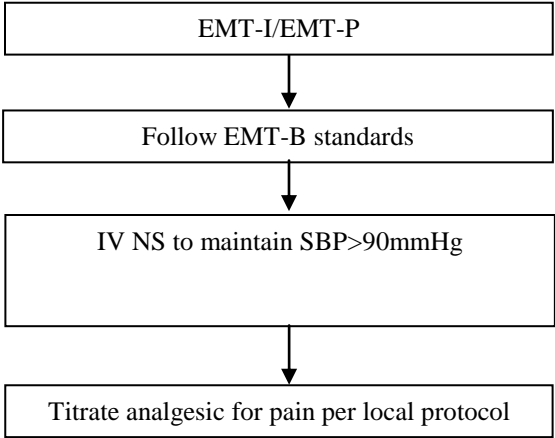
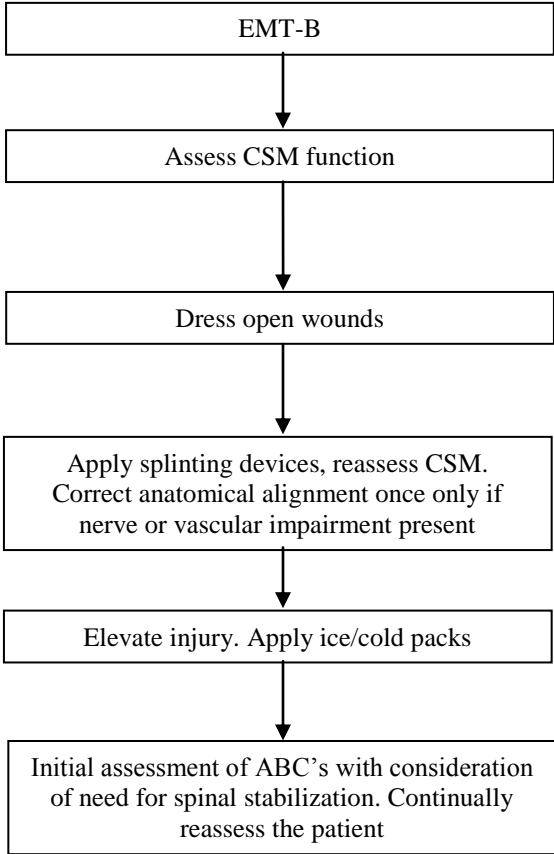
³as determined by local medical direction

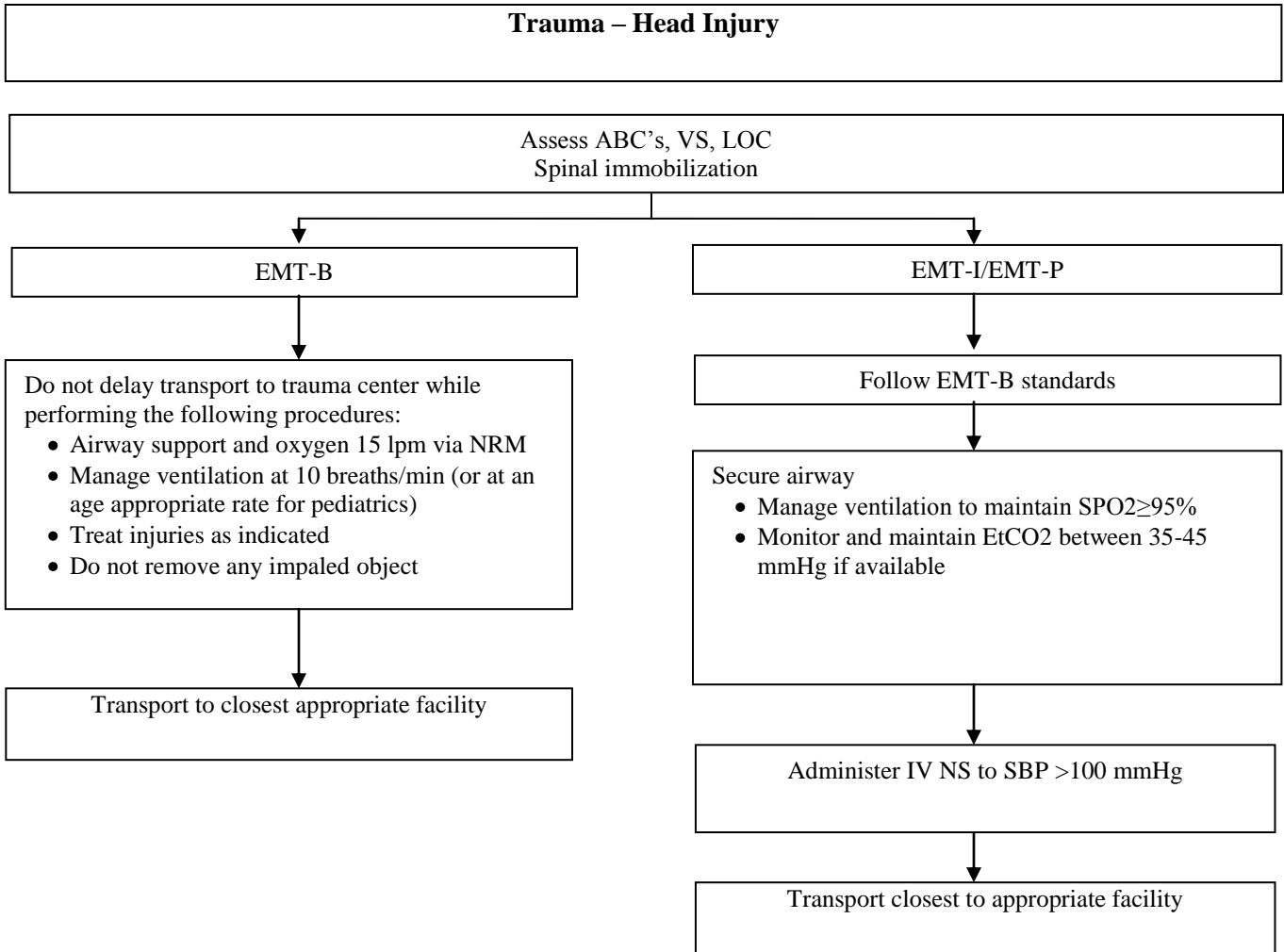


Trauma - Amputated Parts



Trauma - Extremity Fractures, Dislocation and Sprains





Spinal Immobilization Protocol

I. PURPOSE

To provide a field decision scheme for determining the need for spinal immobilization of injured patients.

II. PROCEDURE

Conduct a neurovascular assessment. Follow the outline below to determine the need for immobilization.

BLUNT TRAUMA		PENETRATING TRAUMA TO HEAD, NECK OR TORSO	
<p><u>IMMOBILIZE</u></p> <p><i>if any of the following criteria are present:</i></p> <ul style="list-style-type: none"> • Spinal pain or tenderness • Neurological deficit or complaint • Anatomic deformity of spine • Concerning mechanism of injury * • Presence of alcohol/drugs • Distracting injury ** 	<p><u>CONSIDER NOT IMMOBILIZING</u></p> <p><i>Patient must meet the following criteria:</i></p> <ul style="list-style-type: none"> • No spine pain or tenderness • No neurological deficit or complaint • No anatomic deformity of spine • No concerning mechanism of injury * • Absence of evident impairment from alcohol/drugs • No obvious distracting injury ** 	<p><u>IMMOBILIZE</u></p> <p><i>if any of the following criteria are present:</i></p> <ul style="list-style-type: none"> • Neurological deficit or complaint 	<p><u>CONSIDER NOT IMMOBILIZING</u></p> <ul style="list-style-type: none"> • No neurological deficit or complaint

III. SPECIAL CONSIDERATIONS

*Any mechanism that produces a violent impact to the head, neck, torso, or pelvis (e.g., assault, entrapment in structural collapse, etc.), or incidents producing sudden acceleration, deceleration, or lateral bending forces to the neck or torso.

** Any injury that may have the potential to impair the patient’s ability to appreciate other injuries.

In the event that initiation of standard spinal immobilization is judged impractical or likely to cause more potential harm than benefit, use modified immobilization technique and contact medical direction as needed.

If decisional capacity is confirmed, defer immobilization and proceed with standard care. If patient lacks decisional capacity consult with medical direction. In patients refusing immobilization in whom decisional capacity is questionable, perform and document a cognitive screen.

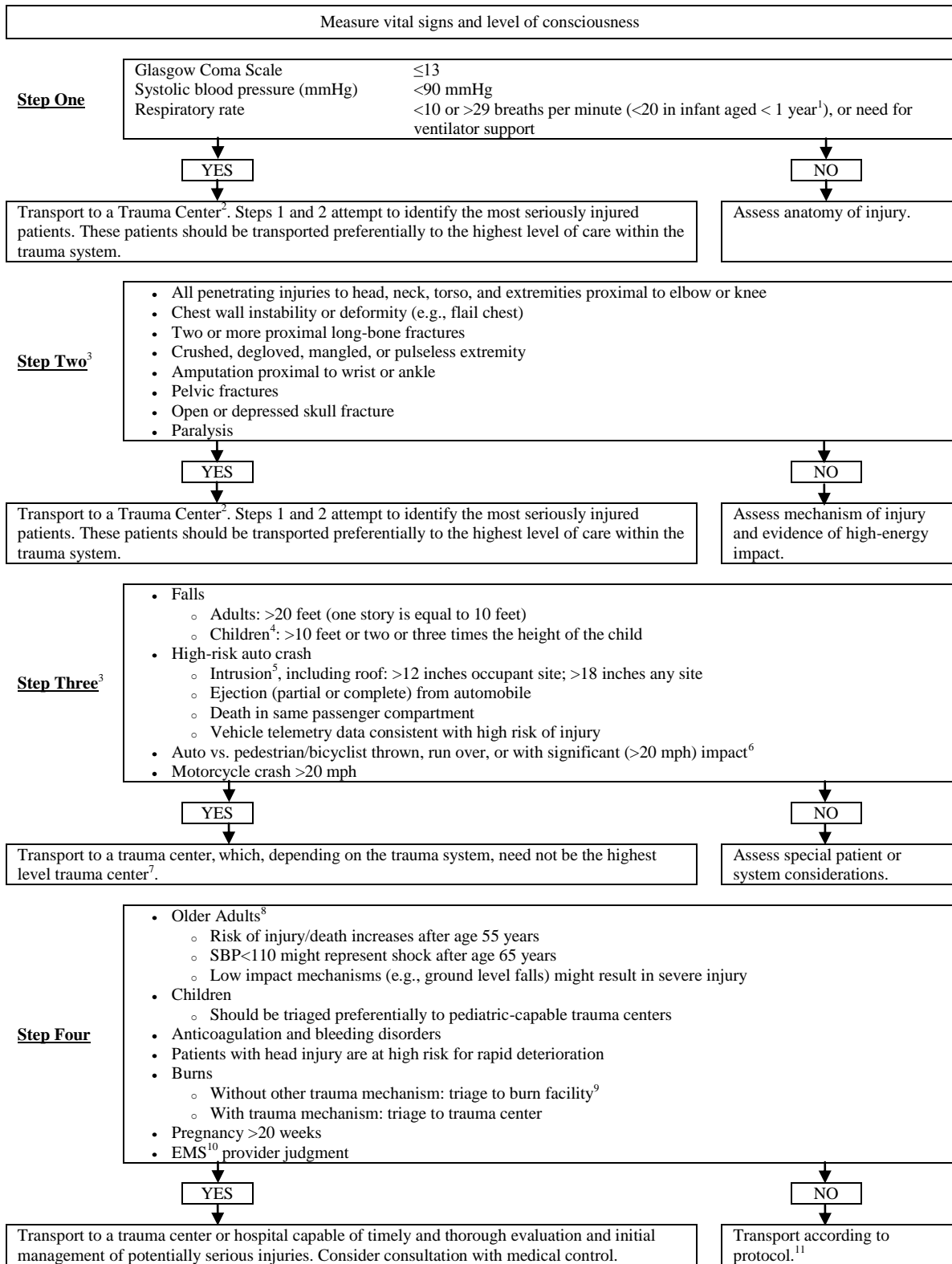
“USE CLINICAL JUDGEMENT. IF IN DOUBT, IMMOBILIZE”

Added to TTTG: 6/2012

Arizona Guidelines for Field Triage of Injured Patients

(Regional modifications are permissible)

FIELD TRIAGE DECISION SCHEME



WHEN IN DOUBT, TRANSPORT TO A TRAUMA CENTER

FIELD TRIAGE SCHEME FOOTNOTES

¹ The upper limit of respiratory rate in infants is >29 breaths per minute to maintain a higher level of over-triage for infants.
² Trauma centers are designated Level I-IV. A Level I center has the greatest amount of resources and personnel for care of the injured patient and provides regional leadership in education, research, and prevention programs. A Level II facility offers similar resources to a Level I facility, possible differing only in continuous availability of certain subspecialties or sufficient prevention, education, and research activities for Level I designation; Level II facilities are not required to be resident or fellow education centers. A Level III center is capable of assessment, resuscitation, and emergency surgery, with severely injured patients being transferred to a Level I or II facility. A Level IV trauma center is capable of providing 24-hour physician coverage, resuscitation, and stabilization to injured patients before transfer to a facility that provides a higher level of trauma care.
³ Any injury noted in Step Two or Step Three triggers a "YES" response.
⁴ Age <15 years.
⁵ Intrusion refers to interior compartment intrusion, as opposed to deformation which refers to exterior damage.
⁶ Includes pedestrians or bicyclists thrown or run over by a motor vehicle or those with estimated impact >20 mph with a motor vehicle.
⁷ Local or regional protocols should be used to determine the most appropriate level of trauma center; appropriate center need not be Level I.
⁸ Age >55 years.
⁹ Patients with both burns and concomitant trauma for whom the burn injury poses the greatest risk for morbidity and mortality should be transferred to a burn center. If the non-burn trauma presents a greater immediate risk, the patient may be stabilized in a trauma center and then transferred to a burn center.
¹⁰ Emergency medical services.
¹¹ Patients who do not meet any of the triage criteria in Steps One through Four should be transported to the most appropriate medical facility as outlined in local EMS protocols.

Revised: 6/2012

Arizona Ground and Air Ambulance Mode of Transport Guidelines

The decision for mode of transport for both field and inter-facility patients is based on the premise that the time to definitive care and quality of care are critical to achieving optimal outcomes. Factors of distance, injury/illness, road conditions, weather, and traffic patterns should be considered when choosing between air or ground transport. The skill level of the transport team(s) involved should also be considered.

Local and regional analysis of mode of transport decisions should be part of the normal, on-going quality improvement process. Mode of transport discussion should be incorporated into on-going pre-hospital and hospital educational opportunities. Although the examples provided below are not intended to cover all potential circumstances, consider the following assumptions:

- Air ambulance transport may be quicker.
- There are no weather or road issues that would make air transport preferable to ground transport or ground transport preferable to air transport.
- Patients in cardiac arrest and receiving CPR should never be transported by air ambulance.

Transports from one hospital to another for a higher level of care typically fall into one of two broad types: Those in which a quicker form of transport may make a difference in treatment/outcome; and, those in which a quicker form of transport may not make a difference in treatment/outcome. As a general rule, the potential benefit to the patient should outweigh the risk associated with Air Ambulance transport.

MODE OF TRANSPORT EXAMPLES (examples not intended to cover all potential circumstances)	
Quicker Form of Transport <u>May</u> Make a Difference in Outcome	Quicker Form of Transport May <u>Not</u> Make a Difference in Outcome
Patient with a suspected aortic injury as seen on chest X-ray or CT scan.	Patient with 2 broken ribs, no pneumothorax and who is breathing fine.
Patient with an open book pelvic fracture.	Patient with a minor pelvic fracture and hemodynamically stable.
Patient with stab wound to the abdomen near the upper right quadrant.	Patient with gun-shot wound to the thigh with excellent pulses, no expanding thigh, and no significant on-going blood loss.
Patient with a gunshot wound to the thigh with decreased pulses.	Stab wound to the arm with decreased sensation but normal pulses, no “tightness”, and no significant on-going blood loss.
Patient with Glasgow Coma Scale (GCS) less than 12 and the GCS is decreasing.	Patient with a concussion and normal CT scan of the brain; or if no CT, then a GCS of 15.
Patient with a time-sensitive illness (such as STEMI, stroke, sepsis, burn victims, etc.) that would benefit from proven intervention or treatment that is only available at the specific receiving institution.	Patients with medical conditions that are not eligible for or will not receive time sensitive interventions.
Geriatric, pediatric or peri-natal patients with unexplained and worsening illness.	Special populations whose vital signs are stable and indications for acute changes are unlikely.

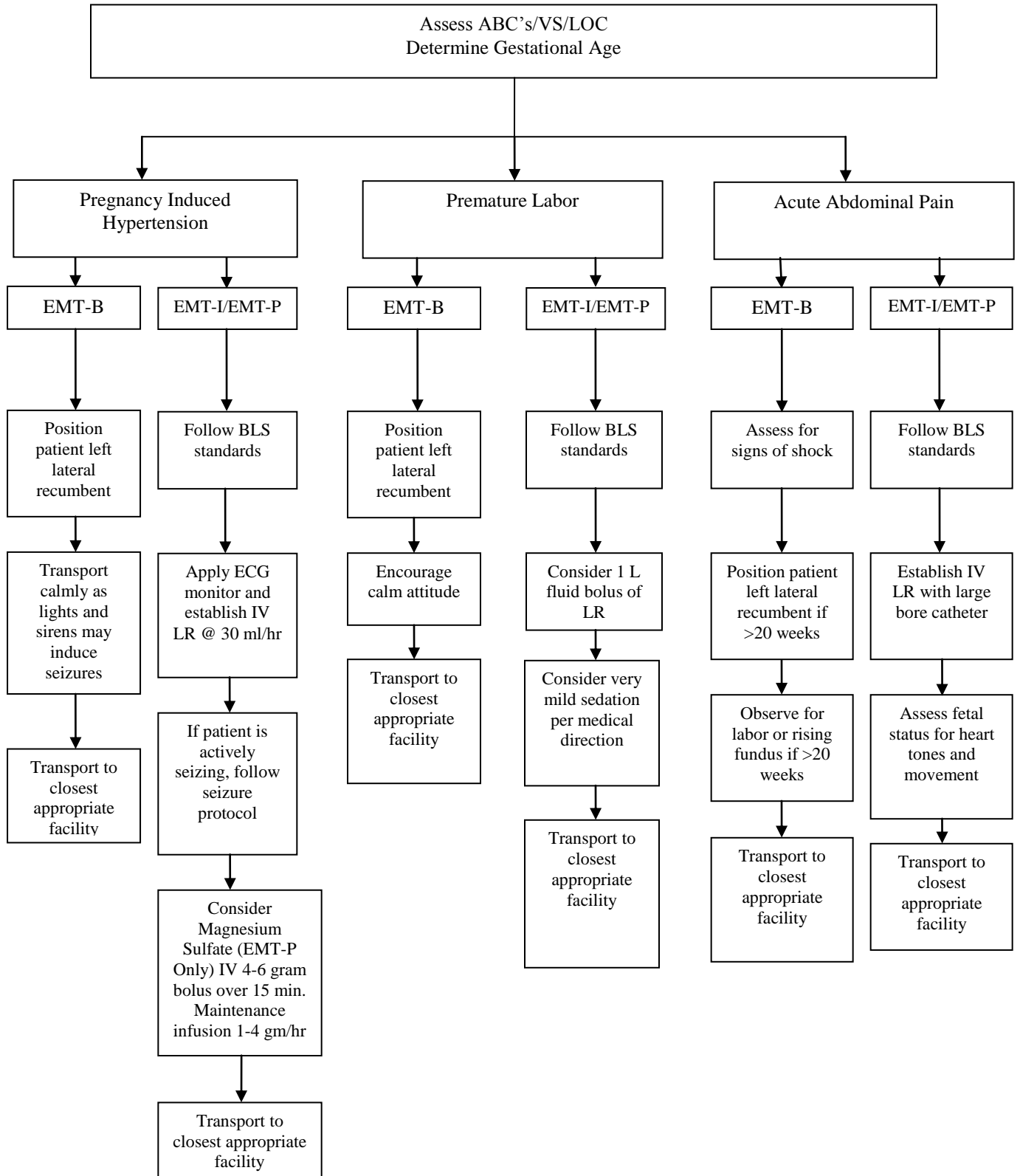
When considering air transport, the amount of time saved should be significant enough to allow a potentially beneficial intervention to take place at the receiving facility. Time considerations should take into account arranging for air transport, patient packaging, transport to the aircraft and transport for the patient from the helipad or airport to the receiving facility. The referring physician should collaborate with the receiving physician (this is not limited to transfers initiated in the ED), and transport service providers to determine the appropriate mode of transport based on the patient’s condition, best practices, and the above mentioned factors.

References:

American College of Emergency Physicians. 2011. Appropriate utilization of air medical transport in the out-of-hospital setting (<http://www.acep.org/Content.aspx?id=29116>)

National Association of EMS Physicians. Guidelines for air medical dispatch. Prehospital emergency care. April/June 2003. Volume 7, number 2 (<http://www.naemsp.org/pdf/AirMedicalDispatch.pdf>)

Adult High Risk OB (HROB)



Pediatric Shortness of Breath

ABCDE Assessment

EMT-B

- Establish airway support
- Maintain position of comfort
- High flow oxygen
- Assist ventilation as needed

- Assess ventilation
- BVM for inadequate ventilation/altered MS
 - Concern for obstruction follow pre-hospital guidelines for airway

Transport to closest appropriate facility

EMT-I/EMT-P

Follow BLS Standards

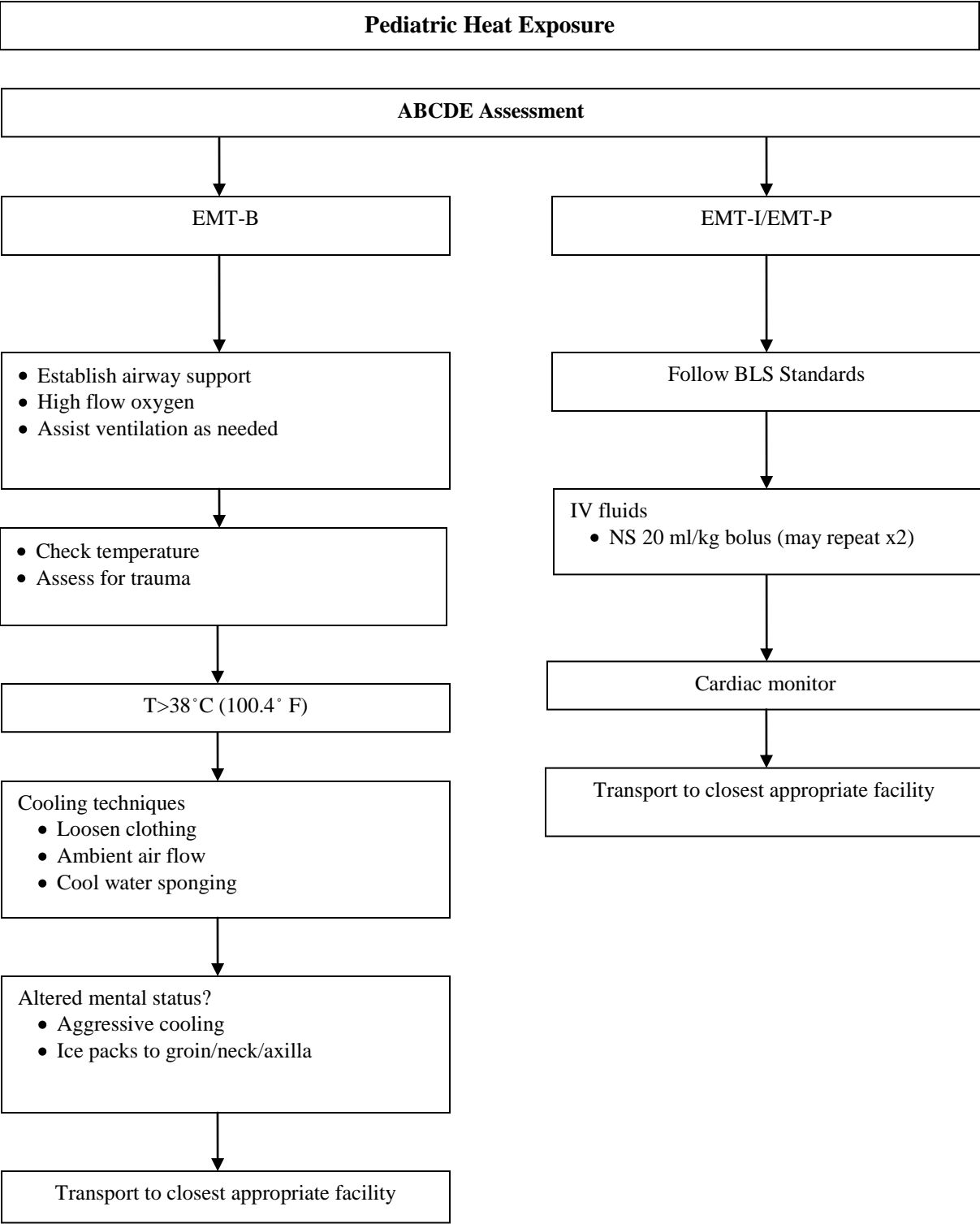
- Assess for causation
- Asthma
 - Pulmonary edema
 - Obstruction
 - Anaphylaxis

- Consider
- Albuterol (0.15 mg/kg nebulized) may repeat x2
 - Atrovent (Ipratropium bromide 0.02%) (2.5 cc SVN)
 - Epinephrine (0.01 mg/kg IM)

- IV Fluids
- NS 20 ml/kg bolus: may repeat x2 (hypotension= $SBP < 70 + 2x$ age in years)

Cardiac monitor

Transport to closest appropriate facility



Pediatric *Anaphylaxis/Allergic Reaction**

ABCDE Assessment

EMT-B

Anaphylaxis
(respiratory distress or shock)

- Maintain airway
- High flow oxygenation
- Assist ventilation as necessary
- Check glucose (treat if <40 mg/dl)

- Assist patient with or administer Epi-pen if available
- Assist patient with Albuterol inhaler if available

Transport to closest appropriate facility

EMT-I/EMT-P

Allergic reaction
(no respiratory distress)

Follow BLS standards

- Consider:
- Diphenhydramine 1mg/kg IV/IM up to 25 mg
 - Methylprednisolone 2 mg/kg IV
 - Albuterol SVN prn
 - Epinephrine 0.01 mg/kg up to 0.3 mg (0.01-0.03 ml/kg) of 1:1000

Transport to closest appropriate facility

Anaphylaxis
(respiratory distress or shock)

Follow BLS standards

Apply monitor

Epinephrine SC or IM 1:1000
0.01 mg/kg up to 0.3 mg
(0.01-0.03 ml/kg)

Establish IV/IO of NS

For hypotension,
Epinephrine IV/IO infusion:
0.1 mcg - 1.0 mcg/kg/min

If signs & symptoms of hypoperfusion fluid bolus of 20 ml/kg. May repeat PRN.

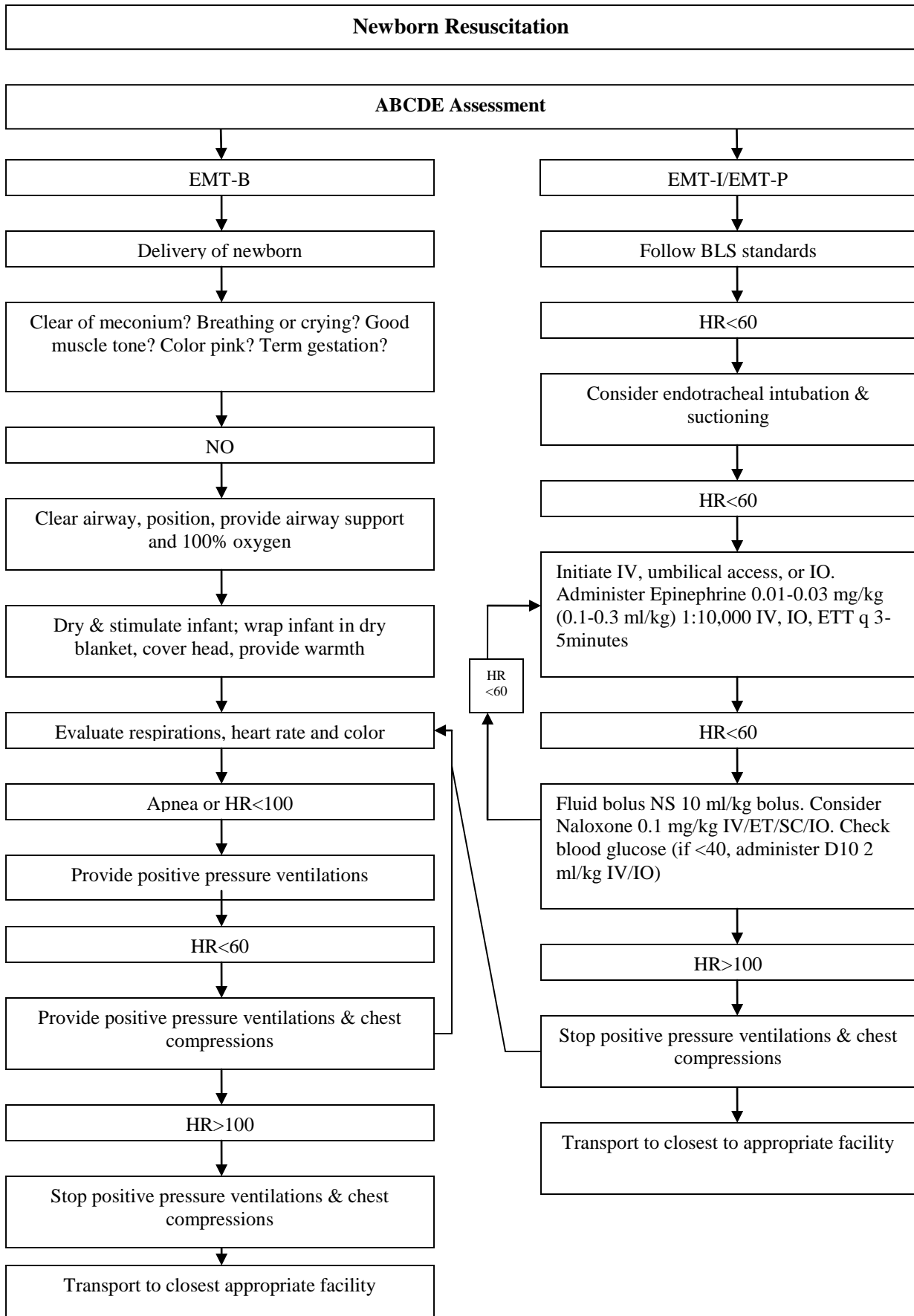
- BVN if respiratory failure or apnea
- SVN Albuterol 2.5 mg/3 ml NS via mask/mouth-piece/in-line if wheezing
- May repeat PRN

Diphenhydramine 1mg/kg IV/IM (max. 25 mg)

Consider Methylprednisolone 2 mg/kg IV

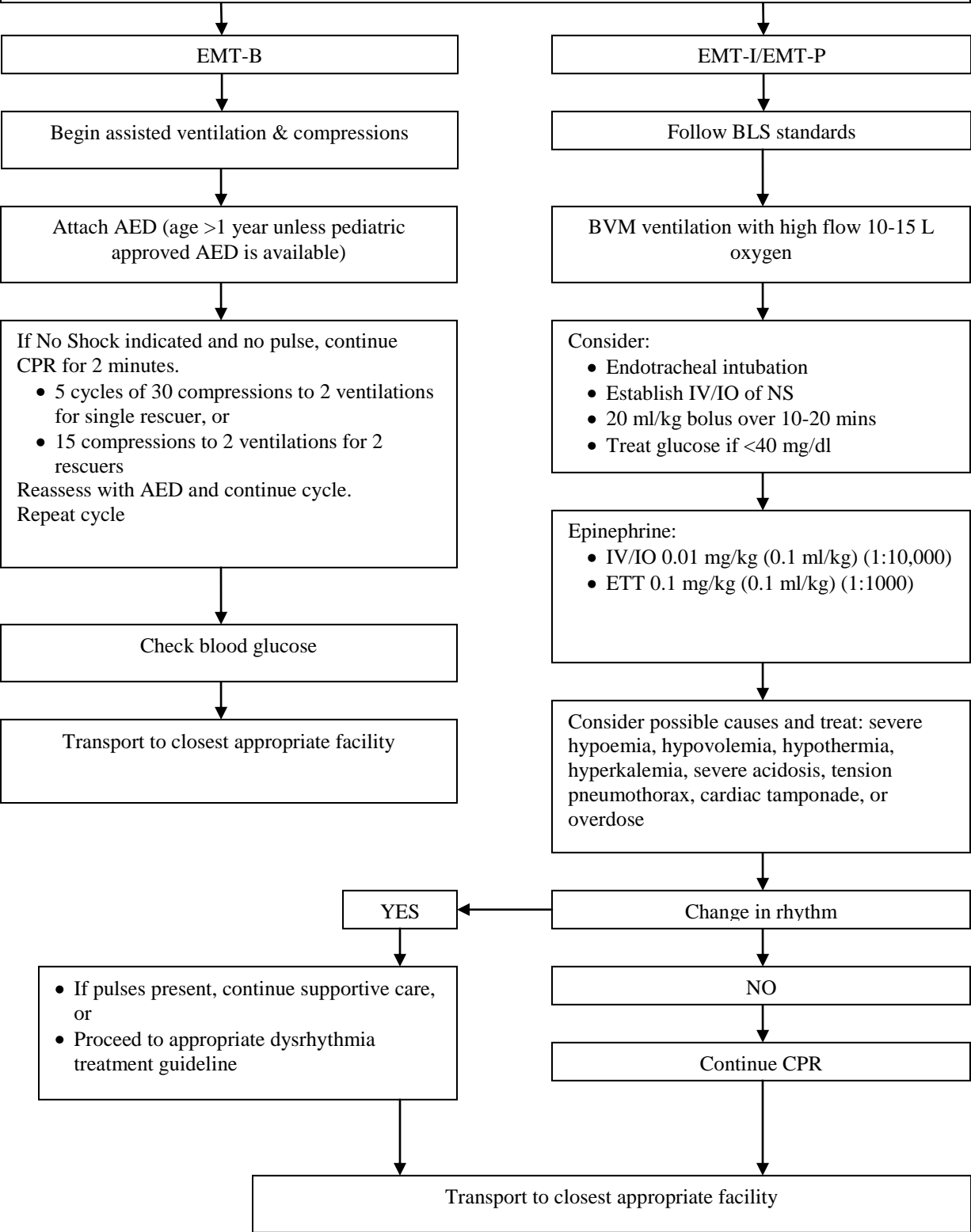
Transport to closest appropriate facility

*Anaphylaxis: stridor, bronchospasm, severe abdominal pain, respiratory distress, shock, edema of the lips/face/tongue
**Allergic reaction: itching, urticaria, nausea



Pediatric Pulseless Electrical Activity (PEA)/Asystole

ABCDE Assessment



Pediatric Bradycardia, Unstable

ABCDE Assessment

EMT-B

- Support ABCs/Oxygenate
- High flow oxygen
- Support ventilations with BVM if necessary
- Consider hypoxia a primary cause of bradycardia in pediatrics

Chest compression if after oxygenation & ventilation HR < 60/min in infant or child with poor systemic perfusion

Transport to closest appropriate facility

EMT-I/EMT-P

Follow BLS standards

Establish IV/IO of NS

Epinephrine:
IV/IO - 0.01 mg/kg (1:10,000)
ETT - 0.1 mg/kg (1:1000)
Repeat same dose q 3-5 min PRN

Consider Atropine 0.02 mg/kg IV/IO (min dose 0.1 mg all ages)
Max single dose:
Child - 0.5 mg
Adolescent 1 mg
May repeat once in 5 minutes

Administer fluid bolus of 10-20 ml/kg of NS

Determine blood glucose. Administer Dextrose per pediatric Altered Mental Status guideline

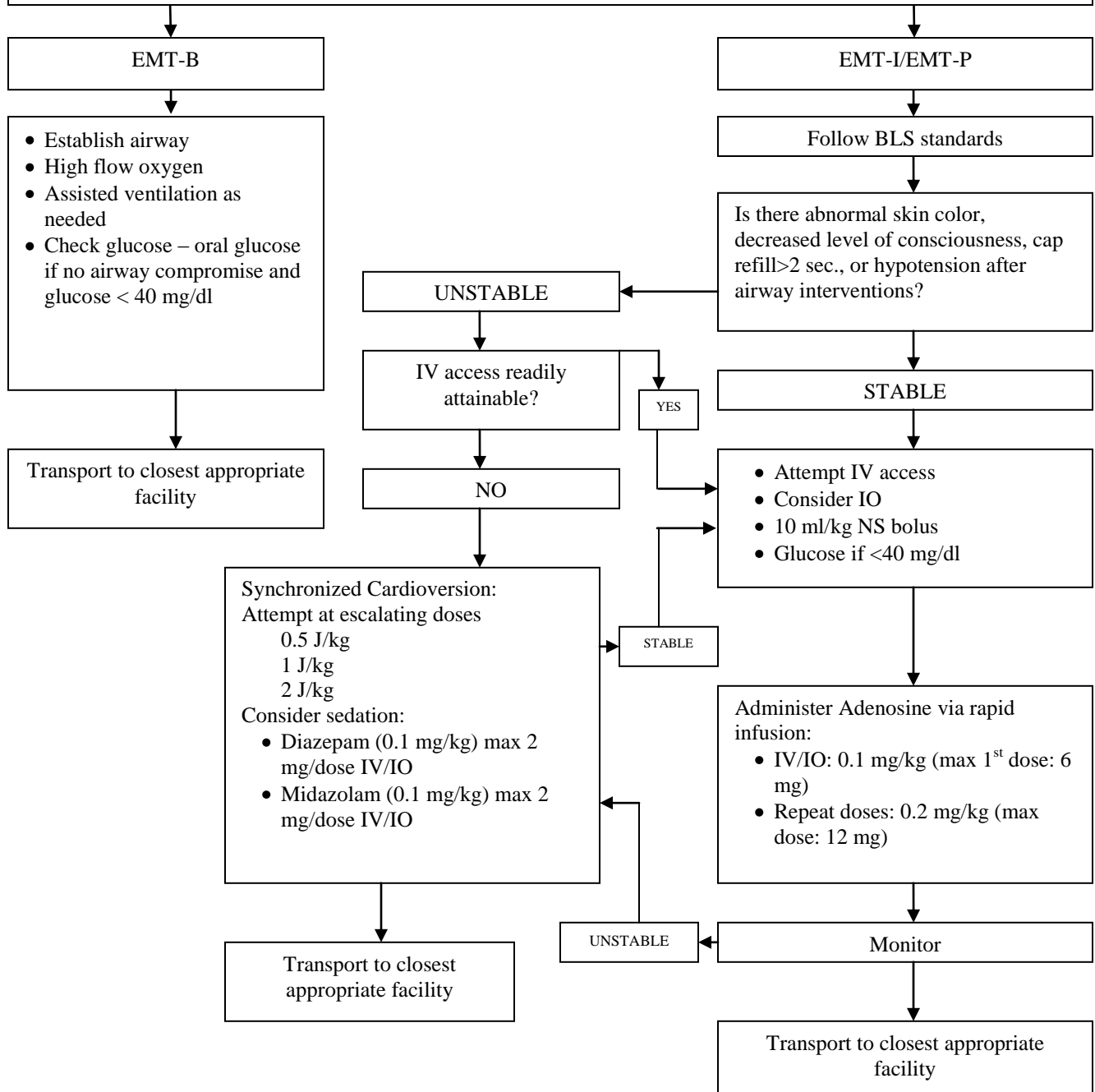
Consider external pacing. Start at 200 milliamps for a HR of 100 & rapidly adjust downward to slightly above the minimal level that produces capture.

Consider administration of Epinephrine IV continuous infusion at a rate of 0.1 – 1 mcg/kg/min

Transport to closest appropriate facility

Pediatric Supraventricular Tachycardia

ABCDE Assessment



*Monitor rate in children < 2 years is >220 BPM
Biphasic energy settings may be different*

Pediatric Ventricular Fibrillation/Pulseless Ventricular Tachycardia

ABCDE Assessment

EMT-B

- Establish airway
- High flow oxygen
- Assisted ventilation as needed
- Start age-appropriate CPR
- Apply AED (age >1). Shock if advised
- Resume CPR immediately after shock for 2 minutes, then reassess. If No Shock advised, continue CPR and go to PEA/Asystole algorithm
- Check glucose – treat if < 40 mg/dl per hypoglycemia protocol

Transport to closest appropriate facility

EMT-I/EMT-P

Follow BLS standards

Perform complete sets of CPR

- 5 cycles of 30 compressions to 2 ventilations for single rescuer, or
- 15 compressions to 2 ventilations for 2 rescuers

Defibrillate once between each set of escalating doses:

- 2 J/kg
- 4 J/kg
- 4 J/kg

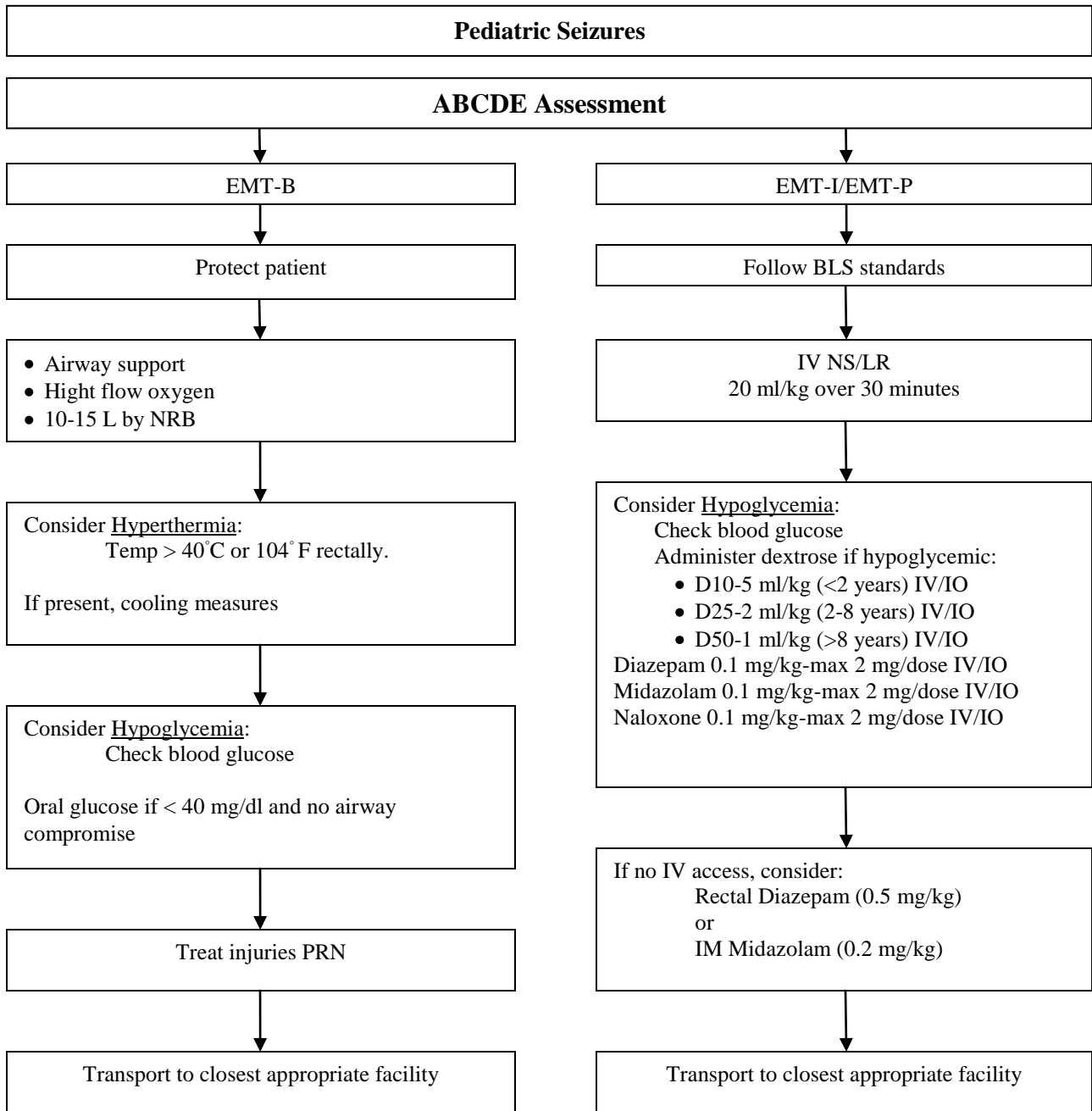
- Endotracheal intubation
- Establish IV/IO
- NS bolus 20 ml/kg over 10-20 minutes

Epinephrine:
IV/IO - 0.01 mg/kg (1:10,000)
ETT - 0.1 mg/kg (1:1000)
Repeat same dose q 3-5 min PRN

Continue defibrillation at 4 J/kg between each set of CPR cycles

Consider Lidocaine
IV/IO 1 mg/kg; ETT 2 mg/kg
Or
Magnesium
IV/IO 25-50 mg/kg (for torsades de pointes or hypomagnesemia) max. 2 grams

Transport to closest appropriate facility



Pediatric Altered Mental Status

ABCDE Assessment

EMT-B

- High flow oxygen
- Assist ventilation as needed

- Consider:
- Pulse oximetry
 - C-spine
 - Check blood glucose
 - Warming maneuvers

Oral glucose if pt hypoglycemic (<40 mg/dl) and airway uncompromised

Transport to closest appropriate facility

EMT-I/EMT-P

Follow BLS standards
Apply monitor

- Consider:
- Intubation to control airway NG/OG tube
 - Intravascular access with NS or LR bolus

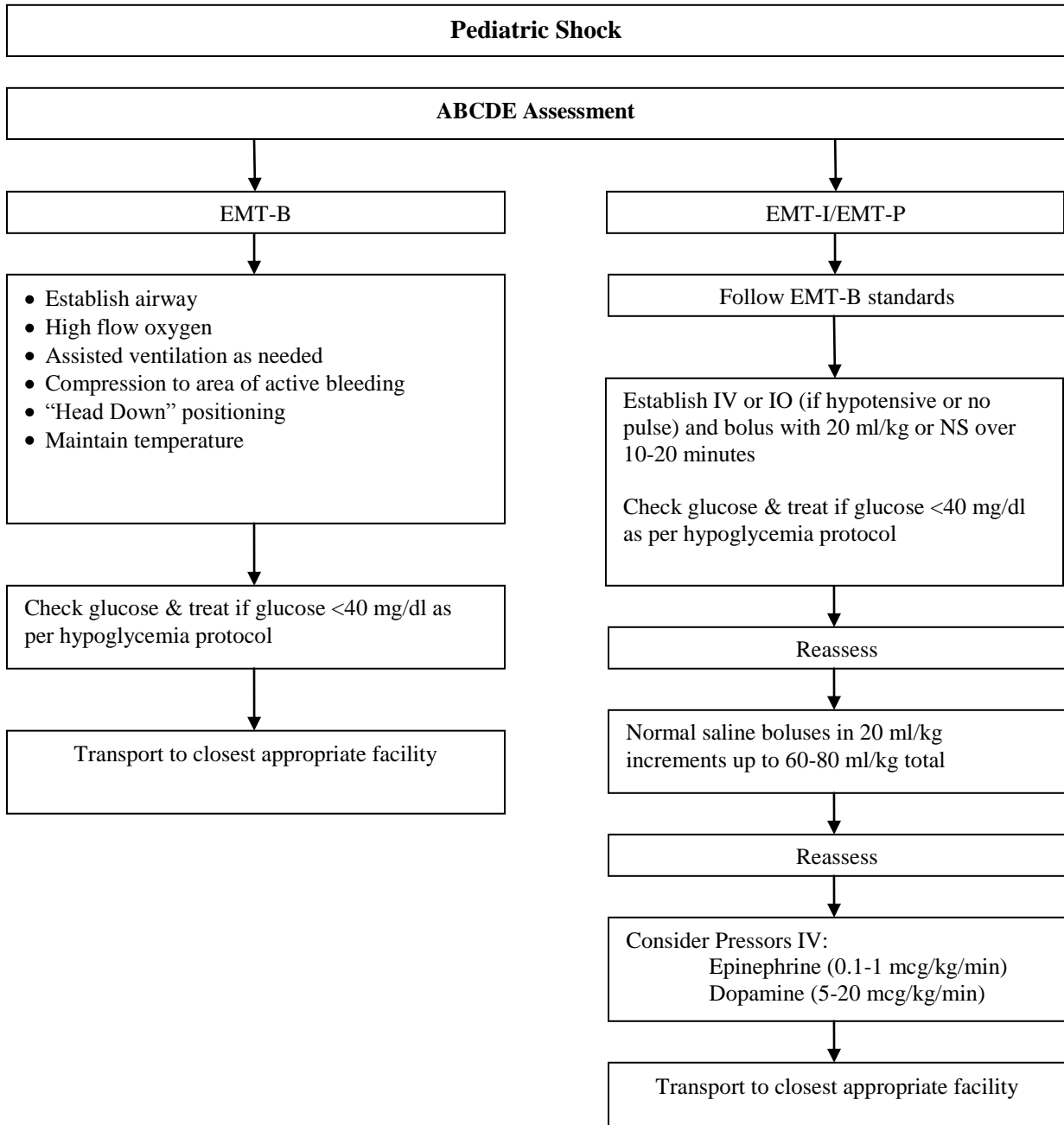
Fluid bolus 20 ml/kg over 10-20 minutes

Administer dextrose if hypoglycemic (<40 mg/dl)

- D10-5 ml/kg (<2 years) IV/IO
- D25-2 ml/kg (2-8 years) IV/IO
- D50-1 ml/kg (>8 years) IV/IO

Naloxone 0.1 mg/kg-max 2 mg/dose
IV/IO/IM

Transport to closest appropriate facility



Pediatric Submersion Injury

ABCDE Assessment

EMT-B

- Establish/maintain airway
- Consider C-spine immobilization
- High flow oxygen
- Assisted ventilation as needed
- Start CPR if no pulse
- Remove wet clothing
- Keep warm
- Consider glucose check

Transport to closest appropriate facility

EMT-I/EMT-P

Follow EMT-B standards

Consider endotracheal intubation if effort to ventilate/oxygenate via BVM is inadequate. Use positive end-expiratory pressure (5 cm H₂O) if available.

Continue CPR if no pulse present

- 5 cycles of 30 compressions to 2 ventilations for single rescuer, or
- 15 compressions to 2 ventilations for 2 rescuers

Reassess, repeat.

- Consider IV/IO access
- Administer 20 ml/kg NS over 10-20 minutes if IV/IO present
- Administer Dextrose if <40mg/dl
 - D10-5 ml/kg (<2 years) IV/IO
 - D25-2 ml/kg (2-8 years) IV/IO
 - D50-1 ml/kg (>8 years) IV/IO

Consider nasogastric or orogastric tube for gastric decompression

Transport to closest appropriate facility