Division of Public Health Services

Office of the Assistant Director
Public Health Preparedness Services
Bureau of Emergency Medical Services and Trauma System

150 N. 18th Avenue, Suite 540
Phoenix, Arizona 85007
(602) 364-3150 / 1-800-200-8523
(602) 364-3568 FAX

DOUGLAS A. DUCEY, GOVERNOR
CARA M. CHRIST, MD, DIRECTOR

PROTOCOLS, MEDICATIONS & DEVICES (PMD)

STANDING COMMITTEE

Date: July 16, 2015 - **Time**: 12:00 PM

Location: 150 N. 18th Ave., Conference Rooms 215 A&B

Conference Call: 1-877-820-7831 - **Code**: 450908#

iLinc URL: https://azdhsems.ilinc.com/join/xcphsxt

You must register prior to the meeting to join the web conference session.

AGENDA

I. Call to Order – Toni Gross, MD, Chair

II. Roll Call – Jennifer Herbert (12 Members, 7 required for quorum)

III. Chairman's Report – Toni Gross, MD
   a. Attendance report (Attachment III.a.)

IV. Bureau Report – Noreen Adlin
   a. Rules update
   b. Education Curricula for Pain Management Protocol – Toni Gross, MD

V. Discussion and Action Items
   a. Discuss, amend, approve PMD minutes of March 19, 2015 (Attachment V.a.).
   b. Discuss and approve adding the new membership category of Trauma Surgeon to the PMD Bylaws – Toni Gross, MD (Attachment V.b.)
   c. Discuss the TTTG document review – Toni Gross, MD (Attachment V.c.)
      i. Discuss, amend, approve the Pain Management TTTG – Toni Gross and Robert Jarvis
      ii. Discuss, amend, approve the Shock TTTG – Toni Gross and Bruce Toliver
      iii. Discuss, amend, approve the Altered Mental Status TTTG – Gail Bradley and Kim Choppi
      iv. Discuss, amend, approve the Hyperthermia/Heat Exposure TTTG – Sue Kern and Terry Mason

Persons with disabilities may request reasonable accommodations such as a sign language interpreter, by Angie McNamara, Program Project Specialist II, 602-364-3156; State TDD Number 1-800-367-8939; or Voice Relay Number 711. Request should be made as early as possible to allow time to arrange accommodations.

v. Discuss, amend, approve the Altitude Illness TTTG – Jason Johnson and Brian Smith

d. Discuss, amend, approve expanding the use of Ketamine in the drug profile– Garth Gemar, MD (Attachment V.d.)
e. Discuss and approve adding Phytonadine on Infusion Pump (IP) to Table 5.4 (Interfacility Transport) as a Paramedic skill only – Garth Gemar, MD (Attachment V.e.)
f. Discuss, amend, approve the Phytonadine Drug Profile – Garth Gemar, MD (Attachment V.f.)
g. Discuss medication classes and specific agents in Table 5.2 (Drug Box) – Toni Gross, MD (Attachment V.g.)
h. Discuss and approve changes to Naloxone on Table 5.1 (Scope of Practice) – Noreen Adlin (Attachment V.g.)

VI. Agenda Items for Next Meeting

a. Discuss and approve the addition of Hydroxyethyl Starch with Lactated Ringers as an Optional Agent for Paramedics only to the Drug Box, Table 5.2 – Garth Gemar, MD and Kari Jerge, MD
b. Discuss, amend, approve the Hydroxyethyl Starch with Lactated Ringers Drug Profile – Garth Gemar, MD and Kari Jerge, MD
c. Discuss adding TXA to Table 5.2 (Drug Box) as an Optional Agent – Garth Gemar, MD and Kari Jerge, MD
d. Discuss the TXA Drug Profile – Garth Gemar, MD and Kari Jerge, MD

VII. Call to the Public: A public body may make an open call to the public during a public meeting, subject to reasonable time, place and manner restrictions, to allow individuals to address the public body on any issue within the jurisdiction of the public body. At the conclusion of an open call to the public, individual members of the public body may respond to criticism made by those who have addressed the public body, may ask staff to review a matter, or may ask that a matter be put on a future agenda. Members of the public body shall not discuss or take legal action on matters raised during an open call to the public unless the matters are properly noticed for discussion and legal action. A.R.S. § 38-431.01 (G).

Members of the public body may present a brief summary of current events. Members of the public body shall not propose, discuss, deliberate, or take legal action on matters raised during a summary of current events unless the matters are properly noticed for discussion and legal action.

VIII. Summary of Current Events

a. July 30-31, 2015: SW Regional Trauma Conference. J.W. Marriott Starr Pass Resort and Spa, Tucson
b. November 2-4, 2015: National Pediatric Disaster Conference. Camelback Inn Resort and Spa, Scottsdale
c. November 6-7, 2015: Pediatric Trauma Society Meeting. OMNI Resort & Spa Montelucia, Scottsdale
d. November 12-13, 2015: Southwest Trauma and Acute care symposium (STACS). Talking Stick Resort, Scottsdale

IX. Next Meeting: November 19, 2015, 12:00 PM at 150 N. 18th Avenue, Rooms 215A & 215B

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X. Adjournment

Persons with disabilities may request reasonable accommodations such as a sign language interpreter, by Angie McNamara, Program Project Specialist II, 602-364-3156; State TDD Number 1-800-367-8939; or Voice Relay Number 711. Request should be made as early as possible to allow time to arrange accommodations.

PROTOCOLS, MEDICATIONS & DEVICES (PMD) STANDING COMMITTEE

Date: March 19, 2015 - **Time**: 12:00 PM

Location: 150 N. 18th Ave., Conference Room 540 A

Meeting Minutes

I. Call to Order – Toni Gross, MD, Chair. Meeting was called to order at 12:00am

II. Roll Call – Toni Gross, MD, (12 Members, 7 required for quorum). A quorum was present.

Members Present		Members Absent
Gail Bradley, MD	Bruce Toliver*	Charlie Smith
Jason Johnson, MD	Sue Kern*	
Josh Gaither, MD	Garth Gemar	
Michael Pfleger, MD*		
Neil Gago		
Terence Mason		
Toni Gross, MD		

III. Chairman's Report – Toni Gross, MD
   a. Attendance report. Members reviewed the attendance report and there were no comments

IV. Bureau Report – Noreen Adlin
   a. Rules update
   b. Education Curricula for Pain Management Protocol – Toni Gross, MD

V. Discussion and Action Items
   a. Discuss, amend, approve, PMD minutes of November 20, 2014. Gail Bradley, MD, made the motion, seconded by Terry Mason. The **motion carries**.
   b. Discuss adding medications for I99s on Table 5.2 (Drug Box) – Toni Gross, MD. Garth Gemar, MD, made the motion to discuss, seconded by Josh Gaither, MD. A discussion ensued.
   c. Discuss forming workgroups to review & update the TTTG – Toni Gross, MD. Toni Gross, MD, suggested forming several workgroups that will review the current TTTG and give an update at the next meeting July 16, 2015. This was discussed but no formal committees were formed.
   d. Discuss changing the PMD Bylaws to increase membership – Toni Gross, MD. Toni Gross, MD, suggested adding 2 membership categories to increase representation by adding a Trauma Center Surgeon and 2 member at large positions. Discussion item only.
   e. Discuss, amend, approve the External Hemorrhage Guideline for the TTTG – Toni Gross, MD. Gail Bradley, MD made the motion to approve the guideline as presented, seconded by Garth Gemar, MD. A discussion ensued and the **motion carries**.

VI. Agenda Items for Next Meeting
   a. External Hemorrhage Guideline - Wound Packing BLS scope of practice – Garth Gemar, MD
   b. Amending bylaws to include additional membership categories (see V.d.)
   c. TTTG Review – Toni Gross, MD
   d. Adding TXA to Table 5.2 (Drug Box) and create a drug profile – Garth Gemar, MD
   e. Evaluation and expansion of ketamine use – Garth Gemar, MD

f. Timely transfer of prehospital medical records to receiving hospital – Sandy Nygaard or AEMS workgroup representative.

VII. Call to the Public: No comments

VIII. Summary of Current Events
a. June 11-12, 2015: EMS Odyssey. Desert Willow Conference Center. Phoenix
b. July 15-17, 2015: Western Pediatric Trauma Conference. Park City, Utah
c. July 30-31, 2015: SW Regional Trauma Conference. J.W. Marriott Starr Pass Resort and Spa, Tucson
d. November 2-4, 2015: National Pediatric Disaster Conference. Camelback Inn Resort and Spa, Scottsdale
e. November 6-7, 2015: Pediatric Trauma Society Meeting. OMNI Resort & Spa Monte Lucia, Scottsdale
f. November 12-13, 2015: Southwest Trauma and Acute care symposium (STACS). Talking Stick Resort, Scottsdale

IX. Next Meeting: July 16, 2015, 12:00 PM at 150 N. 18th Avenue, Rooms 215A & 215B

X. Adjournment: 12:51PM

Approved by PMD
Date:

Committee Attendance Report

Protocols, Medications & Devices Committee

		Present	Tele	Absent
Bruce Toliver	AEMS Representative			
	2/2/2012	☐	☑	☐
	5/24/2012	☐	☑	☐
	11/15/2012	☐	☑	☐
	3/21/2013	☐	☑	☐
	7/18/2013	☐	☐	☑
	11/21/2013	☐	☐	☑
	3/20/2014	☐	☑	☐
	7/17/2014	☐	☐	☑
	11/20/2014	☐	☐	☑
	3/19/2015	☐	☑	☐
Charlie Smith	EMS Council Liaison			
	2/2/2012	☑	☐	☐
	5/24/2012	☑	☐	☐
	11/15/2012	☑	☐	☐
	3/21/2013	☑	☐	☐
	7/18/2013	☑	☐	☐
	11/21/2013	☐	☑	☐
	3/20/2014	☑	☐	☐
	7/17/2014	☑	☐	☐
	11/20/2014	☑	☐	☐
	3/19/2015	☐	☐	☑
Gail Bradley	AEMS Representative			
	3/20/2014	☑	☐	☐
	7/17/2014	☑	☐	☐
	11/20/2014	☑	☐	☐
	3/19/2015	☑	☐	☐
Garth Gemar	AEMS Representative			
	2/2/2012	☑	☐	☐
	5/24/2012	☐	☑	☐
	11/15/2012	☑	☐	☐
	3/21/2013	☑	☐	☐
	7/18/2013	☑	☐	☐
	11/21/2013	☐	☑	☐
	3/20/2014	☑	☐	☐
	7/17/2014	☑	☐	☐
	11/20/2014	☐	☐	☑
	3/19/2015	☑	☐	☐
Jason Johnson	NAEMS Representative			
	11/15/2012	☐	☑	☐
	3/21/2013	☑	☐	☐
	7/18/2013	☑	☐	☐
	11/21/2013	☑	☐	☐
	3/20/2014	☑	☐	☐
	7/17/2014	☑	☐	☐
	11/20/2014	☑	☐	☐
	3/19/2015	☑	☐	☐
Josh Gaither	SAEMS Representative			

Protocols, Medications & Devices Committee

		Present	Tele	Absent
Josh Gaither	SAEMS Representative			
	11/21/2013	☑	☐	☐
	3/20/2014	☑	☐	☐
	7/17/2014	☐	☑	☐
	11/20/2014	☑	☐	☐
	3/19/2015	☑	☐	☐
Michael Pfleger	AEMS Representative (STAB Liaison)			
	2/2/2012	☑	☐	☐
	5/24/2012	☐	☐	☑
	11/15/2012	☐	☐	☑
	3/21/2013	☐	☑	☐
	7/18/2013	☐	☑	☐
	11/21/2013	☐	☐	☑
	3/20/2014	☑	☐	☐
	7/17/2014	☐	☑	☐
	11/20/2014	☐	☑	☐
	3/19/2015	☐	☑	☐
Neil Gago	SAEMS Representative			
	11/20/2014	☑	☐	☐
	3/19/2015	☑	☐	☐
Robert Jarvis	AEMS Representative			
	2/2/2012	☑	☐	☐
	5/24/2012	☐	☑	☐
	11/15/2012	☐	☐	☑
	3/21/2013	☐	☐	☑
	7/18/2013	☐	☑	☐
	11/21/2013	☐	☑	☐
	3/20/2014	☐	☐	☑
	7/17/2014	☑	☐	☐
	11/20/2014	☐	☐	☑
	3/19/2015	☑	☐	☐
Sue Kern	WACEMS Representative			
	2/2/2012	☐	☐	☑
	5/24/2012	☐	☑	☐
	11/15/2012	☐	☐	☑
	3/21/2013	☐	☑	☐
	7/18/2013	☐	☑	☐
	11/21/2013	☐	☐	☑
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Terence Mason	Vice Chair/AEMS Representative			
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	11/20/2014	☑	☐	☐
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Toni Gross	Chair/AEMS Representative (MDC Liaiso			
	5/24/2012	☑	☐	☐
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	3/21/2013	☑	☐	☐
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	11/21/2013	☑	☐	☐
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PROTOCOLS, MEDICATIONS & DEVICES (PMD) STANDING COMMITTEE

Date: March 19, 2015 - **Time**: 12:00 PM

Location: 150 N. 18th Ave., Conference Room 540 A

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X. Adjournment: 12:51PM

Approved by PMD
Date:

BYLAWS

Standing Committee Title: Protocols, Medications and Devices Standing Committee
Standing Committee Acronym: PMD

Article I: Purpose

1. The Protocols, Medications and Devices Standing Committee assists the Statutory Councils (State Trauma Advisory Board, Emergency Medical Services Council and Medical Direction Commission) in carrying out the duties described in Arizona Revised Statutes, Title 36, Chapter 21.1, Emergency Medical Services, by making recommendations for adoption by the Director, Arizona Department of Health Services. Duties include:
2. Review Drug Box Procedures/Drug lists annually.
3. Publish, as necessary, agents list approved for prehospital use emphasizing agent, minimum supply.
4. Develop and distribute information profiles for each agent approved for prehospital use.
5. Review annually all agents approved for IV monitoring by certification levels on interfacility transports.
6. Review requests for new therapeutic agents, care devices, and pilot projects, as requested by the Statutory Councils and make recommendations to the Statutory Councils.
7. Recommend medical standards for non-physician prehospital treatment and prehospital triage of patients requiring emergency medical services.
8. Recommend standards pertaining to prehospital communication for direct and indirect medical control.
9. Recommend standards for prehospital standing orders for treatment and triage.
10. Recommend treatment guidelines approved for prehospital use.

Article II: Committee Liaison

The intent of this article is to provide for the timely and appropriate exchange of information between the Standing Committee and the three Statutory Councils. All Standing Committees shall, therefore, have a minimum of one member from each of the three Statutory Councils in their membership to serve as liaisons.

The Chief of the Bureau of Emergency Medical Services and Trauma System, or designee, shall also attend and support the timely and appropriate exchange of information between the Standing Committee and the three Statutory Councils and to provide staff support and technical support to the Standing Committee including notification of pending actions or issues which may be within the scope of the Standing Committees' purpose.

Article III: Members

Section 1: Committee Membership
Membership of the PMD Standing Committee shall consist of no more than 12 members from a diverse representation of individuals from throughout the state. There will be Standing Committee members selected from each of the four EMS Regions. The Medical Director, Standing Committee

Chair and Bureau Chief, under the advice of the Bureau Liaison, shall solicit and appoint members. The following members are required:

- A member of the State Trauma Advisory Board
- A member of the Medical Direction Commission
- A member of the Emergency Medical Services Council
- A trauma surgeon

Section 2: Terms of Membership
There is no specific term of membership, however, the Medical Director, Standing Committee Chair and Bureau Chief, under the advice of the Bureau Liaison, shall periodically review member attendance (Article V, Section 4) and if necessary, remove a member due to failure to meet the attendance requirement.

Section 3: Compensation
Standing Committee members shall not be eligible to receive compensation.

Section 4: Voting
Each member of the Standing Committee shall be entitled to one vote when present in person or via electronic media at a meeting of the Standing Committee. No individual member shall cast more than one vote on the Standing Committee. Voting by proxy and/or alternate voter shall not be permitted.

Section 5: Vacancies
Standing Committee vacancies shall be filled through appointment by the Medical Director, under the advice of the Standing Committee Chair, Bureau Chief and the Bureau Liaison, with consideration given to individuals with expertise consistent with the Standing Committee purpose. The Bureau Liaison shall be responsible for informing the Medical Director, Standing Committee Chair and Bureau Chief of vacancies.

Article IV: Officers

Chair: The Standing Committee Chairs shall be chosen as follows:

- Education Standing Committee – EMS Council
- Protocols Medications and Devices Standing Committee – MDC
- Trauma and EMS Performance Improvement Standing Committee – STAB

Vice Chair: The Vice Chair of the Standing Committee shall be filled through appointment by the Medical Director, Standing Committee Chair and Bureau Chief, under the advice of the Bureau Liaison, and shall serve as the Standing Committee Chair in his/her absence. On resignation a new Vice Chair shall be selected by the next regular meeting.

Article V: Meetings

Section 1: Regular Meetings
The regular meetings of the Standing Committee shall be held, at a minimum, three times per year at a time and place designated by the Chair and Bureau.

Section 2: Special Meetings
Special meetings and/or telephone meetings may be called by the Chair in agreement with the Bureau Liaison, or by written request of five (5) members of the Standing Committee and must comply with the Open Meeting laws.

Section 3: Notice of Meetings
Standing Committee members shall be notified ten (10) days in advance of all Standing Committee meetings. A yearly schedule of regular Standing Committee meetings shall be made available to Standing Committee members in January. Minutes of the previous meeting and an agenda for the upcoming meeting should be available to members ten (10) days in advance of the Standing Committee meeting.

Section 4: Attendance
Regular attendance is expected of all Committee members. If a member fails to attend two (2) consecutive meetings, an inquiry shall be made by the Bureau Liaison of that member concerning their continued participation on the Board, and the results of the inquiry shall be forwarded to the Medical Director, Committee Chair, and Bureau Chief for a decision on the member's status.

Section 5: Quorum
A quorum consists of a simple majority (50% plus one) of the entire membership, whether the position is filled or vacant, present in person or via electronic media.

Article VI: Parliamentary Authority

The rules contained in the current edition of Robert's Rules of Order Newly Revised shall govern the Standing Committee in all cases to which they are applicable and in which they are not inconsistent with these bylaws.

Article VII: Open Meeting Law

The Arizona Open Meeting Law (A.R. S. 38-431: 38-431.09) shall apply to meetings of the Standing Committee.

Article VIII: Minutes

Minutes of each Standing Committee Meeting will be recorded and the Standing Committee shall have the rights of review and correction of minutes of all meetings before publication and distribution.

Article IX: Motions

All motions passed by this Standing Committee will be forwarded to the appropriate Statutory Council(s) for review and/or action at their next regularly scheduled meeting.

Article X: Amendments

These bylaws can be amended at any regular meeting of the Standing Committee by a majority vote of the entire membership, provided that the amendment has been submitted to the members in written form ten (10) days in advance of the meeting. Bylaws will be reviewed, at a minimum, every three (3) years.

Article XI: Workgroups

The committee may authorize small workgroups that are necessary to review, develop or amend any subject contained in these bylaws when such review, development or amendment would not be of a benefit to the committee as a whole, but rather having the workgroup meet and provide a detailed report and recommendation to the committee at its next regular meeting.

Approved: 4/97
Revised and Approved by MDC: 3/27/98, 3/26/99, 7/23/99, 1/25/02, 1/24/03
Revised and Approved by PMD: 2/16/06
Revised and Approved by MDC: 4/21/06
Revised and Approved by PMD: 11/18/10, 3/20/14

Attachment V.c.

Pain Management

(Incorporates elements of an evidence-based guideline for prehospital analgesia in trauma created using the National Prehospital Evidence-Based Guideline Model Process)
(9914071 – Pain Control)

Patient Care Goals
The practice of prehospital emergency medicine requires expertise in a wide variety of pharmacological and non-pharmacological techniques to treat acute pain resulting from myriad injuries and illnesses. One of the most essential missions for all healthcare providers should be the relief and/or prevention of pain and suffering. Approaches to pain relief must be designed to be safe and effective in the organized chaos of the prehospital environment. The degree of pain and the hemodynamic status of the patient will determine the rapidity of care
Patient Presentation
Inclusion Criteria
Patients who are experiencing pain
Exclusion Criteria
1. Patients who are allergic to narcotic medications
2. Patients who have altered mentation (GCS < 15 or mentation not appropriate for age)

Patient Management
Assessment, Treatment and Interventions
1. Apply a pulse oximeter and administer oxygen as needed to maintain a O_2 saturation > 94%
2. Determine patient's pain score assessment using standard pain scale.
a. < 4 years: Observational scale (e.g. Faces, Legs, Arms, Cry, Consolablity (FLACC) or Children's Hospital of Eastern Ontario Pain Scale (CHEOPS)
b. 4-12 years: Self-report scale (e.g. Wong Baker Faces, Faces Pain Scale (FPS), Faces Pain Scale Revised (FPS-R)
c. > 12 years: Self-report scale (Numeric Rating Scale (NRS)
3. Place patient on cardiac monitor per patient assessment
4. If available, consider use of non-pharmaceutical pain management techniques
a. Placement of the patient in a position of comfort
b. Application of ice packs and/or splints for pain secondary to trauma
c. Verbal reassurance to control anxiety
5. If not improved, consider use of analgesics as available and as permitted by direct medical oversight
a. Acetaminophen 15 mg/kg PO (maximum dose 1 gm)
b. Ibuprofen 10 mg/kg PO for patients greater than 6 months of age (maximum dose 800 mg)
c. Fentanyl 1 mcg/kg IN or IM

d. Ketorolac – Adult: 60 mg IM in adults who are not pregnant

Pediatric: (2-16 years) 1mg/kg IM (maximum dose 30 mg)
Geriatric/Renal impairment: 1mg/kg IM (maximum dose 30 mg)
e. Morphine sulfate 0.1 mg/kg (maximum dose 15 mg)

f. Nitrous Oxide

6. Establish IV of normal saline per patient assessment

7. If the patient is experiencing significant pain, administer IV analgesics

a. Ketorolac - Adult: 30 mg IV in adults who are not pregnant

Pediatric: (2-16 years) 0.5mg/kg (maximum dose 15 mg)
Geriatric/Renal impairment: 0.5mg/kg (maximum dose 15 mg)
b. Morphine sulfate 0.1 mg/kg IV or IO

c. Fentanyl 1 mcg/kg IV or IO

8. Consider administration of oral, sublingual, or IV antiemetics to prevent nausea in high risk patients. See **Nausea/Vomiting** guideline

9. If indicated based on pain assessment, repeat pain medication administration after 10 minutes of the previous dose

10. Transport in position of comfort and reassess as indicated

Attachment V.c.

Shock

(Adapted from an evidence-based guideline created using the National Prehospital Evidence-Based Guideline Model Process)
(9914127 – Hypotension/Shock (Non-trauma))

Patient Care Goals

1. Initiate early fluid resuscitation and vasopressors to maintain/restore adequate perfusion to vital organs
2. Differentiate between possible underlying causes of shock in order to promptly initiate additional therapy

Patient Presentation

Inclusion Criteria

1. Signs of poor perfusion (due to a medical cause) such as one or more of the following:
a. Altered mental status
b. Delayed/flash capillary refill
c. Hypoxia (pulse oximetry < 94%)
d. Decreased urine output
e. Respiratory rate > 20 in adults or elevated in children (see normal vital signs table)
f. Hypotension for age (lowest acceptable systolic blood pressure in mm Hg):
i. < 1 year: 60
ii. 1-10 years: (age in years)(2)+70
iii. > 10 years: 90
g. Tachycardia for age, out of proportion to temperature (see **Normal Vital Signs** table, **Appendix VII**)
h. Weak, decreased or bounding pulses
i. Cool/mottled or flushed/ruddy skin

2. AND potential etiologies of shock:
a. Hypovolemia (poor fluid intake, excessive fluid loss (e.g. bleeding, SIADH, hyperglycemia excessive diuretics, vomiting, diarrhea)
b. Sepsis (temperature instability: < 36 C or 96.8 F; > 38.5 C or 101.3 F; and/or tachycardia, warm skin, tachypnea)
c. Anaphylaxis (urticaria, nausea/vomiting, facial edema, wheezing)
d. Signs of heart failure (hepatomegaly, rales on pulmonary exam, extremity edema, JVD)

Exclusion Criteria

Shock due to suspected trauma (see **Trauma** section guidelines)

Patient Management

Assessment

1. History
a. History of GI bleeding
b. Cardiac problems

c. Stroke
d. Fever
e. Nausea/vomiting, diarrhea
f. Frequent or no urination
g. Syncopal episode
h. Allergic reaction
i. Immunocompromise (malignancy, transplant, asplenia)
j. Adrenal insufficiency
k. Presence of a central line
l. Other risk of infection (spina bifida or other genitourinary anatomic abnormality)

2. Exam
a. Airway/breathing (airway edema, rales, wheezing, pulse oximetry, respiratory rate)
b. Circulation (heart rate, blood pressure, capillary refill)
c. Abdomen (hepatomegaly)
d. Mucous membrane hydration
e. Skin (turgor, rash)
f. Neurologic (GCS, sensorimotor deficits)

3. Determination of type of shock
a. Cardiogenic
b. Distributive (neurogenic, septic, anaphylactic)
c. Hypovolemic
d. Obstructive (e.g. pulmonary embolism, cardiac tamponade, tension pneumothorax)

Treatment and Interventions
1. Check full vital signs
2. Administer oxygen (titrate oxygen to $SPO_2 \geq 94\%$)
3. Cardiac monitor
4. Pulse oximetry
5. Check blood sugar, and correct if < 60 mg/dl
6. EKG
7. Check lactate, if available (> 2.5 mmol/L is abnormal)
8. Antipyretics for fever
a. Acetaminophen (15 mg/kg; max dose of 1000 mg)
b. Ibuprofen (10 mg/kg; max dose of 800 mg)
9. Establish IV access; if unable to obtain within 2 attempts or < 90 seconds, place an IO needle
10. IV fluids (20 ml/kg isotonic fluid; max of 1 liter) over < 15 minutes, using a push-pull method of drawing up the fluid in a syringe and pushing it through the IV. May repeat up to 3 times
11. If there is a history of adrenal insufficiency, give:
a. Hydrocortisone succinate, 2 mg/kg (max 100 mg) IV/IM (preferred) **or**
b. Methylprednisolone 2 mg/kg IV (max 125 mg)
12. Vasopressors (shock unresponsive to IV fluids)
a. Cardiogenic shock, hypovolemic shock, obstructive shock:
 Give dopamine, 2-20 mcg/kg/minute
 Give epinephrine, 0.05-0.3 mcg/kg/minute

 Norepinephrine - there is recent evidence that supports the use of norepinephrine as the preferred intervention (initial dose: 0.5 – 1 mcg/minute titrated to effect. For patients in refractory shock: 8-30 mcg/minute)

b. Distributive shock (with the exception of anaphylactic shock):

 Give norepinephrine, 0.05-0.5 mcg/kg/minute

 Norepinephrine is the first-line drug of choice for neurogenic shock

 For anaphylactic shock see **Anaphylaxis and Allergic Reaction** guideline

13. Provide advanced notification to the hospital

14. Consider empiric antibiotics for suspected septic shock if transport time is anticipated to be

> 1 hour, if blood cultures can be obtained in advance, and/or EMS has coordinated with regional receiving hospitals about choice of antibiotic therapy.

Patient Safety Considerations

Recognition of cardiogenic shock: if patient condition deteriorates after fluid administration, rales or hepatomegaly develop, then consider cardiogenic shock and holding further fluid administration

Notes/Educational Pearls

Key Considerations

1. Early, aggressive IV fluid administration is essential in the treatment of suspected shock

2. Patients predisposed to shock:

a. Immunocompromised (patients undergoing chemotherapy or with a primary or acquired immunodeficiency)

b. Adrenal insufficiency (Addison's disease, congenital adrenal hyperplasia, chronic or recent steroid use)

c. History of a solid organ or bone marrow transplant

d. Infants

e. Elderly

3. Tachycardia is the first sign of compensated shock, and may persist for hours. Hypotension indicates uncompensated shock, which may progress to cardiopulmonary failure within minutes

4. Hydrocortisone succinate, if available, is preferred over methylprednisolone and dexamethasone for the patient with adrenal insufficiency, because of its dual glucocorticoid and mineralocorticoid effects. Patients with no reported history of adrenal axis dysfunction may have adrenal suppression due to their acute illness, and hydrocortisone should be considered for any patient showing signs of treatment-resistant shock. Patients with adrenal insufficiency may have an emergency dose of hydrocortisone available that can be administered IV or IM

Pertinent Assessment Findings

Decreased perfusion manifested by altered decreased mental status, decreased urine output (< 1 ml/kg/hr) or abnormalities in capillary refill or pulses:

1. Cardiogenic, hypovolemic, obstructive shock: capillary refill >2 seconds, diminished peripheral pulses, mottled cool extremities

2. Distributive shock: flash capillary refill, bounding peripheral pulses

Attachment V.c.

Quality Improvement
Key Documentation Elements

1. Medications administered
2. Full vital signs with reassessment every 15 minutes or as appropriate
3. Lactate level
4. Neurologic status assessment (see **Appendix VI**)
5. Amount of fluids given

Performance Measures

1. Percentage of patients who have full vital signs (HR, RR, BP, T, O2) documented
2. Presence of a decision support tool (laminated card, a protocol, or electronic alert) to identify patients in shock
3. Percentage of patients with suspected shock for whom advanced notification to the hospital was provided
4. Mean time from abnormal vitals to initiation of a fluid bolus
5. Percentage of patients who receive pressors for ongoing hypotension after receiving 60 ml/kg isotonic fluid in the setting of shock

Attachment V.c.

Altered Mental Status

(9914113 – Altered Mental Status)

Patient Care Goals

1. Identify treatable causes
2. Protect patient from harm

Patient Presentation

Inclusion criteria

Impaired decision-making capacity

Exclusion criteria

Traumatic brain injury

Patient Management

Assessment

Look for treatable causes of altered mental status:

1. Airway: make sure airway can remain patent; reposition patient as needed
2. Breathing: look for respiratory depression; check SPO_2, $ETCO_2$, and CO detector readings
3. Circulation: look for signs of shock
4. Glasgow Coma Score and/or AVPU
5. Pupils
6. Neck rigidity or pain with range of motion
7. Stroke tool
8. Blood glucose level
9. EKG: arrhythmia limiting perfusion
10. Breath odor: possible unusual odors include alcohol, acidosis, ammonia
11. Chest/Abdominal: intra-thoracic hardware, assist devices, abdominal pain or distention
12. Extremities/skin: track marks, hydration, edema, dialysis shunt, temperature to touch (or if able, use a thermometer)
13. Environment: survey for pills, paraphernalia, ambient temperature

Treatment and Interventions

1. Oxygen (see Universal Care guideline for treatments)
2. Glucose (see **Hypoglycemia/Hyperglycemia** guideline for treatments)
3. Naloxone (see **Opioid Poisoning/Overdose** guideline for treatments)
4. Restraint: physical and chemical (see **Agitated or Violent Patient/Behavioral Emergency** guideline for treatments)
5. Anti-dysrhythmic medication (see **Cardiovascular Section** guidelines for specific dysrhythmia guidelines for treatments)
6. Active cooling or warming (see **Hypothermia/Cold Exposure or Hyperthermia/Heat Emergency** guidelines for treatments)
7. IV fluids (see fluid administration doses in **Shock** and **Hypoglycemia/Hyperglycemia** guidelines)

8. Vasopressors (see **Shock** guideline for treatments)

Patient Safety Considerations
With depressed mental status, initial focus is on airway protection, oxygenation, ventilation, and perfusion. The violent patient may need chemical and/or physical restraint to insure proper assessment and treatment. Hypoglycemic and hypoxic patients can be irritable and violent (see **Agitated or Violent Patient/Behavioral Emergency** guideline)

Notes/Educational Pearls

Key Considerations

1. History from bystanders
2. Age of the patient
3. Environment where patient found
4. Recent complaints (e.g. headache, chest pain, difficulty breathing, vomiting, fever)
5. Pill bottles/medications: anti-coagulants, anti-depressants, narcotic pain relievers, benzodiazepines
6. Medical alert tags and accessory medical devices
7. Toddlers should be evaluated for reduced PO intake and/or vomiting and/or diarrhea as a cause of AMS

Pertinent Assessment Findings

1. Track marks
2. Breath odor
3. Skin temperature
4. Location

Quality Improvement

Key Documentation Elements

1. GCS or AVPU description
2. Temperature was taken when able
3. Patient and medic safety were considered
4. Pupil and neck exam were done

Performance measures

1. Hypoglycemia considered and treated appropriately
2. Hypotension raised the possibility of sepsis
3. Hypotension appropriately treated
4. Naloxone is used as therapeutic intervention, not a diagnostic tool
5. CO detector is used when available

Attachment V.c.

Hyperthermia/Heat Exposure

(9914027 – Heat Exposure/Heat Exhaustion; 9914029 – Heat Exposure/Heat Stroke)

Definitions:

1. **Heat cramps** are minor muscle cramps usually in the legs and abdominal wall. Temperature is normal
2. **Heat exhaustion** has both salt and water depletion usually of a gradual onset. As it progresses tachycardia, hypotension, elevated temperature, and very painful cramps occur. Symptoms of headache, nausea and vomiting occur. Heat exhaustion can progress to heat stroke
3. **Heat stroke** occurs when the cooling mechanism of the body (sweating) ceases due to temperature overload and/or electrolyte imbalances. Temperature is usually > 104 F. When no thermometer is available, it is distinguished from heat exhaustion by altered level of consciousness

Patient Care Goals

1. Cooling and rehydration
2. Mitigate high risk for decompensation
3. Mitigate high risk for agitation and uncooperative behavior

Patient Presentation

Inclusion Criteria

1. Heat cramps
2. Heat exhaustion
3. Heat stroke
4. Stimulant drug abuse
5. Excited delirium (see also **Agitated or Violent Patient/Behavioral Emergency** guideline)

Exclusion Criteria

1. Fever from infectious or inflammatory conditions
2. Malignant hyperthermia
3. Neuroleptic malignant syndrome

Patient Management

Assessment

1. Patient assessment:
a. Age
b. Oral intake
c. Medications
d. Alcohol
e. Illicit drugs
f. Overdose
g. Withdrawal risk
2. Environmental assessment:
a. Ambient temperature and humidity

b. Exertion level
c. Length of time at risk
d. Attire (clothing worn)
e. Children left in cars with evidence of altered mental status and elevated body temperature are likely suffering from hyperthermia
3. Associated symptoms:
a. Cramps
b. Headache
c. Orthostatic symptoms
d. Nausea
e. Weakness
4. Vital signs:

Temperature: usually 104 degrees Fahrenheit or greater (if thermometer available)
5. Mental status:
a. Confusion
b. Coma
c. Seizures
d. Psychosis
6. Skin:
a. Flushed and hot
b. Dry or sweaty
c. Signs of first or second degree burns from sun exposure
7. Other signs of poor perfusion/shock

Treatment and Interventions
1. Move victim to a cool area and shield from the sun or any external heat source
2. Remove as much clothing as is practical and loosen any restrictive garments
3. If alert and oriented, give small sips of cool liquids
4. If altered mental status, check blood glucose level
5. Maintain airway vigilance for emesis, seizure
6. Place on cardiac monitor and record ongoing vital signs and level of consciousness
7. If temperature is > 104 degrees F (40 degrees C) or if altered mental status is present, begin active cooling by:
a. Continually misting the exposed skin with tepid water while fanning the victim (most effective)
b. Truncal ice packs may be used, but are less effective than evaporation
c. Shivering should be treated as soon as possible
d. Ice bath immersion provides the most rapid cooling mechanism but may not be available to EMS
8. Establish IV access for heat stroke
9. Give cool fluids at 20 ml/kg boluses and reduce to 10 ml/kg/hr boluses when vitals are stable
10. Monitor for shivering and seizures; treat as below
11. Adult:

Consider 500 ml normal saline IV fluid bolus for dehydration even if vital signs are normal
If uncontrolled shivering occurs during cooling:
a. Midazolam 2.5mg IV/IN, may repeat once in 5 minutes or; 5mg IM may repeat once in 10 minutes

b. Lorazepam 1mg IV, may repeat once in 5 minutes or; 2mg IM, may repeat once in 10 minutes
c. Diazepam 2mg IV, may repeat once in 5 minutes
12. Pediatric:

Consider 10 – 20ml/kg normal saline IV fluid bolus for dehydration even if vital signs are normal
If uncontrolled shivering occurs during cooling:
a. Midazolam 0.1mg/kg IV or 0.2mg/kg IN/IM (single maximum dose 1mg); Note: a 5mg/ml concentration is recommended for IN/IM administration)
b. Lorazepam 0.1mg/kg IV/IM (single maximum dose 1mg)
c. Diazepam 0.2mg/kg IV or 0.5mg/kg PR (single maximum dose 2mg IV or 4mg PR)
13. Monitor for arrhythmia and cardiovascular collapse, (see **Cardiovascular** section)

Patient Safety Considerations
Use soft restraints, consider chemical restraints, and protect your IV access sites
Notes/Educational Pearls
Key Considerations
1. Patients at risk for heat emergencies include neonates, infants, geriatric patients, and patients with mental illness
2. Contributory risk factors may come from:
a. Prescription and over-the-counter herbal supplements
b. Cold medications
c. Heart medications
d. Diuretics
e. Psychiatric medications
f. Drug abuse
g. Accidental or intentional drug overdose
3. Heat exposure can occur either due to increased environmental temperatures or prolonged exercise or a combination of both. Environments with temperature > 90° F and humidity > 60% present the most risk
4. Heat stroke is associated with cardiac arrhythmias independent of drug ingestion/overdose. Heat stroke has also been associated with cerebral edema
5. Do not forget to look for other causes of altered mental status such as low blood glucose level
6. Controversy: shivering is thought to worsen outcomes in treating heat stroke. It is controversial about whether to stop active cooling if shivering occurs and ALS care with IV access and anti-shivering drugs are not available. Risk of shivering versus risk of stopping active cooling must be weighed by the team. Research does not demonstrate the value of one benzodiazepine over another in shivering patients
7. Hyperthermia not from environmental factors has a differential that includes the following:
a. Fever and delirium
b. Hyperthyroid storm
c. Delirium tremens (DTs)
d. CNS lesion or tumor
e. Adverse drug event: neuroleptic malignant syndrome, malignant hyperthermia
8. There is no evidence supporting EMS utilizing orthostatic vital signs

Attachment V.c.

Pertinent Assessment Findings

1. Warning signs: fever, altered mental status
2. Blood glucose level for AMS

Quality Improvement

Key Documentation Elements

1. Patient assessment includes all types of medication/drug use
2. Environmental assessment done
3. Cooling treatments options considered and implemented
4. Decision-making regarding restraints
5. Decision-making regarding monitoring ABCs

Performance Measures

1. Blood glucose level done for altered mental status
2. Fluids given for hypotension
3. All decompensations during EMS care reviewed

Attachment V.c.

Altitude Illness

(9914021 – Altitude Sickness)

Patient Care Goals

1. Improve oxygenation through a combination of descent and supplemental O_2
2. Safe but rapid transport from the high altitude environment to a lower altitude environment

Patient Presentation

Inclusion Criteria

Patients suffering from altitude illness, including

1. Acute mountain sickness
2. High altitude pulmonary edema
3. High altitude cerebral edema

Exclusion Criteria

Patients who have not been exposed to altitude

Patient Management

Assessment

1. The definition of altitude illnesses are as follows:

a. Acute mountain sickness – Headache plus one or more of the following: anorexia, nausea or vomiting, fatigue or weakness, dizziness or lightheadedness or difficulty sleeping. These symptoms must occur in the setting of recent arrival to high altitude (generally considered greater than 5000 – 7000 feet)

b. High altitude pulmonary edema (HAPE) – Progressive dyspnea, cough, hypoxia, and weakness in high altitude environments (considered 8000 feet or greater). Patients may or may not exhibit symptoms if acute mountain sickness precedes symptoms of HAPE

c. High altitude cerebral edema (HACE) – Heralded by mental status changes in patients with symptoms of acute mountain sickness including altered mentation, ataxia, or stupor and progressing to coma. Typically seen in high altitude environments (greater than 8000 feet)

2. Assessment should target the signs and symptoms of altitude illness but should also consider alternate causes of these symptoms

Treatment and Interventions

1. Ensure scene safety for rescuers
2. Stop ascent. Patients with acute mountain sickness only may remain at their current altitude and initiate symptomatic therapy. Patients with HACE or HAPE should initiate descent
3. Perform ABCs and manage airway as necessary
4. Administer supplemental oxygen with goal to keep oxygen saturations > 94%
5. Descend to lower altitude. Descent is the mainstay of therapy and is the definitive therapy for all altitude related illnesses. Descent should be initiated as soon as scene conditions permit

a. If severe respiratory distress is present and pulmonary edema is found on exam, provider should start positive pressure ventilation

b. Establish IV and perform fluid bolus with goal to maintain systolic BP > 90 mm Hg

c. Monitor cardiac rhythm

Patient Safety Considerations

1. The high altitude environment is inherently dangerous. Rescuers must balance patient needs with patient safety and safety for the responders
2. Rapid descent by a minimum of 500-1000 feet is a priority, however rapidity of descent must be balanced by current environmental conditions and other safety considerations

Notes/Educational Pearls

Key Considerations

1. Patients suffering from altitude illness have exposed themselves to a dangerous environment. By entering the same environment, providers are exposing themselves to the same altitude exposure. Be vigilant in looking for symptoms of altitude illness amongst rescuers
2. Descent of 500-1000 feet is often enough to see improvements in patient conditions
3. Patients with HAPE are suffering from non-cardiogenic pulmonary edema and may benefit from positive pressure ventilation via either bag assisted ventilation, CPAP or other means of positive pressure ventilation
4. Patients suffering from altitude illness are commonly dehydrated and require IV fluids. Once resuscitation is complete and the patient requires no further fluid boluses, maintain IV fluids at 125 ml/hr
5. HAPE is the most lethal of all altitude illnesses
6. Consider alternate causes of symptoms of AMS. The symptoms of AMS may be caused by alternate etiologies such as carbon monoxide poisoning (in patients cooking within enclosed areas), dehydration, exhaustion, hypoglycemia, hyponatremia
7. Descent should always be the primary treatment strategy for patients suffering from altitude illness, especially patients suffering from HACE and HAPE. If decent is not possible, or if direct medical oversight permits, the EMS provider may consider the following possible therapies:

a. Portable hyperbaric chambers are effective for the management of severe altitude illness. However, they should not be used in lieu of decent, only as an alternative should descent be unfeasible

b. Acute mountain sickness

i. Ibuprofen or acetaminophen for pain

ii. Ondansetron 4 mg IV, PO, or sublingual every 6 hours for vomiting

iii. Acetazolamide – up to 250 PO mg twice a day

1. Pediatric dosing is 2.5 mg/kg up to a max of 250 mg twice a day
2. Acetazolamide speeds acclimatization and therefore helps in treating acute mountain sickness

iv. Dexamethasone - 8 mg IM, IV, or PO followed by 4 mg IM, IV, or PO every 6 hours until symptoms resolve

1. Pediatric dosing is 0.15 mg/kg IM, IV, or PO every 6 hours
2. Dexamethasone helps treat the symptoms of acute mountain sickness and may be used as an adjunctive therapy in severe acute mountain sickness when the above measures alone do not ameliorate the symptoms. In these circumstances, patients should also initiate descent, as dexamethasone does not facilitate acclimatization

c. HACE – All below listed therapies should be considered as adjunctive to descent. Descent should always be the primary treatment modality
i. Dexamethasone – at above adult and pediatric doses
1. Dexamethasone helps treat the symptoms of HACE and should be initiated in HACE. In these circumstances, patients should also initiate descent
ii. Consider use of acetazolamide at the above dosing
d. HAPE - All below listed therapies should be considered as adjunctive to descent. Descent should always be the primary treatment modality
i. Nifedipine SR 60 mg PO once a day may be added to the patient's regimen
ii. Tadalafil (20-40 mg PO once daily) or sildenafil (20 mg PO three times a day) may be used if nifedipine is not available. Multiple pulmonary vasodilators should not be used concurrently

Pertinent Assessment Findings
1. Consider airway management needs in the patient with severe alteration in mental status
2. HAPE will present with increasing respiratory distress and rales on exam
3. HACE will present with mental status changes, ataxia, and progressing to coma

Quality Improvement
Key Documentation Elements
1. Patient's itinerary, including starting altitude, highest altitude gained and rate of ascent
2. Presence (or absence) of prophylaxis against altitude (including medications such as acetazolamide, sildenafil)
3. Total altitude descended

Performance Measures
1. Mechanism of treatment for acute mountain sickness, HACE or HAPE
2. Medical decision-making regarding treatment choice (e.g. weather, inability to descend)

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 2015]

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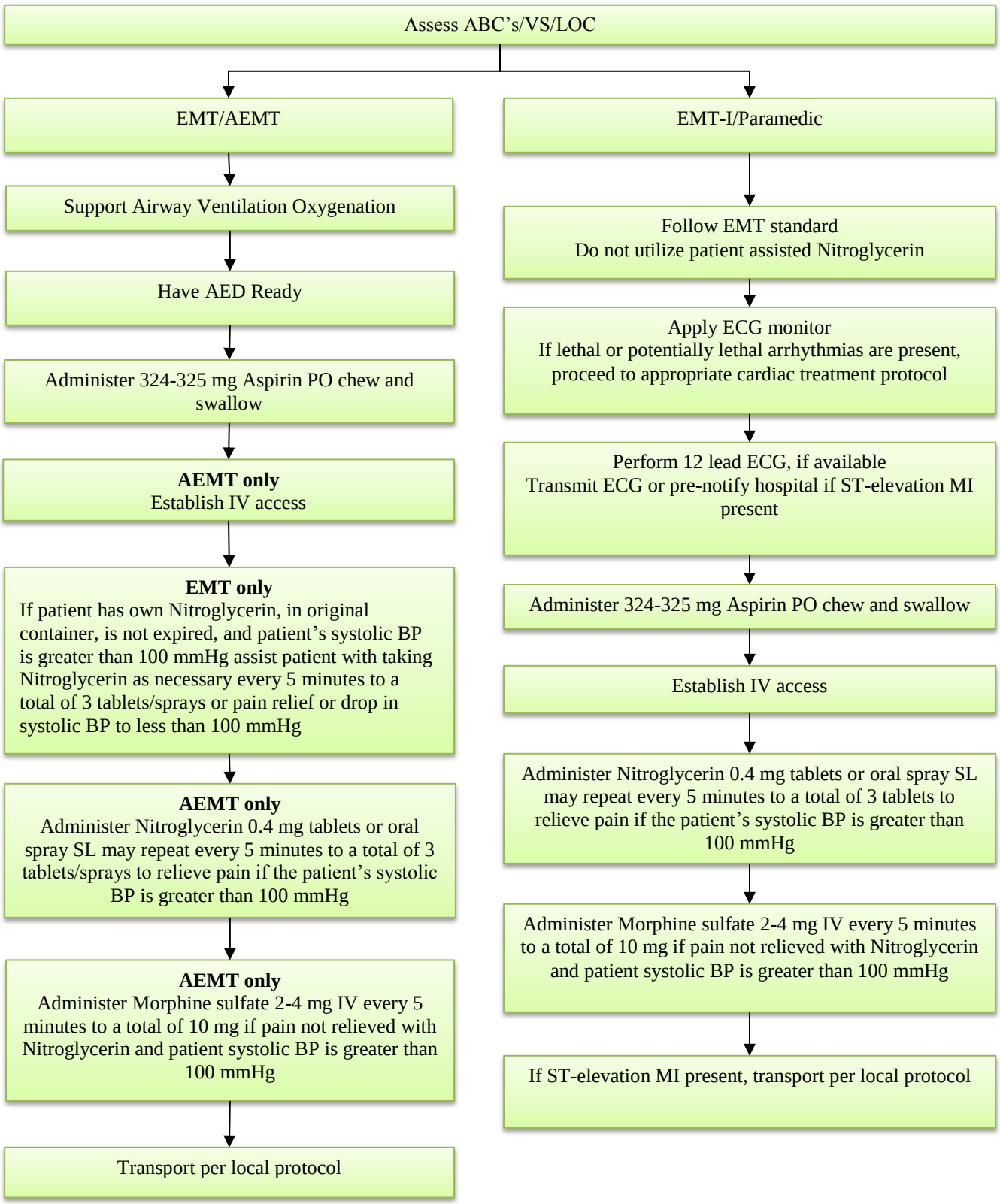
DISCLAIMER

These protocols are designed to be a resource document for use by Medical Direction Authorities, as defined by A.R.S. § 36-2205, responsible for the administrative, organizational and on-line medical direction of pre-hospital Emergency Medical Care Technicians (EMCTs). It is specifically recognized that documented regional or local variations from the guidelines contained within are not only acceptable, but also appropriate, depending on the individual circumstances of the involved areas and organizations.

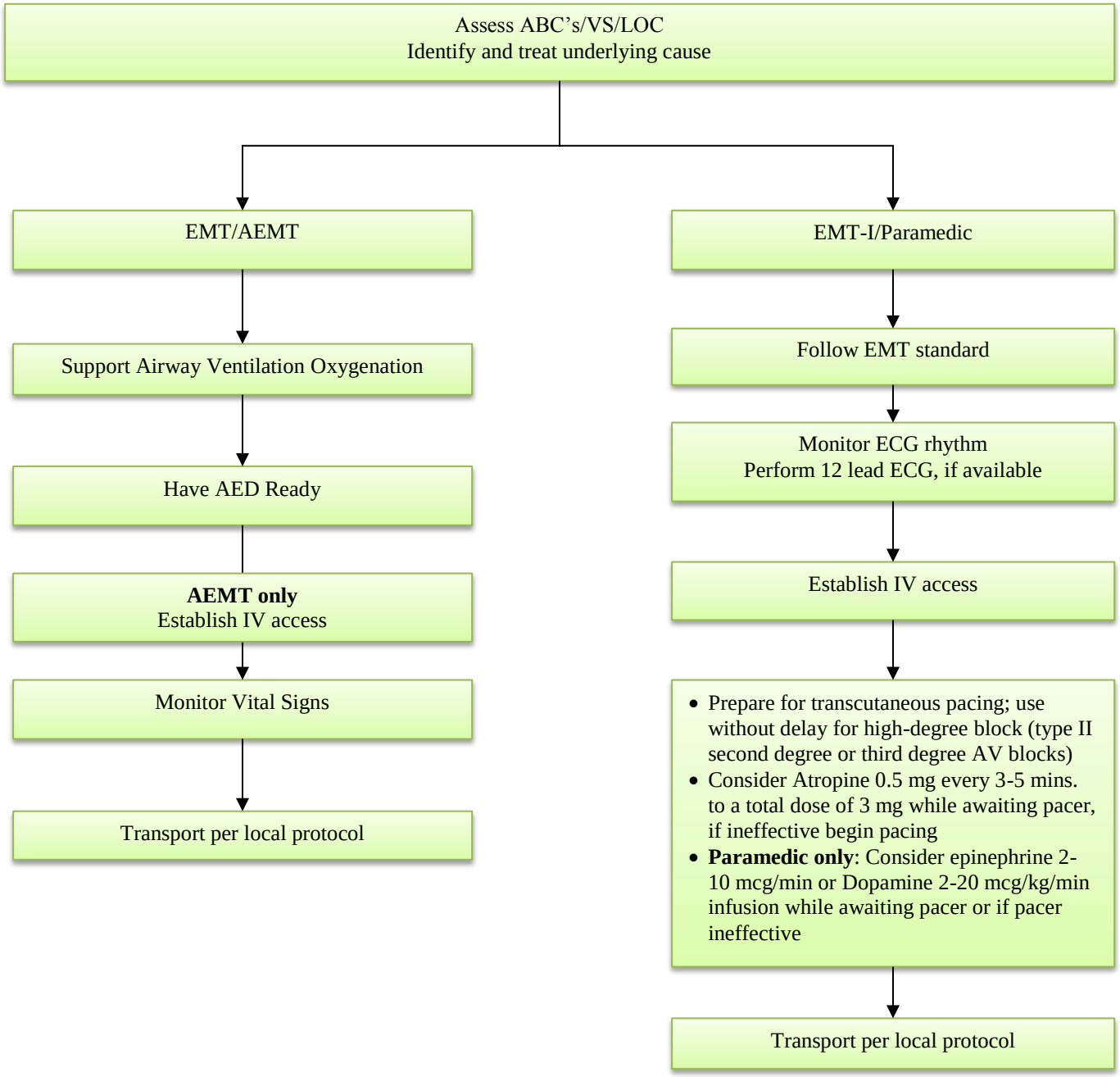
By Statute and Rule, all advanced life support pre-hospital EMCTs shall have administrative and on-line medical direction. These guidelines are not meant to act as a substitute, proxy or alternative to that medical direction. Any conflict between these guidelines and the EMCT's medical direction shall 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 documented regional or local 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.

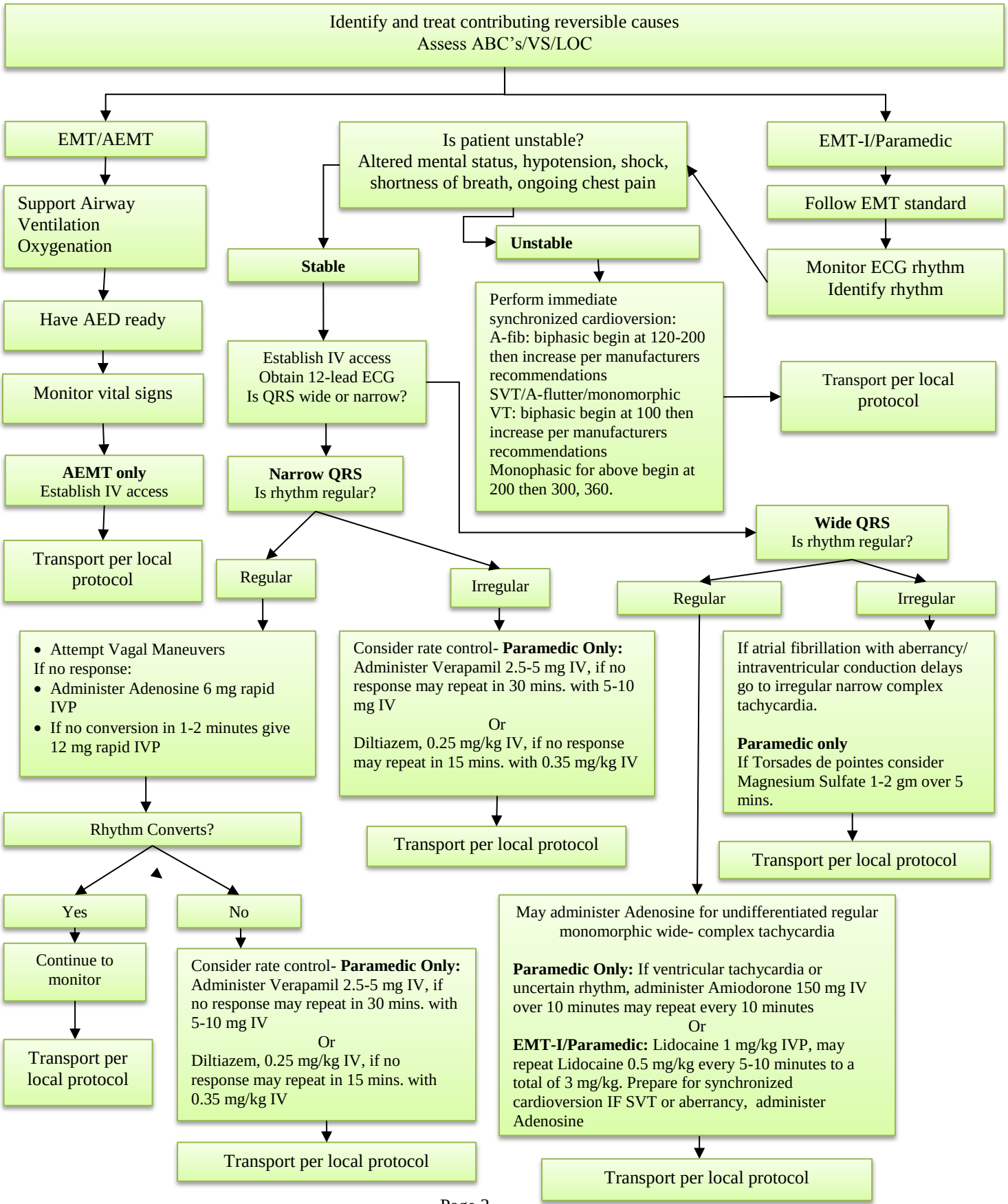
Adult Chest Pain of Probable Cardiac Origin



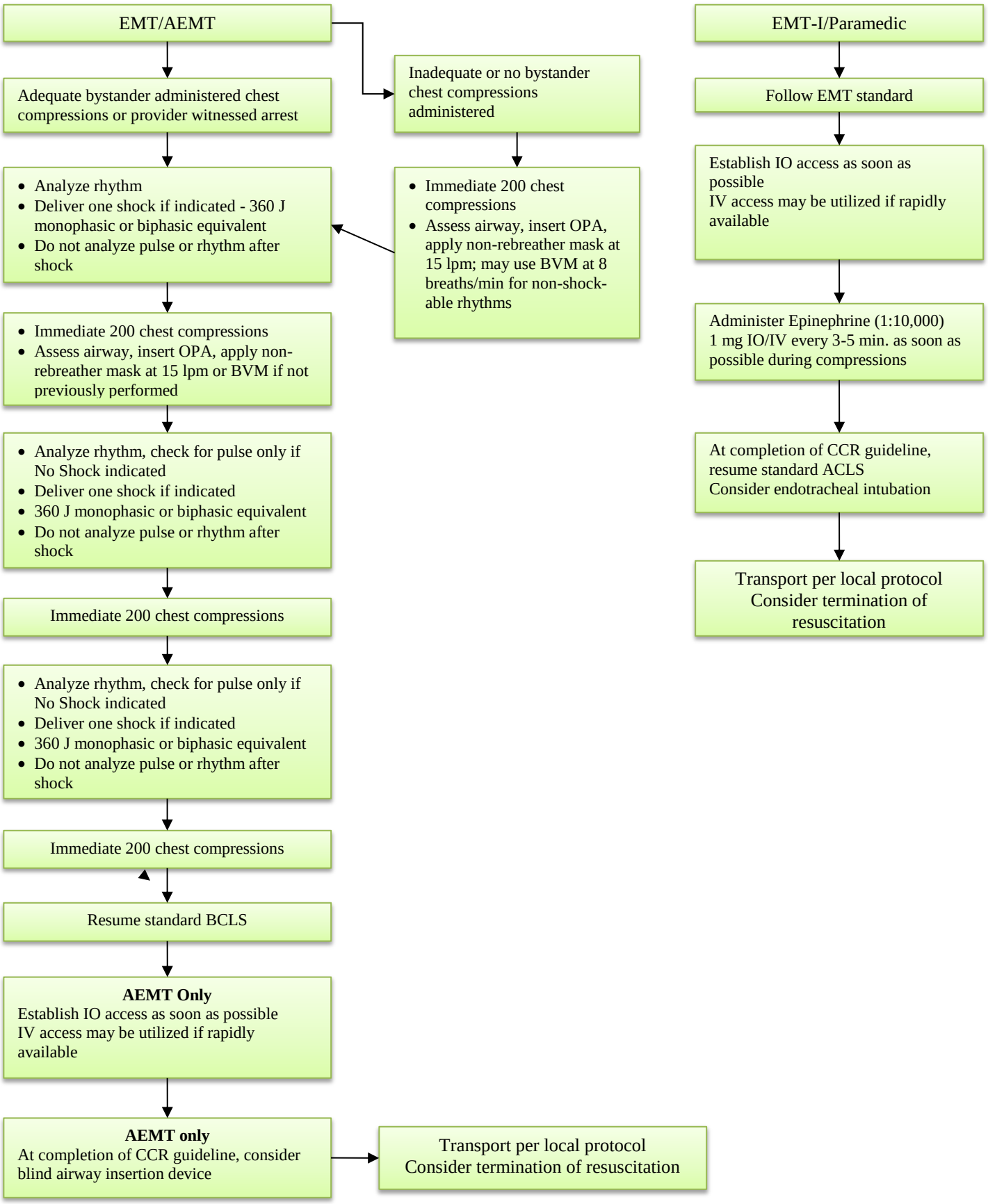
Adult Bradycardia, Symptomatic



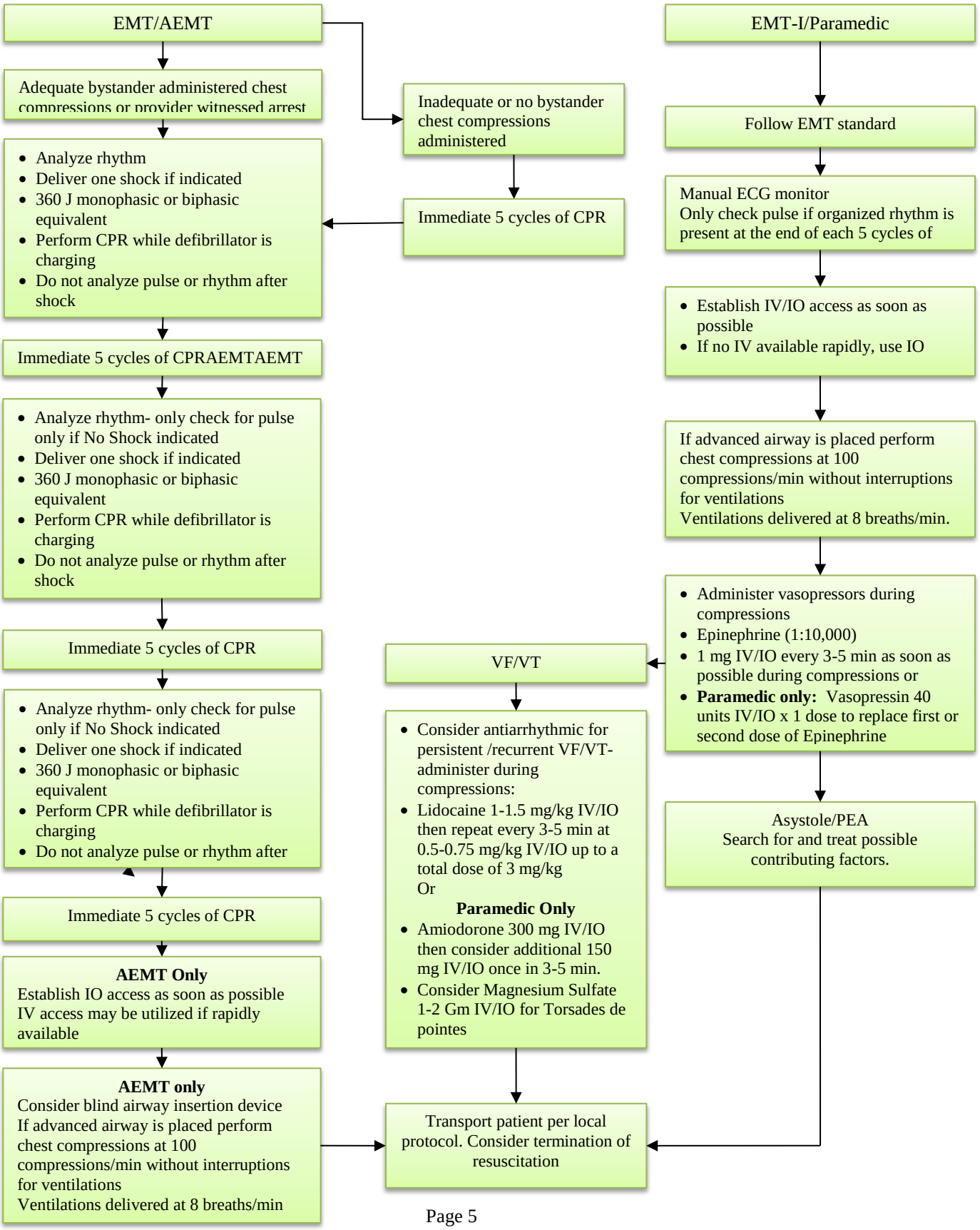
Adult Tachycardia with Pulses



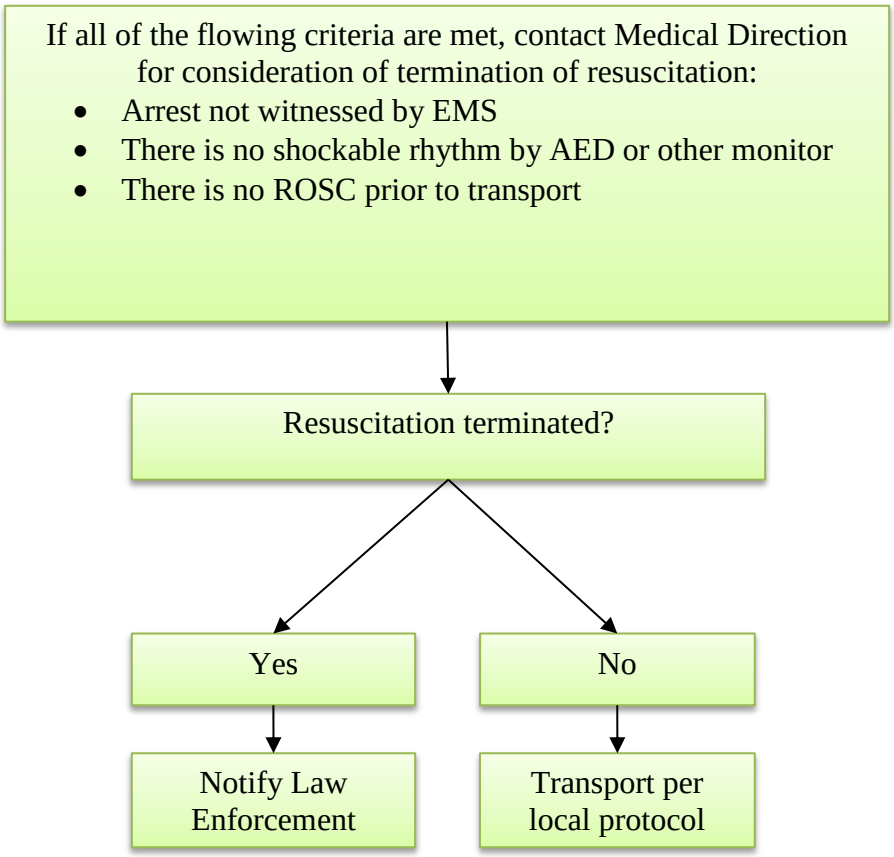
Adult Pulseless Arrest-Cardiocerebral Resuscitation



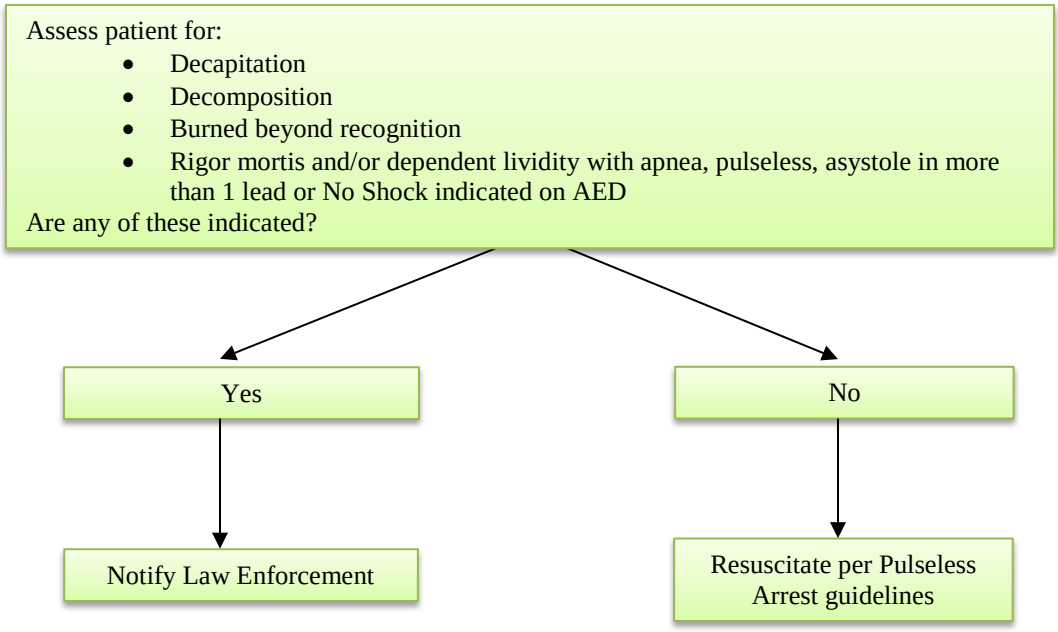
Adult Pulseless Arrest



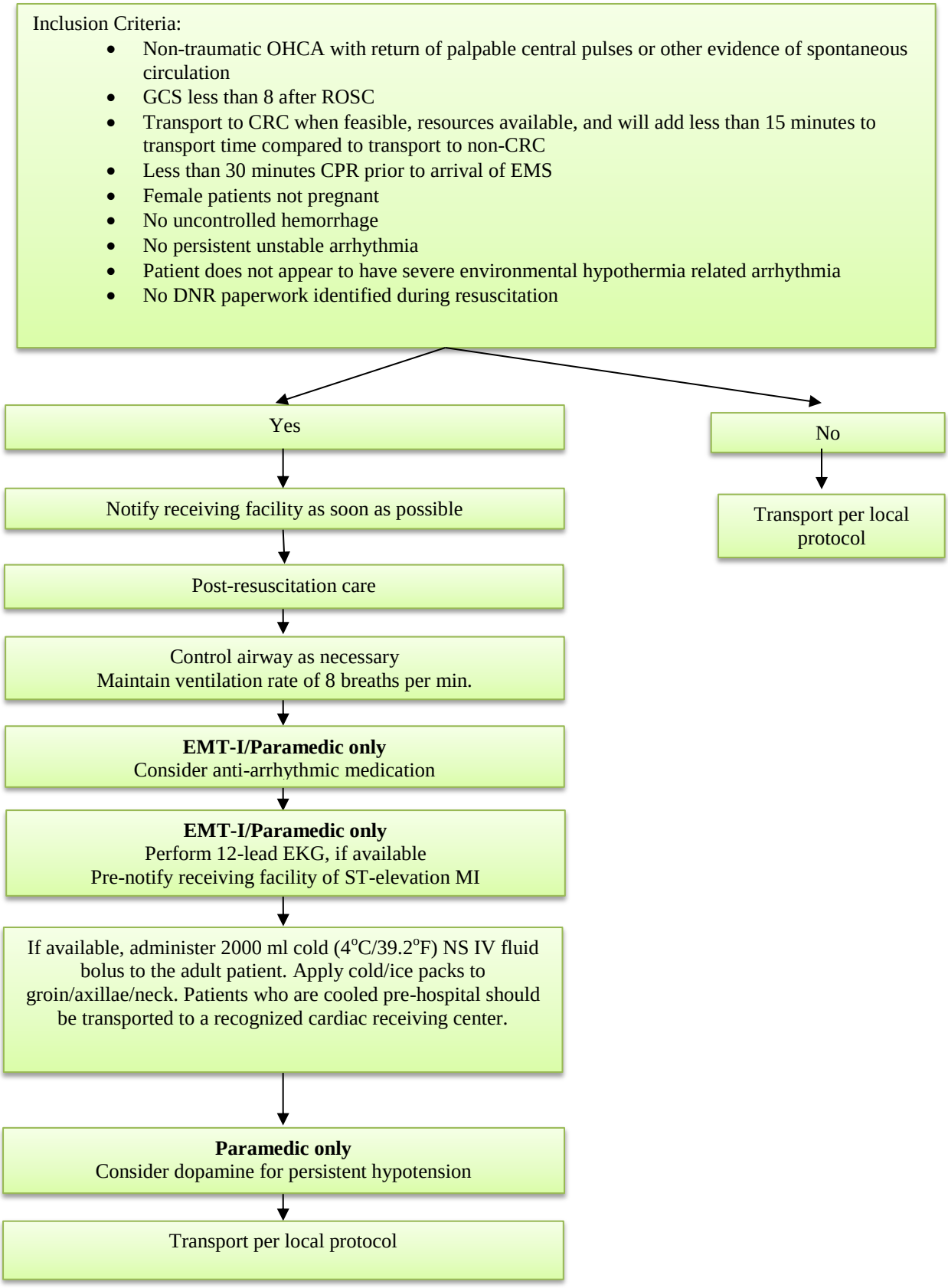
Adult Termination of Resuscitation Efforts
[Environmental Hypothermia not Present]



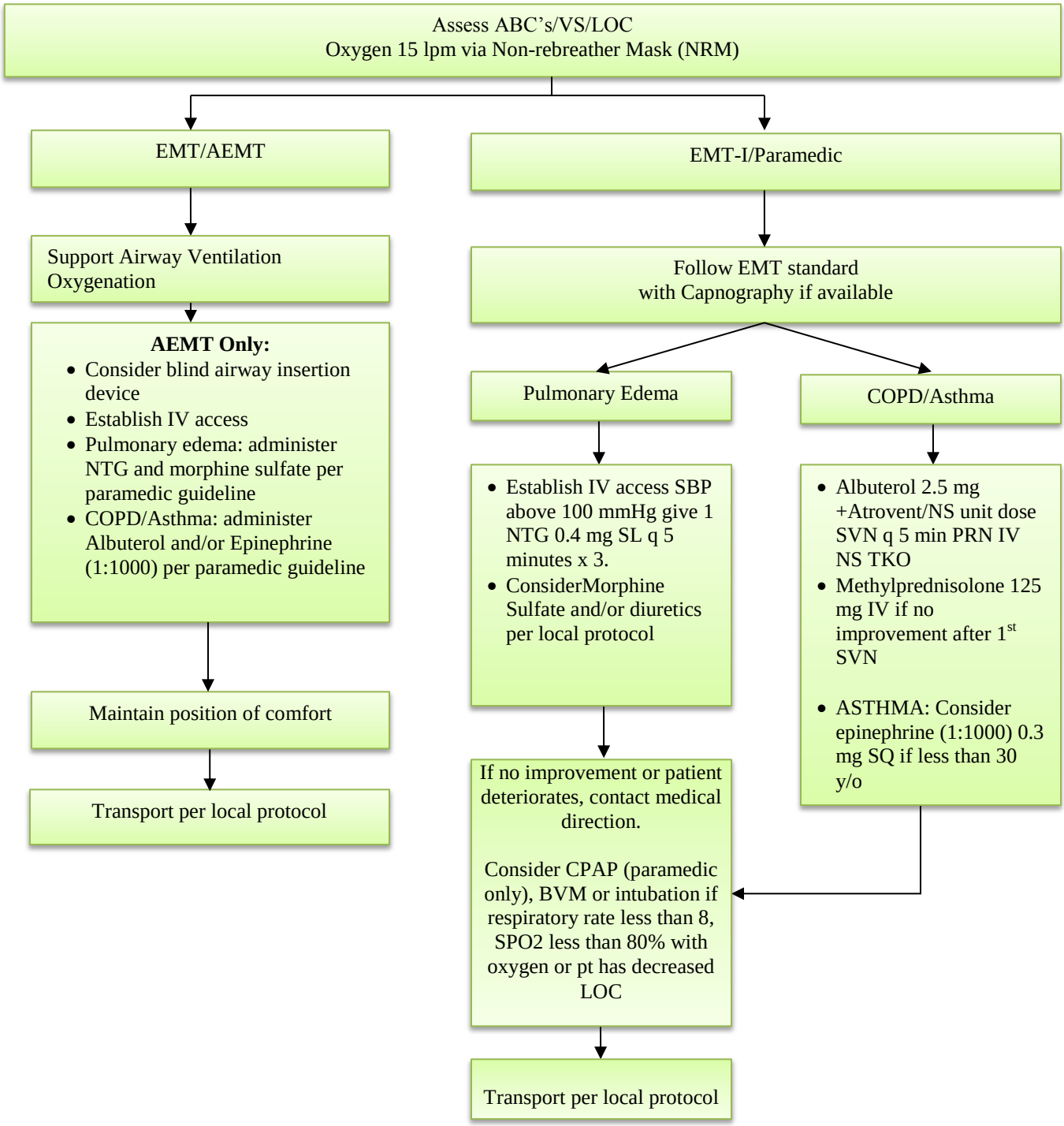
Adult Withholding of Resuscitation Efforts



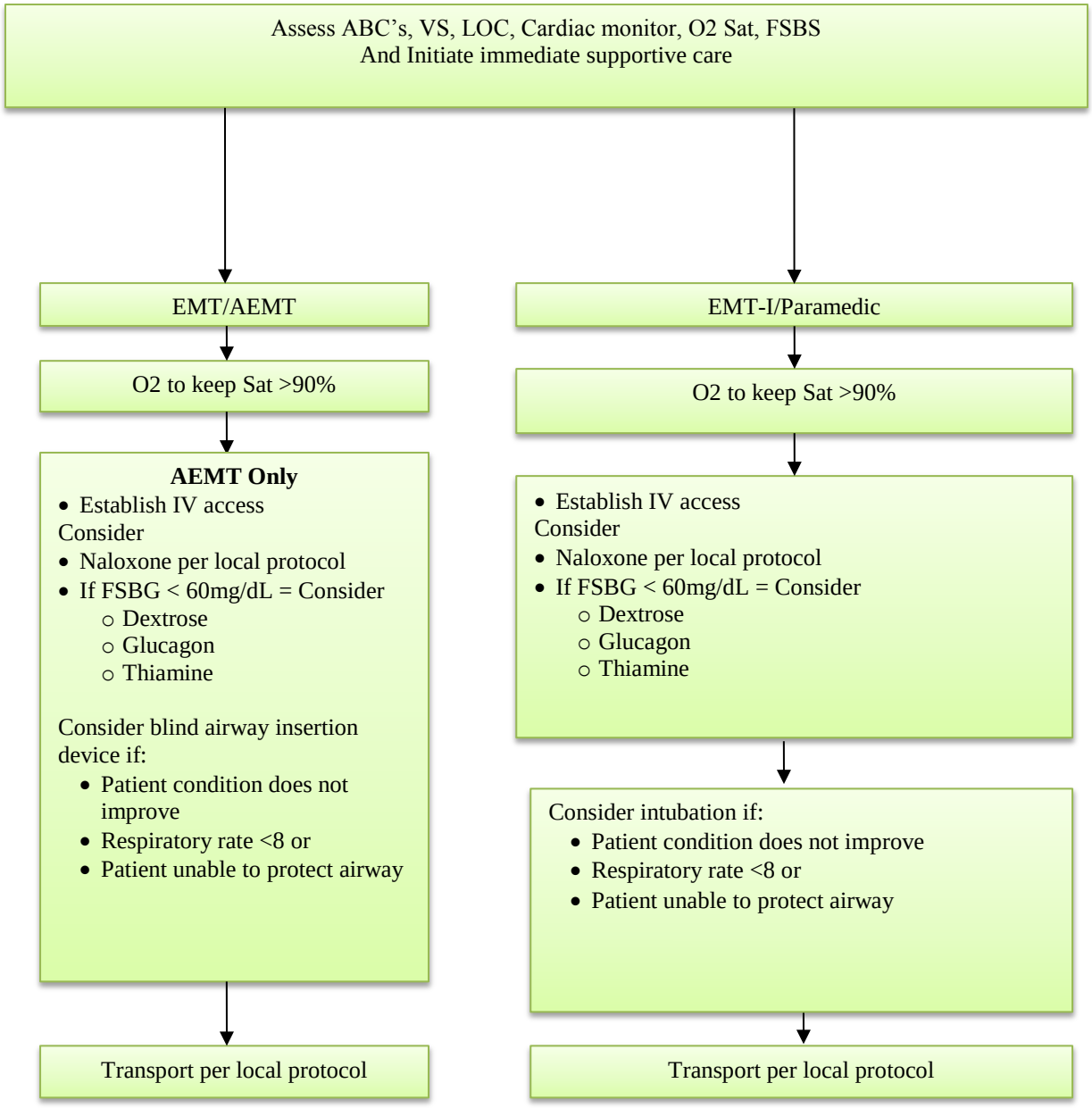
Adult Transport to a Recognized Cardiac Receiving Center/Cardiac Arrest Post-Resuscitation



Adult Respiratory Difficulty

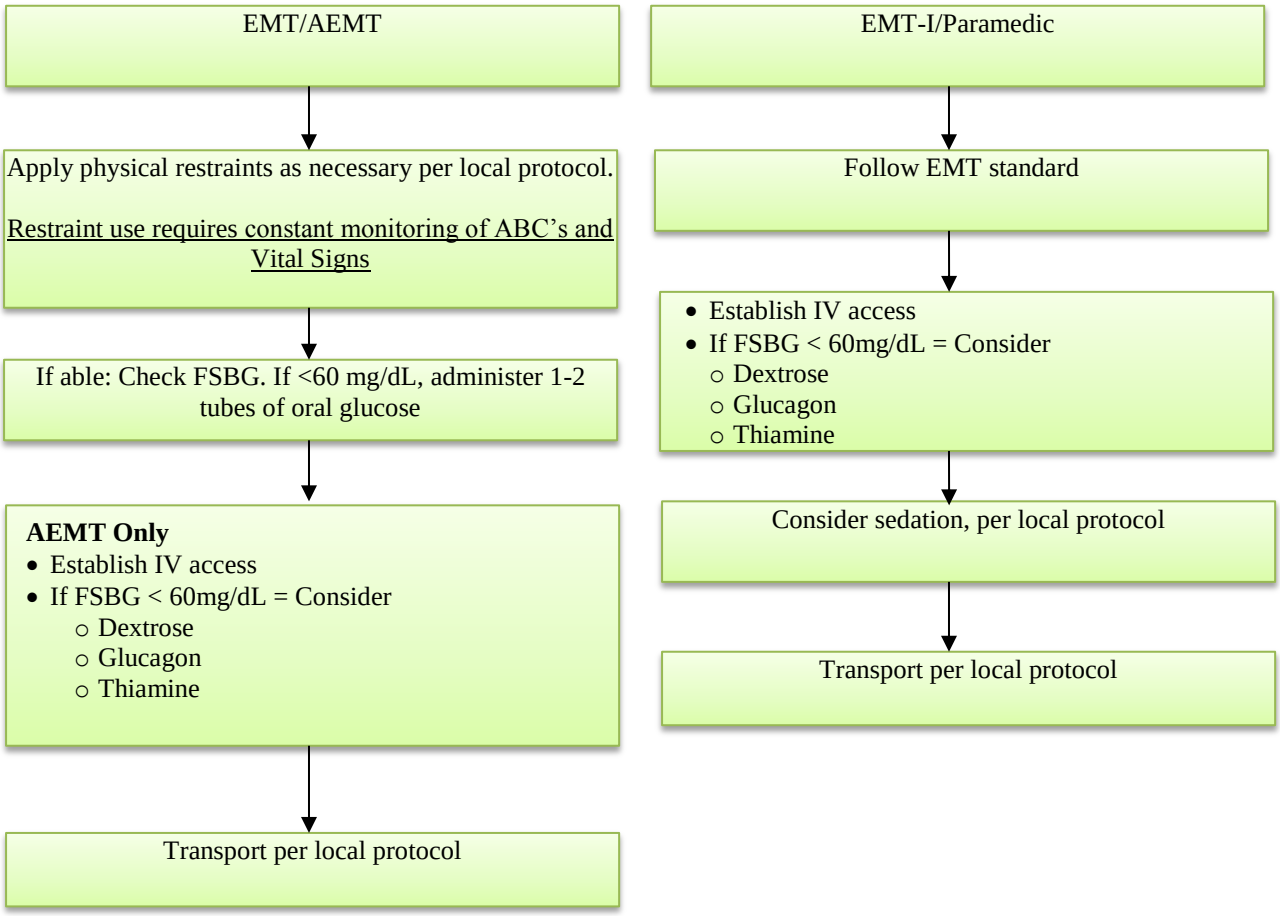


Adult Unconscious/Unresponsive
[Non-Traumatic Adult ≥ 15 Y/O]

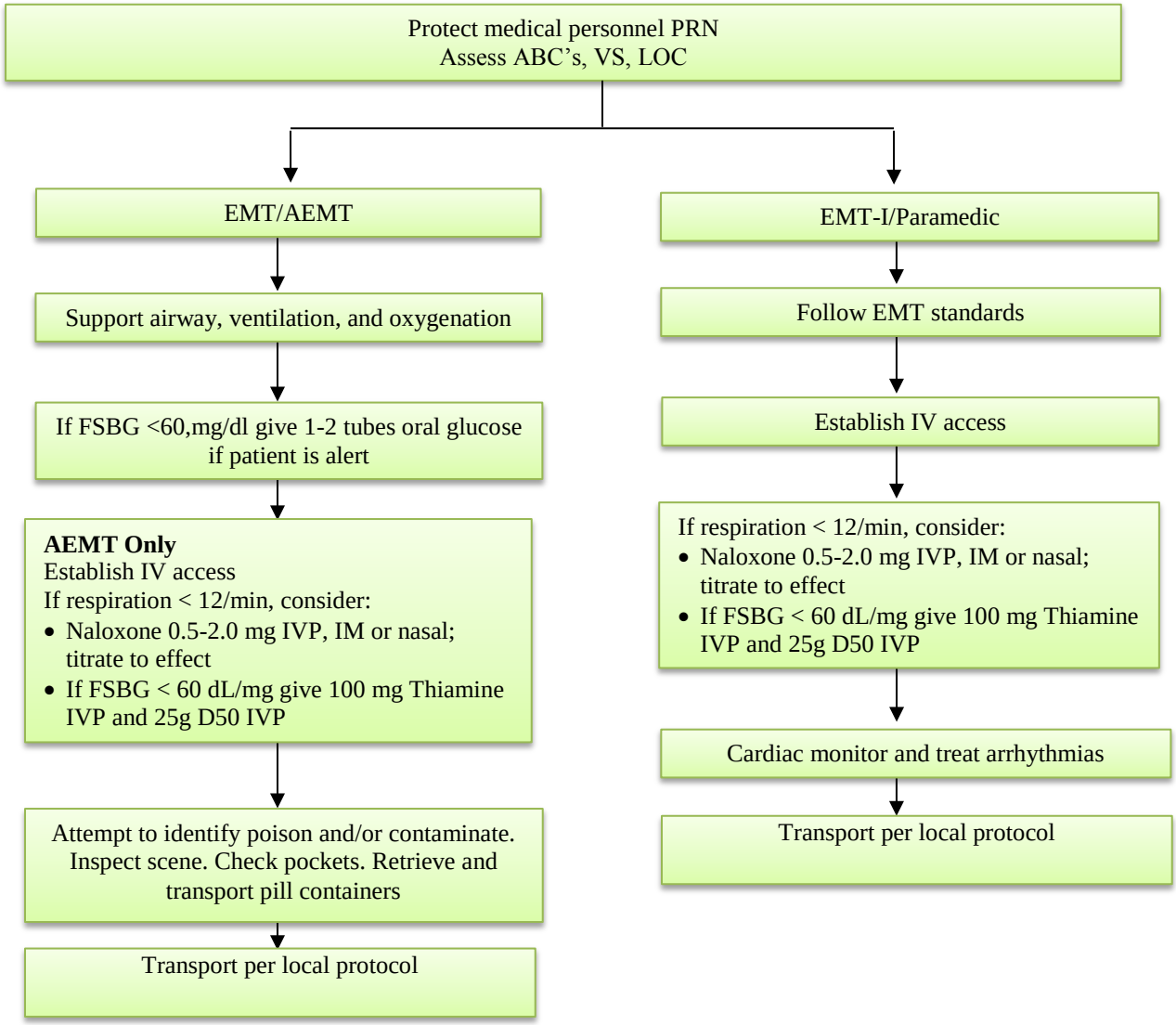


Adult Behavioral Emergency – Violent or Combative Patient

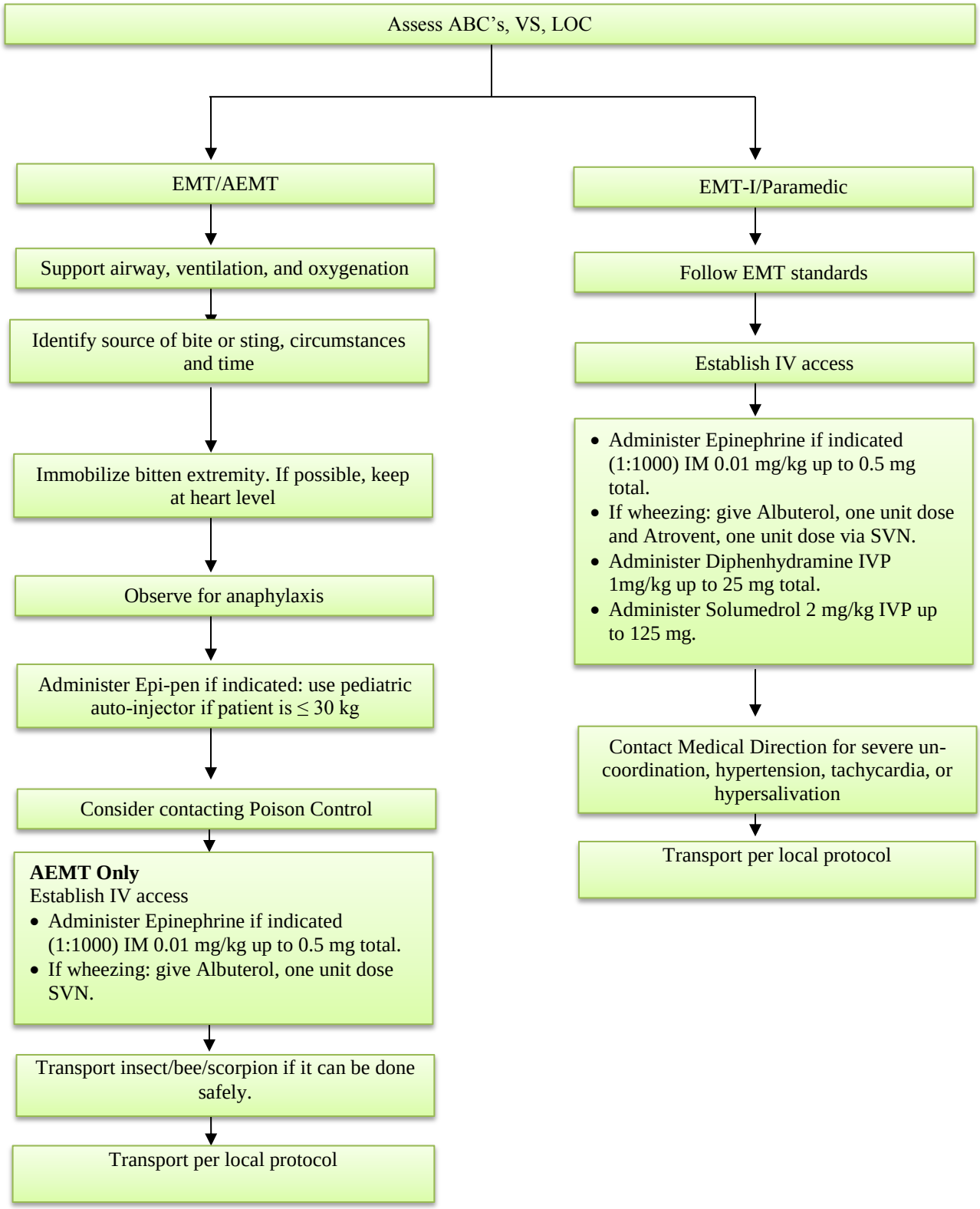
If patient is an immediate threat to the crew or bystanders, step away from scene and call for police assistance.
If able, assess ABC's, VS, LOC



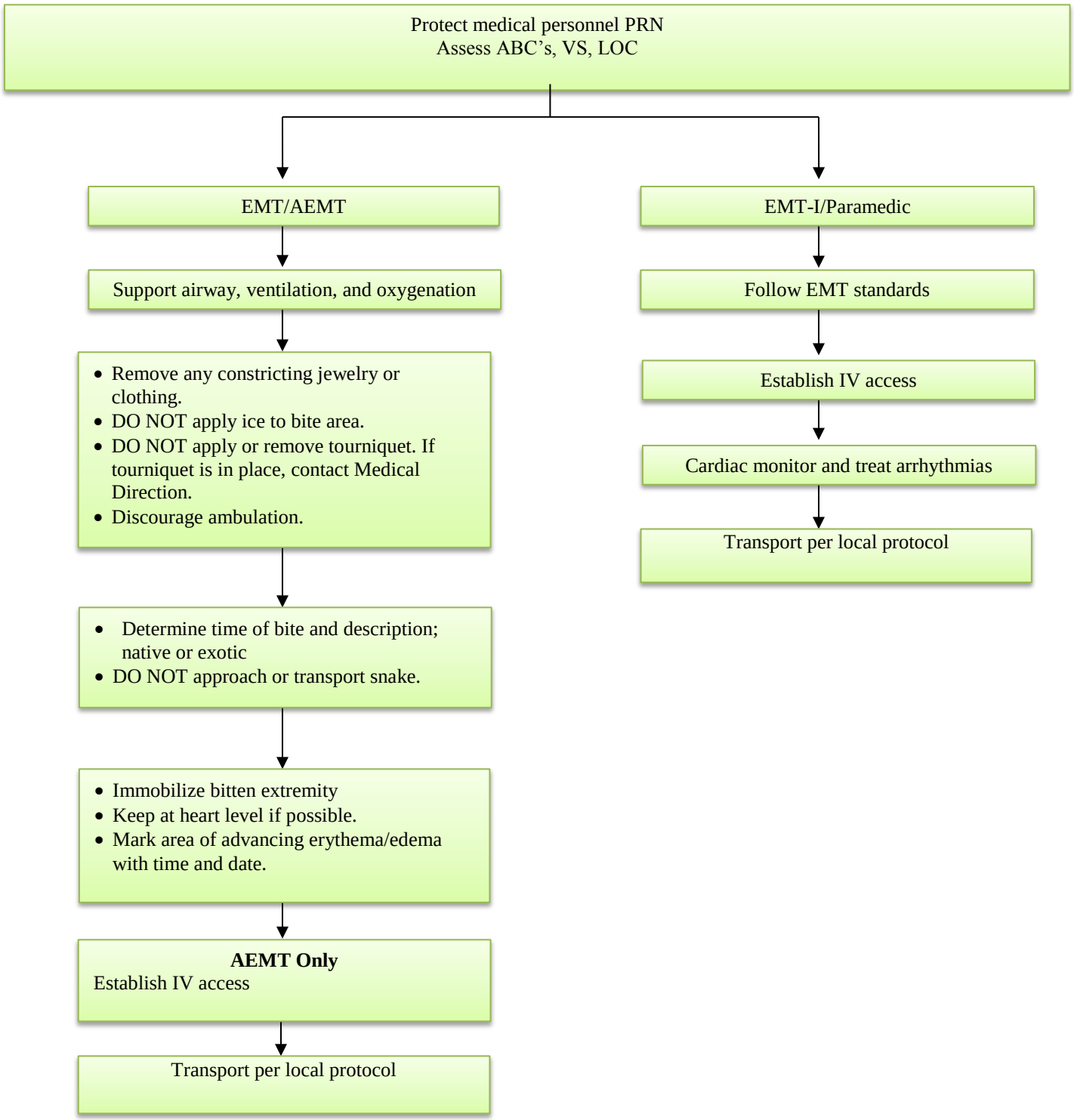
Poison Ingestion/Inhalation



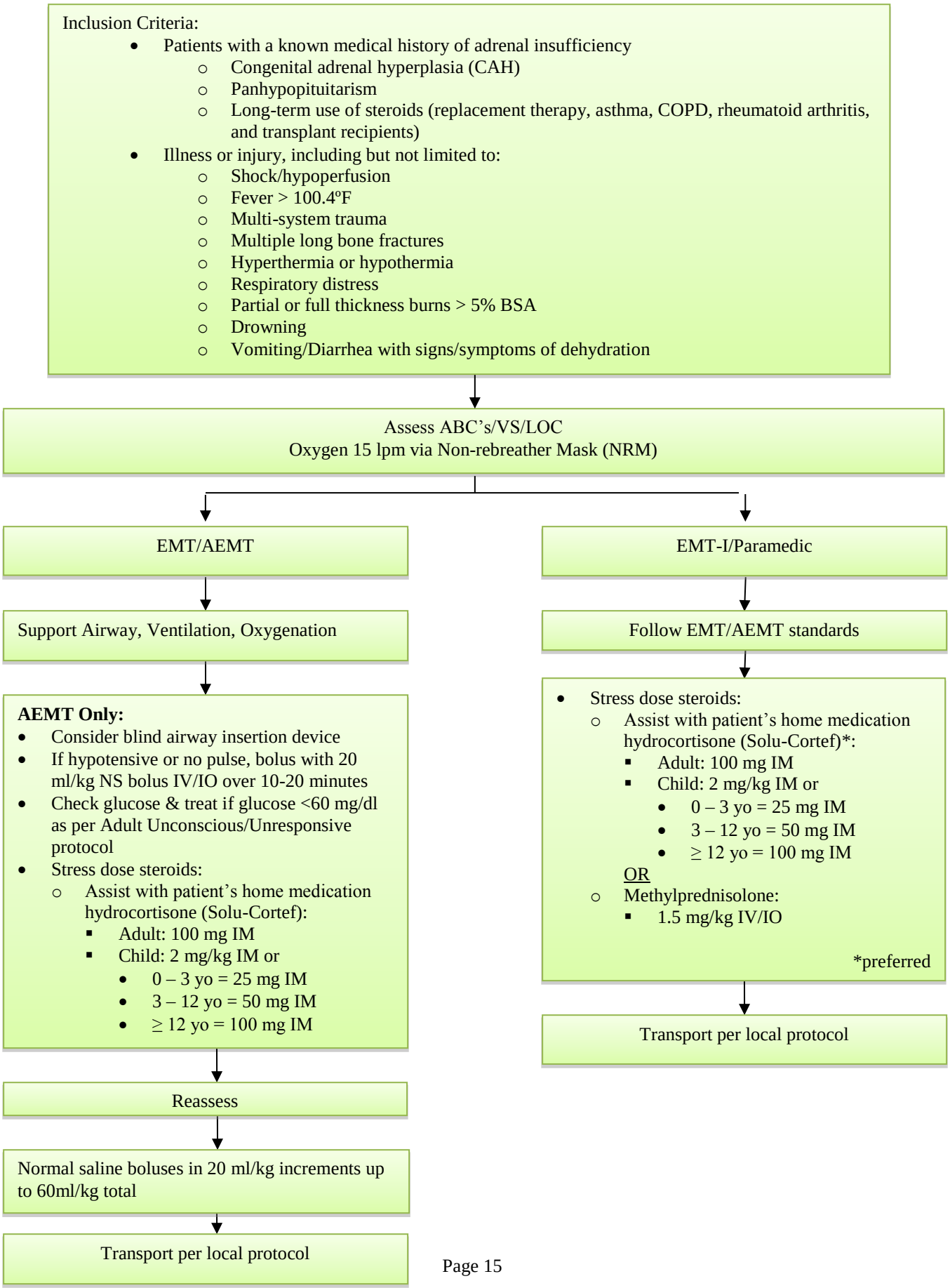
Adult Poison - Bites and Stings



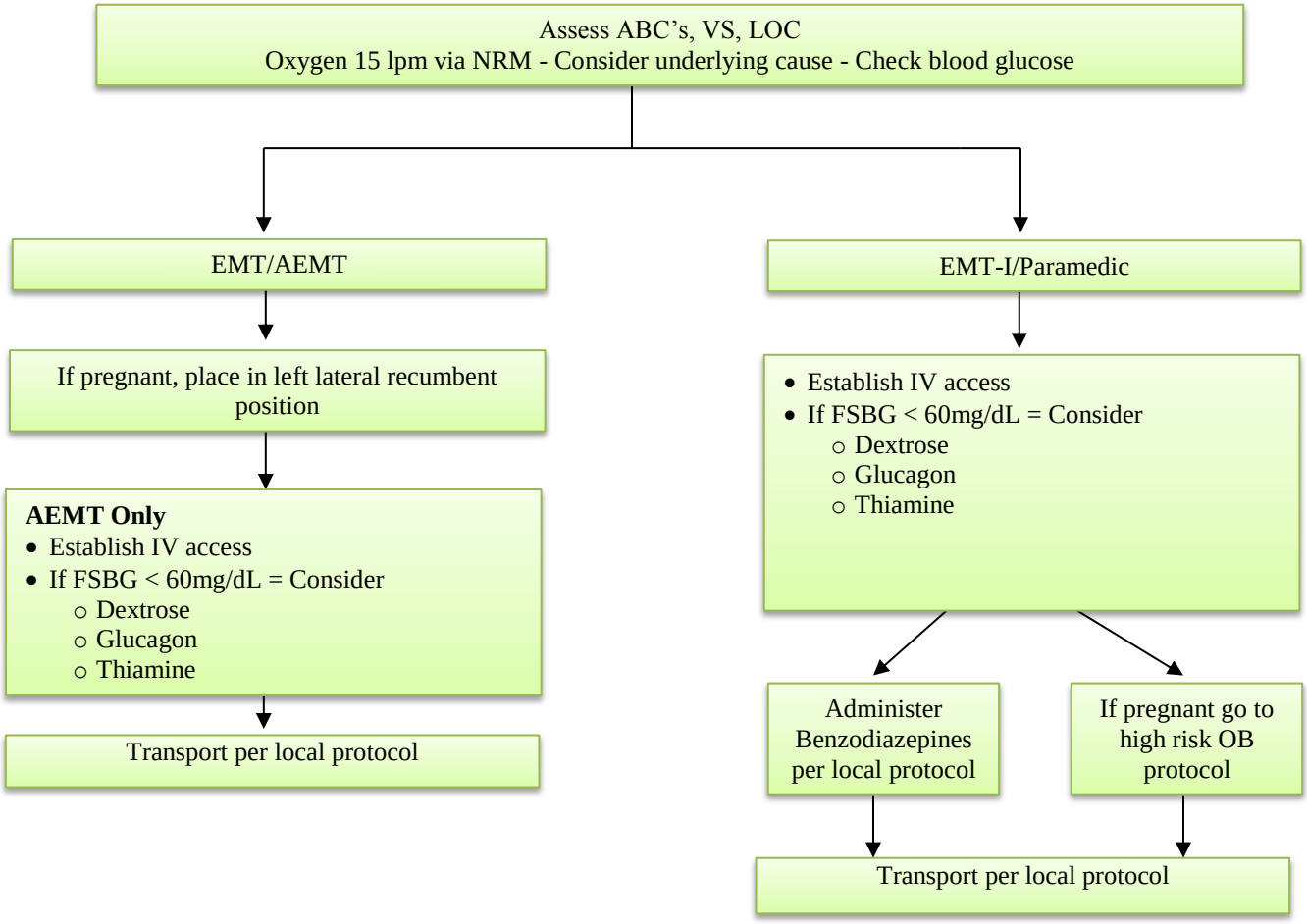
Poison – Snakebite



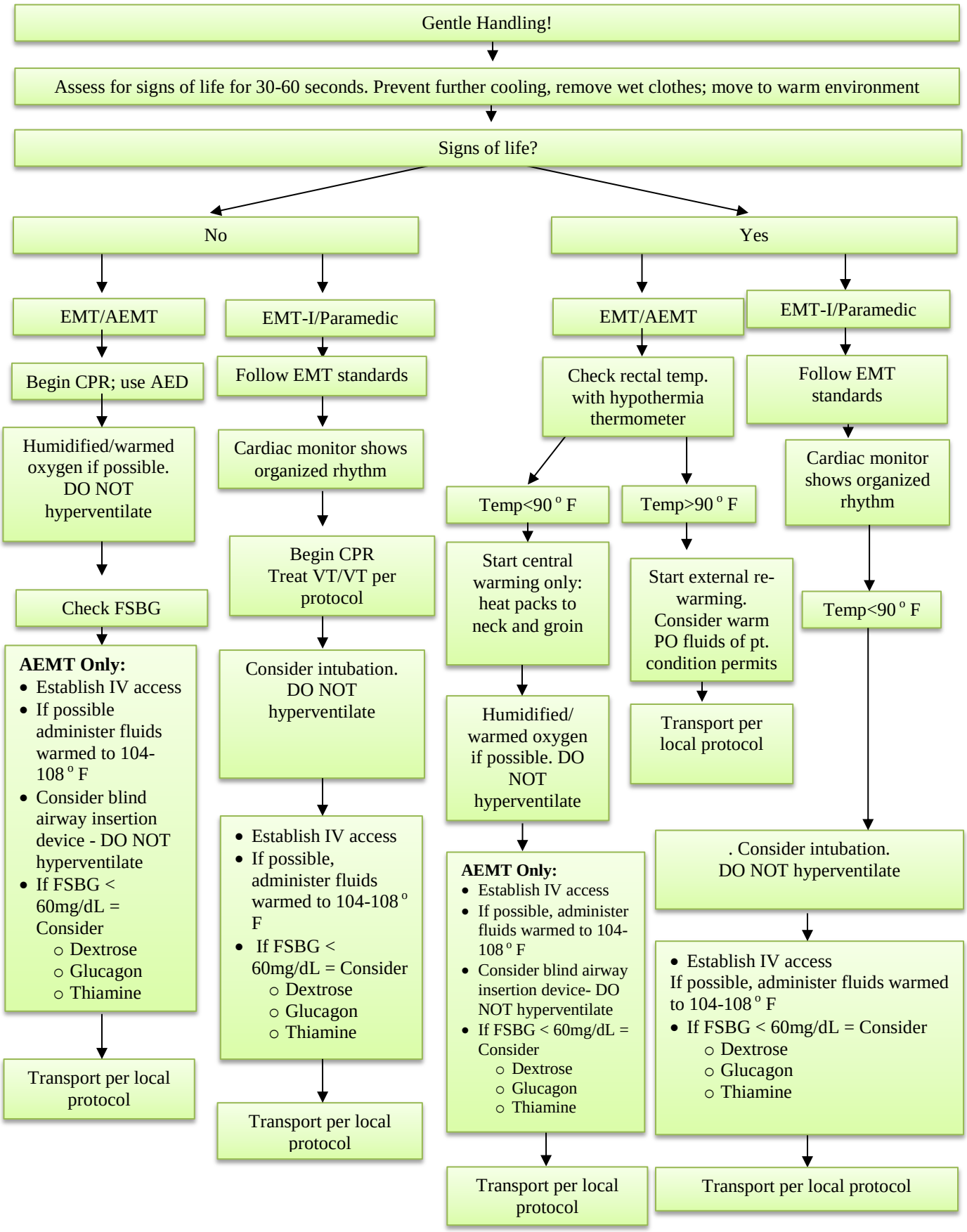
Adult Adrenal Insufficiency



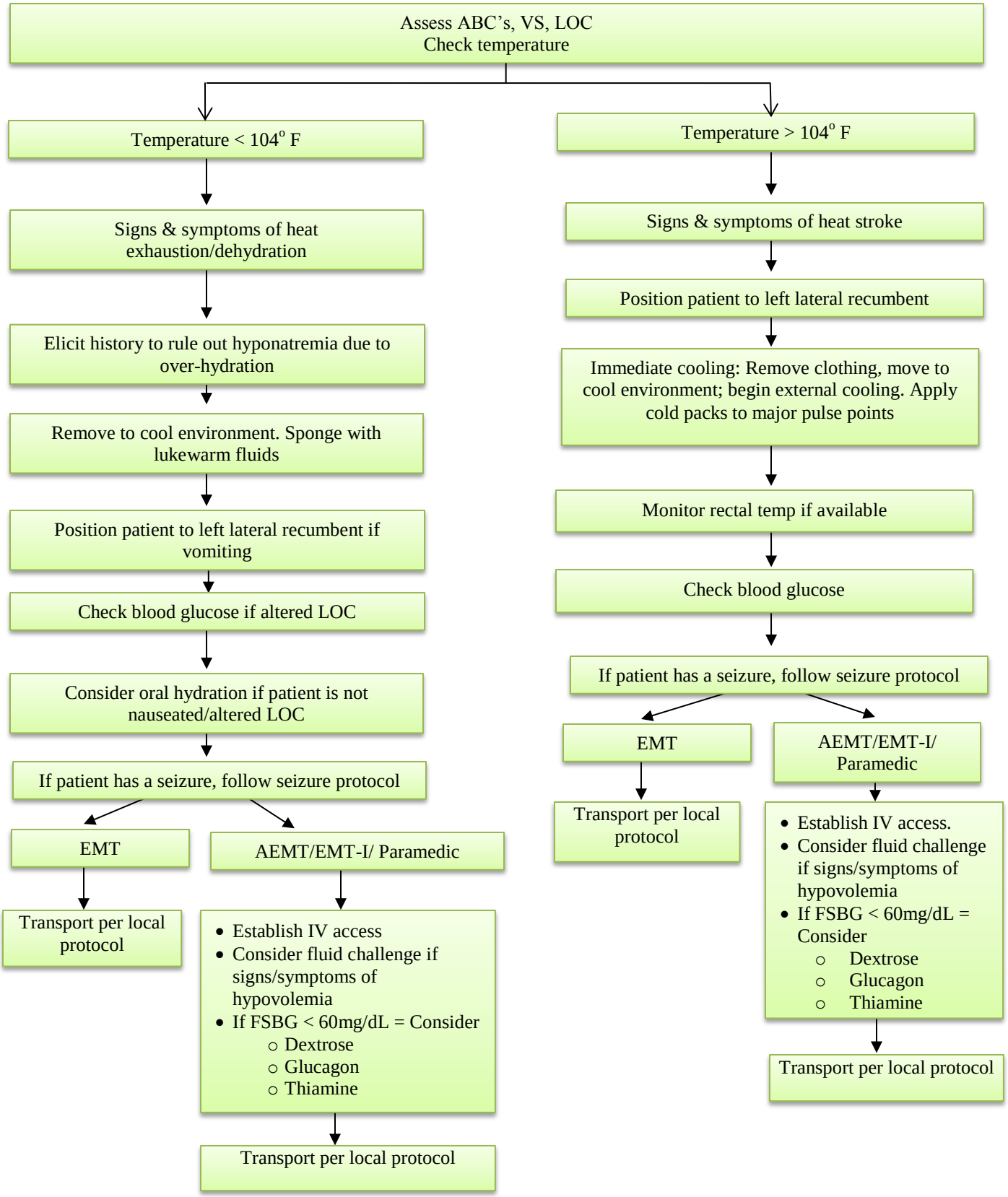
Adult Seizures



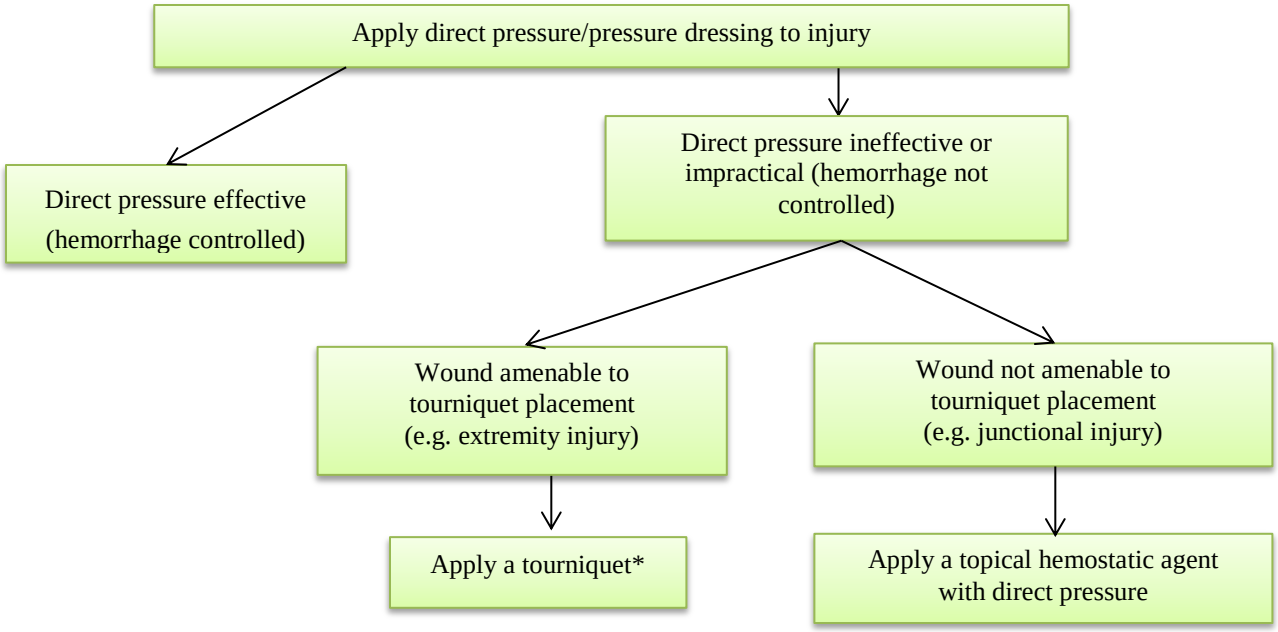
Hypothermia



Hyperthermia

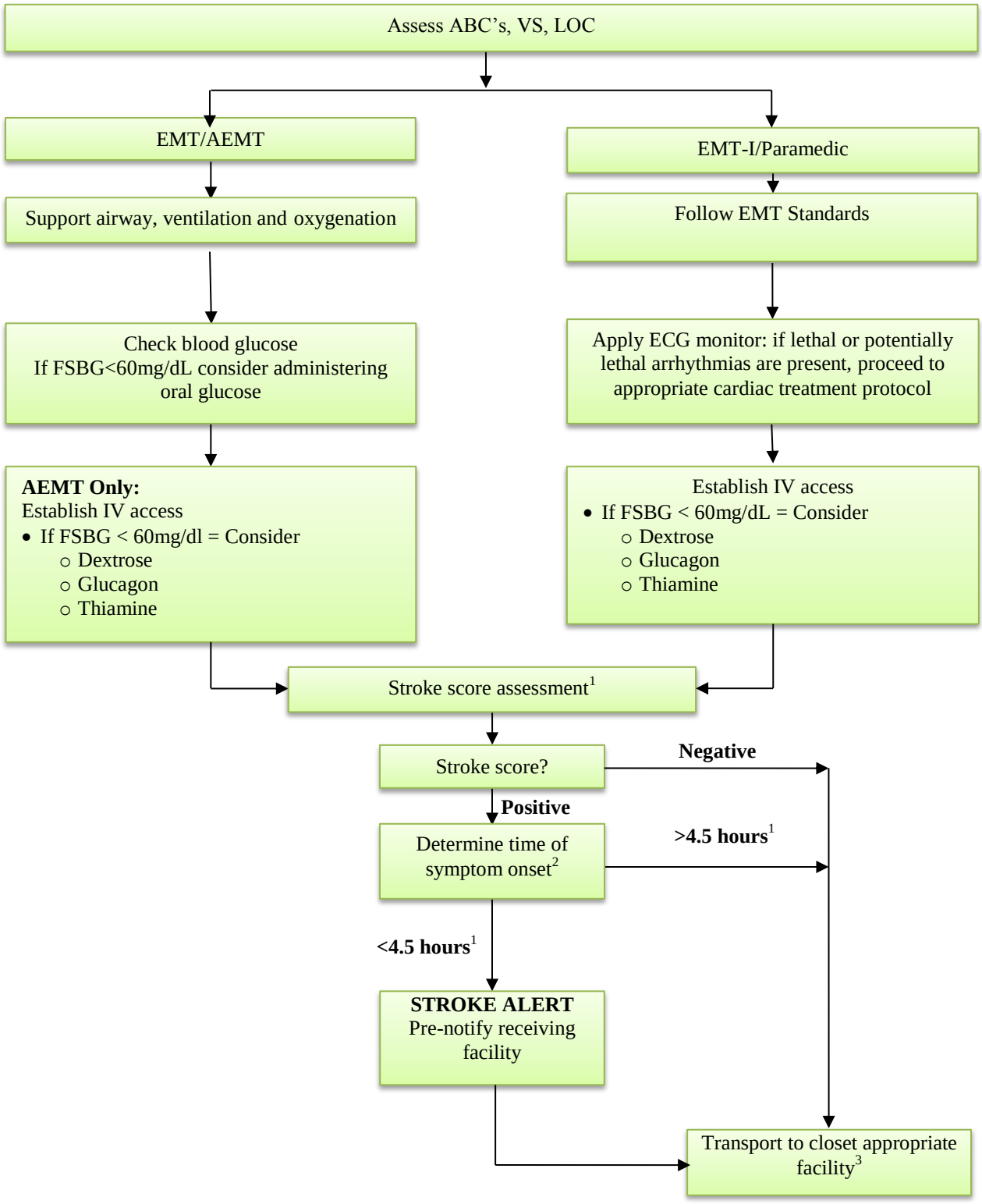


External Hemorrhage Control



*Use of tourniquet for extremity hemorrhage is strongly recommended if sustained direct pressure is ineffective or impractical; Use a commercially-produced, windlass, pneumatic, or ratcheting device, which has been demonstrated to occlude arterial flow and avoid narrow, elastic, or bungee-type devices; Utilize improvised tourniquets only if no commercial device is available ; Do not release a properly-applied tourniquet until the patient reaches definitive care #Apply a topical hemostatic agent, in combination with direct pressure, for wounds in anatomic areas where tourniquets cannot be applied and sustained direct pressure alone is ineffective or impractical; Only apply topical hemostatic agents in a gauze format that supports wound packing; Only utilize topical hemostatic agents which have been determined to be effective and safe in a standardized laboratory injury model.

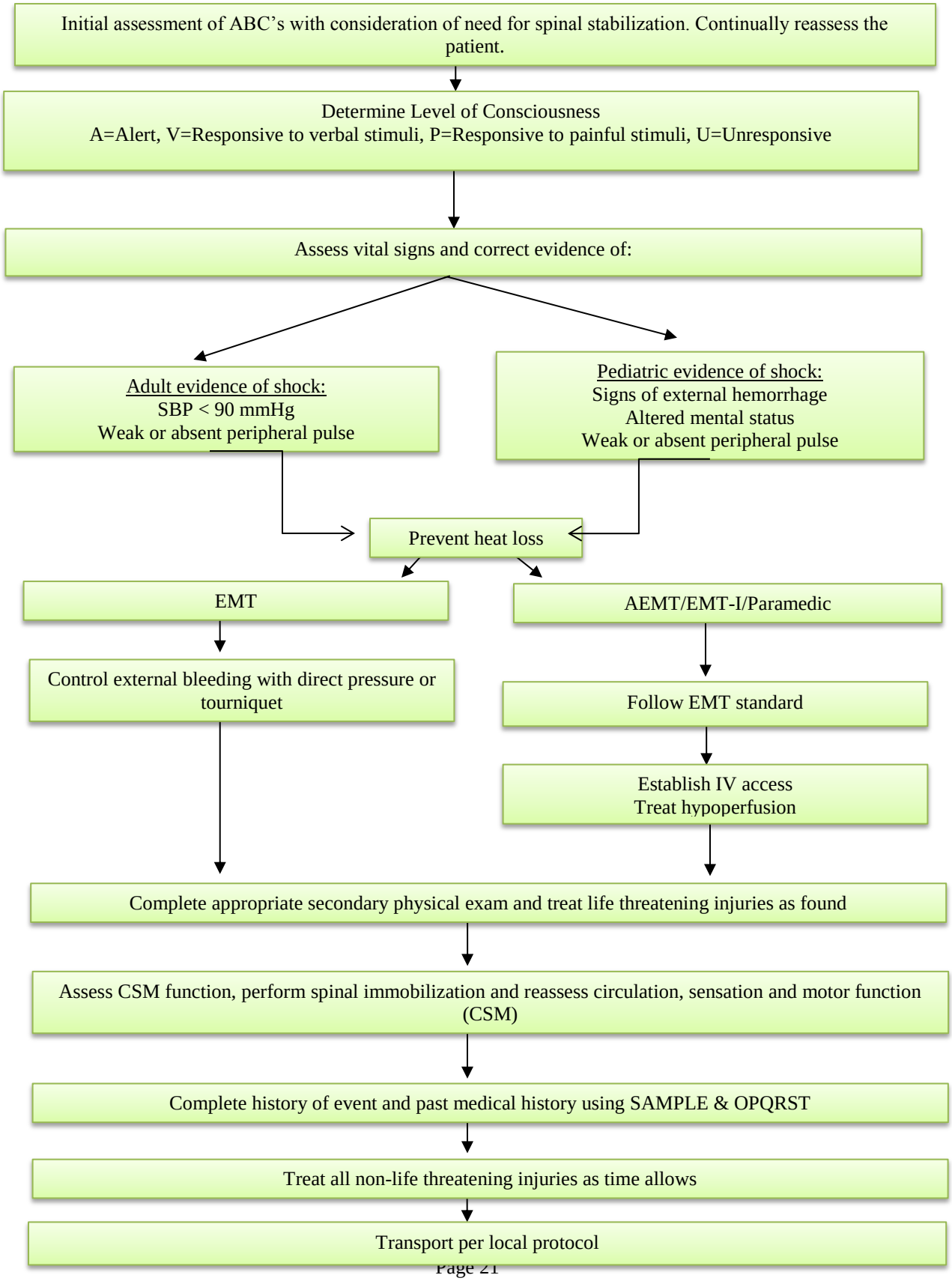
Adult Suspected Stroke



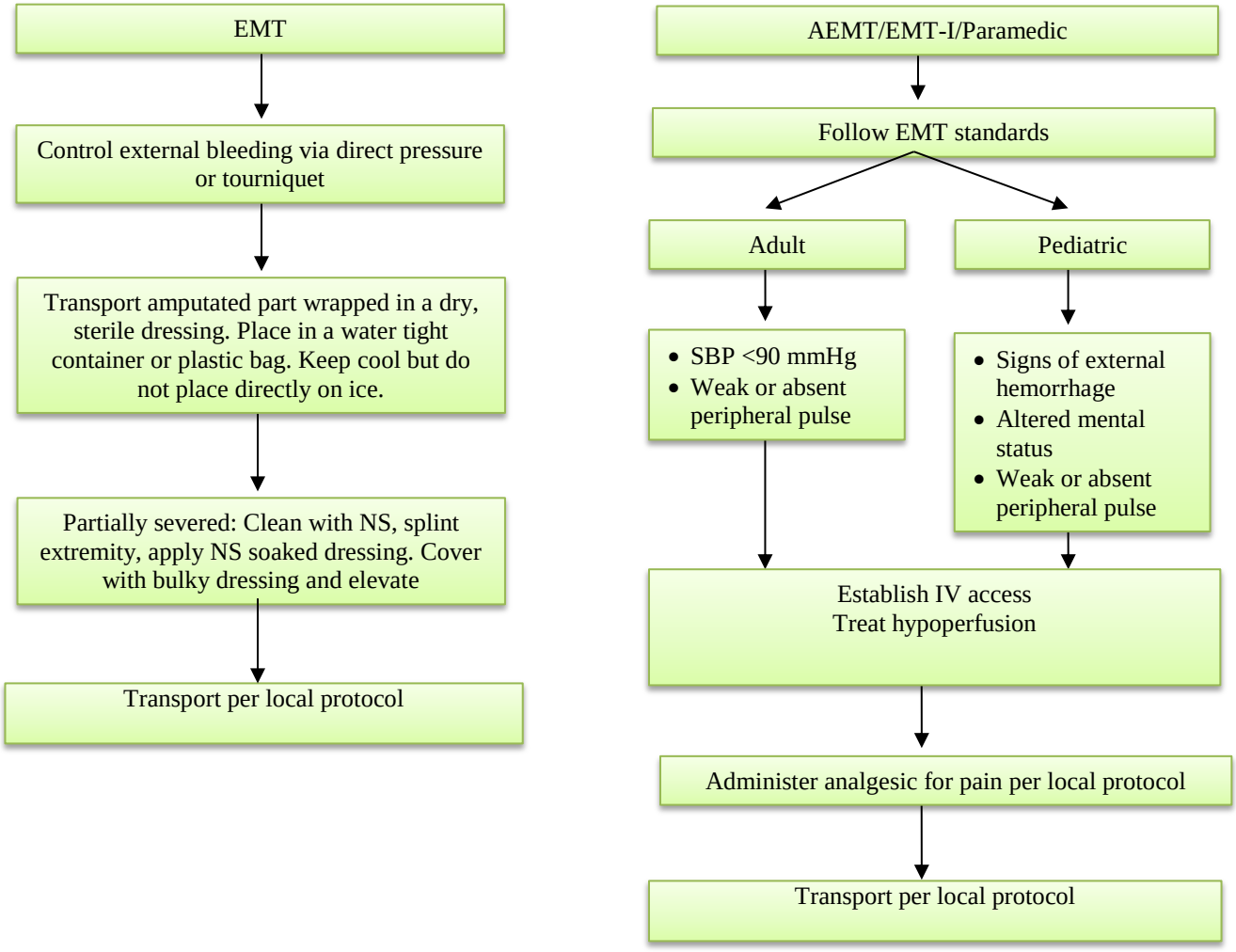
[1]method determined by regional medical guidelines
[2]last normal if time of onset unknown
[3]as determined by local medical direction

Trauma - General Management

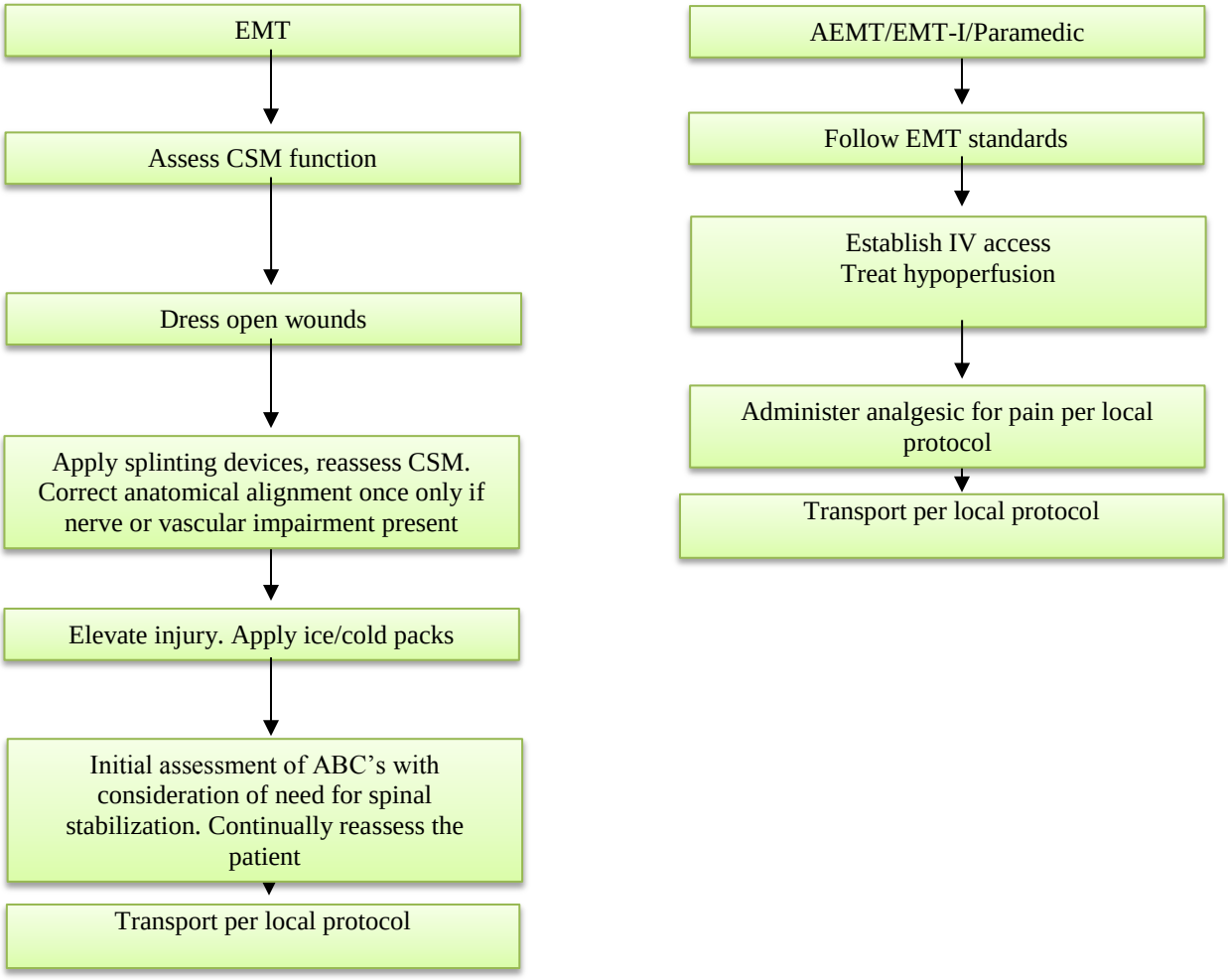
Determine and evaluate mechanism of injury



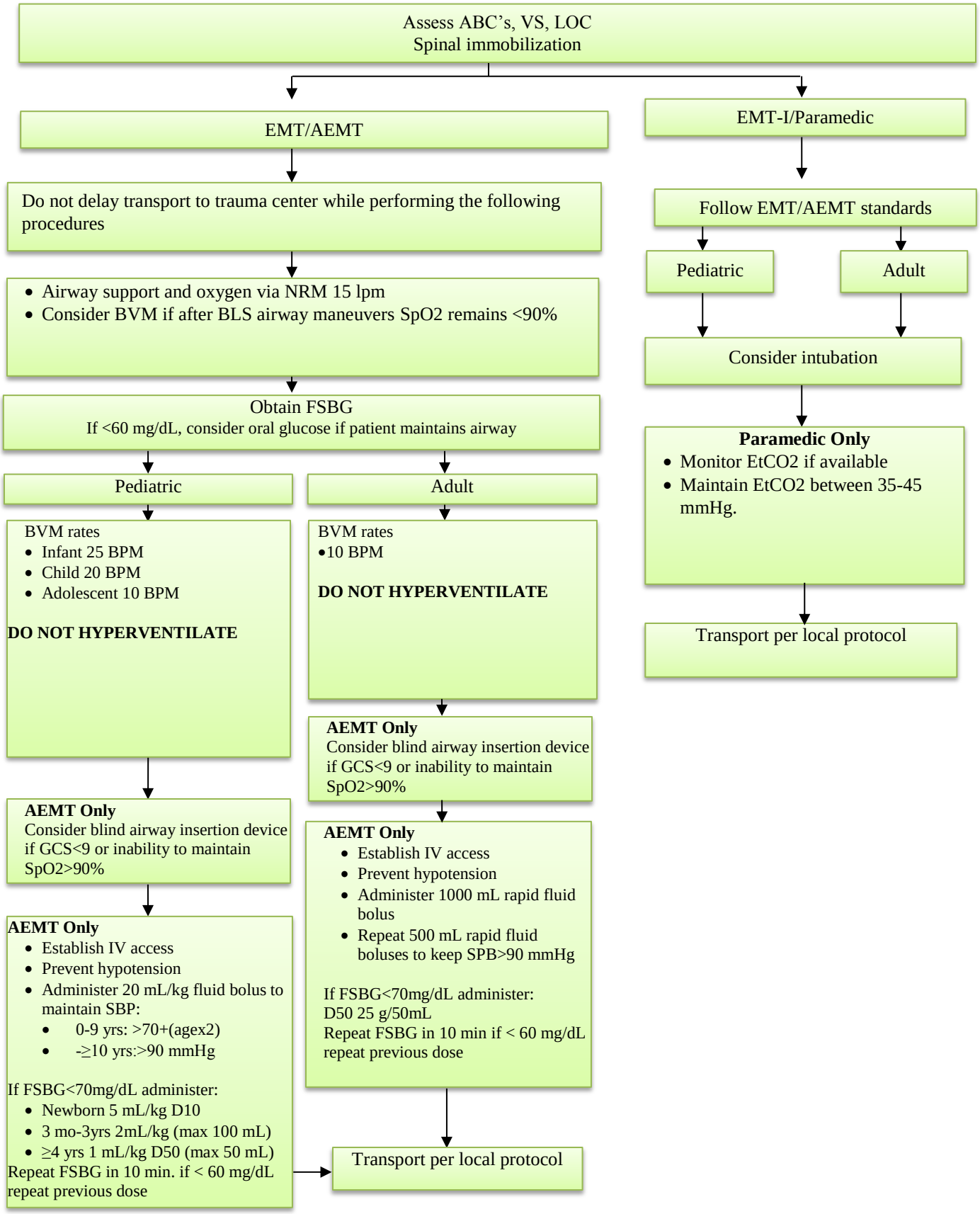
Trauma - Amputated Parts



Trauma - Extremity Fractures, Dislocation and Sprains



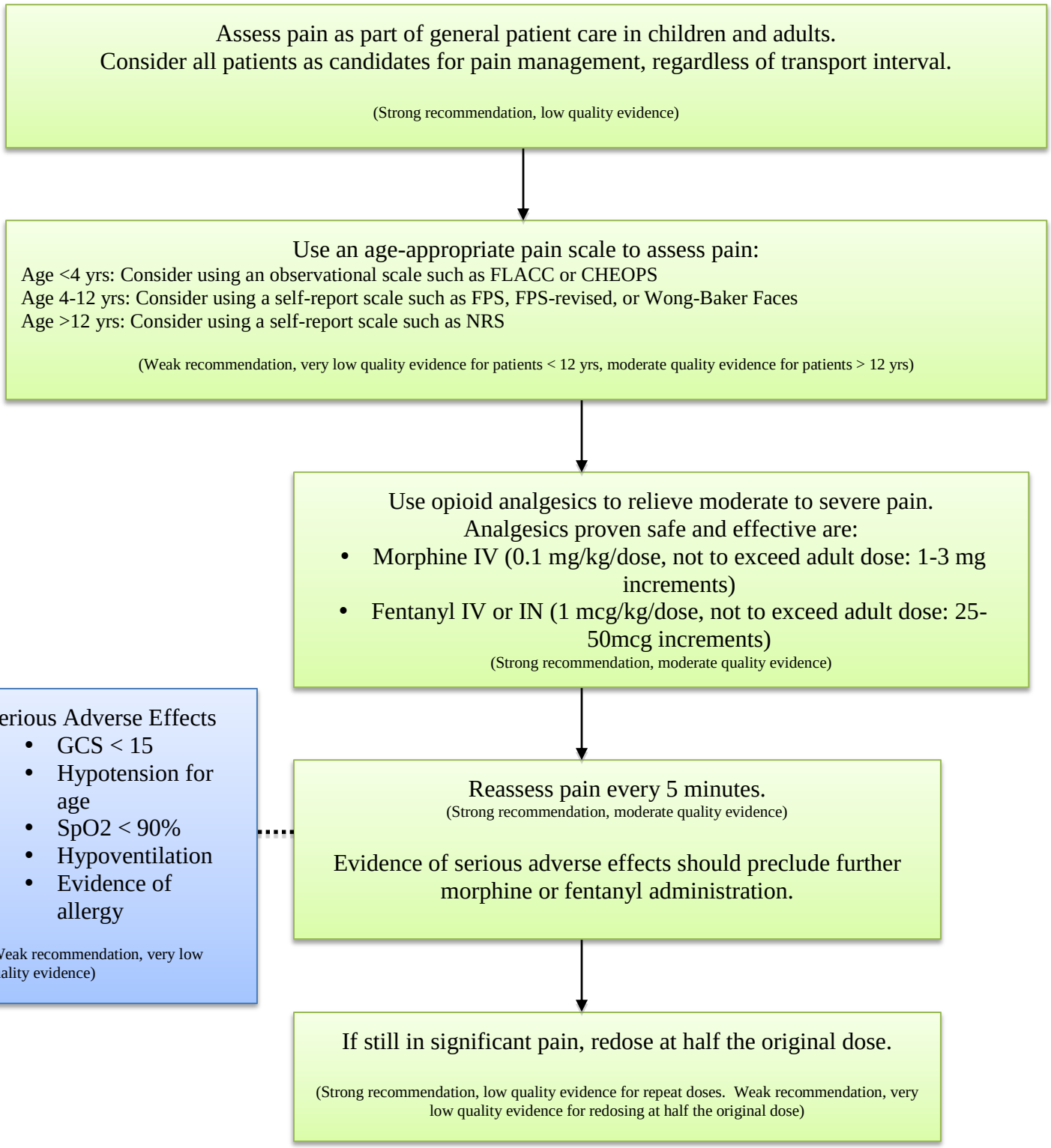
Trauma - Brain Injury



Management of Acute Traumatic Pain

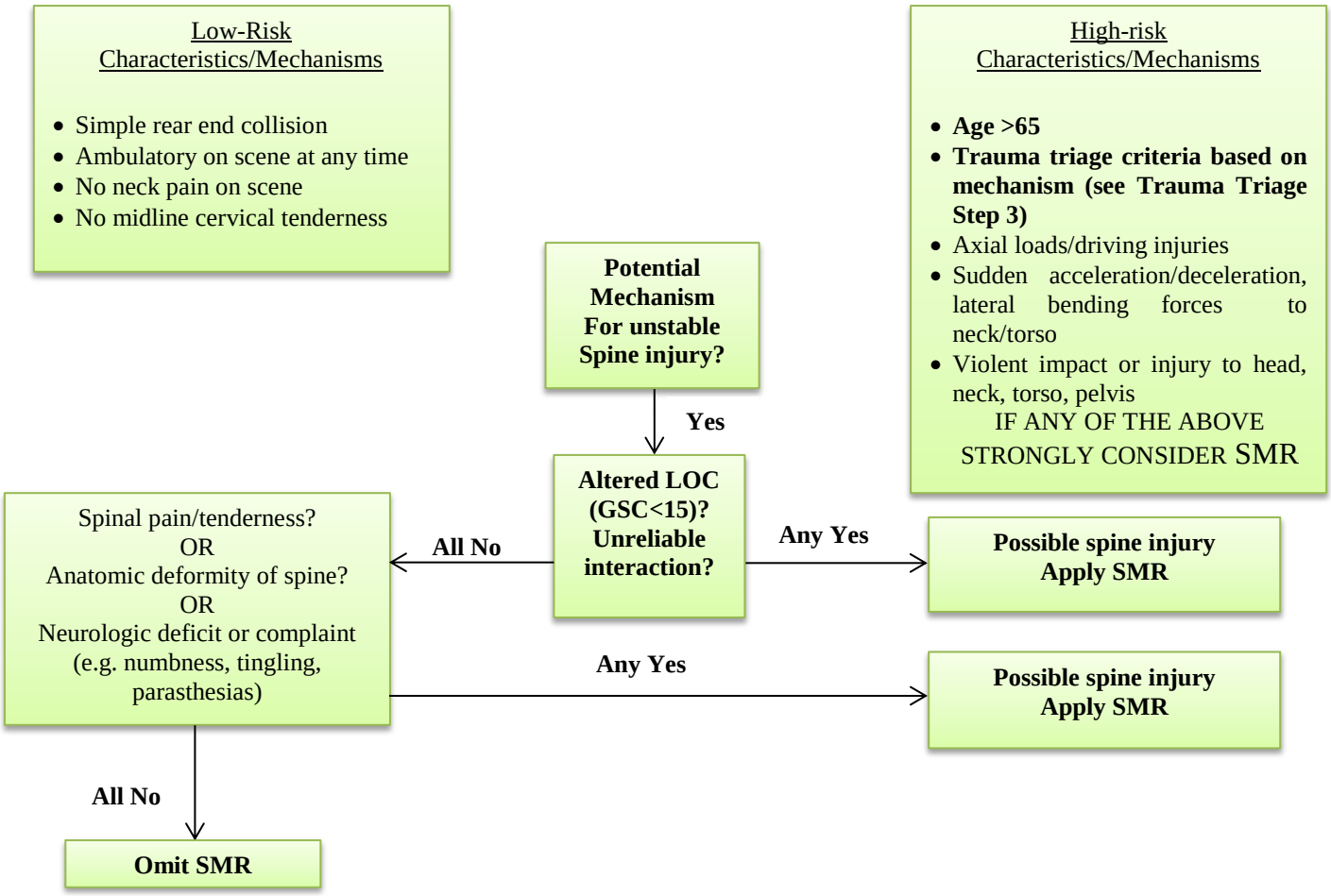
This protocol excludes patients who are allergic to morphine or fentanyl and/or who have:

- Altered mentation (GCS < 15 or mentation not appropriate for age)
- Hypotension for age
- SpO2 < 90%
- Hypoventilation



Spinal Motion Restriction (SMR)

Adult (≥ 15 y/o) Blunt Trauma



Unreliable Patient Interactions

- Language barriers; inability to communicate
- Lack of cooperation during exam
- Evidence of drug/alcohol intoxication
- Painful distracting injury such as long-bone fracture

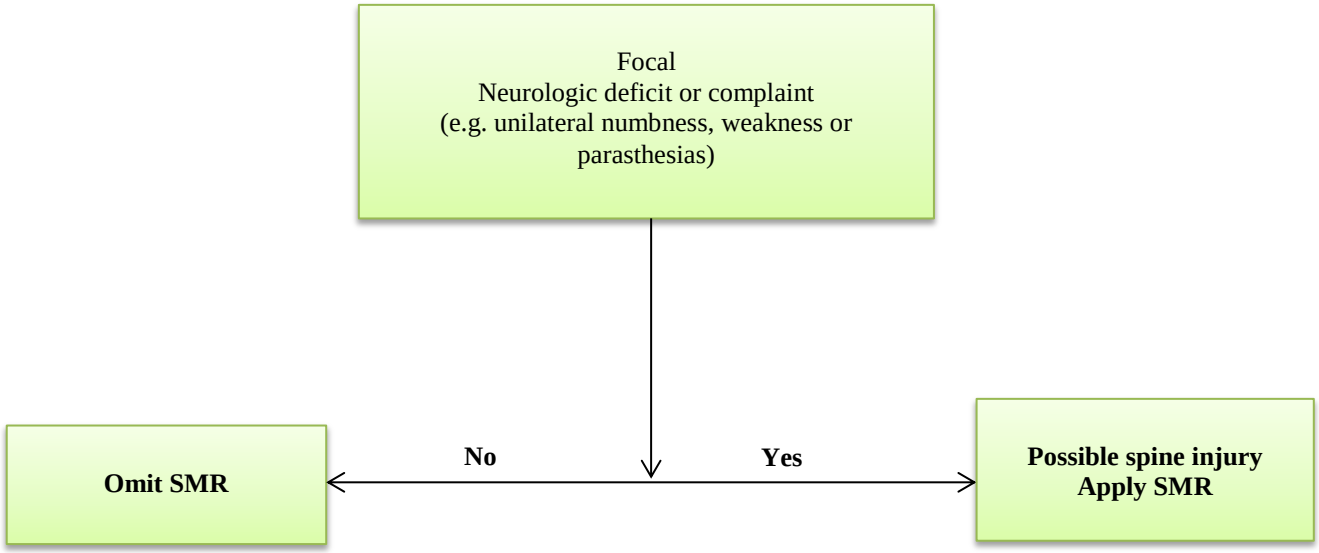
Spinal Motion Restriction (SMR)

Refer to SMR Procedures page for preferred packing methods and tools

Motor/Sensory Exam

- Wrist/hand extension bilaterally
- Foot plantarflexion bilaterally
- Foot dorsiflexion bilaterally
- Gross sensation in all extremities
- Check for parasthesias

Spinal Motion Restriction
Adult (≥ 15 y/o) Penetrating Trauma



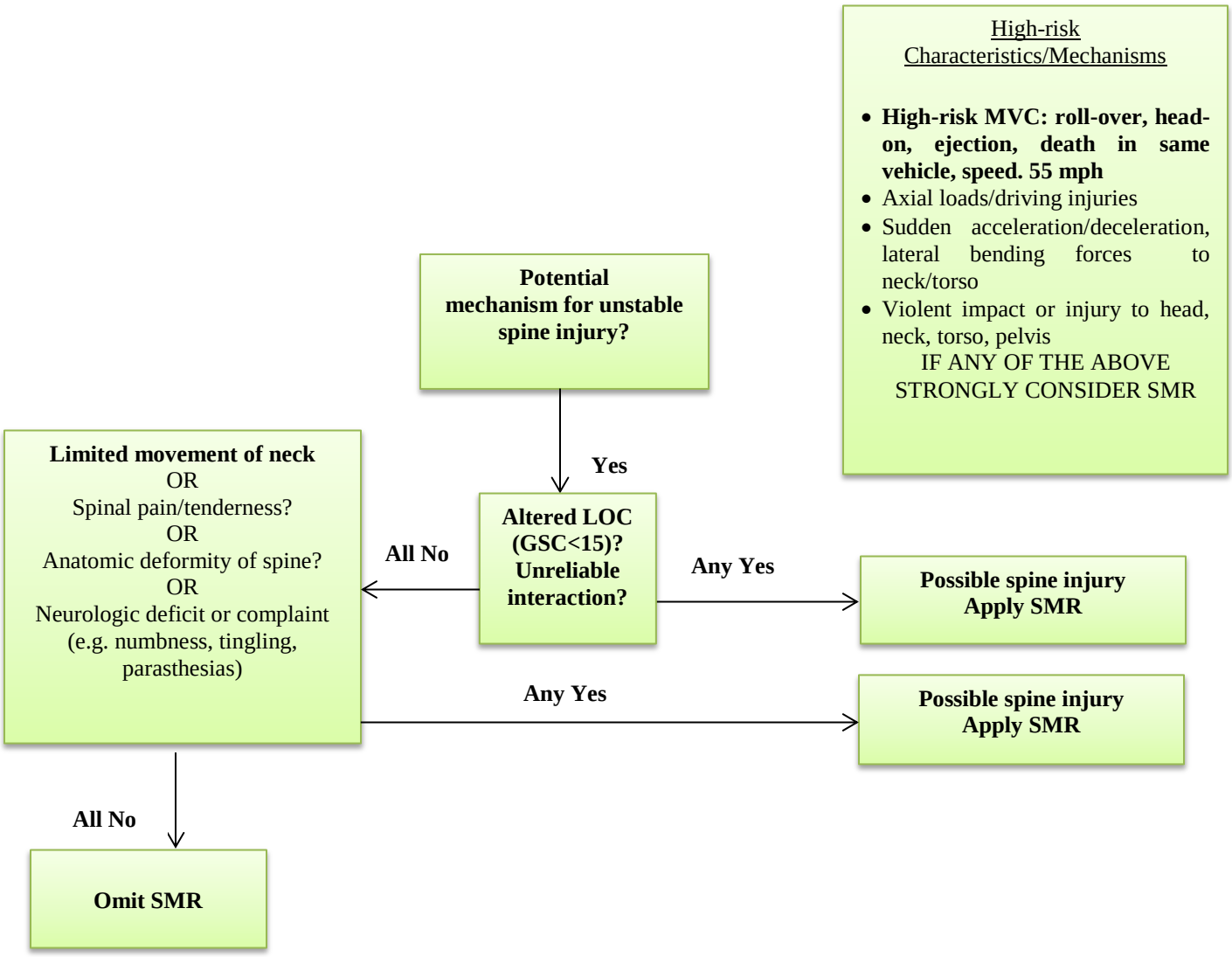
Notes

- Unstable spine fractures and spinal cord injury from penetrating head trauma are extremely rare
- Neuro deficits often present at moment of injury
- Life threatening conditions and evacuation from imminent threat take priority
- If history suggests combination penetrating AND blunt trauma, revert to Blunt Trauma SMR Algorithm
- Instructive information: Patients with global deficits do not require SMR (e.g. GCS 3, comatose)

Spinal Motion Restriction (SMR)

- Refer to SMR Procedures page for preferred packing methods and tools

Spinal Motion Restriction (SMR)
Pediatric (≤ 14 y/o) Blunt Trauma



Unreliable Patient Interactions

- Language barriers; inability to communicate; age < 2
- Lack of cooperation during exam
- Evidence of drug/alcohol intoxication
- Painful distracting injury such as long-bone fracture

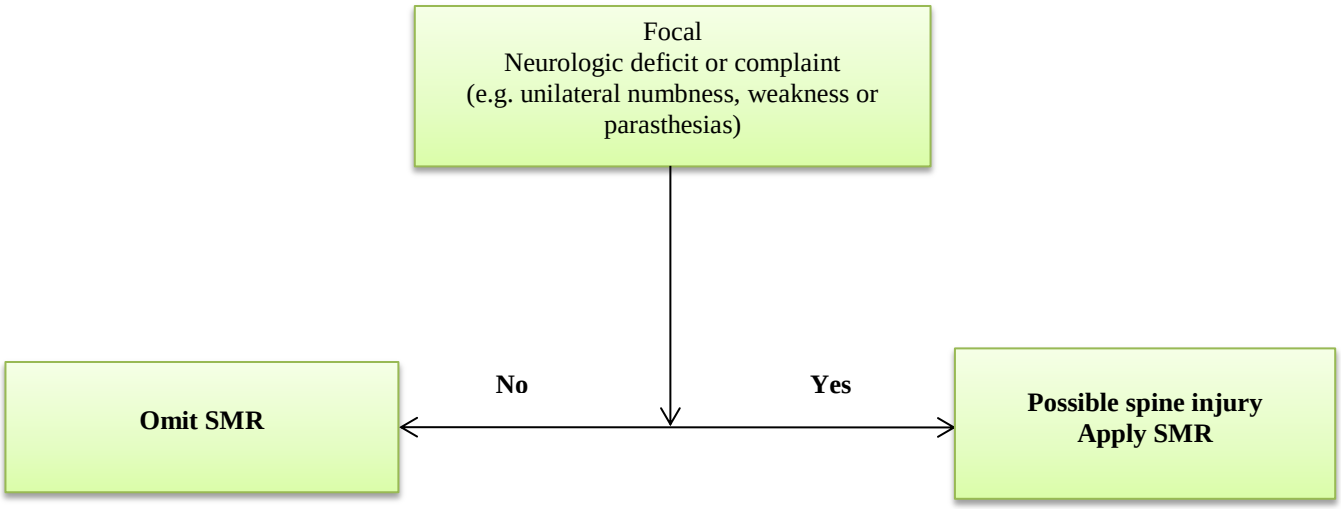
Spinal Motion Restriction (SMR)
Refer to SMR Procedures page for preferred packing methods and tools

Motor/Sensory Exam

- Wrist/hand extension bilaterally
- Foot plantarflexion bilaterally
- Foot dorsiflexion bilaterally
- Gross sensation in all extremities
- Check for paresthesias

Spinal Motion Restriction (SMR)

Pediatric (≤ 14 y/o) Penetrating Trauma



Notes

- Unstable spine fractures and spinal cord injury from penetrating head trauma are extremely rare
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- Life threatening conditions and evacuation from imminent threat take priority
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Spinal Motion Restriction (SMR)

- Refer to SMR Procedures page for preferred packing methods and tools

Arizona Guidelines for Field Triage of Injured Patients

(Regional modifications are permissible)

FIELD TRIAGE DECISION SCHEME

Measure vital signs and level of consciousness

Step One

Glasgow Coma Scale	≤13
Systolic blood pressure (mmHg)	<90 mmHg
Respiratory rate	<10 or >29 breaths per minute (<20 in infant aged < 1 year[1]), or need for ventilator support

YES → Transport to a Trauma Center[2]. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the trauma system.

NO → Assess anatomy of injury.

Step Two[3]

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g., flail chest)
- Two or more proximal long-bone fractures
- Crushed, de-gloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

YES → Transport to a Trauma Center[2]. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the trauma system.

NO → Assess mechanism of injury and evidence of high-energy impact.

Step Three[3]

- Falls
  - Adults: >20 feet (one story is equal to 10 feet)
  - Children[4]: >10 feet or two or three times the height of the child
- High-risk auto crash
  - Intrusion[5], including roof: >12 inches occupant site; >18 inches any site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with high risk of injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact[6]
- Motorcycle crash >20 mph

YES → Transport to a trauma center, which, depending on the trauma system, need not be the highest level trauma center[7].

NO → Assess special patient or system considerations.

Step Four

- Older Adults[8]
  - Risk of injury/death increases after age 55 years
  - SBP<110 might represent shock after age 65 years
  - Low impact mechanisms (e.g., ground level falls) might result in severe injury
- Children
  - Should be triaged preferentially to pediatric-capable trauma centers
- Anticoagulation and bleeding disorders
  - Patients with head injury are at high risk for rapid deterioration
- Burns
  - Without other trauma mechanism: triage to burn facility[9]
  - With trauma mechanism: triage to trauma center
- Pregnancy >20 weeks
- EMS[10] provider judgment

YES → Transport to a trauma center or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.

NO → Transport according to protocol.[11]

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 May Make a Difference in Outcome	Quicker Form of Transport May Not 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.

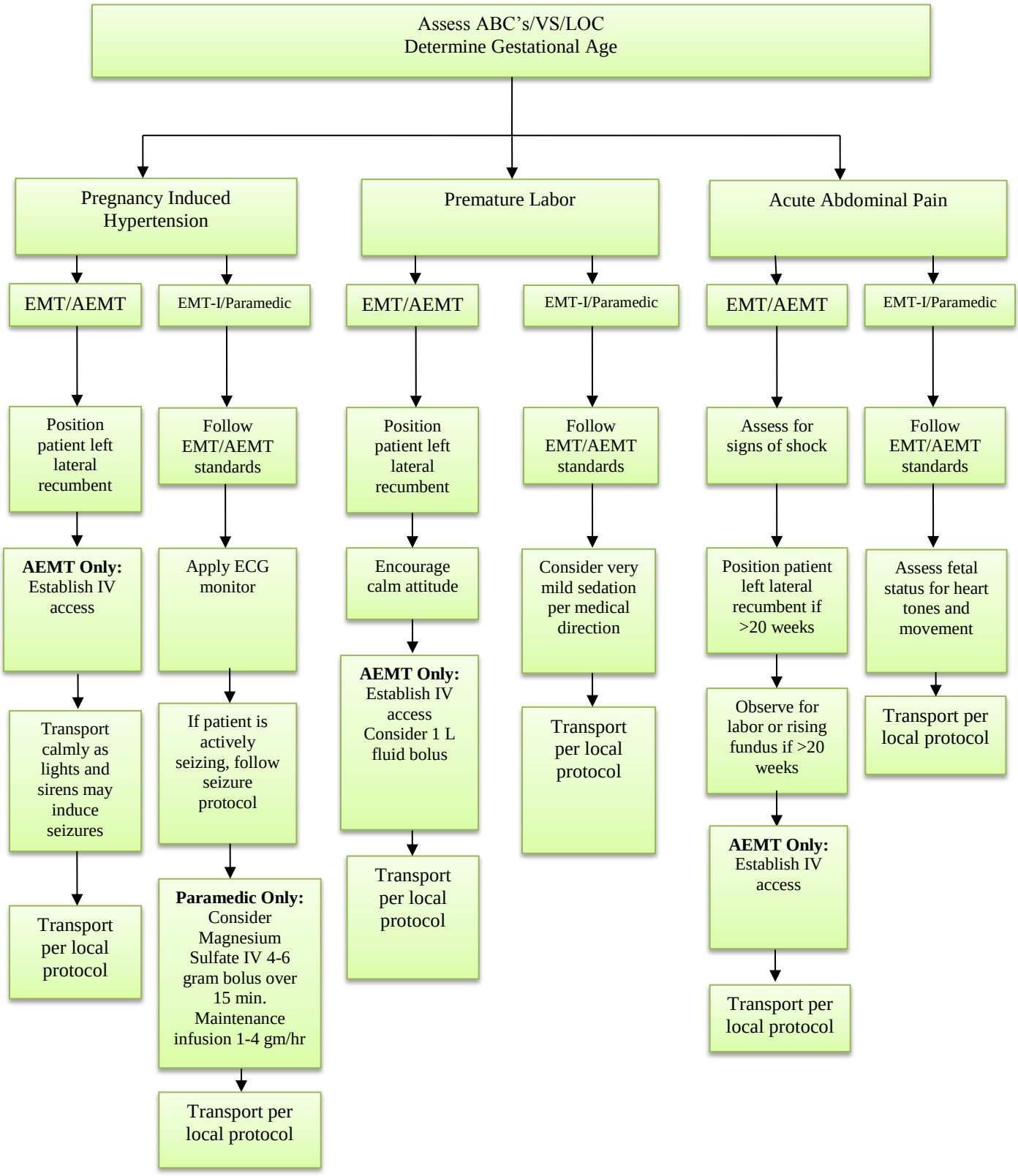
References:

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)

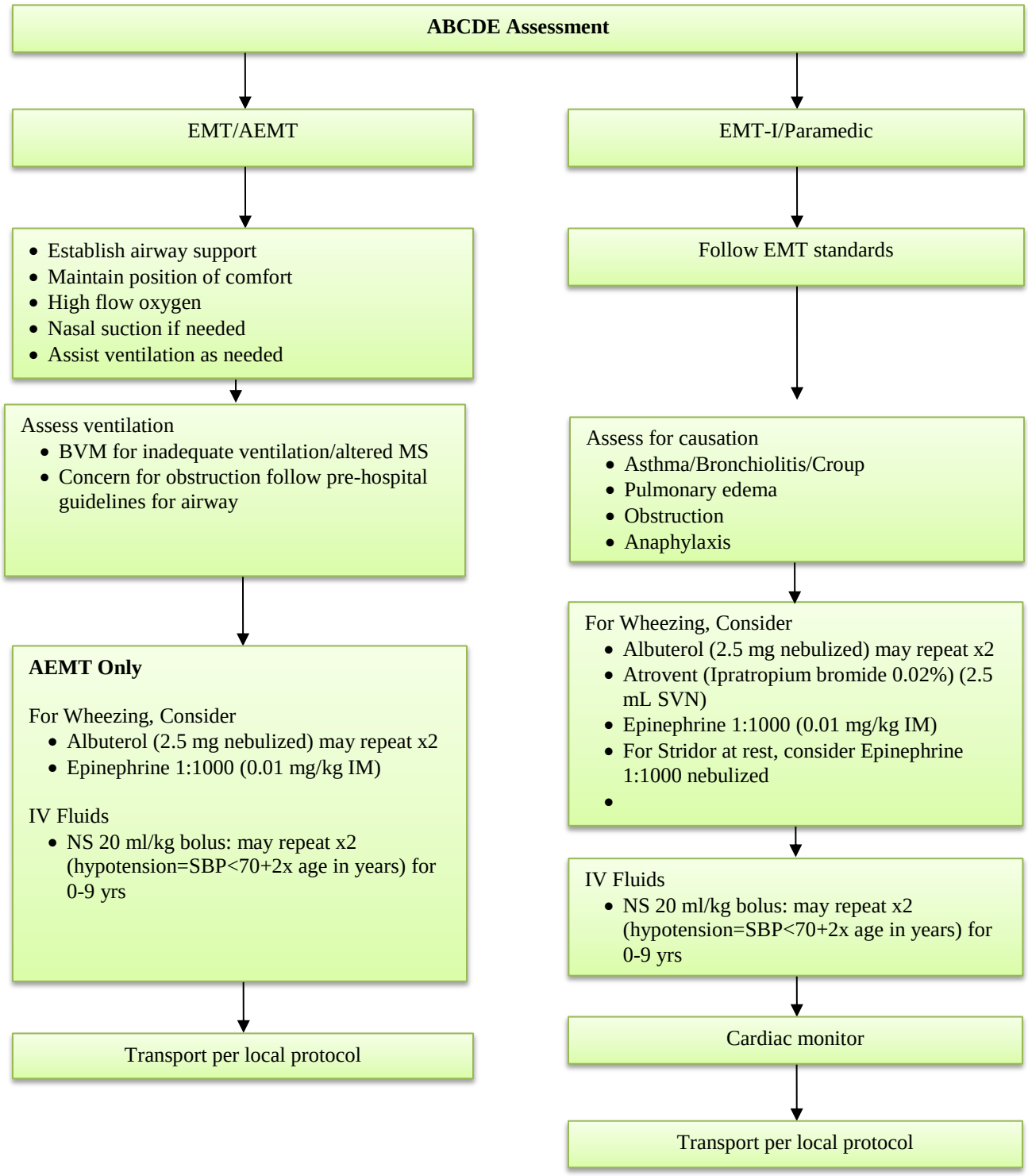
National Association of EMS Physicians. Guidelines for air medical dispatch. Prehospital emergency care. April/June 2003. Volume 7, number 2 (http://www.naemsp.org/pdf/AirMedicalDispatch.pdf)

Added to TTTG: 6/2012

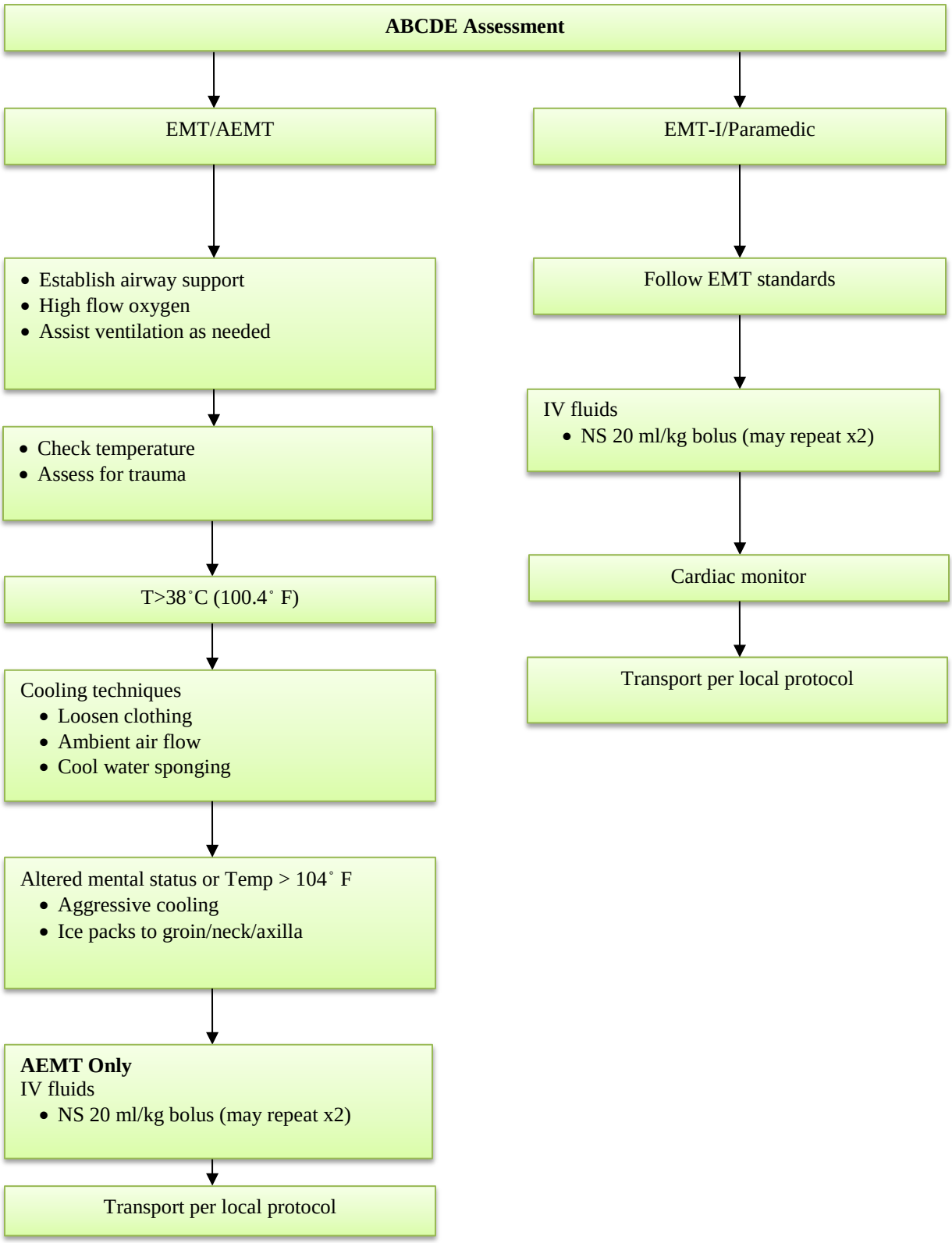
Adult High Risk OB (HROB)



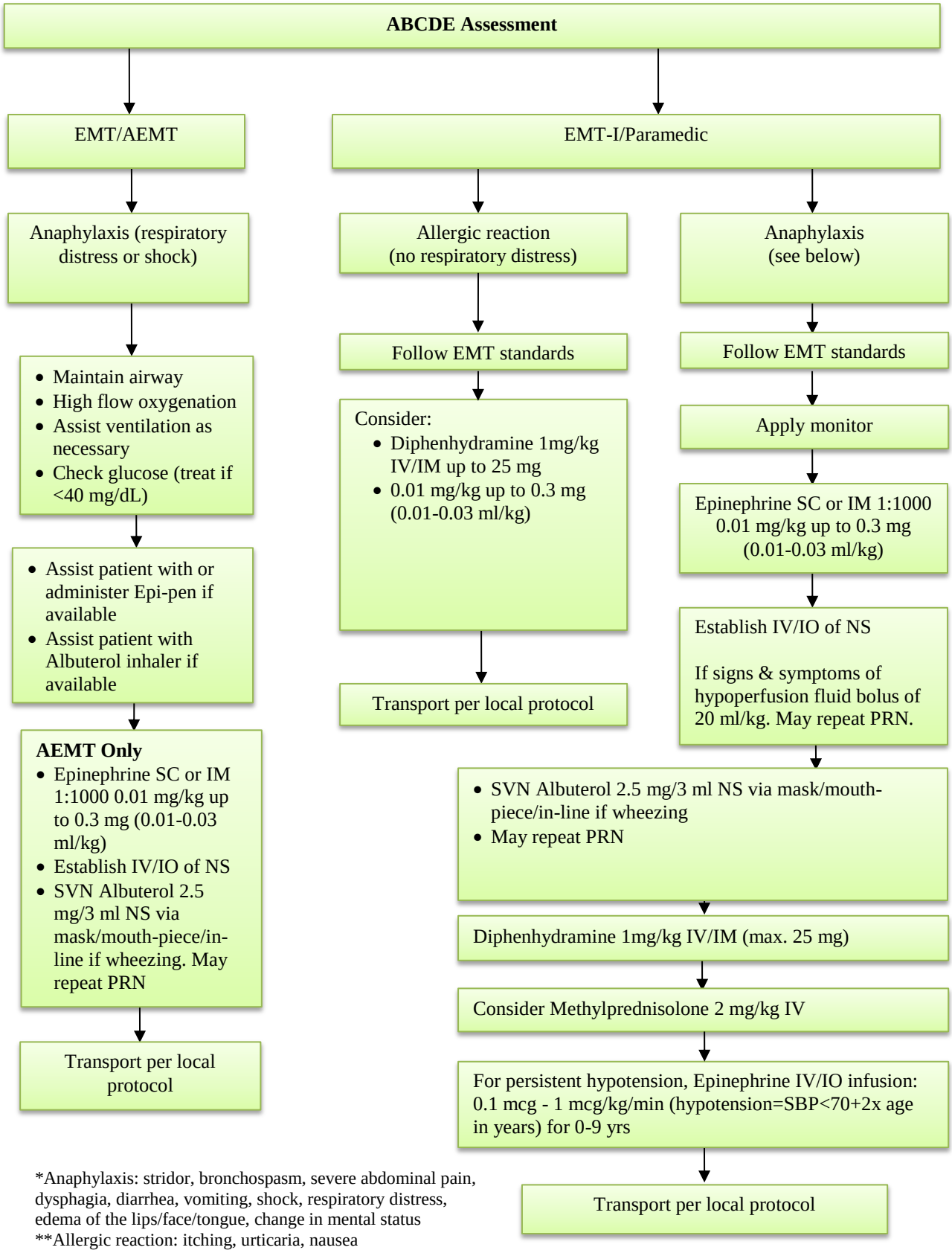
Pediatric Shortness of Breath



Pediatric Heat Exposure

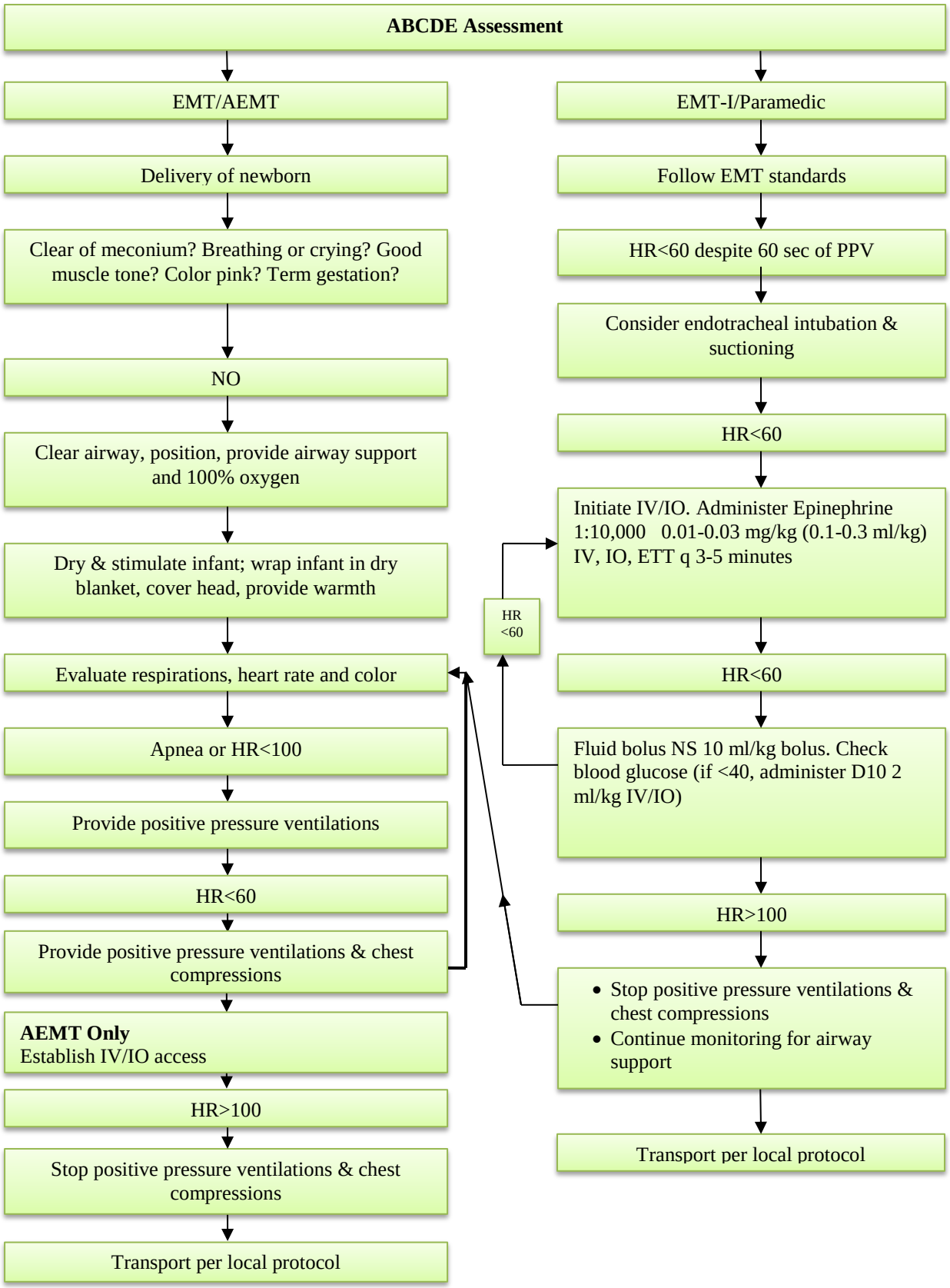


Pediatric *Anaphylaxis/**Allergic Reaction

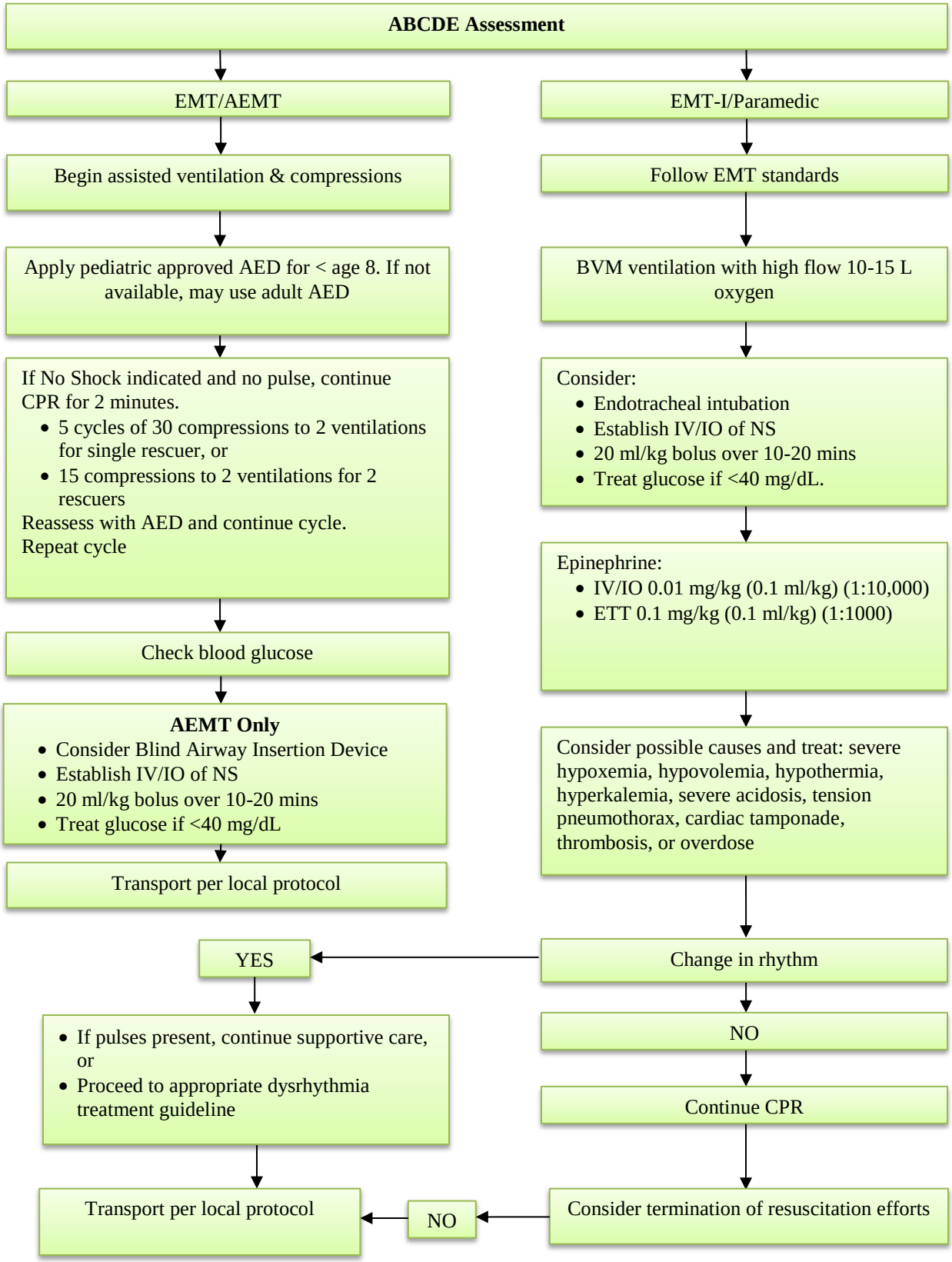


*Anaphylaxis: stridor, bronchospasm, severe abdominal pain, dysphagia, diarrhea, vomiting, shock, respiratory distress, edema of the lips/face/tongue, change in mental status
**Allergic reaction: itching, urticaria, nausea

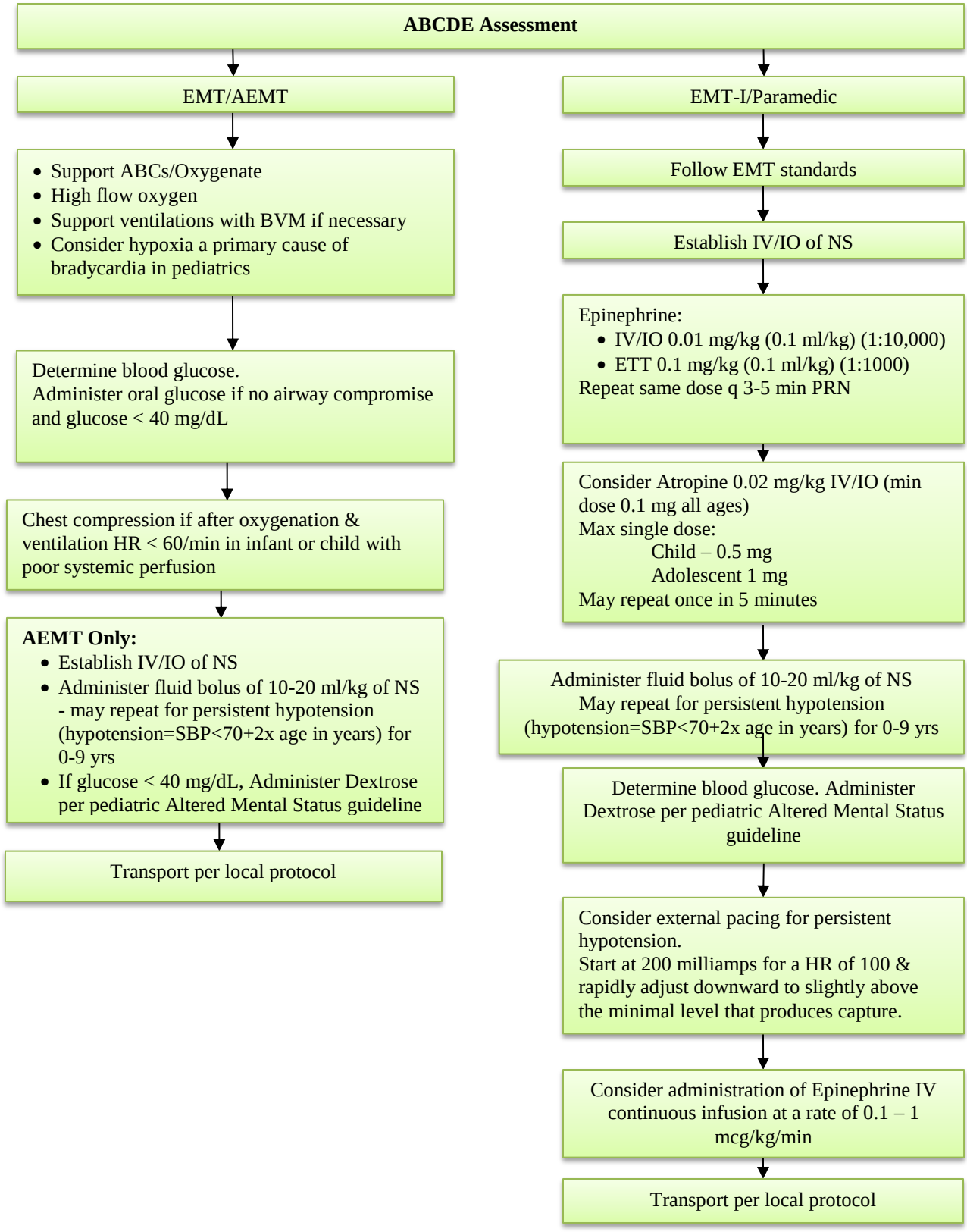
Newborn Resuscitation



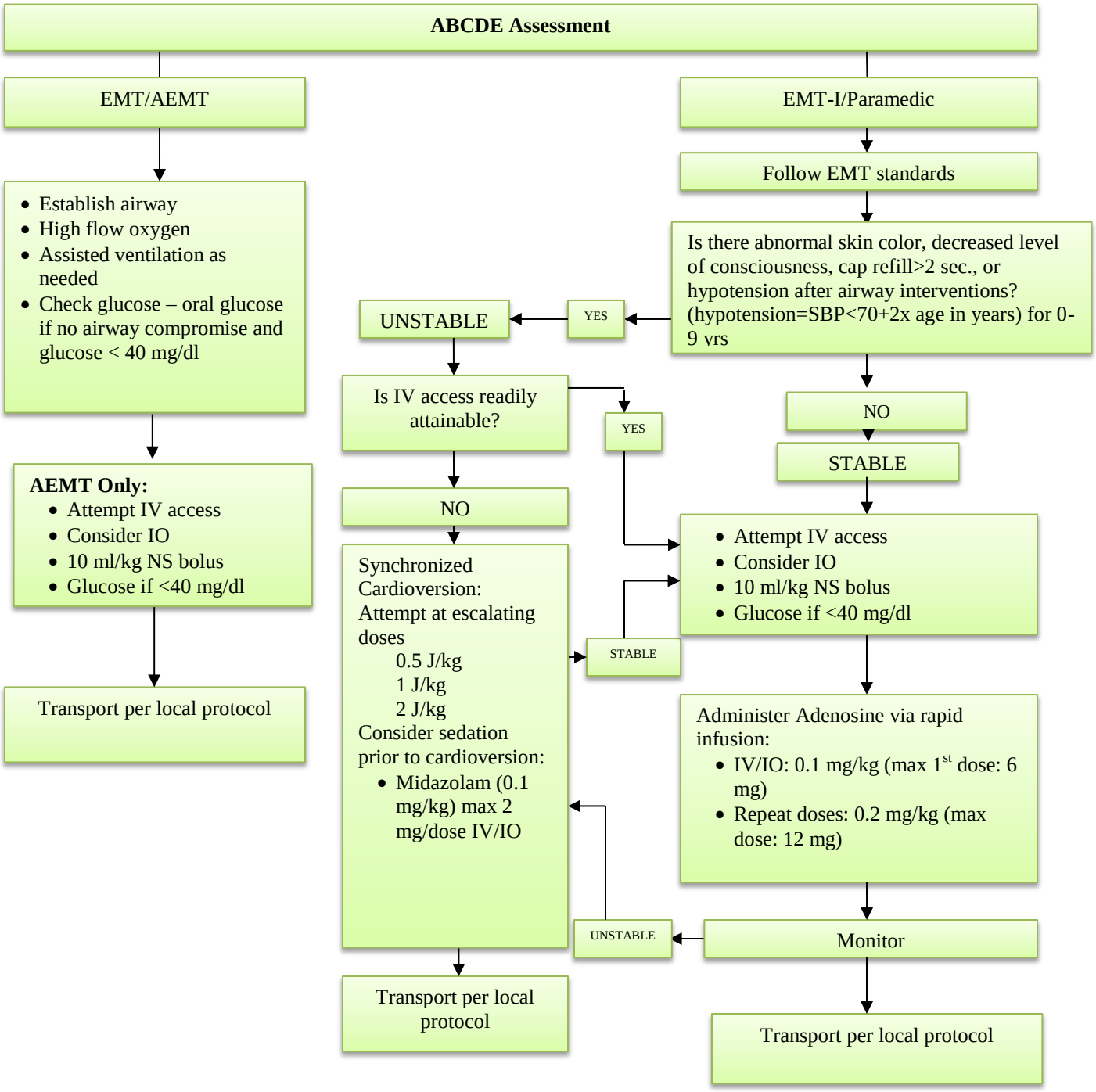
Pediatric Pulseless Electrical Activity (PEA)/Asystole



Pediatric Bradycardia, Unstable

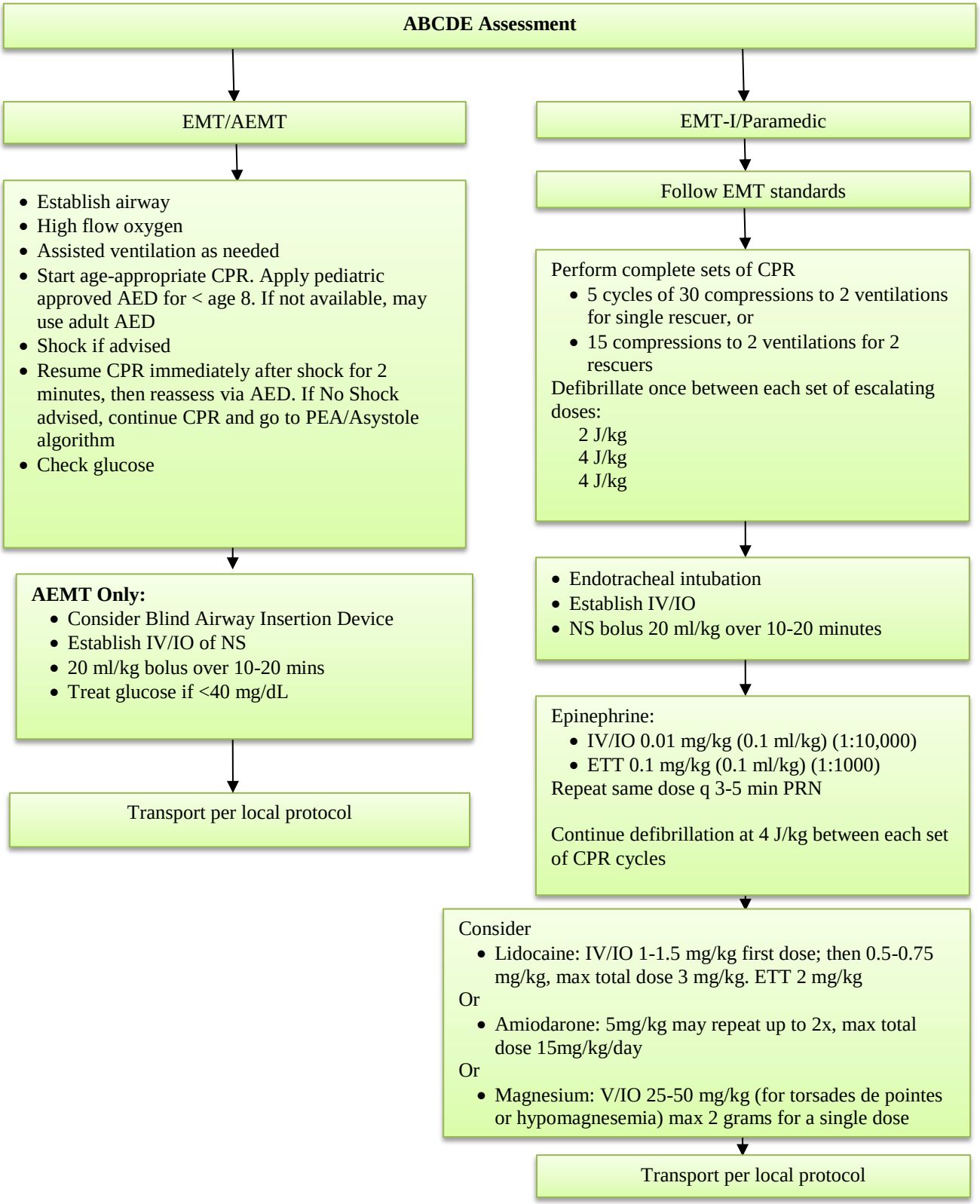


Pediatric Supraventricular Tachycardia

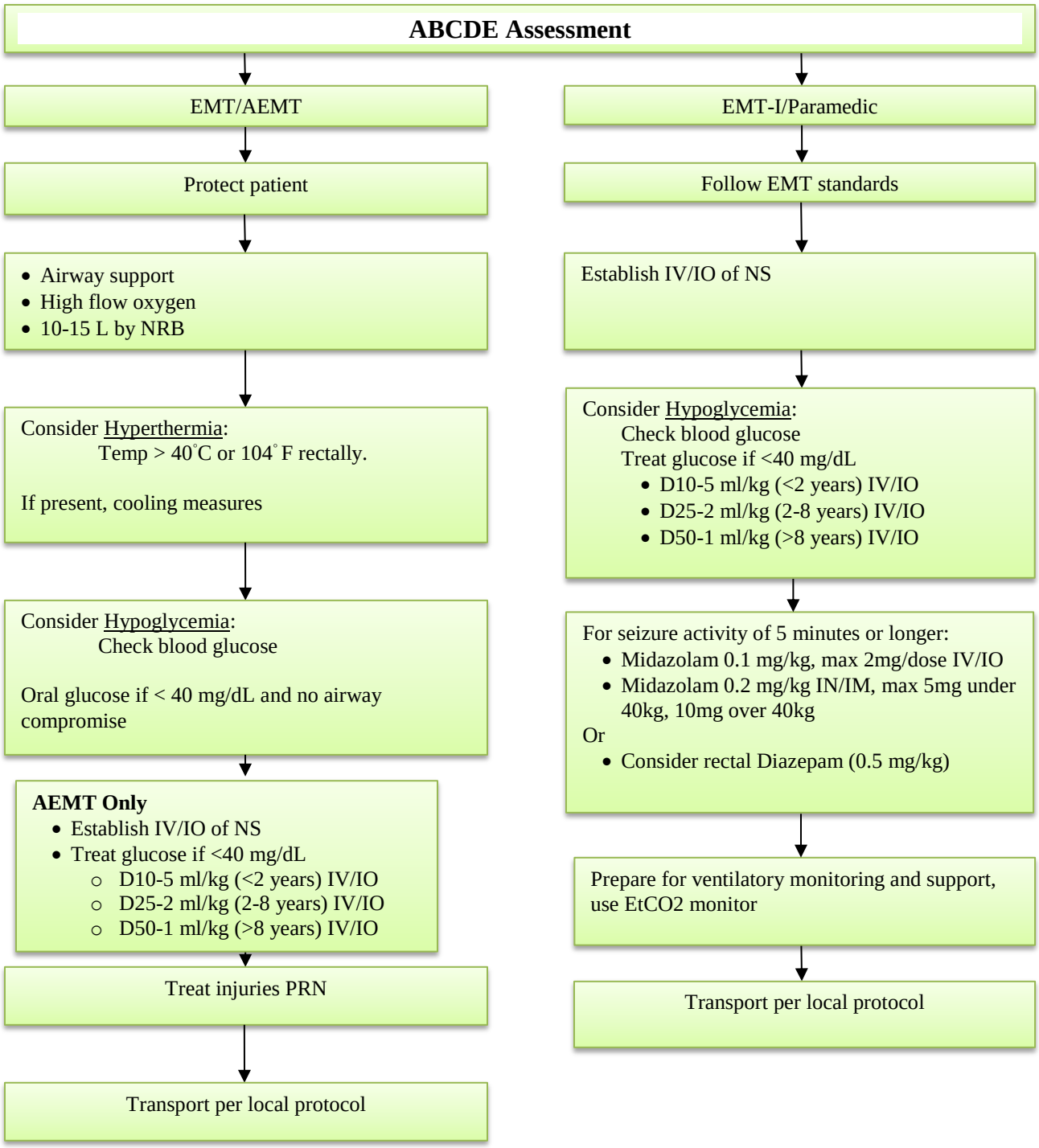


Monitor rate in children < 2 years is >220 BPM
Biphasic energy settings may be different

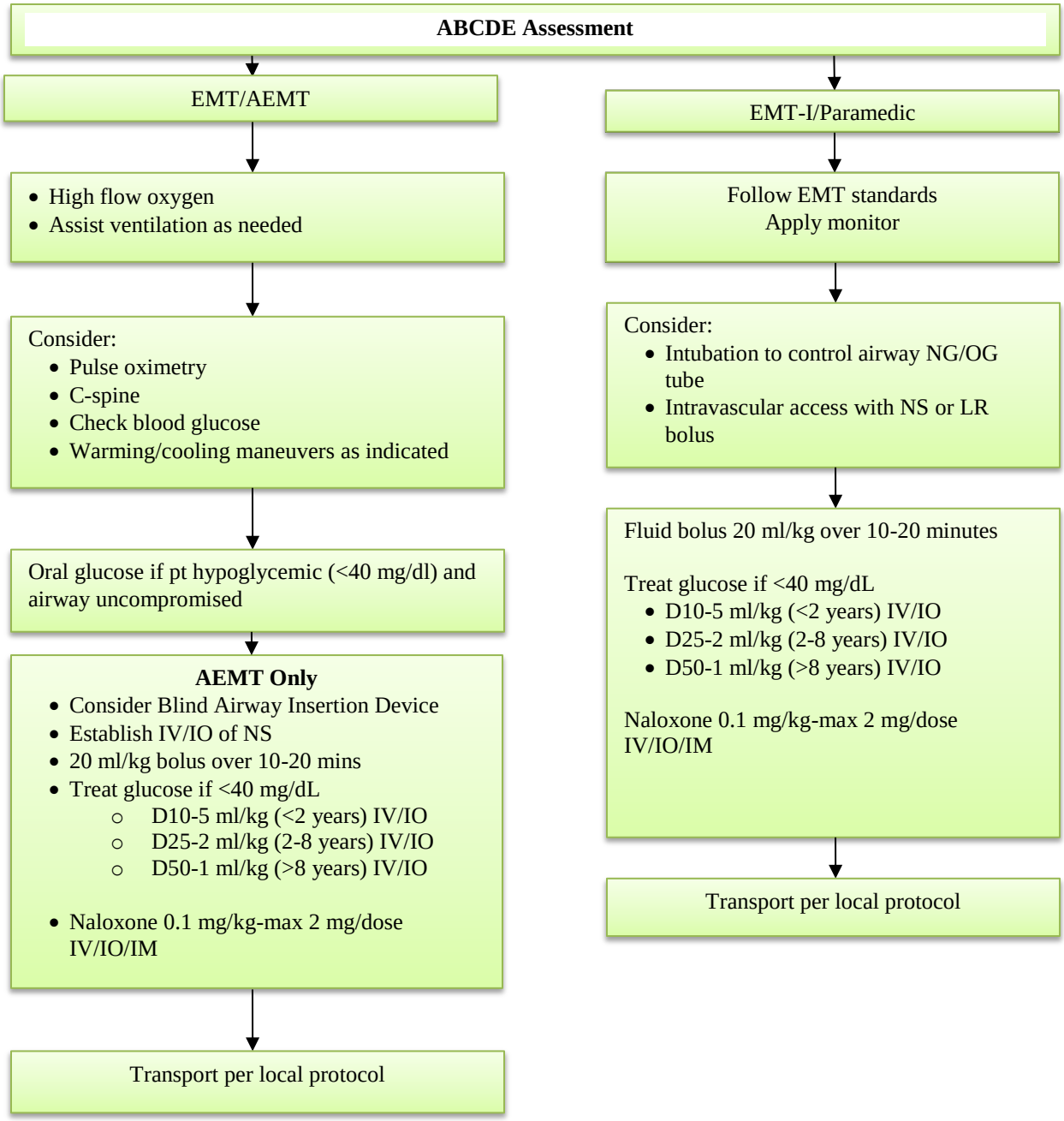
Pediatric Ventricular Fibrillation/Pulseless Ventricular Tachycardia



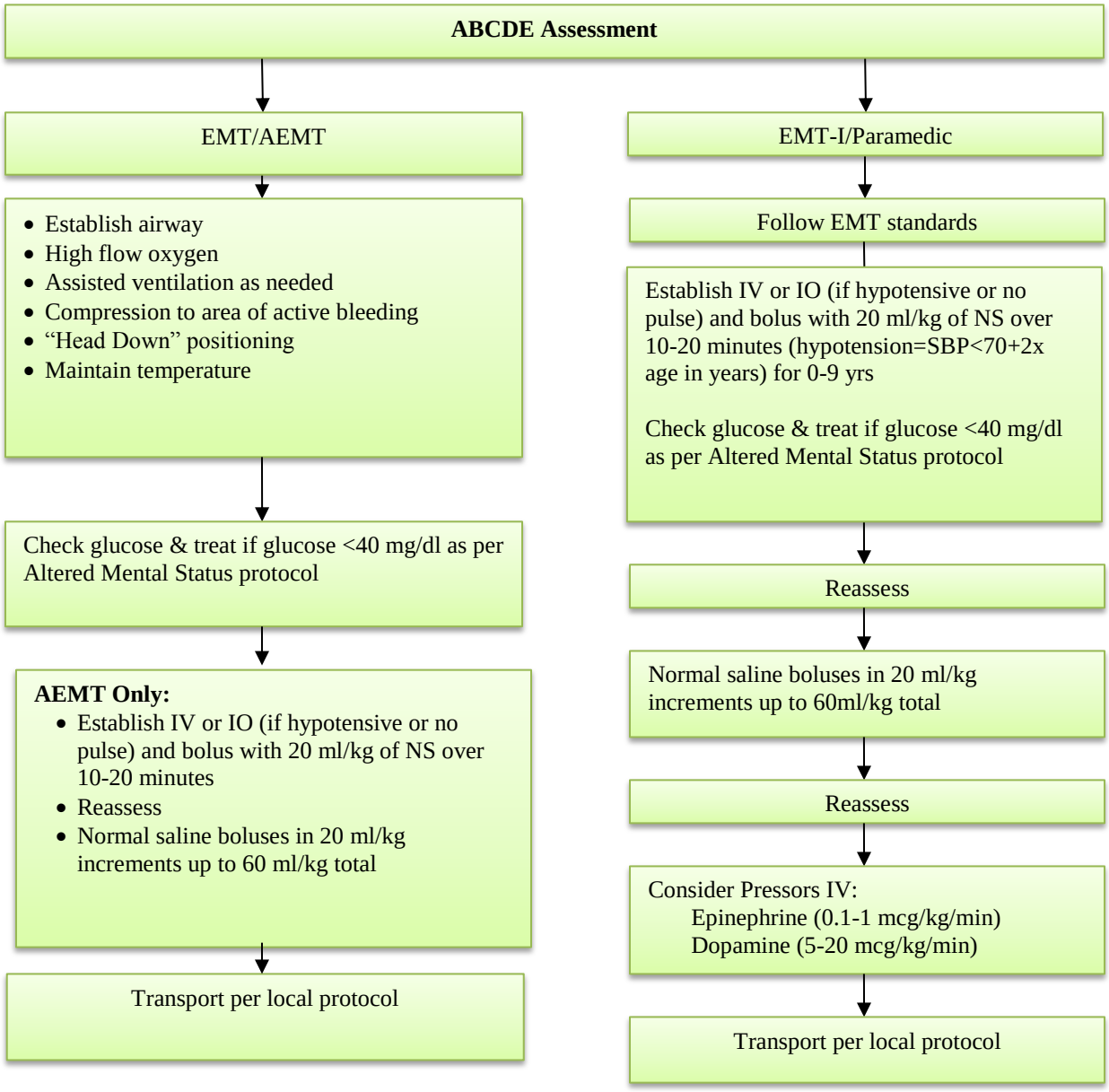
Pediatric Seizures



Pediatric Altered Mental Status



Pediatric Shock



Pediatric Shock
[Including use of Sodium Succinate]

ABCDE Assessment
The pediatric patient may present hemodynamically unstable or with hypoperfusion evidenced by:
- **Tachycardia** out of proportion to temperature or degree of pain
- **Altered mental status**
- Delayed **capillary refill greater than 2 seconds**
- Pallor
- Peripheral cyanosis
- **Hypotension (systolic blood pressure less than 70 + [2 x years])**

EMT/AEMT

- Support Airway
- High flow oxygen
- Assisted ventilation as needed
- Compression to area of active bleeding as needed
- "Head Down" positioning
- Maintain temperature

AEMT Only:
- Establish IV
  (or IO if hypotensive or no pulse)
- **Bolus with 20 ml/kg of NS over 10-20 minutes**
- Check glucose
  - Treat glucose if <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
- If history of Adrenal Insufficiency (congenital adrenal hyperplasia, daily steroid use) consider adrenal insufficiency guideline

Reassess

Normal saline boluses in 20 ml/kg increments, up to **60ml/kg total** (until vital signs/perfusion normal OR rales or hepatomegaly on exam)
- Exception: volume-sensitive conditions, 10 ml/kg increments:
  neonates (0-28 days), congenital heart disease, chornic lung disease, chronic renal failure

Transport per local protocol

EMT-I/Paramedic

Follow EMT/AEMT standards

- If history of Adrenal Insufficiency (congenital adrenal hyperplasia, daily steroid use)
  - Stress dose steroids as per Adrenal Insufficiency guideline (see below)

Reassess

Consider Pressors IV:
Epinephrine (0.1-1 mcg/kg/min)
Dopamine (5-20 mcg/kg/min)

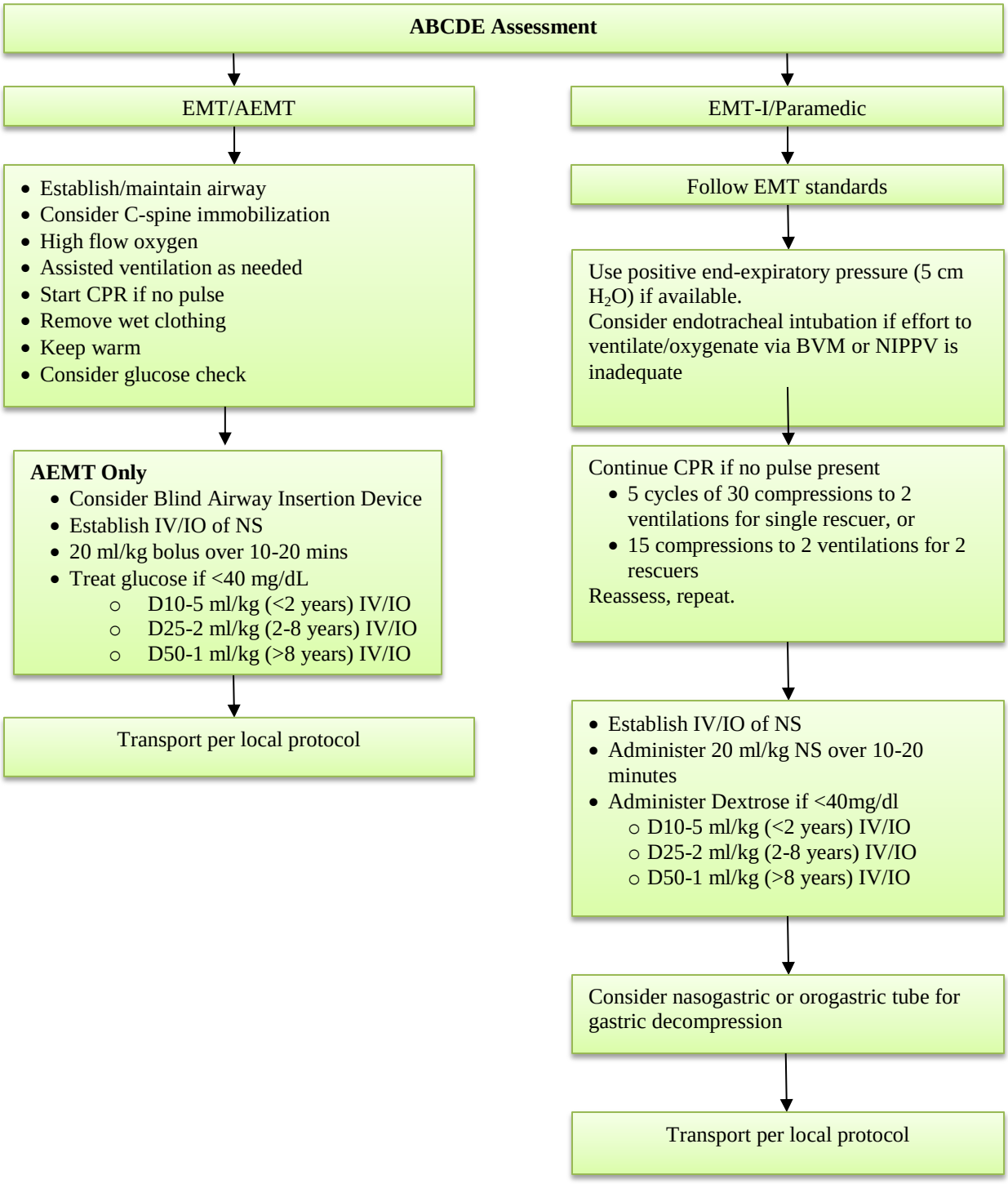
Transport per local protocol

Adrenal Insufficiency Guideline
- Stress dose steroids:
  - Assist with patient's home medication hydrocortisone (Solu-Cortef)*:
    - Adult: 100 mg IM
    - Child: 2 mg/kg IM or
      - 0 – 3 yo = 25 mg IM
      - 3 – 12 yo = 50 mg IM
      - ≥ 12 yo = 100 mg IM

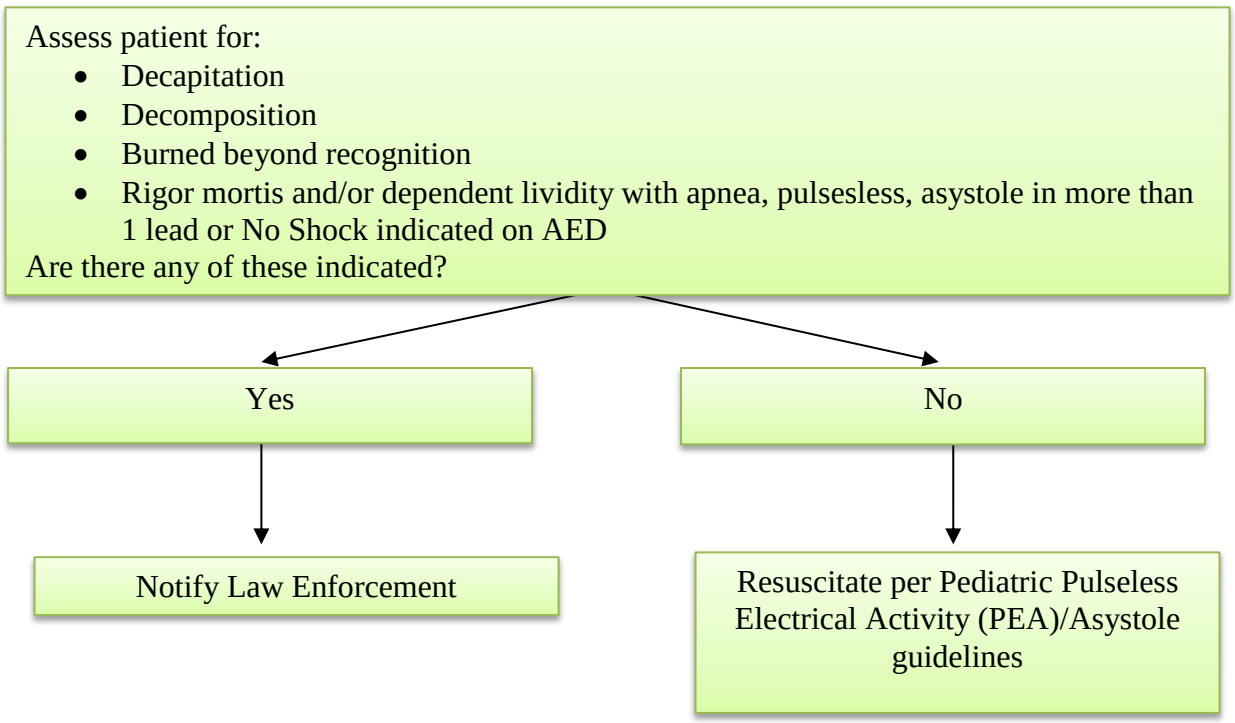
      OR
  - Methylprednisolone:
    - 1.5 mg/kg IV/IO

*preferred

Pediatric Submersion Injury



Pediatric Withholding of Resuscitation Efforts



Attachment V.d.

GENERIC NAME: KETAMINE HYDROCHLORIC INJECTION
CLASS: Anesthetic; Dissociative Anesthetic

Mechanism of Action:

Pharmacologic Effects:

- Ketamine is a Class III Phencyclidine (PCP) derivative that is rapid acting in producing a "dissociative" anesthesia in which the patient's consciousness is detached from their nervous system. Due to its "dissociative" properties, Ketamine is a potent analgesic.
- Minimal cardiac depression occasionally reported with rapid-high doses. May transiently (within 30-60 seconds) increase heart rate and blood pressure by central sympathetic stimulation. Return to normal values begins almost immediately, and is complete within 15 minutes.
- Ketamine is a bronchodilator and has minimal to no respiratory depression, with respiratory stimulation frequently seen.

Metabolized:

- The liver microsomal enzyme system metabolizes Ketamine.

Indications for Field Use (14 years and older):

- Pre-anesthetic (Induction agent) for Rapid Sequence Intubation.
- Pre-anesthetic for critical asthma patients needing aggressive bronchodilation and possible intubation.

Contraindications:

- Angina
- CHF
- Symptomatic Hyperthyroidism
- Pregnancy-Relative (Category B)

Adverse Reactions:

An emergence reaction (in approximately 12% of patients) may occur near end of medication half-life, when patient is awakening, that may require Versed 1-5 mg IV/IM/IO to calm patient.

Cautions:

- Hypertension
- Tachycardia
- Known Cerebral or Aortic Aneurism
- Psychotic Disorders

Attachment V.d.

Notes of Administration:

IV/IO: May re-medicate with half-dose after 10 minutes.

Incompatibilities/Drug Interactions:

Diazepam

Adult Dosage (14 years and older):

IV/IO 0.5-2 mg/kg over 1 minute. Half-life 5-10 minutes.
IM 2-4 mg/kg. Half-life 12-25 minutes.

Pediatric Dosage:

Not

Routes of Administration:

IV/IO
IM

Onset of Action:

IV/IO: 30 seconds
IM: 3-4 minutes

Peak Effects:

IV/IO: 30 seconds to 5 minutes
IM: 3-12 minutes

Duration of Action:

IV/IO: 10-45 minutes
IM: 25-60 minutes

Arizona Drug Box Minimum Supply:

Optional: 200 mg

Special Notes:

- Pregnancy Category B:
- Lactation: Undetermined, if any, effects

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- Elderly: Use with caution, start at low end of dosing range
- Alcohol: Use with caution in the acutely alcohol-intoxicated patient

Table 5.4: Authorization for Administration, Monitoring, and Assistance in Patient Self-administration of Agents by EMCT Certification; Identification of Transport Agents; Administration Requirements; and Minimum Supply Requirements for Agents for Interfacility Transports

Legend

IP Agent shall be administered by infusion pump

TA Transport agent for an EMCT with the specified certification

AGENT	MINIMUM SUPPLY	EMT	AEMT	EMT-I (99)	Paramedic
Amiodarone IP	None	-	-	-	TA
Antibiotics	None	-	-	TA	TA
Blood	None	-	-	-	TA
Calcium Chloride	None	-	-	-	TA
Colloids	None	-	-	TA	TA
Corticosteroids IP	None	-	-	TA	TA
Diltiazem IP	None	-	-	-	TA
Diuretics	None	-	-	TA	TA
Dopamine HCl IP	None	-	-	-	TA
Electrolytes/Crystalloids (Commercial Preparations)	None	TA	TA	TA	TA
Epinephrine IP	None	-	-	TA	TA
Fentanyl IP	None	-	-	TA	TA
Fosphenytoin Na IP or Phenytoin Na IP	None None	- -	- -	- -	TA TA
Glucagon	None	-	-	TA	TA
Glycoprotein IIb/IIIa Inhibitors	None	-	-	-	TA
H2 Blockers	None	-	-	TA	TA
Heparin Na IP	None	-	-	-	TA
Insulin IP	None	-	-	-	TA
Levophed IP	None	-	-	-	TA
Lidocaine IP	None	-	-	TA	TA
Magnesium Sulfate IP	None	-	-	-	TA
Midazolam IP	None	-	-	TA	TA
Morphine IP	None	-	-	TA	TA
Nitroglycerin IV Solution IP	None	-	-	-	TA
Phenobarbital Na IP	None	-	-	-	TA
Phytonadine (Vitamin K)	None	-	-	-	TA
Potassium Salts IP	None	-	-	-	TA
Procainamide HCl IP	None	-	-	-	TA
Propofol IP	None	-	-	-	TA
Racemic Epinephrine SVN	None	-	-	-	TA
Total Parenteral Nutrition, with or without lipids IP	None	-	-	-	TA
Vitamins	None	-	-	TA	TA

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[Approved by MDC & EMS Council 5-16-2013]

Attachment V.f.

GENERIC NAME: Pytonadione
BRAND NAME: Vitamin K, Aquamephyton, Mephyton,
CLASS: Hemostatics, Vitamins

Mechanism of Action:

Promotes synthesis of clotting factors II, VII, IX and X by the liver.

Indications for Field Use:

INTERFACILITY, attended by a paramedic: Reversal of warfarin (Coumadin) effects, and specifically to treat major bleeding (e.g. CNS, GI, retroperitoneal, etc.) with any elevated INR: 2012 ACCP guidelines recommend vitamin K1 5-10 mg IV (dilute in 50 mL IV fluid and infuse over 20 min) along with other treatments (prothrombin complex concentrate and perhaps others, depending on clinical situation). No indications in 911 system-generated transports.

Contraindications:

Known hypersensitivity to pytonadione/Vitamin K

Adverse Reactions:

- Anaphylaxis even when recommended infusion rates followed (more prevalent with too-rapid IV administration) (has resulted in death) (black box warning has been issued)
- Dyspnea
- Cyanosis
- Erythematous skin eruptions
- Pruritus
- Flushing
- Hypotension
- Injection site reactions
- Taste alterations

NOTES ON ADMINISTRATION

Incompatibilities/Drug Interactions:

None found.

Adult Dosage:

5-10 mg IV (mixed in 50 cc NS) and given by infusion pump over 20 minutes.

Pediatric Dosage:

Pediatric use not allowed for this indication.

Routes of Administration:

IV/IO via infusion pump.

Onset of Action:

1-2 hours.

Peak Effects:

12-14 hours.

Duration of Action:

Dependent on hepatic status and presence or absence of ongoing coagulopathies.

Dosage Forms/Packaging:

Will be provided by sending institution. The mixture should contain 5-10 mg in 50cc preservative-free NS, D5W or D5NS to be given over 20 minutes and absolutely no faster than 1mg/minute.

Arizona Drug Box Standard Supply:

PARAMEDIC: Interfacility agent only, not in paramedic drug box.
INTERMEDIATE: Not approved for this level of provider.

Special Notes:

+ Pregnancy Category C. Excreted in breast milk. Use caution.
+ Protect from light; agent is rapidly degraded.

+

⋈ ***Special Training Requirement***

Table 5.2. Eligibility for Authorization to Administer, Monitor, and Assist in Patient Self-administration of Agents by EMCT Classification; Administration Requirements; and Minimum Supply Requirements for Agents

KEY:

A = Authorized to administer the agent

SVN = Agent shall be administered by small volume nebulizer

MDI = Agent shall be administered by metered dose inhaler

* = Authorized to assist in patient self-administration

[ ] = Minimum supply required if an EMS provider chooses to make the optional agent available for EMCT administration

AGENT	MINIMUM SUPPLY	EMT	AEMT	EMT-I (99)	Paramedic
Adenosine	18 mg	-	-	A	A
Albuterol Sulfate SVN or MDI (sulfite free)	10 mg	A	A	A	A
Amiodarone or Lidocaine	300 mg or 3 prefilled syringes, total of 300 mg and 1 g vials or premixed infusion, total of 2 g	- -	- -	- A	A A
Aspirin	324 mg	A	A	A	A
Atropine Sulfate	3 prefilled syringes, total of 3 mg	-	-	A	A
Atropine Sulfate	Optional [8 mg multidose vial (1)]	-	-	A	A
Atropine Sulfate Auto-Injector	None	A	A	A	A
Atropine Sulfate and Pralidoxime Chloride (Combined) Auto-Injector	None	A	A	A	A
Calcium Chloride	1 g	-	-	-	A
Calcium Gluconate, 2.5% topical gel	Optional [50 g]	A	A	A	A
Charcoal, Activated (without sorbitol)	Optional [50 g]	A	A	A	A
Cyanokit	Optional [5 g]	-	-	-	A
Dexamethasone	Optional [8 mg]	-	-	A	A
Dextrose	50 g	-	A	A	A
Dextrose, 5% in H2O	Optional [250 mL bag (1)]	A	A	A	A
Diazepam or Lorazepam or Midazolam	20 mg 8 mg 10 mg	- - -	- - -	A A A	A A A
Diazepam Rectal Delivery Gel	Optional [20 mg]	-	-	A	A
Diltiazem or Verapamil HCl	25 mg 10 mg	- -	- -	- -	A A
Diphenhydramine HCl	50 mg	-	-	A	A
Dopamine HCl	400 mg	-	-	-	A
Epinephrine Auto-Injector	Optional [2 adult auto-injectors 2 pediatric auto-injectors]	A	A	A	A
Epinephrine HCl, 1:1,000	2 mg	-	A	A	A

Epinephrine HCl, 1:1,000	Optional [30 mg multidose vial (1)]	-	A	A	A
Epinephrine HCl, 1:10,000	5 mg	-	-	A	A
Etomidate	Optional [40 mg]	-	-	-	A
Furosemide or Bumetanide	Optional [100 mg] Optional [4 mg]	- -	- -	A A	A A
Glucagon	2 mg	-	A	A	A
Glucose, oral	Optional [30 gm]	A	A	A	A
Hemostatic Agents	Optional	A	A	A	A
Hydrocortisone Sodium Succinate	Optional	-	*	*	*
Immunizing Agent	Optional	-	-	A	A
Ipratropium Bromide 0.02% SVN or MDI	5 mL	-	-	A	A
Ketamine	Optional [200 mg]	-	-	-	A
Lactated Ringers	1 L bag (2)	A	A	A	A
Magnesium Sulfate	5 g	-	-	-	A
Methylprednisolone Sodium Succinate	Optional [250 mg]	-	-	A	A
Morphine Sulfate or Fentanyl	20 mg 200 mcg	- -	A -	A A	A A
Nalmefene HCl	Optional [4 mg]	-	A	A	A
Naloxone HCl	10 mg	-	A	A	A
Naloxone HCl	Optional [prefilled atomizers or auto-injectors] 2 doses	A	A	A	A
Nitroglycerin Sublingual Spray or Nitroglycerin Tablets	1 bottle 1 bottle	* *	A A	A A	A A
Normal Saline	1 L bag (2) Optional [250 mL bag (1)] Optional [50 mL bag (2)]	A	A	A	A
Ondansetron HCl	Optional [4 mg]	-	-	A	A
Oxygen	13 cubic feet	A	A	A	A
Oxytocin	Optional [10 units]	-	-	A	A
Phenylephrine Nasal Spray 0.5%	Optional [1 bottle]	-	-	A	A
Pralidoxime Chloride Auto-Injector	None	A	A	A	A
Proparacaine Ophthalmic	Optional [1 bottle]	-	-	A	A
Rocuronium	Optional [100 mg]	-	-	-	A
Sodium Bicarbonate 8.4%	Optional [100 mEq]	-	-	A	A
Succinylcholine	Optional [400 mg]	-	-	-	A
Thiamine HCl	100 mg	-	-	A	A
Tuberculin PPD	Optional [5 mL]	-	-	A	A
Vasopressin	Optional [40 units]	-	-	-	A

Attachment V.i.

Table 5.1. Arizona Scope of Practice Skills

KEY:

✓ = Arizona Scope of Practice skill

STR = Specialty Training Requirement: Skill requires specific specialty training with medical director authorization and involvement

* = Already intubated

	Airway/Ventilation/Oxygenation	EMT	AEMT	EMT-I(99)	Paramedic
	Airway- esophageal	STR	✓	✓	✓
	Airway- supraglottic	STR	✓	STR	✓
	Airway- nasal	✓	✓	✓	✓
	Airway- oral	✓	✓	✓	✓
	Bag-valve-mask (BVM)	✓	✓	✓	✓
	BiPAP/CPAP				✓
	Chest decompression- needle			✓	✓
	Chest tube placement- assist only				STR
	Chest tube monitoring and management				STR
	Cricoid pressure (Sellick's maneuver)	✓	✓	✓	✓
	Cricothyrotomy- needle			STR	✓
	Cricothyrotomy- percutaneous			STR	✓
	Cricothyrotomy- surgical			STR	STR
	Demand valve- manually triggered ventilation	✓	✓	✓	✓
	End tidal CO2 monitoring/capnography			✓	✓
	Gastric decompression- NG tube			✓	✓
	Gastric decompression- OG tube			✓	✓
	Head-tilt chin lift	✓	✓	✓	✓
	Intubation- nasotracheal			STR	✓
	Intubation- orotracheal	STR	STR	✓	✓
	Jaw-thrust	✓	✓	✓	✓
	Jaw-thrust – modified (trauma)	✓	✓	✓	✓
	Medication Assisted Intubation (paralytics)				STR
	Mouth-to-barrier	✓	✓	✓	✓
	Mouth-to-mask	✓	✓	✓	✓
	Mouth-to-mouth	✓	✓	✓	✓
	Mouth-to-nose	✓	✓	✓	✓
	Mouth-to-stoma	✓	✓	✓	✓
	Obstruction- direct laryngoscopy			✓	✓
	Obstruction- manual	✓	✓	✓	✓
	Oxygen therapy- humidifiers	✓	✓	✓	✓

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	Oxygen therapy- nasal cannula	✓	✓	✓	✓
	Oxygen therapy- non-rebreather mask	✓	✓	✓	✓
	Oxygen therapy- partial rebreather mask	✓	✓	✓	✓
	Oxygen therapy- simple face mask	✓	✓	✓	✓
	Oxygen therapy- venturi mask	✓	✓	✓	✓
	PEEP- therapeutic			✓	✓
	Pulse oximetry	✓	✓	✓	✓
	Suctioning- upper airway	✓	✓	✓	✓
	Suctioning- tracheobronchial		✓*	✓	✓
	Automated transport ventilator	STR	STR	~~✓~~	~~✓~~
Cardiovascular/Circulation		**EMT**	**AEMT**	**EMT-I (99)**	**Paramedic**
	Cardiac monitoring- multiple lead (interpretive)			✓	✓
	Cardiac monitoring- single lead (interpretive)			✓	✓
	Cardiac - multiple lead acquisition (non-interpretive)	STR	STR	✓	✓
	Cardiopulmonary resuscitation	✓	✓	✓	✓
	Cardioversion- electrical			✓	✓
	Carotid massage – (≤17 years)			STR	STR
	Defibrillation- automatic/semi-automatic	✓	✓	✓	✓
	Defibrillation- manual			✓	✓
	Hemorrhage control- direct pressure	✓	✓	✓	✓
	Hemorrhage control- tourniquet	✓	✓	✓	✓
	Internal; cardiac pacing- monitoring only			✓	✓
	Mechanical CPR device	STR	STR	STR	STR
	Transcutaneous pacing- manual			✓	✓
Immobilization		**EMT**	**AEMT**	**EMT-I (99)**	**Paramedic**
	Spinal immobilization- cervical collar	✓	✓	✓	✓
	Spinal immobilization- long board	✓	✓	✓	✓
	Spinal immobilization- manual	✓	✓	✓	✓
	Spinal immobilization- seated patient (KED,etc.)	✓	✓	✓	✓
	Spinal immobilization- rapid manual extrication	✓	✓	✓	✓
	Extremity stabilization- manual	✓	✓	✓	✓
	Extremity splinting	✓	✓	✓	✓
	Splint- traction	✓	✓	✓	✓
	Mechanical patient restraint	✓	✓	✓	✓
	Emergency moves for endangered patients	✓	✓	✓	✓
Medication administration - routes		**EMT**	**AEMT**	**EMT-I (99)**	**Paramedic**

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	Assisting patient with his/her own prescribed medications (aerosolized/nebulized)	✓	✓	✓	✓
	Assisting patient with his/her own prescribed medications (ASA/Nitro)	✓	✓	✓	✓
	Aerosolized/nebulized (beta agonist)	STR	✓	✓	✓
	Auto-injector	STR	✓	✓	✓
	Buccal	STR	✓	✓	✓
	Endotracheal tube			✓	✓
	Inhaled self-administered (nitrous oxide)		✓	✓	✓
	Intradermal				✓
	Intramuscular (including patient assisted hydrocortisone)		✓	✓	✓
	Intranasal	STR	✓	✓	✓
	Intravenous push		✓	✓	✓
	Intravenous piggyback			✓	✓
	Intraosseous		STR	✓	✓
	Nasogastric				✓
	Oral	✓	✓	✓	✓
	Rectal		STR	✓	✓
	Subcutaneous		✓	✓	✓
	Sublingual		✓	✓	✓
	Auto-injector (self or peer)	✓	✓	✓	✓
	Auto-injector (patient's own prescribed medications)	✓	✓	✓	✓
IV initiation/maintenance fluids		**EMT**	**AEMT**	**EMT-I (99)**	**Paramedic**
	Access indwelling catheters and implanted central IV ports				✓
	Central line- monitoring				✓
	Intraosseous- initiation		✓	✓	✓
	Intravenous access		✓	✓	✓
	Intravenous initiation- peripheral	STR	✓	✓	✓
	Intravenous- maintenance of non-medicated IV fluids	✓	✓	✓	✓
	Intravenous- maintenance of medicated IV fluids			✓	✓
	Umbilical initiation				STR
Miscellaneous		**EMT**	**AEMT**	**EMT-I (99)**	**Paramedic**
	Assisted delivery (childbirth)	✓	✓	✓	✓
	Assisted complicated delivery (childbirth)	✓	✓	✓	✓
	Blood glucose monitoring	✓	✓	✓	✓
	Blood pressure- automated	✓	✓	✓	✓
	Blood pressure- manual	✓	✓	✓	✓
	Eye irrigation	✓	✓	✓	✓

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	Eye irrigation (Morgan lens)				STR
	Thrombolytic therapy- initiation				STR
	Urinary catheterization				STR
	Venous blood sampling			✓	✓
	Wound Packing	STR	STR	STR	STR
	Blood chemistry analysis				STR
	Inter-facility med transport list, including pump administration \			STR	STR