

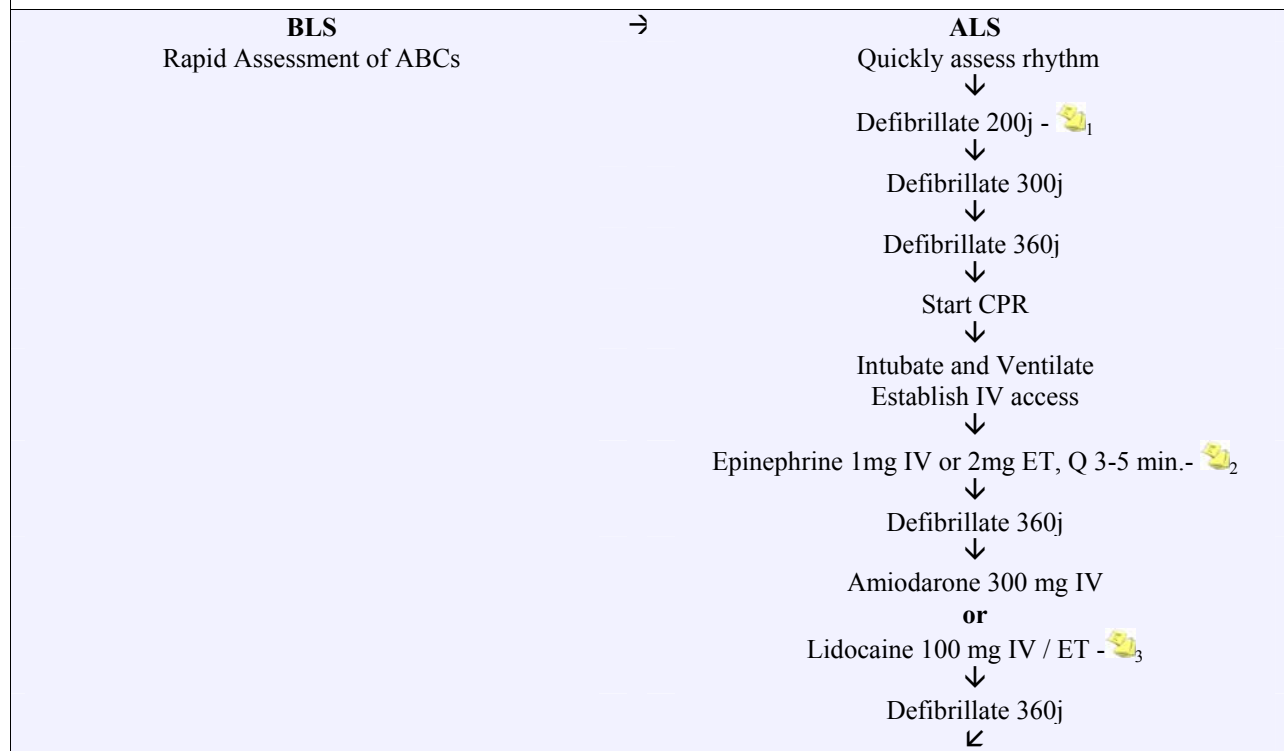
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Ventricular Fibrillation or Pulseless Ventricular Tachycardia Protocol – 101

Prehospital Goal: Prompt recognition and rapid delivery of the countershock are the keys to success. When countershocks are initially unsuccessful, direct your efforts to maximizing perfusion with oxygenated blood and reducing ventricular irritability.

Indications: Patients in cardiac arrest presenting with ventricular fibrillation or pulseless ventricular tachycardia

**Treatment Options****Ventricular Antiarrhythmics**

Deliver countershocks following each agent

| | | | | |
|-------------------------------------|-----------------------------|--|--|--|
| 📞 Sodium Bicarbonate 1 mEq/kg IV | 📞 Discontinue resuscitation | 📞 Supplemental Dose Amiodarone 150 mg rapid IVP (2.5 mg/kg) | 📞 Lidocaine 1-1.5 mg/kg IV, repeat to max 3 mg/kg | 📞 Magnesium Sulfate 1 - 2 gm IVP - 📄 ₄ |
|-------------------------------------|-----------------------------|--|--|--|

Notes:

- 📄₁ Energy levels identified refer to monophasic shock. For biphasic, lower energy levels may be used per ALS Medical Director.
- 📄₂ 📞 Higher doses of Epinephrine up to 0.2 mg/kg may be considered
- 📄₃ Lidocaine 100 mg is acceptable in place of Amiodarone 300 mg
- 📄₄ Magnesium Sulfate IVP
 - draw up 1 gm (2 ml) in syringe
 - dilute in 10 ml of D₅W, NS, or sterile H₂O
- If the patient converts to a supraventricular rhythm prior to the use of an antiarrhythmic agent, administer Lidocaine 1 mg/kg IV

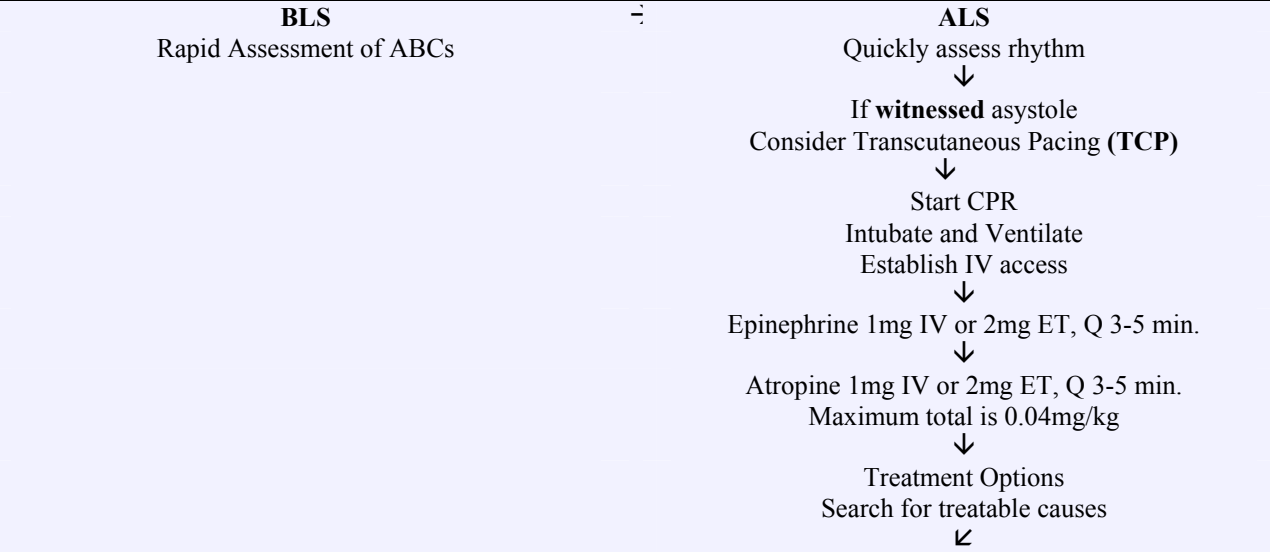
Quality Indicators



| | | |
|----------------------|------------------------------|-------------------------------|
| Onset of arrest time | Initial rhythm | Response to Therapy |
| Bystander/FR CPR | Time of initial countershock | Confirmation of ET intubation |
| Time CPR initiated | | Patient Disposition |

Asystole Protocol – 102


Prehospital Goal: Asystole is a common final pathway for many patients in cardiac arrest. Direct your efforts to maximizing perfusion with oxygenated blood. It may appropriate to consider not initiating resuscitation under certain circumstances.

Indications: Patients in cardiac arrest presenting with asystole, confirmed in 2 leads, who do not meet DOA criteria.



| Treatment Options | |
|--|---|
| <p> Consult - consider treatable causes</p> <ul style="list-style-type: none"> ▪ Hypovolemia ▪ Hypoxia ▪ Hypothermia ▪ Drug overdose ▪ Acidosis | <p> Termination of Resuscitation</p> <ul style="list-style-type: none"> ▪ Consider this if total arrest time is > 20 minutes and adequate trial of ACLS has been performed ▪ No atypical or reversible conditions are present ▪ All social, legal, and ethical concerns have been addressed |

Notes:

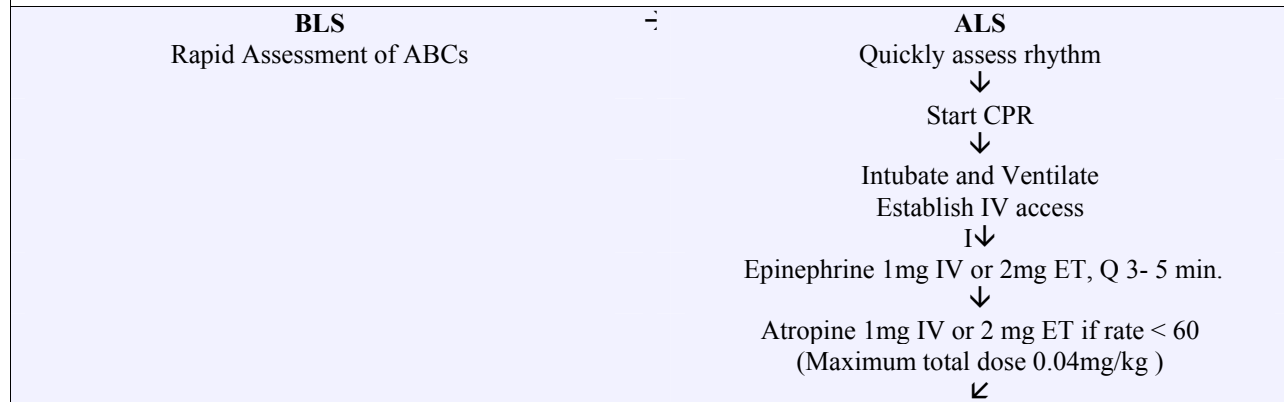
- **Withhold** resuscitation if :
 - obvious mortal injury
 - operative advanced directive
 - rigor mortis with asystole confirmed in two leads
- Resuscitation may also be withheld or terminated, following consultation with , on a case-by-case basis

| Quality Indicators | | |
|----------------------|---------------------|-------------------------------|
| Onset of arrest time | Initial rhythm | Response to Therapy |
| Bystander/FR CPR | Time CPR initiated | Confirmation of ET intubation |
| | Patient Disposition | |












Pulseless Electrical Activity (PEA) Protocol – 103

Prehospital Goal: Direct your efforts to maximizing perfusion with oxygenated blood and addressing treatable causes.





Indications: Patients in cardiac arrest presenting with electrical activity other than VF, VT or asystole on the ECG monitor.

**Treatable causes**

Many treatable causes may be treated simultaneously

| | | |
|--|--|---|
| <p>Hypoxia</p> <ul style="list-style-type: none"> Ventilation with 100% O₂ <p>Hypovolemia</p> <ul style="list-style-type: none"> NS or RL IV, run wide <p>Cardiac Tamponade</p> <ul style="list-style-type: none"> Continue IV fluids <p>Tension Pneumothorax</p> <ul style="list-style-type: none"> Needle decompression <p>Hypothermia</p> <ul style="list-style-type: none"> Prevent further heat loss Warm IV fluids | <p>Hyperkalemia</p> <ul style="list-style-type: none">  Calcium Chloride 10%, 1g IV  Sodium Bicarbonate 1mEq/kg IV <p>Acidosis</p> <ul style="list-style-type: none">  Sodium Bicarbonate 1mEq/kg IV <p>Hypokalemia</p> <ul style="list-style-type: none">  Consult | <p>Drug Overdose</p> <ul style="list-style-type: none">  Specific therapy if applicable  Sodium Bicarbonate 1mEq/kg IV - ₁  Glucagon 1 mg IM - ₂ <p>Pulmonary Embolism</p> <ul style="list-style-type: none">  Consult <p>Acute MI</p> <ul style="list-style-type: none">  Consult regarding consideration of transport to a center with emergent PTCA capabilities |
|--|--|---|

Notes:

- ₁ Recommended for Aspirin and Tricyclic overdose
- ₂ Recommended for Beta Blocker and Calcium Channel Blocker overdose
- Contact  as soon as practical.
- EMS treatments for drug overdoses, cardiac tamponade, pulmonary embolism, MI and hypokalemia are limited. Consult  ASAP.

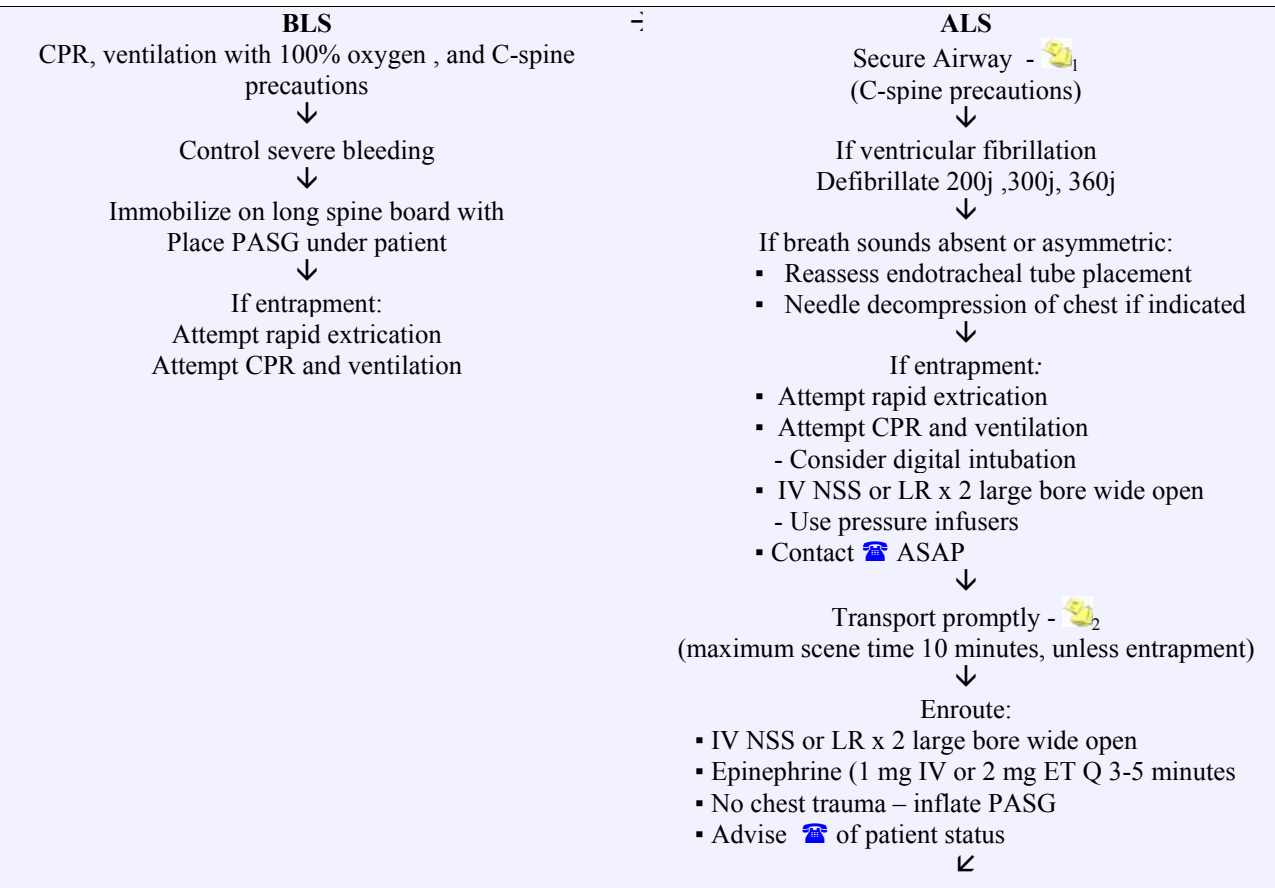
Quality Indicators

| | | |
|----------------------|--------------------|-------------------------------|
| Onset of arrest time | Initial rhythm | Response to Therapy |
| Bystander/FR CPR | Time CPR initiated | Patient Disposition |
| | | Confirmation of ET intubation |

Trauma Arrest – 104

Prehospital Goal: Appropriate interventions, per regional trauma criteria guidelines, with rapid transportation to a Level I or Level II Trauma Center.

Indications: Unresponsive and pulseless following major blunt or penetrating trauma.



Treatment Options

📞 Consider termination of resuscitation if “no signs of life.” Must meet **all** of the following: ▪ no carotid pulse for one continuous minute of palpation ▪ no respiratory effort ▪ no movement and no response to deep pain ▪ no pupillary response to light ▪ asystole on ECG for thirty continuous seconds.

Notes:

- 📞₁ Maximum of 2 attempts per each paramedic – If unable to intubate and ventilate, use adjunct airway device such as combi-tube.
- 📞₂ **Air transport not typically indicated.** If patient meets regional triage criteria and transport time to trauma center is < 20 minutes, transport to closest Level I or II Trauma Center. If transport time to trauma center is > 20 minutes, transport to closest emergency facility for stabilization.
- IV drugs should be administered rapidly by bolus in cardiac arrest. Follow drugs with 20 ml IV fluid bolus.
- PASG can be inflated until velcro crackles and if time permits

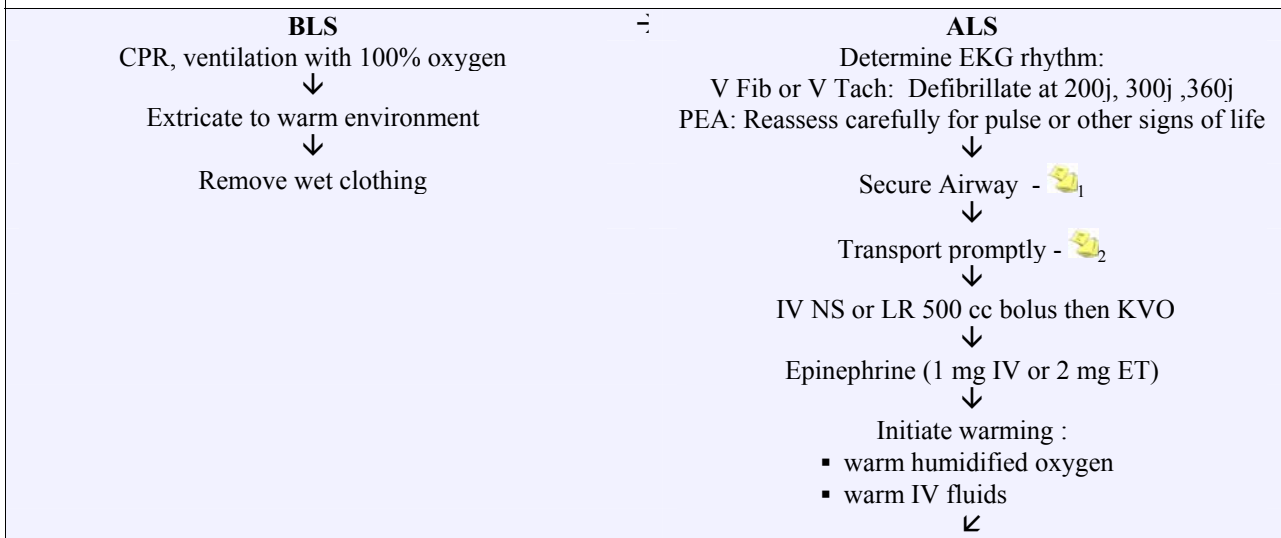
Quality Indicators

| | | |
|---|----------------------|--------------------------------|
| Confirmation of ET intubation (if intubation performed) | Time on scene | C-spine precautions |
| Defibrillation times | Onset of arrest-time | Appropriate receiving facility |

Hypothermic Cardiac Arrest – 105

Prehospital Goal: The main focus should be on rewarming the patient while at the same time maintaining perfusion and ventilation.

Indications: Unresponsive and pulseless, with no signs of life, **and** suspected hypothermia.



Consider the following options:

| | | | |
|--|-------------------------------|---------------------------------------|--|
| Transport to a facility with emergency cardiopulmonary bypass capability | Additional Intravenous Fluids | Additional Epinephrine - ₃ | Anti-arrhythmic medications - ₃ |
|--|-------------------------------|---------------------------------------|--|

Notes:

- ₁ Maximum of 2 attempts per each paramedic – If unable to intubate and ventilate, use adjunct airway device such as combi-tube.
- ₂ **Gentle** movement recommended as excessive movement can cause ventricular fibrillation
- ₃ In severe hypothermia, intervals between medication doses should be extended.
- The chronically ill and elderly are susceptible to hypothermia even in above-freezing temperatures.
- Preferred IV access should be with a large bore catheter in arm at, or proximal, to the antecubital fossa
- Drugs and electric therapy are often ineffective.
- IV drugs should be administered rapidly by bolus in cardiac arrest. Follow drugs with 20 ml IV fluid bolus.

| Quality Indicators | | |
|--|----------------------|----------------------|
| Confirmation of ET intubation (if intubation performed) | Onset of arrest-time | Defibrillation times |
| | Medication dosing | |

Bradycardia Protocol – 201

| | | |
|---|--|--|
| Prehospital Goal: Restoration of cardiac output. | | |
| Indications: Patients with slow heart rates or relatively slow (less than expected relative to underlying condition or cause) heart rates. | | |
| BLS Rapid Assessment of ABCs ↓ High flow O ₂ | = | ALS Obtain and review ECG (12-lead if available) ↓ Continuous ECG monitoring ↙ ↓ ↘ |
| Serious signs & symptoms related to Second Degree Type II or Third Degree Block Transcutaneous Pacing (TCP) ☎ Consider sedation ↓ Establish IV access ↓ Atropine 1mg IVP ↓ IV NS / LR ↓ ☎ Dopamine 5-20 mcg/kg/min IV | Serious signs & symptoms related to Bradycardia Establish IV access ↓ Atropine 1mg IVP - ☎ ₁ ↓ Treatment Options ↙ | NO serious signs & symptoms Standby Transcutaneous Pacing (TCP) ↓ Continue to monitor for serious signs and symptoms ↓ Treatment Options ↙ |
| Treatment Options | | |
| ☎ Additional Atropine 0.5 – 1 mg IV maximum total 0.04mg/kg | ☎ IV NS / LR 250-500 ml bolus | Heart transplant patient will not respond to atropine Consider: ☎ Transcutaneous Pacing (TCP) ☎ Dopamine 5-20 mcg/kg/min IV ☎ Epinephrine IV drip |
| Sedation Options | | |
| All agents may cause hypotension and respiratory depression | | |
| ☎ Versed 1-3mg IV | ☎ Valium 2-5mg IV | ☎ Morphine Sulfate 3-5mg IV |
| ☎ Nitrous Oxide by inhalation if available | | |
| Notes: | | |
| ➤ ☎ ₁ If patient shows signs of pre-arrest, TCP should be performed prior to administration of Atropine. | | |
| Quality Indicators | | |
| Initial Rhythm | Symptoms of Poor Cardiac Output | Response to Therapy |
| Signs of Poor Cardiac Output | Documentation of TCP parameters and capture, if used. | Patient Disposition |

Rapid Atrial Fibrillation /Atrial Flutter (Af/AF) Protocol – 202

Prehospital Goal: Direct your efforts to controlling the ventricular response. Abolishing atrial fibrillation whose duration is greater than 48 hours carries an increased risk of embolism. Ventricular rates > 150 bpm may require immediate cardioversion. Slower rates generally do not require immediate countershock.

Indications: Patients with either atrial flutter or atrial fibrillation with rapid ventricular rates.

| | | | |
|--|---|--|---|
| <p>BLS</p> <p>Rapid Assessment of ABCs</p> <p>↓</p> <p>High flow O₂</p> | → | <p>ALS</p> <p>Unstable:- 📄₁</p> <p>↓</p> <p>Synchronized cardioversion 100j, 200j, 300j, 360j</p> <p>☎️ Consider pre-medication</p> <p>↓</p> <p>Establish IV access</p> <p>↓</p> <p>Treatment Options</p> <p>↙</p> | <p>Stable - 📄₂</p> <p>↓:</p> <p>Establish IV access</p> <p>↓</p> <p>Treatment Options</p> <p>↙</p> |
| Treatment options | | | |
| <p>☎️ Verapamil 2.5-5mg IV</p> <p>Repeat at 2.5-10mg IV Q 10-15 min.- 📄₃</p> | <p>☎️ Amiodarone</p> <ul style="list-style-type: none"> ▪ 2.5 – 5 mg/kg rapid IVP ▪ 150 mg / 100 cc bag D₅W (slowly over 10 minutes) | <p>☎️ Synchronized Cardioversion 100j, 200j, 300j, 360j</p> <p>Consider pre-medication</p> | |
| Pre-Medication Options | | | |
| All agents may cause hypotension and respiratory depression | | | |
| <p>☎️ Versed 1-3 mg IV</p> | <p>☎️ Valium 2-5 mg IV</p> | <p>☎️ Morphine Sulfate 3-5 mg IV</p> | |
| Notes: | | | |
| <ul style="list-style-type: none"> ➤ Contact ☎️ as soon as practical. ➤ 📄₁ Hypoperfusion (altered mental status, hypotension) OR other severe symptoms chest pain, dyspnea) ➤ 📄₂ Patient asymptomatic ➤ 📄₃ Do not use Verapamil if there is a history of Wolf-Parkinson-White (WPW) syndrome. WPW patients may develop extremely rapid atrial fibrillation and subsequent cardiac arrest if given calcium channel blockers. Use extreme caution if wide complex as hypotension and heart failure may develop. | | | |
| Quality Indicators | | | |
| Initial rhythm | Stable or Unstable Af/AF | Response to Therapy | |
| Duration of Af | | Patient Disposition | |

Supraventricular Tachycardia (SVT) Protocol – 203

Prehospital Goal: Direct your efforts to abolishing this potentially life-threatening arrhythmia. Rapidly identify unstable patients and deliver synchronized cardioversion. Stable patients will be managed with O₂ and antiarrhythmics.

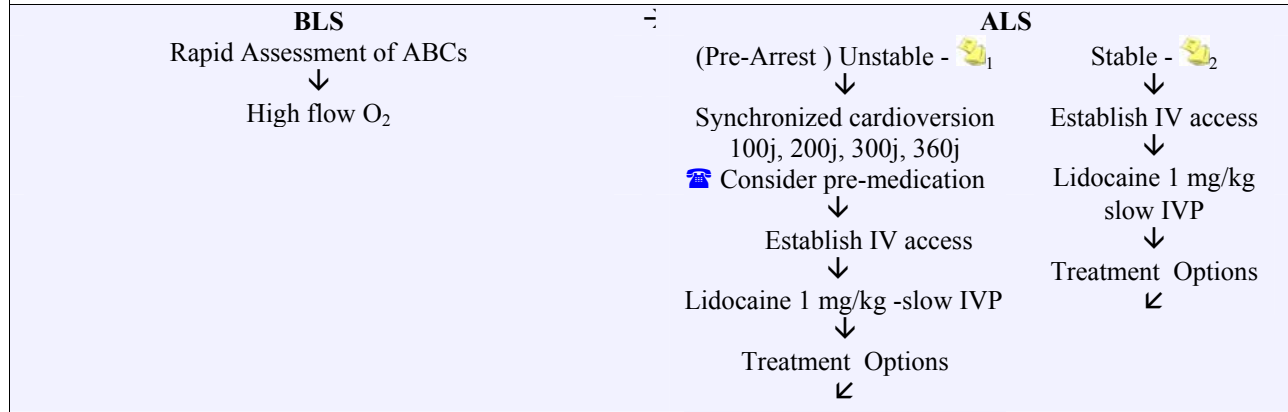
Indications: Patients with both SVT and pulses. Ventricular rates > 150 bpm may require immediate cardioversion. Slower rates generally do not require immediate countershock.

| | | | |
|--|---|--|---|
| <p>BLS</p> <p>Rapid Assessment of ABCs</p> <p>↓</p> <p>High flow O₂</p> | → | <p style="text-align: center;">ALS</p> | |
| | | <p>(Pre-Arrest) - Unstable - 📞₁</p> <p>↓</p> <p>Synchronized cardioversion 100j, 200j, 300j, 360j</p> <p>📞 Consider pre-medication</p> <p>↓</p> <p>Establish IV access</p> <p>↓</p> <p>Adenosine 6 mg IVP - 📞₄</p> <p>Repeat 12 mg IV prn x 2</p> <p>↓</p> <p>Treatment Options</p> <p>↙</p> | <p>Stable - 📞₂</p> <p>↓</p> <p>Establish IV access</p> <p>↓</p> <p>Attempt Valsalva maneuvers - 📞₃</p> <p>↓</p> <p>Treatment Options</p> <p>↙</p> |
| Treatment Options | | | |
| <p>📞 Verapamil 2.5-5mg IV Repeat at 2.5-10mg IV Q 10-15 min.</p> | <p>📞 Adenosine 6 mg IVP Repeat 12 mg IV prn x 2</p> | <p>📞 Synchronized Cardioversion 100j, 200j, 300j, 360j Consider pre-medication</p> | <p>📞 Amiodarone</p> <ul style="list-style-type: none"> ▪ 2.5 – 5 mg/kg rapid IVP ▪ 150 mg / 100 cc bag D₅W (slowly over 10 minutes) |
| Pre-Medication Options | | | |
| All agents may cause hypotension and respiratory depression | | | |
| <p>📞 Versed 1-3mg IV</p> | <p>📞 Valium 2-5mg IV</p> | <p>📞 Morphine Sulfate 3-5mg IV</p> | |
| Notes: | | | |
| <p>➤ Contact 📞 as soon as practical.</p> <p>➤ 📞₁ All of the following:</p> <ul style="list-style-type: none"> ▪ SBP < 80 and markedly decreased mental status ▪ Ventricular rate ≥ 150 ▪ Narrow complex QRS (< 3 small blocks or 0.12 seconds) ▪ Other severe symptoms (chest pain, dyspnea) - If symptoms are minor/moderate, consult 📞 for treatment options <p>➤ 📞₂ Both of the following:</p> <ul style="list-style-type: none"> ▪ Ventricular rate ≥ 150 ▪ Narrow complex QRS (< 3 small blocks or 0.12 seconds) ▪ NO associated symptoms such as chest pain or dyspnea <p>➤ 📞₃ ▪ Valsalva maneuver</p> <p>➤ 📞₄ Adenosine may be diagnostic, but not therapeutic, for certain rhythms such as atrial fibrillation. Observe ECG carefully during administration and refer to appropriate protocol.</p> | | | |
| Quality Indicators | | | |
| Initial rhythm | Stable or Unstable SVT | Response to Therapy | Patient Disposition |

Ventricular Tachycardia (VT) Protocol – 204

Prehospital Goal: Direct your efforts to abolishing this potentially life-threatening arrhythmia. Rapidly identify unstable patients and deliver synchronized cardioversion. Stable patients will be managed with O₂ and antiarrhythmics.

Indications: Patients with both VT and pulses. Ventricular rates > 150 bpm may require immediate cardioversion. Slower rates generally do not require immediate countershock.



| Treatment Options | | |
|--|---|--|
| Antiarrhythmic Agents | | |
| <p>☎️ Amiodarone</p> <ul style="list-style-type: none"> ▪ 2.5 – 5 mg/kg rapid IVP ▪ 150 mg / 100 cc bag D₅W (slowly over 10 minutes) | <p>☎️ Lidocaine</p> <ul style="list-style-type: none"> ▪ Initial dose: 1-1.5 mg/kg slow IV push ▪ Follow-up dose: 0.5mg/kg q 5 min. up to a maximum total dose of 3mg/kg - 🚑₃ ▪ Maintenance Infusion: Infusion 2-4mg/min | <p>☎️ Magnesium Sulfate</p> <p>1-2 g IV over 5-20 min.- 🚑₄</p> |

| Pre-Medication Options | | |
|---|---|---|
| All agents may cause hypotension and respiratory depression | | |
| <p>☎️ Versed</p> <p>1-3mg IV</p> | <p>☎️ Valium</p> <p>2-5mg IV</p> | <p>☎️ Morphine Sulfate</p> <p>3-5mg IV</p> |

Notes:

- Contact ☎️ as soon as practical.
- 🚑₁ All of the following:
 - SBP < 80 and markedly decreased mental status
 - Regular ventricular rhythm > 140
 - Wide complex QRS (>3 small blocks) without preceding P waves
 - Hypoperfusion (altered mental status, hypotension) OR other severe symptoms (chest pain, dyspnea) - If symptoms are minor/moderate, consult ☎️ for treatment options
- 🚑₂ Both of the following:
 - Regular ventricular rhythm > 140
 - Wide complex QRS (> 3 small blocks) without preceding P waves
- 🚑₃ In patients with CHF, liver failure, shock, or > age 70, follow-up with 0.25 mg/kg and max. total dose of 2 mg/kg.
- 🚑₄ Preferred for patients experiencing multi-focal VT(Torsades de Pointe). If hypotension develops, discontinue infusion and re-contact ☎️. Magnesium Sulfate IVP
 - draw up 1- 2 gm (2 ml) in syringe
 - dilute in 10 ml of D₅W, NS, or sterile H₂O

| Quality Indicators | | | |
|--------------------|-----------------------|---------------------|---------------------|
| Initial rhythm | Stable or Unstable VT | Response to Therapy | Patient Disposition |

Chest Pain - 301

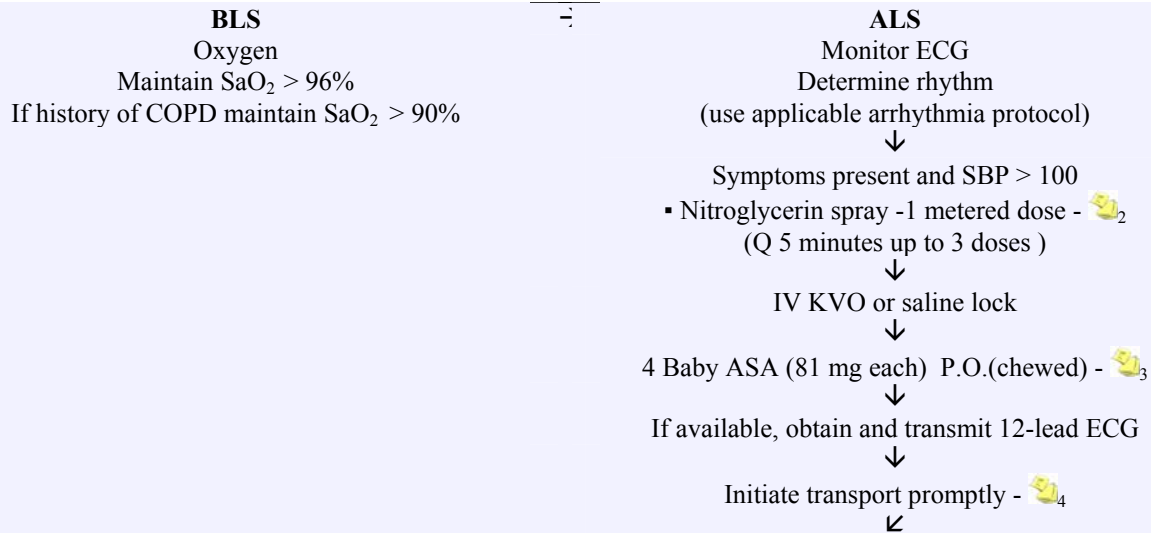
Prehospital Goal: Decrease or eliminate signs and symptoms associated with cardiac ischemia with emphasis on prompt transport.

Indications: Both of the following:

- Pain, dyspnea, or other complaints suggestive of cardiac ischemia
- Age > 30 years

Exclusions: ▪ If SBP < 90 (see shock protocol)

- Pleuritic-type chest pain (sharp chest pain that increases with movement and/or inspiration) - 📄₁



ALS notification acceptable if:

- History of angina and pain totally relieved
- Total duration of pain is < 30 minutes
- No abnormalities of vital signs

Treatment Options

Persistent symptoms and SBP > 100

📞 Nitroglycerin 0.4 mg SL spray

- Q 3-5 minutes

📞 Morphine Sulfate
(2-4 mg slow IV push)

- Repeat as directed

📞 Nitrous Oxide by inhalation

- If available

Notes:

- 📄₁ If suspicious that chest pain “may” be ischemic, contact 📞
- 📄₂ ▪ If patient has taken **Viagra** within 24 hours, contact 📞 prior to giving Nitroglycerin.
▪ Maintain a systolic B/P > 100 mmHg
- 📄₃ Exclusions to ASA:
 - Allergy to ASA
 - Active bleeding condition or disorder
 - Pregnancy
 - Has taken ASA today
- 📄₄ If acute MI on ECG, attempt transport to a facility capable of rapid reperfusion therapy.

Quality Indicators

Initial SaO₂

Patient Disposition

Pain Scale (1-10)

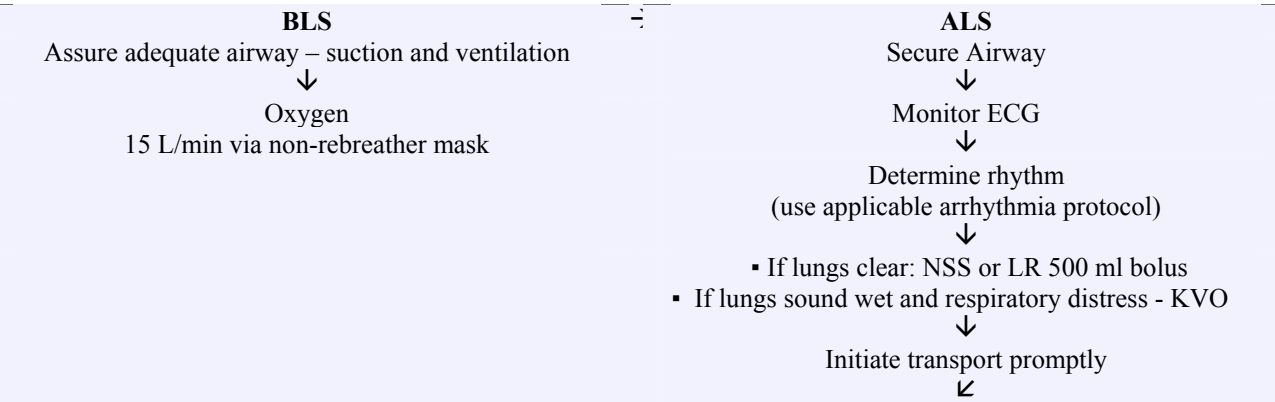
Response to Therapy

Shock - 302

Prehospital Goal: Quick identification of signs and symptoms of shock with consideration of causes, appropriate interventions, and rapid transport to suitable facility.

Indications: Both of following:

- Signs or symptoms of poor perfusion (tachycardia, altered mental status, cool and clammy skin, delayed capillary refill, etc.)
- SBP < 90 mm Hg



Treatment Options

| Volume 📞 | Vascular 📞 | Pump 📞 |
|---|---|---|
| <ul style="list-style-type: none"> ▪ IV NSS or LR boluses ▪ Start 2nd IV while enroute | <p>Vasodilatation -sepsis, spinal cord injury, drugs/ toxins</p> <ul style="list-style-type: none"> ▪ IV NSS or LR boluses ▪ PASG inflation ▪ Dopamine infusion (5-20 mcg/kg/min) ▪ Epinephrine infusion (1-4 mcg/min) <p>Obstruction: (tension pneumothorax, pulmonary embolism, cardiac tamponade)</p> <ul style="list-style-type: none"> ▪ IV NSS or LR bolus ▪ Rapid transport ▪ Needle decompression of chest | <ul style="list-style-type: none"> ▪ Treat rate and arrhythmias (see specific protocols) ▪ If SBP 70-100 w/o signs of severe hypoperfusion: Dobutamine infusion (5-20 mcg/kg/min) ▪ If SBP < 70 or signs of severe hypoperfusion: Dopamine infusion (5-20 mcg/kg/min) |

Notes:

- Consult with 📞 regarding need for air medical transport and/or transport to a specialty center (e.g., suspected ruptured aortic aneurysm)

Quality Indicators

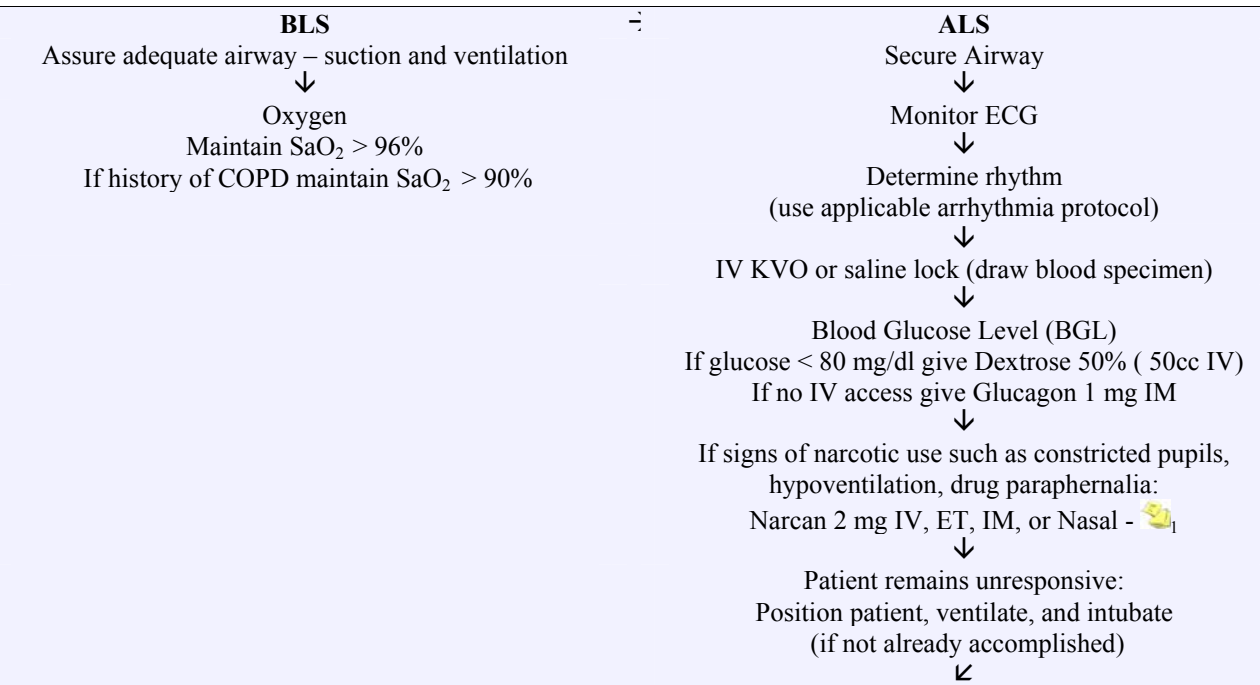
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| Lung sounds | Initial Mental status | Mental status after treatment |
| Capillary refill | | Patient Disposition |

Altered Level of Consciousness - 303

Prehospital Goal: Protection of patient’s airway along with appropriate interventions, as indicated by underlying cause, if identified.

Indications: Any alteration in mental status or level of consciousness, including suspected hypoglycemia, drug or toxin effect, or CNS event

Exclusions: Shock, major trauma, severe respiratory distress, and cardiac arrhythmias



| | | |
|--|--|--|
| ALS notification acceptable if: | Hypoglycemic and <ul style="list-style-type: none"> ▪ given D50 ▪ normal vital signs ▪ patient awake ▪ transport initiated | Suspected opiate OD and <ul style="list-style-type: none"> ▪ given Narcan ▪ normal vital signs ▪ patient awake ▪ transport initiated |
|--|--|--|

Treatment Options

📞 Additional Narcan

- Consider if suspicion of high potency fentanyl derivatives such as dextromethorphan, propoxyphene, or pentazocine - 🧴₂

Notes:

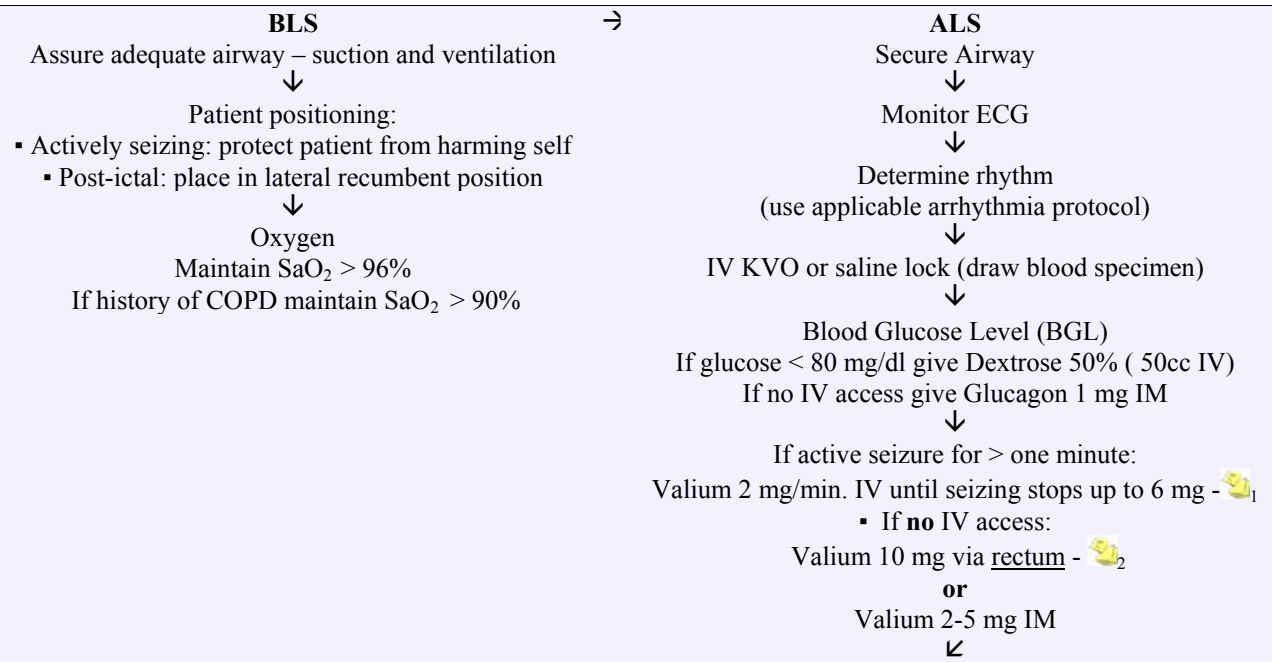
- Cervical spine precautions should be taken if potential head or neck injuries are suspected
- If BGL not available and hypoglycemia suspected, give Dextrose 50% (50cc IV) **or** Glucagon 1 mg IM
- 🧴₁ Can be safely administered via nasal route **only** when utilizing the Mucosal Atomization Device (MAD)
- 🧴₂
 - Dextromethorphan - found in Robitussin DM, Triaminic DM, and Rondec DM
 - Propoxyphene – found in Darvocet, Darvon, and Dolene
 - Pentazocine – found in Talwin Nx

| Quality Indicators | | | |
|----------------------------|--------------------------|---------------------|---------------------|
| Suspected head/neck injury | Initial SaO ₂ | Response to Therapy | Patient Disposition |

Seizure - 304

Prehospital Goal: Provide interventions to stop active, recurrent, and/or persistent seizing while protecting the patient from self-harm.

Indications: Active seizure or suspected recent seizure.



Treatment Options

If not already accomplished, consider the need for intubation

📞 Recurrent or persistent seizing:

- 📄₁ Valium 2 mg/min IV - 📄₁
 - Give until seizing stops
 - If **no** I
 - Valium 10 mg via rectum - 📄₂
 - Valium 2- 5 mg IM

📞 Versed 2 –5 mg IM - 📄₁

📞 Potential treatable causes:

- Hypoxia
- Hypoperfusion
- Toxin/drugs

Notes:

- Cervical spine precautions should be taken if potential head or neck injuries are suspected
- If BGL not available and hypoglycemia suspected, give Dextrose 50% (50cc IV) **or** Glucagon 1 mg IM
- 📄₁ Be alert for signs of respiratory depression and hypotension
- 📄₂ When administering Valium via rectum, use syringe and IV catheter (**not the needle**)

Quality Indicators

Suspected head/neck injury

Initial SaO₂

Response to Therapy

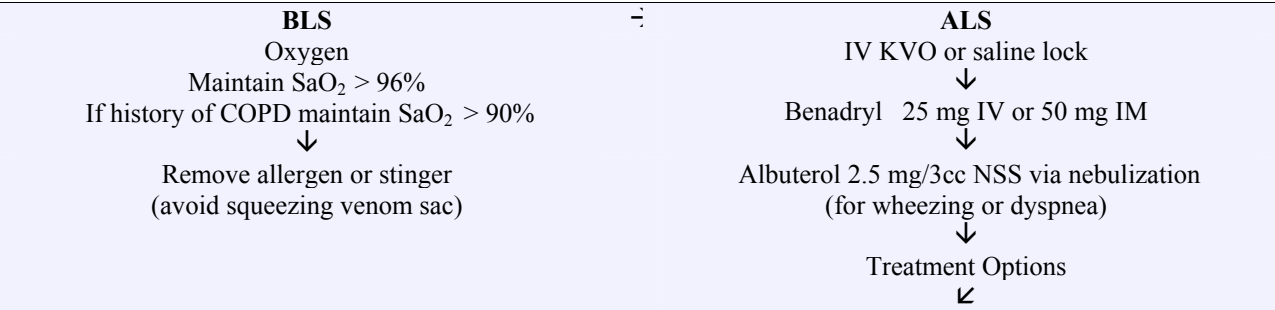
Patient Disposition

General Allergic Reaction – 305-A



Prehospital Goal: Recognition of indications and/or exclusions followed by appropriate interventions to alleviate signs and symptoms associated with a general allergic reaction.

Indications: Suspected allergic reaction associated with rash, pruritus, erythema, urticaria, mild dyspnea, or mild wheezing.


Exclusions: Hypoperfusion (altered mental status, hypotension), upper airway distress or other severe symptoms (chest pain, dyspnea, lightheadedness): Use Severe Allergic Reaction Protocol – 305-B



Treatment Options

 Epinephrine
(1:1000) 0.1 – 0.3 cc SQ - 

Notes:

➤  Use caution in patients with coronary artery disease or over 35 years of age

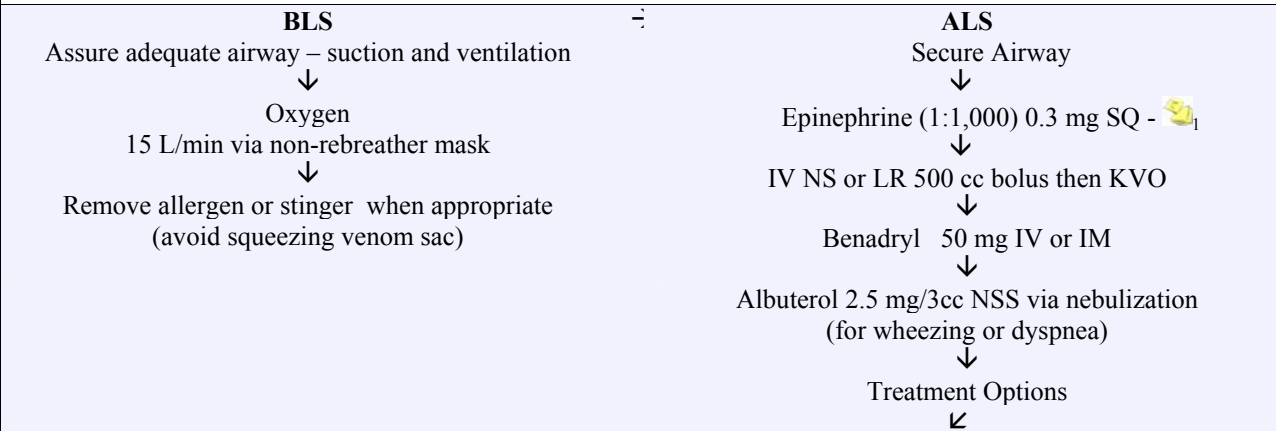
| | | |
|---------------------------|----------------------------------|---------------------|
| Quality Indicators | | |
| Initial SaO ₂ | SaO ₂ after treatment | Patient Disposition |
| | Response to Therapy | |

Severe Allergic Reaction (Anaphylaxis) – 305-B

Prehospital Goal: Rapid recognition of indications followed by appropriate interventions to alleviate signs and symptoms associated with anaphylaxis.

Indications: Suspected allergic reaction with:

- Hypoperfusion (altered mental status, hypotension), upper airway distress or other severe symptoms (chest pain, dyspnea, lightheadedness)



Treatment Options

Severe hypotension (SBP < 80), consider:

Severe bronchospasm, consider:

- 📞 Additional boluses of IV NS or LR
- 📞 PASG inflation
- 📞 Epinephrine (1:10,000) slow IVP of 0.1 - 0.5 mg
- 📞 Epinephrine infusion (1 - 4 mcg/min)
- 📞 Dopamine infusion (5 - 20 mcg/kg/min)
- 📞 Glucagon 1 - 4 mg IV (most useful in patients on beta-blockers)

- 📞 Consider intubation
- 📞 Albuterol by continuous nebulization
- 📞 Epinephrine SQ, IV push or IV infusion, ET or IO

Notes:

- 📄₁ Consult 📞 in patients with coronary artery disease or over 35 years of age

Quality Indicators

Initial SaO₂

SaO₂ after treatment

Patient Disposition

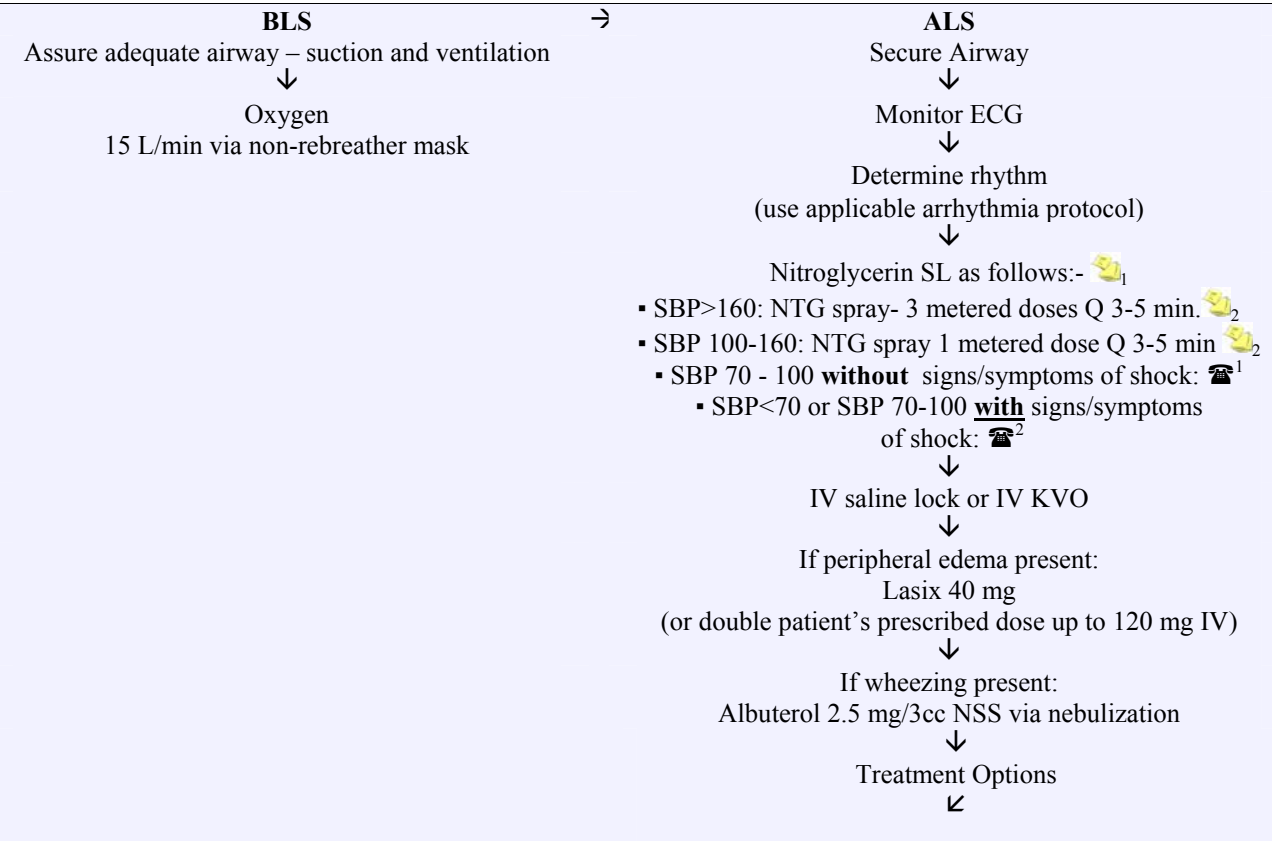
Response to Therapy

Respiratory Distress: Pulmonary Edema, CHF – 306-A

Prehospital Goal: Prompt recognition and appropriate interventions to alleviate respiratory distress related to pulmonary edema and CHF.

Indications: Shortness of breath with any of the following:

- bilateral rales
- history of congestive heart failure
- wheezing with cardiac history or symptoms



| Treatment Options | | | |
|---|--|---|--|
| ☎ ¹ Dobutamine infusion (5-20 mcg/kg/min) | ☎ ² Dopamine infusion (5-20 mcg/kg/minute) | ☎ Morphine Sulfate 2-4 mg IV (5-10 mg pre-intubation) | ☎ Additional NTG, Lasix, and Albuterol |

- Notes:**
- Intubation should be initially reserved for patients with decreased mental status or impending respiratory arrest. Otherwise, trial aggressive medical management prior to intubation.
 - 📄¹ If patient has taken **Viagra** within 24 hours, contact ☎ prior to giving Nitroglycerin.
 - 📄² Continue NTG as indicated provided the systolic B/P> 100 mmHg

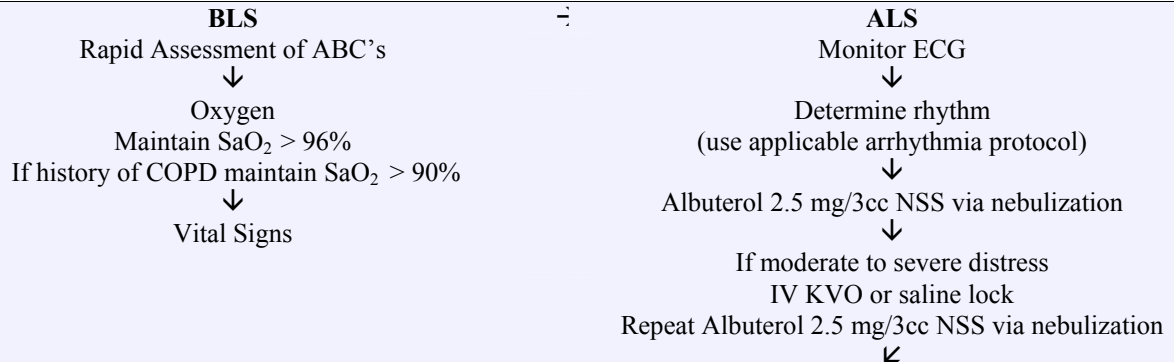
| Quality Indicators | | |
|---|-------------|---------------------|
| Confirmation of ET intubation (if intubation performed) | Initial B/P | Response to Therapy |
| Patient Disposition | | |

Respiratory Distress: Wheezing, Asthma, COPD - 306B

Prehospital Goal: Prompt recognition, appropriate interventions to alleviate respiratory distress, and maintenance of $\text{SaO}_2 > 96\%$. If history of COPD, maintain $\text{SaO}_2 > 90\%$.





Indications: Shortness of breath with any of the following:

- wheezing (not considered cardiac)
- history of asthma or COPD





ALS notification acceptable if:

- History of asthma /COPD
- Dyspnea improving
- Oxygen saturation $> 96\%$ with oxygen
- Normal vital signs
- Epinephrine **not** required

| | | |
|---|--|---|
| <p> Additional Albuterol 2.5 mg/3cc NSS</p> | <p>Treatment Options</p> <p> Epinephrine (1:1000) 0.1 – 0.3 cc SQ</p> | <p> Magnesium Sulfate 1 - 2 gm over 5 - 20minutes - </p> |
|---|--|---|

Notes:

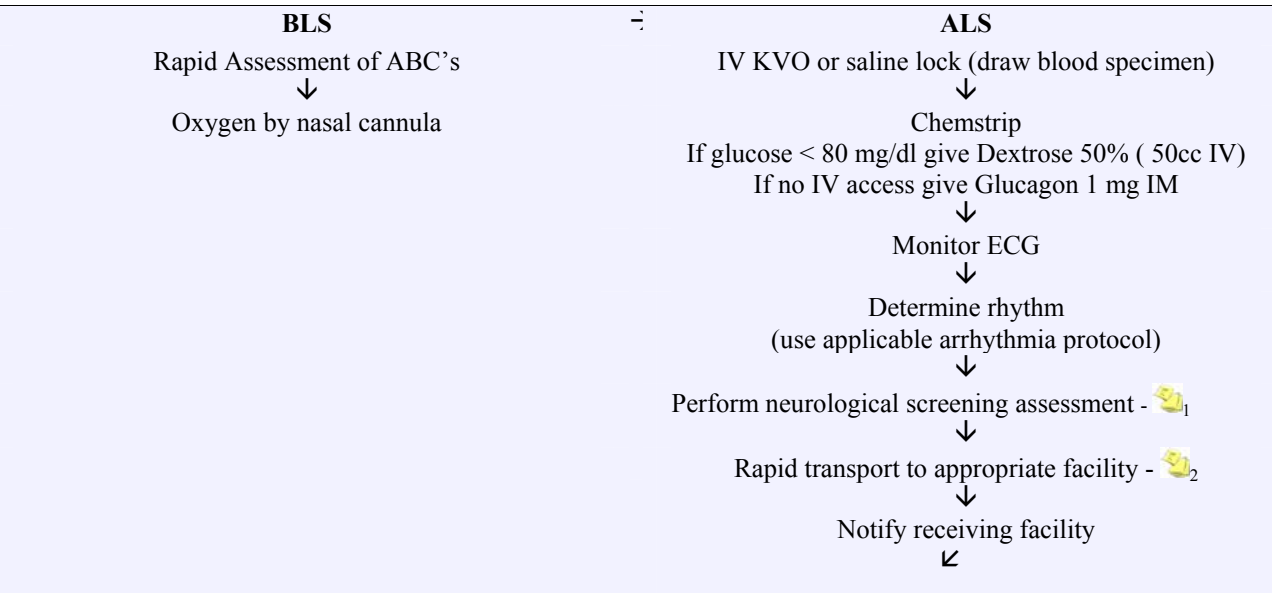
-  may order Albuterol as continuous nebulization
- Epinephrine should be used with caution in patients with coronary artery disease or over 35 years of age
-  Magnesium Sulfate IVP:
 - draw up 1 gm (2 ml) in syringe
 - dilute in 10 ml of D₅W, NS, or sterile H₂O

| | | |
|---------------------------|---------------------|--------------------------------|
| Quality Indicators | | |
| Initial SaO_2 | Response to Therapy | SaO_2 after treatment |
| | Patient Disposition | |

Suspected Stroke - 307

Prehospital Goal: Immediate patient assessment and procedures, including a neurological screening assessment, and rapid transport to hospital.

Indications: Patients that exhibit any of the following: difficulty speaking, arm weakness, facial droop or other focal neurological deficits.



ALS notification acceptable if: All symptoms present for > 24 hours and all vital signs stable

Treatment Options

☎️ Narcan

Consider 2 mg IV or IM for significant decreases in levels of consciousness if etiology undetermined

Notes:

➤ 📄₁ Cincinnati Prehospital Stroke Scale (includes difficulty speaking, arm weakness, and facial droop)

Facial Droop (have patient show teeth or smile):

- Normal – both sides of face move equally
- Abnormal – one side of face does not move as well as the other side

Arm Drift (patient closes eyes and holds both arms straight out for 10 seconds):

- Normal – both arms move the same or both arms do not move at all (other findings, such as grip strength, may be helpful)
- Abnormal – one arm does not move or one arm drifts down compared with the other

Abnormal Speech (have the patient say “you can’t teach an old dog new tricks”):

- Normal – patient uses correct words with no slurring
- Abnormal – patient slurs words, uses the wrong words, or is unable to speak

Interpretation: If any 1 of these 3 signs is abnormal, the probability of a stroke is 72%.

➤ 📄₂ Some receiving facilities have the capabilities for rapid evaluation and treatment of stroke

| Quality Indicators | | | |
|---------------------------|-------------------------------------|-----------|---------------|
| Oxygen application | Cincinnati Prehospital Stroke Scale | Chemstrip | Time of onset |

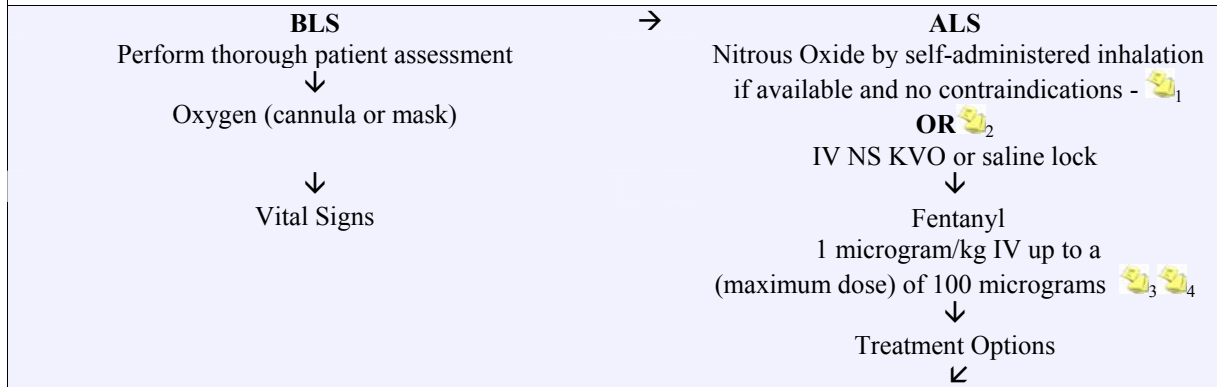
Pain Control - 308


Prehospital Goal: Reduction of patient's pain to a tolerable level in order to provide reasonable comfort during prehospital treatment and transport.



Indications: Patients in significant pain due to **isolated** injury (e.g., fracture, dislocation)


Exclusions:



- Major trauma to head, chest, abdomen or pelvis follow appropriate protocol
- Patients with chest pain that meet criteria for Chest Pain Protocol - 301



**Treatment Options**

 Intravenous Fluid Bolus




 Versed 1-3mg IV - ₄

 Fentanyl 0.25-1 micrograms/kg IV every 15 minutes as needed for pain


 Valium 2-5mg IV - ₄

 Morphine Sulfate - 2-10 mg IV every 20-30 minutes ₄

Notes:

- ₁ **Contraindications to Nitrous Oxide:**
 - Obvious intoxication
 - Head injury with altered response
 - Chronic lung disease
 - Dyspnea with suspected pneumothorax
 - Suspected bowel obstruction
 - Decompression sickness
 - Patients with B/P below 90 mmHg
- ₂ Administer nitrous oxide **OR** fentanyl, but **NOT** both, as a standing order
- ₃ **Contraindications to Fentanyl**
 - Pregnancy
 - Known allergy to fentanyl
 - Profound hypotension
 - Significant head injury with suspicion of increased intracranial pressure
 - Severe respiratory depression

Relative Contraindication

 - Use care when respiratory compromise is present (e.g., COPD, CHF, high spinal injury, etc....) as well as the elderly, the very young, and those with unstable vital signs.
- ₄ Be alert for signs of respiratory depression and hypotension.
 - All patients should have drug allergies documented prior to administration

Quality Indicators

Pain Scale (1-10) - Initial
Adverse Effects

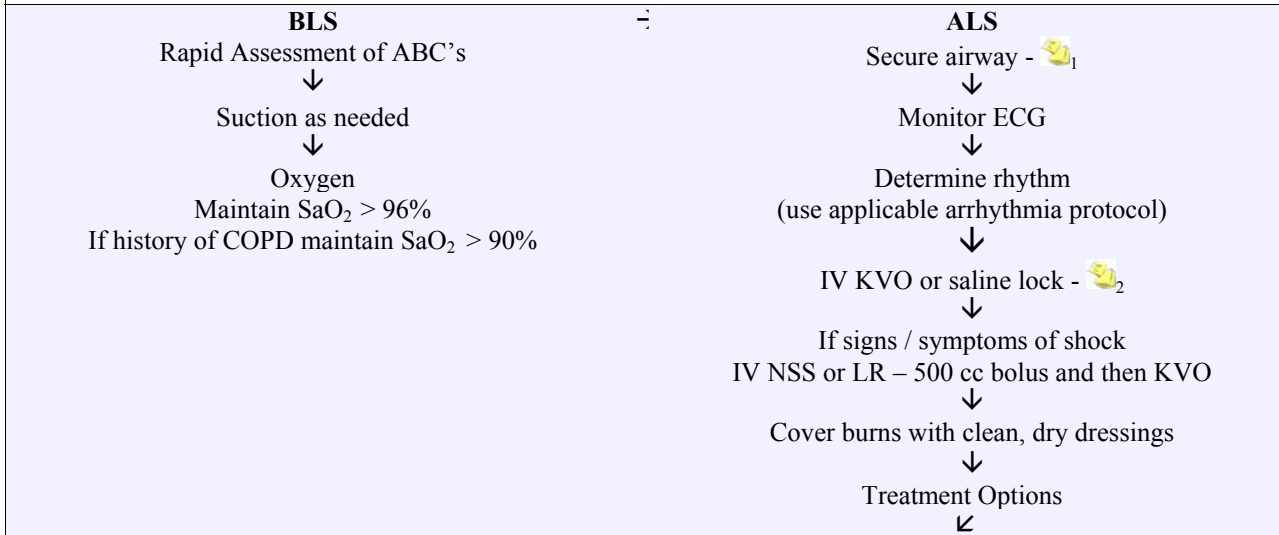
Pain Scale (1-10) - Post Analgesia
Patient Disposition

Burns – Thermal and Electrical - 401

Prehospital Goal: Assure scene safety, remove the patient from the source, assess ABC's, and apply spinal immobilization when indicated.

Indications: Any of the following:

- partial thickness > 10-15% or full thickness > 2% TBSA
- electrical injuries
- suspected inhalation injuries
- burns to the hands, face, or perineum



| Treatment Options | | |
|---|---|--|
| <p style="text-align: center;">Appropriate destination</p> <p style="text-align: center;">(Burn Center, Hyperbaric Center, Trauma Center)</p> | <p style="text-align: center;">Provide analgesic</p> <p style="text-align: center;"> Nitrous Oxide by inhalation if available</p> <p style="text-align: center;"> Morphine Sulfate (2–10 mg IV) (give SQ if no IV access)</p> | <p style="text-align: center;">Additional IV NSS or LR</p> |

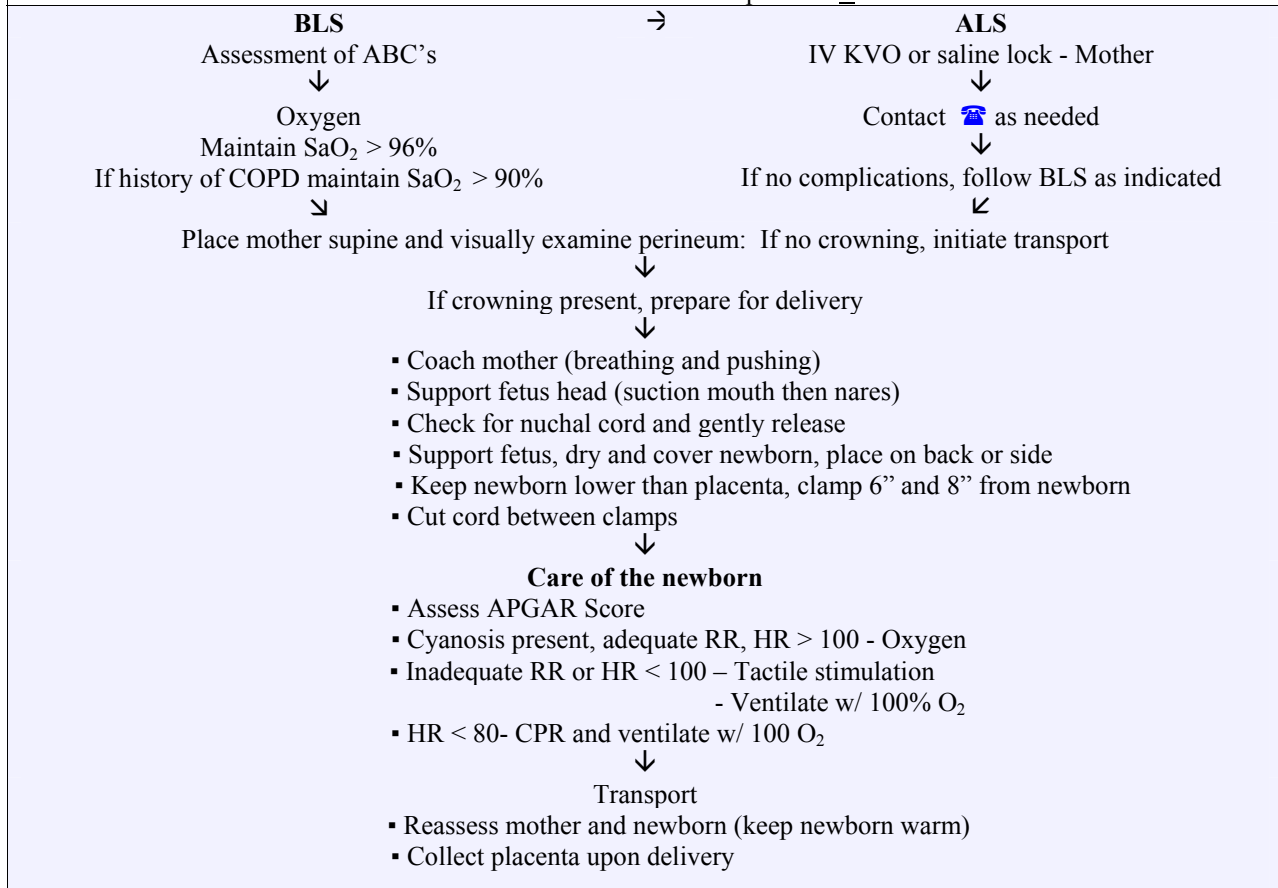
- Notes:**
- ₁ If signs/symptoms of upper airway burn, strongly consider early intubation
 - ₂ When initiating IV, use “non-burned” extremity if possible
 - Expose burned areas and estimate depth and total body surface area (TBSA)
 - Remove jewelry, prostheses, and constricting items

| Quality Indicators | | |
|--|--|---|
| <p style="text-align: center;">Initial SaO₂</p> <p style="text-align: center;">Confirmation of ET intubation (if intubation performed)</p> | <p style="text-align: center;">Response to Therapy</p> | <p style="text-align: center;">SaO₂ after treatment</p> <p style="text-align: center;">Patient Disposition</p> |

Imminent Delivery and Complications of Delivery – 402

Prehospital Goal: Determine history of pregnancy including expected due date, number of fetuses, known complications, and previous pregnancies/deliveries. Prepare for delivery, provide appropriate care for mother and newborn, and transport to receiving facility.

Indications: Female in active labor with contractions < 3 minutes apart and ≥ 1 minute in duration

**Complications of delivery**

| Breech Presentation | Prolapsed Cord | Meconium Staining |
|---|--|---|
| Support buttocks and legs of fetus Apply gentle ↑ traction to fetus head If no delivery in 5 min. - 🧤 ₁ Transport without delay | Trendelenburg or knee/chest position Place hand in vagina/lift fetus off cord Assure pulse maintained in cord Transport without delay | Upon delivery of the head: Suction mouth with bulb syringe Avoid newborn stimulation Upon delivery of baby - 🧤 ₂ |

Notes:

- 🧤₁ If no delivery in 5 minutes, place 2 fingers of gloved hand between baby's face and birth canal to allow air entry for infant to breathe. Provide O₂ by placing end of O₂ tubing at vaginal opening between fingers
- 🧤₂ Upon completion of delivery and before ventilating, intubate and suction through ET tube. Remove ET tube and re-intubate if indicated. Carefully suction nares and oropharynx

Quality Indicators

| | | |
|------------------------------------|--|--|
| Initial SaO ₂ of mother | Confirmation of newborn intubation (meconium staining) | Identification of delivery complications |
| Time of membrane rupture | APGAR scores 1 and 5 minutes | Sex of infant |
| Presentation position | Appearance of amniotic fluid | Time of birth (baby and placenta) |

Obstetric Emergencies: Pre-Eclampsia and Eclampsia – 403




Prehospital Goal: Identify as to whether the patient has been diagnosed with hypertension of pregnancy or pre-eclampsia. Appropriate stabilization of patient noting that definitive treatment is “delivery of fetus.” Rapid transport is indicated

Indications: Patients in third trimester of pregnancy who were normotensive prior to pregnancy and now have BP > 140/90. This may be associated with edema of hands and face. This usually occurs during patient’s first pregnancy.



| BLS | ALS |
|--|--|
| Place patient in comfortable position (elevate right side if supine) ↓ Oxygen Maintain SaO ₂ > 96% If history of COPD maintain SaO ₂ > 90% ↓ | IV KVO or saline lock (draw blood specimen) ↓ Chemstrip If glucose < 80 mg/dl give Dextrose 50% (50cc IV) If no IV access give Glucagon 1 mg IM ↓ If patient has generalized (grand mal) seizure Provide adequate ventilation and O ₂ , protect airway Mag. Sulfate 1 gm/minute IV push until seizure stops <ul style="list-style-type: none"> ▪ Dilute each gram (2ml) in 10cc IV fluid ▪ Maximum dose is four (4) grams ↓ Transport (monitor vitals, airway, and neuro status) ↙ |

Treatment Options



For uncontrolled seizure:

-  Valium 2 mg/min IV until seizure stops - ₁
- If no IV – Valium 10mg per rectum
- Use syringe and IV “catheter”- ₂
- Secure Airway

If B/P > 160/10 (not seizing):

-  Magnesium Sulfate
- 4 gm in D₅W 250 cc infusion over 20 minutes
-  Nitroglycerin spray: 1 - 2 metered doses
- Q 3-5 min as needed

Notes:

- Perform neurological exam (hyperreflexia and visual changes indicate imminent seizure)
- If Chemstrip not available and hypoglycemia suspected, give Dextrose 50% (50cc IV) **or** Glucagon 1 mg IM
- ₁ Be alert for signs of respiratory depression and hypotension.
- ₂ When administering Valium via rectum, use syringe and IV catheter (**not the needle**)

Quality Indicators

Confirmation of ET intubation
 (if intubation performed)

Patient Disposition

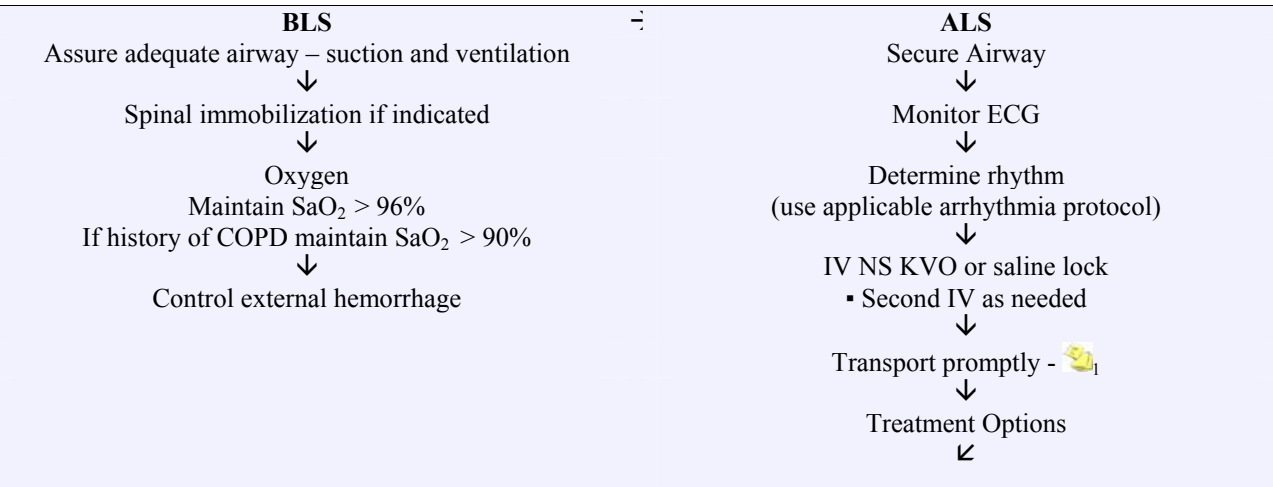
Response to Therapy

Trauma / Medical High Risk - 404

Prehospital Goal: Rapid assessment and identification of high risk patients along with adequate airway control, spinal immobilization (if indicated), and rapid transport.

Indications: Patients who do NOT meet criteria for other protocols but have any of the following:

- **Trauma** – penetrating wounds, pedestrian vs. motor vehicle, falls > 10 feet, MVA with extensive damage, MVA with rollover, severe blunt trauma, entrapment, motorcycle accident, multiple extremity trauma
- **Medical** – abdominal pain, GI hemorrhage, dehydration, overdoses, environmental related emergencies, clinically significant abnormal vital signs, respiratory distress or other signs / symptoms of serious illness.



ALS notification acceptable if: IV initiated as a precaution only

Treatment Options

- | | |
|--|---|
| <ul style="list-style-type: none"> ☎ Consider PASG inflation ▪ Especially for pelvic and femur fractures | <ul style="list-style-type: none"> ☎ Needle Decompression of Chest ▪ If trauma with absent or asymmetric breath sounds |
|--|---|

Notes: If patient meets regional trauma triage criteria:

- 🚑₁ Transport time < 20 minutes – transport to closest Level I or Level II Trauma Center
- 🚑₁ Transport time > 20 minutes – consult ☎ regarding air transport vs. ground transport
 - If ground transport, consider transport to closest emergency facility versus trauma center

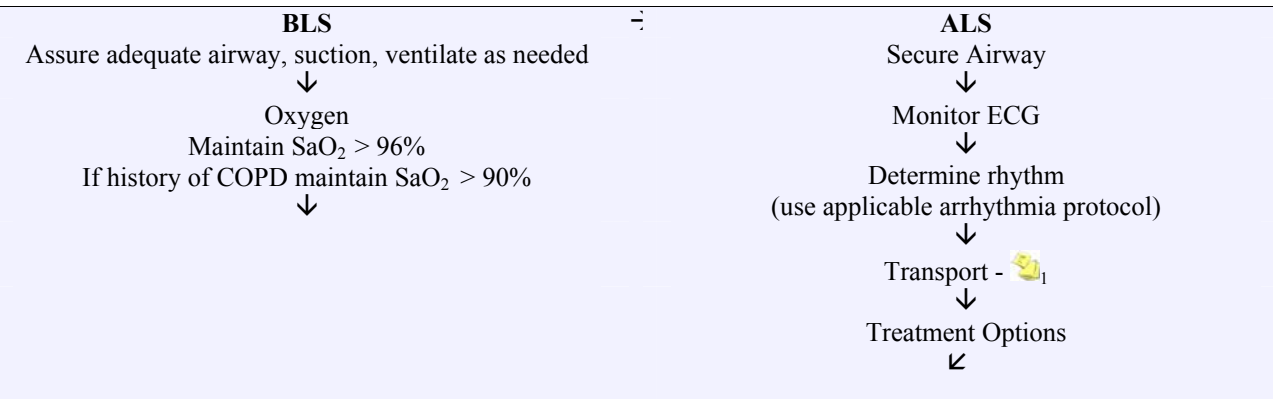
Quality Indicators

| | | |
|------------------------|---|--------------------------|
| Patient Disposition | Time on scene (trauma) | Transport time |
| Final SaO ₂ | Appropriate receiving facility | Initial SaO ₂ |
| | Confirmation of ET intubation (if intubation performed) | |

Interfacility Transports: Patients on IIb / IIIa Inhibitors - 405

Prehospital Goal: Assure adequate airway, monitor the patient for complications during transport, maintain infusion pump, and contact 📞 as appropriate.

Indications: Interfacility transports of patients already receiving intravenous Glycoprotein IIb / IIIa inhibitor.



| Treatment Options | |
|--|---|
| <p style="text-align: center;">Unstable patient</p> <p>Contact 📞 prior to transport if patient is unstable or “appears” to be unstable</p> | <p style="text-align: center;">Serious signs or symptoms of bleeding</p> <p>Stop the infusion and contact 📞</p> |

Notes:

📄₁ Prior to transport, the paramedic should obtain the following information

- Patient history and assessment
- Instructions in operation of the infusion pump (if necessary)
- Indications for the infusion
- Concentration of the drug solution, infusion rate, and duration of the infusion
- Recent dosage changes in the infusion
- Recent changes in the patient’s condition
- Patient complications

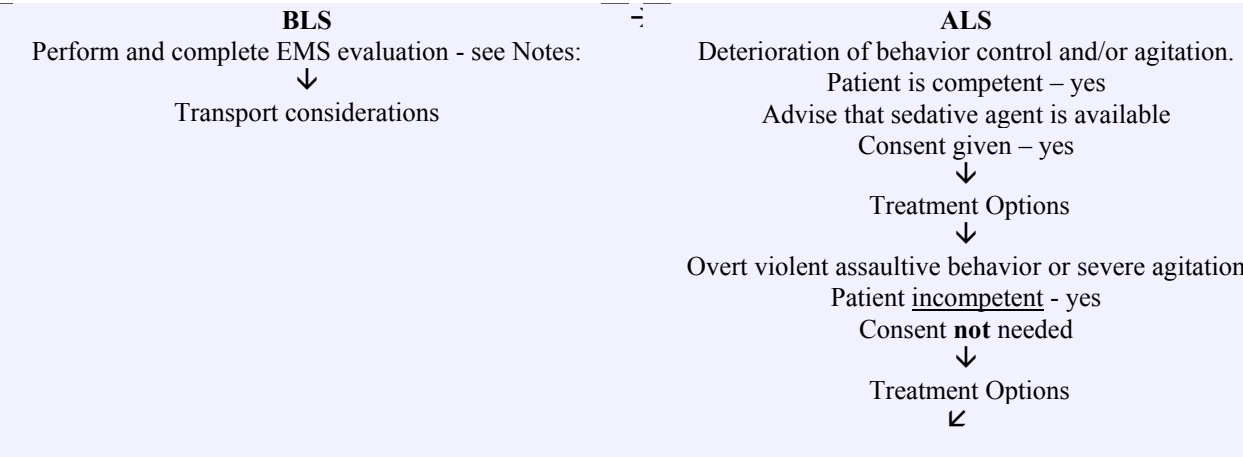
| Quality Indicators | | |
|---------------------------|-------------------------|---------------|
| Patient Disposition | Infusion pump operation | Infusion rate |
| | Drug concentration | |

Violent Patient Protocol – 406

Prehospital Goal: To provide guidance to EMS providers when caring for patients who are violent or potentially violent. It is hoped that this protocol will result in increased safety for patients, bystanders, EMS and other public safety officers.

- Indications:**
- Suspicion of potential for escalation to violent behavior.
 - Progressive deterioration of behavior control and/or agitation.
 - Determination that the patient lacks capacity for decision- making .
 - Overt violent or assaultive behavior or imminent threat.

Exclusions: Hypoxia, Hypoglycemia, Head Trauma, Substance Abuse, Hypotension, Shock, Post-Ictal Period



- Treatment Options**
- | | | | |
|--|----------|-----------|--------------------|
| Physical Restraints (📞 as soon as practical) | 📞 Versed | 📞 Valium | 📞 Morphine Sulfate |
| ▪ Postpone negotiation | 1-3mg IV | 2-5 mg IV | 3-5 mg IV |
- Overwhelming manpower recommended (1 per limb)
 - Reassurance patient but be swift and definitive

- Notes:**
- | | | | |
|---|---|--|---|
| Interview techniques: | Environmental Factors: | Physical Restraints: | Patient Care: |
| <ul style="list-style-type: none"> ➤ Direct, empathetic and calm ➤ Assure patient of safety ➤ Assure patient comfort ➤ Present clear limits and options ➤ Respect personal space ➤ Avoid prolonged eye contact ➤ Non-confrontational posture | <ul style="list-style-type: none"> ➤ Quiet surroundings ➤ Do not block exit ➤ Call for assistance ➤ Weapons detection | <ul style="list-style-type: none"> ➤ DO NOT restrain in a prone position or “hog tied.” ➤ DO NOT sandwich between devices such as LWB’s or Reeves stretchers ➤ Ensure that restraints are not so tight as to cause injury | <ul style="list-style-type: none"> ➤ Frequent assessment of airway, oxygenation, breathing, hemodynamic status, and mental status is mandatory ➤ Be ready to protect the airway should vomiting occur |

| | | |
|---------------------------|-----------------------|-------------------------------|
| Quality Indicators | | |
| Exclusions | Initial Mental status | Mental status after treatment |
| | Patient Disposition | |

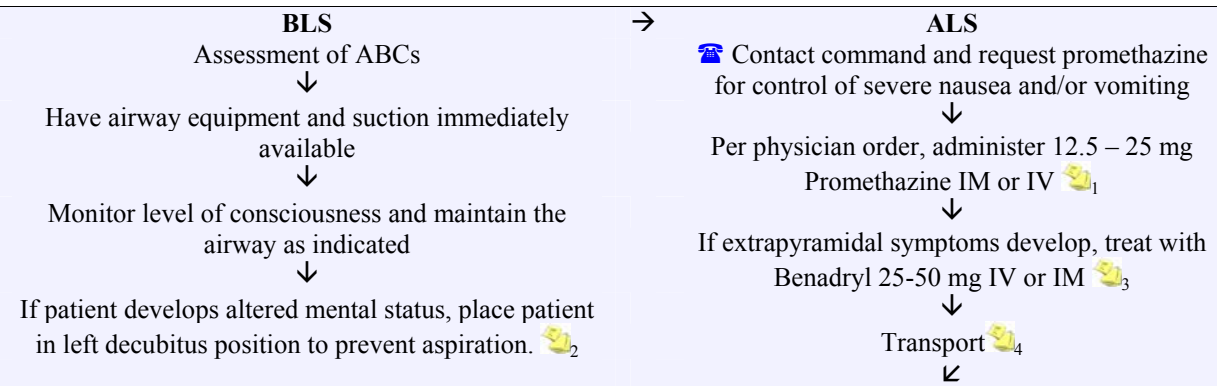
Nausea and Vomiting – 407

Prehospital goal: To properly manage nausea and vomiting in patients 12 years or older

Indications: Nausea and vomiting

Exclusions: ▪ Comatose or altered level of consciousness

- Known allergies to promethazine or phenothiazine medications (e.g., Compazine, Thorazine)
- Pregnant patients
- Children under 12 years of age
- Patients with compromised respiratory functions (i.e., acute COPD or asthma exacerbation, sleep apnea)



Cautions

- Do not use if discolored or particulate matter present
- Children, the elderly, severely ill patients, dehydrated patients (all have an increased incidence of dystonic reactions)
- Patients with narrow angle glaucoma
- Pregnant females or females who are known to be breastfeeding
- Patients who have ingested alcohol or are taking any other CNS depressants may have increased or prolonged sedation

Notes:

- 🧑‍🚒₁ ▪ The IV dose is given slowly over one minute
 - Confirm IV patency prior to injection since extravasations can cause tissue injury
 - **Must not be injected into an artery** as it can cause severe arteriospasm and the possibility of resultant gangrene
 - **Must not be administered SQ** as it can result in tissue necrosis
 - **Must not be administered via the endotracheal tube**
- 🧑‍🚒₂ Do **not** place the patient prone (face down)
- 🧑‍🚒₃ ▪ Symptoms would include blinking and twitching, anxiousness, inability to sit still, muscle spasms of face, neck, and back.
 - Watch for increased sedation and hypotension
- 🧑‍🚒₄ If patient refuses transport, a strong warning must be given to watch for extrapyramidal symptoms over the next 48 hours

Quality Indicators

Response to Therapy

Patient Disposition

Adverse Effects

Medication dosing