TRIAGE, TREATMENT AND TRANSPORT GUIDELINES

As recommended by the

Bureau of Emergency Medical Services
& Trauma System

Arizona Department of Health Services

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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

Assess ABC’s/VS/LOC

EMT/AEMT
- Support Airway Ventilation Oxygenation
- Have AED Ready
- Administer 324-325 mg Aspirin PO chew and swallow

AEMT only
- Establish IV access
- If patient has own Nitroglycerin, in original container, is not expired, and patient’s systolic BP is greater than 100 mmHg assist patient with taking Nitroglycerin as necessary every 5 minutes to a total of 3 tablets/sprays or pain relief or drop in systolic BP to less than 100 mmHg
- Administer Nitroglycerin 0.4 mg tablets or oral spray SL may repeat every 5 minutes to a total of 3 tablets/sprays to relieve pain if the patient’s systolic BP is greater than 100 mmHg
- Administer Morphine sulfate 2-4 mg IV every 5 minutes to a total of 10 mg if pain not relieved with Nitroglycerin and patient systolic BP is greater than 100 mmHg
- Transport per local protocol

EMT-I/Paramedic
- Follow EMT standard
  - Do not utilize patient assisted Nitroglycerin
  - Apply ECG monitor
  - If lethal or potentially lethal arrhythmias are present, proceed to appropriate cardiac treatment protocol
  - Perform 12 lead ECG, if available
  - Transmit ECG or pre-notify hospital if ST-elevation MI present
  - Administer 324-325 mg Aspirin PO chew and swallow
  - Establish IV access
  - Administer Nitroglycerin 0.4 mg tablets or oral spray SL may repeat every 5 minutes to a total of 3 tablets to relieve pain if the patient’s systolic BP is greater than 100 mmHg
  - Administer Morphine sulfate 2-4 mg IV every 5 minutes to a total of 10 mg if pain not relieved with Nitroglycerin and patient systolic BP is greater than 100 mmHg
  - If ST-elevation MI present, transport per local protocol
Adult Bradycardia, Symptomatic

Assess ABC’s/VS/LOC
Identify and treat underlying cause

EMT/AEMT
Support Airway Ventilation Oxygenation
Have AED Ready

EMT-I/Paramedic
Follow EMT standard
Monitor ECG rhythm
Perform 12 lead ECG, if available

AEMT only
Establish IV access
Monitor Vital Signs
Transport per local protocol

- Prepare for transcutaneous pacing; use without delay for high-degree block (type II second degree or third degree AV blocks)
- Consider Atropine 0.5 mg every 3-5 mins. to a total dose of 3 mg while awaiting pacer, if ineffective begin pacing
- **Paramedic only:** Consider epinephrine 2-10 mcg/min or Dopamine 2-20 mcg/kg/min infusion while awaiting pacer or if pacer ineffective

Transport per local protocol
Adult Tachycardia with Pulses

Identify and treat contributing reversible causes
Assess ABC’s/VS/LOC

EMT/AEMT
Support Airway
Ventilation
Oxygenation

Have AED ready
Monitor vital signs

EMT-I/Paramedic
Follow EMT standard
Monitor ECG rhythm
Identify rhythm

Transport per local protocol

Is patient unstable?
Altered mental status, hypotension, shock,
shortness of breath, ongoing chest pain

 Stable

Unstable

Perform immediate synchronized cardioversion:
A-fib: biphasic begin at 120-200
then increase per manufacturers
recommendations
SVT/A-flutter/monomorphic
VT: biphasic begin at 100 then
increase per manufacturers
recommendations
Monophasic for above begin at
200 then 300, 360.

Transport per local protocol

Is QRS wide or narrow?

Narrow QRS
Is rhythm regular?

Regular

Irregular

Transport per local protocol

Rhythm Converts?

Yes

No

Continue to monitor

Transport per local protocol

Regular

Irregular

Transport per local protocol

Wide QRS
Is rhythm regular?

Paramedic Only
If Torsades de pointes consider
Magnesium Sulfate 1-2 gm over 5
mins.

Paramedic Only:
If atrial fibrillation with aberrancy/
intraventricular conduction delays
go to irregular narrow complex
tachycardia.

If no response:
• Administer Adenosine 6 mg rapid
IV
• If no conversion in 1-2 minutes give
12 mg rapid IVP

Consider rate control- Paramedic Only:
Administer Verapamil 2.5-5 mg IV, if no
response may repeat in 30 mins. with 5-10
mg IV
Or
Diltiazem, 0.25 mg/kg IV, if no response
may repeat in 15 mins. with 0.35 mg/kg IV

Consider rate control- Paramedic Only:
Administer Verapamil 2.5-5 mg IV, if no
response may repeat in 30 mins. with 5-10
mg IV
Or
Diltiazem, 0.25 mg/kg IV, if no response
may repeat in 15 mins. with 0.35 mg/kg IV

May administer Adenosine for undifferentiated regular
monomorphic wide-complex tachycardia

Paramedic Only:
If ventricular tachycardia or
uncertain rhythm, administer Amiodorone 150 mg IV
over 10 minutes may repeat every 10 minutes
Or
EMT-I/Paramedic:
Lidocaine 1 mg/kg IVP, may
repeat Lidocaine 0.5 mg/kg every 5-10 minutes to a
total of 3 mg/kg. Prepare for synchronized
cardioversion IF SVT or aberrancy, administer
Adenosine

Stable

Transport per local protocol

Establish IV access
Obtain 12-lead ECG

Unstable

Wide QRS
Is rhythm regular?

If no conversion in 1-2 minutes give
12 mg rapid IVP
Adult Pulseless Arrest-Cardiocerebral Resuscitation

**EMT/AEMT**

Adequate bystander administered chest compressions or provider witnessed arrest

- Analyze rhythm
- Deliver one shock if indicated - 360 J monophasic or biphasic equivalent
- Do not analyze pulse or rhythm after shock

- Immediate 200 chest compressions
- Assess airway, insert OPA, apply non-rebreather mask at 15 lpm or BVM if not previously performed

- Analyze rhythm, check for pulse only if No Shock indicated
- Deliver one shock if indicated
- 360 J monophasic or biphasic equivalent
- Do not analyze pulse or rhythm after shock

Immediate 200 chest compressions

Resume standard BCLS

**AEMT Only**

Establish IO access as soon as possible
IV access may be utilized if rapidly available

At completion of CCR guideline, consider blind airway insertion device

**EMT-I/Paramedic**

Follow EMT standard

Establish IO access as soon as possible
IV access may be utilized if rapidly available

Administer Epinephrine (1:10,000) 1 mg IO/IV every 3-5 min. as soon as possible during compressions

At completion of CCR guideline, resume standard ACLS
Consider endotracheal intubation

Transport per local protocol
Consider termination of resuscitation

**AEMT only**

At completion of CCR guideline, consider blind airway insertion device

Transport per local protocol
Consider termination of resuscitation
Adult Pulseless Arrest

**EMT/AEMT**
- Adequate bystander administered chest compressions or provider witnessed arrest
  - Analyze rhythm
  - Deliver one shock if indicated
  - 360 J monophasic or biphasic equivalent
  - Perform CPR while defibrillator is charging
  - Do not analyze pulse or rhythm after shock

**EMT-I/Paramedic**
- Follow EMT standard
  - Manual ECG monitor
  - Only check pulse if organized rhythm is present at the end of each 5 cycles of CPR

**Immediate 5 cycles of CPR**
- Animate rhythm- only check for pulse only if No Shock indicated
- Deliver one shock if indicated
- 360 J monophasic or biphasic equivalent
- Perform CPR while defibrillator is charging
- Do not analyze pulse or rhythm after shock

**VF/VT**
- Consider antiarrhythmic for persistent /recurrent VF/VT administer during compressions:
  - Lidocaine 1-1.5 mg/kg IV/IO then repeat every 3-5 min at 0.5-0.75 mg/kg IV/IO up to a total dose of 3 mg/kg
  - **Paramedic Only**
  - Amiodarone 300 mg IV/IO then consider additional 150 mg IV/IO once in 3-5 min.
  - Consider Magnesium Sulfate 1-2 Gm IV/IO for Torsades de pointes

**AEMT Only**
- Establish IO access as soon as possible
- IV access may be utilized if rapidly available

**AEMT only**
- Consider blind airway insertion device
- If advanced airway is placed perform chest compressions at 100 compressions/min without interruptions for ventilations
- Ventilations delivered at 8 breaths/min

**Transport patient per local protocol. Consider termination of resuscitation**
Adult Termination of Resuscitation Efforts
[Environmental Hypothermia not Present]

If all of the flowing criteria are met, contact Medical Direction for consideration of termination of resuscitation:
- Arrest not witnessed by EMS
- There is no shockable rhythm by AED or other monitor
- There is no ROSC prior to transport

Resuscitation terminated?

Yes
- Notify Law Enforcement

No
- Transport per local protocol
Adult Withholding of Resuscitation Efforts

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?

- Yes
  - Notify Law Enforcement

- No
  - Resuscitate per Pulseless Arrest guidelines
Adult Transport to a Recognized Cardiac Receiving 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 CRC when feasible, resources available, and will add less than 15 minutes to transport time compared to transport to non-CRC
- 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

**Flowchart:**

1. **Yes**
   - Notify receiving facility as soon as possible
2. **Post-resuscitation care**
   - Control airway as necessary
   - Maintain ventilation rate of 8 breaths per min.
3. **EMT-I/Paramedic only**
   - Consider anti-arrhythmic medication
4. **EMT-I/Paramedic only**
   - Perform 12-lead EKG, if available
   - Pre-notify receiving facility of ST-elevation MI
   - If available, administer 2000 ml cold (4°C/39.2°F) NS IV fluid bolus to the adult patient. Apply cold/ice packs to groin/axillae/neck. Patients who are cooled pre-hospital should be transported to a recognized cardiac receiving center.
5. **Paramedic only**
   - Consider dopamine for persistent hypotension
6. **Transport per local protocol**

**No**

Transport per local protocol
Adult Respiratory Difficulty

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

EMT/AEMT

Support Airway Ventilation Oxygenation

AEMT Only:
- Consider blind airway insertion device
- Establish IV access
- Pulmonary edema: administer NTG and morphine sulfate per paramedic guideline
- COPD/Asthma: administer Albuterol and/or Epinephrine (1:1000) per paramedic guideline

Maintain position of comfort

Transport per local protocol

EMT-I/Paramedic

Follow EMT standard with Capnography if available

Pulmonary Edema

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

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

If no improvement or patient deteriorates, contact medical direction.
Consider CPAP (paramedic only), BVM or intubation if respiratory rate less than 8, SPO2 less than 80% with oxygen or pt has decreased LOC

Transport per local protocol

Maintain position of comfort

Transport per local protocol
**Adult Unconscious/Unresponsive**  
[Non-Traumatic Adult ≥ 15 Y/O]

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

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**EMT/AEMT**

- O2 to keep Sat >90%

---

**AEMT Only**

- Establish IV access  
  Consider  
  - Naloxone per local protocol  
  - If FSBG < 60mg/dL = Consider  
    - Dextrose  
    - Glucagon  
    - Thiamine

Consider blind airway insertion device if:

- Patient condition does not improve  
- Respiratory rate <8 or  
- Patient unable to protect airway

---

**Transport per local protocol**

---

**EMT-I/Paramedic**

- O2 to keep Sat >90%

---

- Establish IV access  
  Consider  
  - Naloxone per local protocol  
  - If FSBG < 60mg/dL = Consider  
    - Dextrose  
    - Glucagon  
    - Thiamine

Consider intubation if:

- Patient condition does not improve  
- Respiratory rate <8 or  
- Patient unable to protect airway

---

**Transport 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

### EMT/AEMT
- Apply physical restraints as necessary per local protocol.
- Restraint use requires constant monitoring of ABC’s and Vital Signs
- If able: Check FSBG. If <60 mg/dL, administer 1-2 tubes of oral glucose
- AEMT Only
  - Establish IV access
  - If FSBG < 60mg/dL = Consider
    - Dextrose
    - Glucagon
    - Thiamine

### EMT-I/Paramedic
- Follow EMT standard
- Establish IV access
- If FSBG < 60mg/dL = Consider
  - Dextrose
  - Glucagon
  - Thiamine
- Consider sedation, per local protocol
- Transport per local protocol
Poison Ingestion/Inhalation

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

EMT/AEMT
Support airway, ventilation, and oxygenation
If FSBG < 60 mg/dL give 1-2 tubes oral glucose if patient is alert

AEMT Only
Establish IV access
If respiration < 12/min, consider:
- Naloxone 0.5-2.0 mg IVP, IM or nasal; titrate to effect
- If FSBG < 60 dL/mg give 100 mg Thiamine IVP and 25g D50 IVP
Attempt to identify poison and/or contaminate. Inspect scene. Check pockets. Retrieve and transport pill containers
Transport per local protocol

EMT-I/Paramedic
Follow EMT standards
Establish IV access
If respiration < 12/min, consider:
- Naloxone 0.5-2.0 mg IVP, IM or nasal; titrate to effect
- If FSBG < 60 dL/mg give 100 mg Thiamine IVP and 25g D50 IVP
Cardiac monitor and treat arrhythmias
Transport per local protocol
Adult Poison - Bites and Stings

Assess ABC’s, VS, LOC

EMT/AEMT

Support airway, ventilation, and oxygenation

Identify source of bite or sting, circumstances and time

Immobilize bitten extremity. If possible, keep at heart level

Observe for anaphylaxis

Administer Epi-pen if indicated: use pediatric auto-injector if patient is ≤ 30 kg

Consider contacting Poison Control

AEMT Only
Establish IV access
- Administer Epinephrine if indicated (1:1000) IM 0.01 mg/kg up to 0.5 mg total.
- If wheezing: give Albuterol, one unit dose SVN.

Transport insect/bee/scorpion if it can be done safely.

Transport per local protocol

EMT-I/Paramedic

Follow EMT standards

Establish IV access

- Administer Epinephrine if indicated (1:1000) IM 0.01 mg/kg up to 0.5 mg total.
- If wheezing: give Albuterol, one unit dose and Atrovent, one unit dose via SVN.
- Administer Diphenhydramine IVP 1mg/kg up to 25 mg total.
- Administer Solumedrol 2 mg/kg IVP up to 125 mg.

Contact Medical Direction for severe uncoordination, hypertension, tachycardia, or hypersalivation

Transport per local protocol
Protect medical personnel PRN
Assess ABC’s, VS, LOC

EMT/AEMT
Support airway, ventilation, and oxygenation
- Remove any constricting jewelry or clothing.
- DO NOT apply ice to bite area.
- DO NOT apply or remove tourniquet. If tourniquet is in place, contact Medical Direction.
- Discourage ambulation.

- Determine time of bite and description; native or exotic
- DO NOT approach or transport snake.

- Immobilize bitten extremity
- Keep at heart level if possible.
- Mark area of advancing erythema/edema with time and date.

AEMT Only
Establish IV access

Transport per local protocol

EMT-I/Paramedic
Follow EMT standards

Establish IV access

Cardiac monitor and treat arrhythmias

Transport per local protocol

Poison – Snakebite
Adult Seizures

Assess ABC’s, VS, LOC
Oxygen 15 lpm via NRM - Consider underlying cause - Check blood glucose

EMT/AEMT

If pregnant, place in left lateral recumbent position

AEMT Only
- Establish IV access
- If FSBG < 60mg/dL = Consider
  - Dextrose
  - Glucagon
  - Thiamine

Transport per local protocol

EMT-I/Paramedic

- Establish IV access
- If FSBG < 60mg/dL = Consider
  - Dextrose
  - Glucagon
  - Thiamine
- Administer Benzodiazepines per local protocol
- If pregnant go to high risk OB protocol

Transport per local protocol
**Hyperthermia**

Assess ABC’s, VS, LOC
Check temperature

**Temperature < 104° F**

- Signs & symptoms of heat exhaustion/dehydration
- Elicit history to rule out hyponatremia due to over-hydration
- Remove to cool environment. Sponge with lukewarm fluids
- Position patient to left lateral recumbent if vomiting
- Check blood glucose if altered LOC
- Consider oral hydration if patient is not nauseated/ altered LOC

If patient has a seizure, follow seizure protocol

- EMT
- AEMT/EMT-I/ Paramedic

Transport per local protocol

**Temperature > 104° F**

- Signs & symptoms of heat stroke
- Position patient to left lateral recumbent
- Immediate cooling: Remove clothing, move to cool environment; begin external cooling. Apply cold packs to major pulse points
- Monitor rectal temp if available
- Check blood glucose

If patient has a seizure, follow seizure protocol

- EMT
- AEMT/EMT-I/ Paramedic

- Establish IV access.
- Consider fluid challenge if signs/symptoms of hypovolemia
- If FSBG < 60mg/dL = Consider
  - Dextrose
  - Glucagon
  - Thiamine

Transport per local protocol
Hypothermia

Gentle Handling!

Assess for signs of life for 30-60 seconds. Prevent further cooling, remove wet clothes; move to warm environment

No

EMT/AEMT

Begin CPR; use AED

Humidified/warmed oxygen if possible. DO NOT hyperventilate

Check FSBG

AEMT Only:
- Establish IV access
- If possible administer fluids warmed to 104-108 °F
- Consider blind airway insertion device - DO NOT hyperventilate
- If FSBG < 60mg/dL = Consider
  - Dextrose
  - Glucagon
  - Thiamine

Transport per local protocol

EMT-I/Paramedic

Follow EMT standards

Cardiac monitor shows organized rhythm

Begin CPR
Treat VT/VT per protocol

Consider intubation. DO NOT hyperventilate

Transport per local protocol

Yes

EMT/AEMT

Check rectal temp. with hypothermia thermometer

Temp<90 °F

Start central warming only: heat packs to neck and groin

Humidified/warmed oxygen if possible. DO NOT hyperventilate

Consider intubation. DO NOT hyperventilate

Transport per local protocol

Temp>90 °F

Start external re-warming. Consider warm PO fluids of pt. condition permits

EMT-I/Paramedic

Follow EMT standards

Cardiac monitor shows organized rhythm

Temp<90 °F

Transport per local protocol

AEMT Only:
- Establish IV access
- If possible administer fluids warmed to 104-108 °F
- If FSBG < 60mg/dL = Consider
  - Dextrose
  - Glucagon
  - Thiamine

Transport per local protocol

AEMT Only:
- Establish IV access
- If possible administer fluids warmed to 104-108 °F
- Consider blind airway insertion device- DO NOT hyperventilate
- If FSBG < 60mg/dL = Consider
  - Dextrose
  - Glucagon
  - Thiamine

Transport per local protocol
**Adult Suspected Stroke**

**Assess ABC’s, VS, LOC**

**EMT/AEMT**
- Support airway, ventilation and oxygenation
- Check blood glucose
  - If FSBG < 60mg/dL consider administering oral glucose

**AEMT Only:**
- Establish IV access
  - If FSBG < 60mg/dl = Consider
    - Dextrose
    - Glucagon
    - Thiamine

**EMT-I/Paramedic**
- Follow EMT Standards
- Apply ECG monitor: if lethal or potentially lethal arrhythmias are present, proceed to appropriate cardiac treatment protocol

**AEMT Only:**
- Establish IV access
  - If FSBG < 60mg/dL = Consider
    - Dextrose
    - Glucagon
    - Thiamine

**Stroke score assessment**

**Stroke score?**
- **Positive**
  - Determine time of symptom onset
  - >4.5 hours
  - <4.5 hours
  - **STROKE ALERT**
    - Pre-notify receiving facility
    - Transport to closest appropriate facility

**Negative**

---

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

**Initial assessment of ABC’s with consideration of need for spinal stabilization. Continually reassess the patient.**

**Determine Level of Consciousness**
A=Alert, V=Responsive to verbal stimuli, P=Responsive to painful stimuli, U=Unresponsive

**Assess vital signs and correct evidence of:**

**Adult evidence of shock:**
- SBP < 90 mmHg
- Weak or absent peripheral pulse

**Pediatric evidence of shock:**
- Signs of external hemorrhage
- Altered mental status
- Weak or absent peripheral pulse

**Prevent heat loss**

**Control external bleeding with direct pressure or tourniquet**

**Establish IV access**

**Treat hypoperfusion**

**Transport per local protocol**
Trauma - Amputated Parts

EMT

Control external bleeding via direct pressure or tourniquet

Transport amputated part wrapped in a dry, sterile dressing. Place in a water tight container or plastic bag. Keep cool but do not place directly on ice.

Partially severed: Clean with NS, splint extremity, apply NS soaked dressing. Cover with bulky dressing and elevate

Transport per local protocol

AEMT/EMT-I/Paramedic

Follow EMT standards

Adult

- SBP <90 mmHg
- Weak or absent peripheral pulse

Establish IV access
Treat hypoperfusion

Administer analgesic for pain per local protocol

Transport per local protocol

Pediatric

- Signs of external hemorrhage
- Altered mental status
- Weak or absent peripheral pulse

Transport per local protocol
Trauma - Extremity Fractures, Dislocation and Sprains

EMT

Assess CSM function

Dress open wounds

Apply splinting devices, reassess CSM. Correct anatomical alignment once only if nerve or vascular impairment present

Elevate injury. Apply ice/cold packs

Initial assessment of ABC’s with consideration of need for spinal stabilization. Continually reassess the patient

Transport per local protocol

AEMT/EMT-I/Paramedic

Follow EMT standards

Establish IV access
Treat hypoperfusion

Administer analgesic for pain per local protocol

Transport per local protocol
Trauma - Brain Injury

Assess ABC’s, VS, LOC
Spinal immobilization

EMT/AEMT
Do not delay transport to trauma center while performing the following procedures
- Airway support and oxygen via NRM 15 lpm
- Consider BVM if after BLS airway maneuvers SpO2 remains <90%

Obtain FSBG
If <60 mg/dL, consider oral glucose if patient maintains airway

Pediatric
BVM rates
- Infant 25 BPM
- Child 20 BPM
- Adolescent 10 BPM
DO NOT HYPERVENTILATE

AEMT Only
Consider blind airway insertion device if GCS<9 or inability to maintain SpO2>90%

AEMT Only
- Establish IV access
- Prevent hypotension
- Administer 20 mL/kg fluid bolus to maintain SBP:
  - 0-9 yrs: >70+(agex2)
  - ≥10 yrs: >90 mmHg

If FSBG<70mg/dL administer:
- Newborn 5 mL/kg D10
- 3 mo-3yrs 2mL/kg (max 100 mL)
- ≥4 yrs 1 mL/kg D50 (max 50 mL)
Repeat FSBG in 10 min if < 60 mg/dL, repeat previous dose

Transport per local protocol

EMT-I/Paramedic
Follow EMT/AEMT standards

Pediatric
Consider intubation

Adult
Transport per local protocol

Paramedic Only
- Monitor EtCO2 if available
- Maintain EtCO2 between 35-45 mmHg.

AEMT Only
Consider blind airway insertion device if GCS<9 or inability to maintain SpO2>90%

AEMT Only
- Establish IV access
- Prevent hypotension
- Administer 1000 mL rapid fluid bolus
- Repeat 500 mL rapid fluid boluses to keep SBP>90 mmHg

If FSBG<70mg/dL administer:
- D50 25 g/50mL
Repeat FSBG in 10 min if < 60 mg/dL, repeat previous dose

Transport per local protocol
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

Assess pain as part of general patient care in children and adults.
Consider all patients as candidates for pain management, regardless of transport interval.
(Strong recommendation, low quality evidence)

Use an age-appropriate pain scale to assess pain:
Age <4 yrs: Consider using an observational scale such as FLACC or CHEOPS
Age 4-12 yrs: Consider using a self-report scale such as FPS, FPS-revised, or Wong-Baker Faces
Age >12 yrs: Consider using a self-report scale such as NRS
(Weak recommendation, very low quality evidence for patients < 12 yrs, moderate quality evidence for patients > 12 yrs)

Use opioid analgesics to relieve moderate to severe pain.
Analgesics proven safe and effective are:
- Morphine IV (0.1 mg/kg/dose, not to exceed adult dose: 1-3 mg increments)
- Fentanyl IV or IN (1 mcg/kg/dose, not to exceed adult dose: 25-50mcg increments)
(Strong recommendation, moderate quality evidence)

Reassess pain every 5 minutes.
(Strong recommendation, moderate quality evidence)

Evidence of serious adverse effects should preclude further morphine or fentanyl administration.

Serious Adverse Effects
- GCS < 15
- Hypotension for age
- SpO2 < 90%
- Hypoventilation
- Evidence of allergy
(Weak recommendation, very low quality evidence)

If still in significant pain, redose at half the original dose.
(Strong recommendation, low quality evidence for repeat doses. Weak recommendation, very low quality evidence for redosing at half the original dose)

Added to TTTG: 1/28/2014
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.

<table>
<thead>
<tr>
<th>BLUNT TRAUMA</th>
<th>PENETRATING TRAUMA TO HEAD, NECK OR TORSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMMOBILIZE</td>
<td>CONSIDER NOT IMMOBILIZING</td>
</tr>
<tr>
<td><em>if any of the following criteria are present:</em></td>
<td>Patient must meet the following criteria:</td>
</tr>
<tr>
<td>• Spinal pain or tenderness</td>
<td>• No spine pain or tenderness</td>
</tr>
<tr>
<td>• Neurological deficit or complaint</td>
<td>• No neurological deficit or complaint</td>
</tr>
<tr>
<td>• Anatomic deformity of spine</td>
<td>• No anatomic deformity of spine</td>
</tr>
<tr>
<td>• Concerning mechanism of injury *</td>
<td>• No concerning mechanism of injury *</td>
</tr>
<tr>
<td>• Presence of alcohol/drugs</td>
<td>• Absence of evident impairment from alcohol/drugs</td>
</tr>
<tr>
<td>• Distracting injury **</td>
<td>• No obvious distracting injury **</td>
</tr>
</tbody>
</table>

IMMOBILIZE if any of the following criteria are present:

• Neurological deficit or complaint

CONSIDER NOT IMMOBILIZING

IMMOBILIZE if any of the following criteria are present:

• No neurological deficit or complaint

CONSIDER NOT IMMOBILIZING

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

Measure vital signs and level of consciousness

<table>
<thead>
<tr>
<th>Measure</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow Coma Scale</td>
<td>≤13</td>
</tr>
<tr>
<td>Systolic blood pressure (mmHg)</td>
<td>&lt;90 mmHg</td>
</tr>
<tr>
<td>Respiratory rate</td>
<td>≤10 or &gt;29 breaths per minute (&lt;20 in infant aged &lt; 1 year&lt;sup&gt;1&lt;/sup&gt;), or need for ventilator support</td>
</tr>
</tbody>
</table>

**Step One**

<table>
<thead>
<tr>
<th>Decision</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport to a Trauma Center&lt;sup&gt;2&lt;/sup&gt;</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Step Two**

- 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

<table>
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<th>Action</th>
</tr>
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<td>Transport to a Trauma Center&lt;sup&gt;2&lt;/sup&gt;</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Step Three**

- Falls
  - Adults: >20 feet (one story is equal to 10 feet)
  - Children<sup>4</sup>: >10 feet or two or three times the height of the child
- High-risk auto crash
  - Intrusion<sup>5</sup>, 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<sup>6</sup>
- Motorcycle crash >20 mph

<table>
<thead>
<tr>
<th>Decision</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport to a trauma center, which, depending on the trauma system, need not be the highest level trauma center&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Assess special patient or system considerations.</td>
</tr>
</tbody>
</table>

**Step Four**

- Older Adults<sup>8</sup>
  - 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<sup>9</sup>
  - With trauma mechanism: triage to trauma center
- Pregnancy >20 weeks
- EMS<sup>10</sup> provider judgment

<table>
<thead>
<tr>
<th>Decision</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>Transport according to protocol&lt;sup&gt;11&lt;/sup&gt;,</td>
</tr>
</tbody>
</table>

WHEN IN DOUBT, TRANSPORT TO A TRAUMA CENTER
<table>
<thead>
<tr>
<th>Field</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The upper limit of respiratory rate in infants is &gt;29 breaths per minute to maintain a higher level of over-triage for infants.</td>
</tr>
<tr>
<td>2</td>
<td>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.</td>
</tr>
<tr>
<td>3</td>
<td>Any injury noted in Step Two or Step Three triggers a “YES” response.</td>
</tr>
<tr>
<td>4</td>
<td>Age &lt;15 years.</td>
</tr>
<tr>
<td>5</td>
<td>Intrusion refers to interior compartment intrusion, as opposed to deformation which refers to exterior damage.</td>
</tr>
<tr>
<td>6</td>
<td>Includes pedestrians or bicyclists thrown or run over by a motor vehicle or those with estimated impact &gt;20 mph with a motor vehicle.</td>
</tr>
<tr>
<td>7</td>
<td>Local or regional protocols should be used to determine the most appropriate level of trauma center; appropriate center need not be Level I.</td>
</tr>
<tr>
<td>8</td>
<td>Age &gt;55 years.</td>
</tr>
<tr>
<td>9</td>
<td>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.</td>
</tr>
<tr>
<td>10</td>
<td>Emergency medical services.</td>
</tr>
<tr>
<td>11</td>
<td>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.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>MODE OF TRANSPORT EXAMPLES</th>
<th>(examples not intended to cover all potential circumstances)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quicker Form of Transport May Make a Difference in Outcome</td>
<td>Quicker Form of Transport May Not Make a Difference in Outcome</td>
</tr>
<tr>
<td>Patient with a suspected aortic injury as seen on chest X-ray or CT scan.</td>
<td>Patient with 2 broken ribs, no pneumothorax and who is breathing fine.</td>
</tr>
<tr>
<td>Patient with stab wound to the abdomen near the upper right quadrant.</td>
<td>Patient with gun-shot wound to the thigh with excellent pulses, no expanding thigh, and no significant on-going blood loss.</td>
</tr>
<tr>
<td>Patient with a gunshot wound to the thigh with decreased pulses.</td>
<td>Stab wound to the arm with decreased sensation but normal pulses, no “tightness”, and no significant on-going blood loss.</td>
</tr>
<tr>
<td>Patient with Glasgow Coma Scale (GCS) less than 12 and the GCS is decreasing.</td>
<td>Patient with a concussion and normal CT scan of the brain; or if no CT, then a GCS of 15.</td>
</tr>
<tr>
<td>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.</td>
<td>Patients with medical conditions that are not eligible for or will not receive time sensitive interventions.</td>
</tr>
<tr>
<td>Geriatric, pediatric or peri-natal patients with unexplained and worsening illness.</td>
<td>Special populations whose vital signs are stable and indications for acute changes are unlikely.</td>
</tr>
</tbody>
</table>

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:


Added to TTTG: 6/2012
Pediatric Shortness of Breath

ABCDE Assessment

EMT/AEMT
- Establish airway support
- Maintain position of comfort
- High flow oxygen
- Nasal suction if needed
- Assist ventilation as needed

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

EMT-I/Paramedic
- Follow EMT standards

AEMT Only
For Wheezing, Consider
- Albuterol (2.5 mg nebulized) may repeat x2
- Epinephrine 1:1000 (0.01 mg/kg IM)

IV Fluids
- NS 20 ml/kg bolus: may repeat x2 (hypotension=SBP<70+2x age in years) for 0-9 yrs

Transport per local protocol

Assess for causation
- Asthma/Bronchiolitis/Croup
- Pulmonary edema
- Obstruction
- Anaphylaxis

For Wheezing, Consider
- Albuterol (2.5 mg nebulized) may repeat x2
- Atrovent (Ipratropium bromide 0.02%) (2.5 mL SVN)
- Epi- nephrine 1:1000 (0.01 mg/kg IM)
- For Stridor at rest, consider Epinephrine 1:1000 nebulized

IV Fluids
- NS 20 ml/kg bolus: may repeat x2 (hypotension=SBP<70+2x age in years) for 0-9 yrs

Cardiac monitor

Transport per local protocol
**Pediatric Heat Exposure**

- **ABCDE Assessment**
  - **EMT/AEMT**
    - Establish airway support
    - High flow oxygen
    - Assist ventilation as needed
    - Check temperature
    - Assess for trauma
  - T > 38°C (100.4°F)
    - Cooling techniques
      - Loosen clothing
      - Ambient air flow
      - Cool water sponging
  - Altered mental status or Temp > 104°F
    - Aggressive cooling
    - Ice packs to groin/neck/axilla
  - **AEMT Only**
    - IV fluids
      - NS 20 ml/kg bolus (may repeat x2)
    - Transport per local protocol

- **EMT-I/Paramedic**
  - Follow EMT standards
  - IV fluids
    - NS 20 ml/kg bolus (may repeat x2)
  - Cardiac monitor
  - Transport per local protocol
Pediatric *Anaphylaxis/**Allergic Reaction

ABCDE Assessment

EMT/AEMT

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

AEMT Only
- 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
- SVN Albuterol 2.5 mg/3 ml NS via mask/mouth-piece/in-line if wheezing. May repeat PRN

Transport per local protocol

EMT-I/Paramedic

Allergic reaction (no respiratory distress)
Consider:
- Diphenhydramine 1mg/kg IV/IM up to 25 mg
- 0.01 mg/kg up to 0.3 mg (0.01-0.03 ml/kg)

Follow EMT standards

Anaphylaxis (see below)

Follow EMT 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

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

- 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

For persistent hypotension, Epinephrine IV/IO infusion: 0.1 mcg - 1 mcg/kg/min (hypotension=SBP<70+2x age in years) for 0-9 yrs

Transport per local protocol

*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

ABCDE Assessment

EMT/AEMT

Delivery of newborn

Clear of meconium? Breathing or crying? Good muscle tone? Color pink? Term gestation?

NO

Clear airway, position, provide airway support and 100% oxygen

Dry & stimulate infant; wrap infant in dry blanket, cover head, provide warmth

Evaluate respirations, heart rate and color

Apnea or HR<100

Provide positive pressure ventilations

HR<60

Provide positive pressure ventilations & chest compressions

AEMT Only
Establish IV/IO access

HR>100

Stop positive pressure ventilations & chest compressions

Transport per local protocol

EMT-I/Paramedic

Follow EMT standards

HR<60 despite 60 sec of PPV

Consider endotracheal intubation & succioning

HR<60

Initiate IV/IO. Administer Epinephrine 1:10,000 0.01-0.03 mg/kg (0.1-0.3 ml/kg) IV, IO, ETT q 3-5 minutes

HR<60

Fluid bolus NS 10 ml/kg bolus. Check blood glucose (if <40, administer D10 2 ml/kg IV/IO)

HR>100

- Stop positive pressure ventilations & chest compressions
- Continue monitoring for airway support

Transport per local protocol
**Pediatric Pulseless Electrical Activity (PEA)/Asystole**

**ABCDE Assessment**

- **EMT/AEMT**
  - Begin assisted ventilation & compressions
  - Apply pediatric approved AED for < age 8. If not available, may use adult AED
  - If No Shock indicated and no pulse, continue CPR for 2 minutes.
    - 5 cycles of 30 compressions to 2 ventilations for single rescuer, or
    - 15 compressions to 2 ventilations for 2 rescuers
    - Reassess with AED and continue cycle. Repeat cycle
  - Check blood glucose
  - **AEMT Only**
    - Consider Blind Airway Insertion Device
    - Establish IV/IO of NS
    - 20 ml/kg bolus over 10-20 mins
    - Treat glucose if <40 mg/dL.
  - Transport per local protocol

- **EMT-I/Paramedic**
  - Follow EMT standards
  - BVM ventilation with high flow 10-15 L oxygen
  - Consider:
    - Endotracheal intubation
    - Establish IV/IO of NS
    - 20 ml/kg bolus over 10-20 mins
    - Treat glucose if <40 mg/dL.
  - Epinephrine:
    - IV/IO 0.01 mg/kg (0.1 ml/kg) (1:10,000)
    - ETT 0.1 mg/kg (0.1 ml/kg) (1:1000)
  - Consider possible causes and treat: severe hypoxemia, hypovolemia, hypothermia, hyperkalemia, severe acidosis, tension pneumothorax, cardiac tamponade, thrombosis, or overdose
  - Transport per local protocol

**Change in rhythm**

- YES
  - If pulses present, continue supportive care, or
  - Proceed to appropriate dysrhythmia treatment guideline
  - Transport per local protocol

- NO
  - Continue CPR

**Consider termination of resuscitation efforts**
Pediatric Bradycardia, Unstable

**ABCDE Assessment**

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

**EMT-I/Paramedic**
- Follow EMT standards

Establish IV/IO of NS

Epinephrine:
- IV/IO 0.01 mg/kg (0.1 ml/kg) (1:10,000)
- ETT 0.1 mg/kg (0.1 ml/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

**AEMT Only:**
- Establish IV/IO of NS
- Administer fluid bolus of 10-20 ml/kg of NS
  - may repeat for persistent hypotension (hypotension=SBP<70+2x age in years) for 0-9 yrs
  - If glucose < 40 mg/dL, Administer Dextrose per pediatric Altered Mental Status guideline

Transport per local protocol

Determine blood glucose.
Administer oral glucose if no airway compromise and glucose < 40 mg/dL

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

**Transport** per local protocol

Administer fluid bolus of 10-20 ml/kg of NS
May repeat for persistent hypotension (hypotension=SBP<70+2x age in years) for 0-9 yrs

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

Consider external pacing for persistent hypotension.
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 per local protocol
Pediatric Supraventricular Tachycardia

ABCDE Assessment

EMT/AEMT

- Establish airway
- High flow oxygen
- Assisted ventilation as needed
- Check glucose – oral glucose if no airway compromise and glucose < 40 mg/dl

AEMT Only:
- Attempt IV access
- Consider IO
- 10 ml/kg NS bolus
- Glucose if <40 mg/dl

Transport per local protocol

UNSTABLE

Is IV access readily attainable?

NO

Synchronized Cardioversion:
- Attempt at escalating doses
  - 0.5 J/kg
  - 1 J/kg
  - 2 J/kg

Consider sedation prior to cardioversion:
- Midazolam (0.1 mg/kg) max 2 mg/dose IV/IO

Transport per local protocol

STABLE

Administer Adenosine via rapid infusion:
- IV/IO: 0.1 mg/kg (max 1st dose: 6 mg)
- Repeat doses: 0.2 mg/kg (max dose: 12 mg)

Monitor

Transport per local protocol

EMT-I/Paramedic

Follow EMT standards

Is there abnormal skin color, decreased level of consciousness, cap refill>2 sec., or hypotension after airway interventions? (hypotension=SBP<70+2x age in years) for 0-9 yrs

NO

STABLE

YES

Monitor rate in children < 2 years is >220 BPM

Biphasic energy settings may be different

Page 35
Pediatric Ventricular Fibrillation/Pulseless Ventricular Tachycardia

ABCDE Assessment

- Establish airway
- High flow oxygen
- Assisted ventilation as needed
- Start age-appropriate CPR. Apply pediatric approved AED for < age 8. If not available, may use adult AED
- Shock if advised
- Resume CPR immediately after shock for 2 minutes, then reassess via AED. If No Shock advised, continue CPR and go to PEA/Asystole algorithm
- Check glucose

EMT/AEMT

EMT-I/Paramedic

Follow EMT 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

AEMT Only:
- Consider Blind Airway Insertion Device
- Establish IV/IO of NS
- 20 ml/kg bolus over 10-20 mins
- Treat glucose if <40 mg/dL

Transport per local protocol

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

Epinephrine:
- IV/IO 0.01 mg/kg (0.1 ml/kg) (1:10,000)
- ETT 0.1 mg/kg (0.1 ml/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 1-1.5 mg/kg first dose; then 0.5-0.75 mg/kg, max total dose 3 mg/kg. ETT 2 mg/kg
Or
- Amiodarone: 5mg/kg may repeat up to 2x, max total dose 15mg/kg/day
Or
- Magnesium: V/IO 25-50 mg/kg (for torsades de pointes or hypomagnesemia) max 2 grams for a single dose

Transport per local protocol
Pediatric Seizures

**ABCDE Assessment**

- **EMT/AEMT**
  - Protect patient
  - Airway support
  - High flow oxygen
  - 10-15 L by NRB
  - Consider Hyperthermia:
    - Temp > 40°C or 104°F rectally.
    - If present, cooling measures
  - Consider Hypoglycemia:
    - Check blood glucose
    - Oral glucose if < 40 mg/dL and no airway compromise
  - **AEMT Only**
    - Establish IV/IO of NS
    - 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
  - Treat injuries PRN

- **EMT-I/Paramedic**
  - Follow EMT standards
  - Establish IV/IO of NS
  - Consider Hypoglycemia:
    - Check blood 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
  - For seizure activity of 5 minutes or longer:
    - Midazolam 0.1 mg/kg, max 2mg/dose IV/IO
    - Midazolam 0.2 mg/kg IN/IM, max 5mg under 40kg, 10mg over 40kg
    - Or
      - Consider rectal Diazepam (0.5 mg/kg)
  - Prepare for ventilatory monitoring and support, use EtCO2 monitor
  - Transport per local protocol
Pediatric Altered Mental Status

**ABCDE Assessment**

**EMT/AEMT**
- High flow oxygen
- Assist ventilation as needed

Consider:
- Pulse oximetry
- C-spine
- Check blood glucose
- Warming/cooling maneuvers as indicated

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

**AEMT Only**
- Consider Blind Airway Insertion Device
- Establish IV/IO of NS
- 20 ml/kg bolus over 10-20 mins
- 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
- Naloxone 0.1 mg/kg-max 2 mg/dose IV/IO/IM

**EMT-I/Paramedic**
- Follow EMT 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
- 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
- Naloxone 0.1 mg/kg-max 2 mg/dose IV/IO/IM

**Transport per local protocol**
Pediatric Shock

ABCDE Assessment

EMT/AEMT
- Establish airway
- High flow oxygen
- Assisted ventilation as needed
- Compression to area of active bleeding
- “Head Down” positioning
- Maintain temperature

Check glucose & treat if glucose <40 mg/dl as per Altered Mental Status protocol

AEMT Only:
- Establish IV or IO (if hypotensive or no pulse) and bolus with 20 ml/kg of NS over 10-20 minutes
- Reassess
- Normal saline boluses in 20 ml/kg increments up to 60 ml/kg total

Transport per local protocol

EMT-I/Paramedic
- Follow EMT standards

Establish IV or IO (if hypotensive or no pulse) and bolus with 20 ml/kg of NS over 10-20 minutes (hypotension=SBP<70+2x age in years) for 0-9 yrs

Check glucose & treat if glucose <40 mg/dl as per Altered Mental Status protocol

Reassess

Normal saline boluses in 20 ml/kg increments up to 60 ml/kg total

Reassess

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

Transport per local protocol
Pediatric Submersion Injury

**ABCDE Assessment**
- 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

**EMT/AEMT**

**EMT-I/Paramedic**
- Follow EMT standards
- Use positive end-expiratory pressure (5 cm H₂O) if available.
  Consider endotracheal intubation if effort to ventilate/oxygenate via BVM or NIPPV is inadequate

**AEMT Only**
- Consider Blind Airway Insertion Device
- Establish IV/IO of NS
- 20 ml/kg bolus over 10-20 mins
- 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

**Transport per local protocol**

**EMT-I/Paramedic**
- 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.

**AEMT Only**
- Establish IV/IO of NS
- Administer 20 ml/kg NS over 10-20 minutes
- 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 per local protocol**
Pediatric Withholding of Resuscitation Efforts

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

Are there any of these indicated?

Yes

Notify Law Enforcement

No

Resuscitate per Pediatric Pulseless Electrical Activity (PEA)/Asystole guidelines