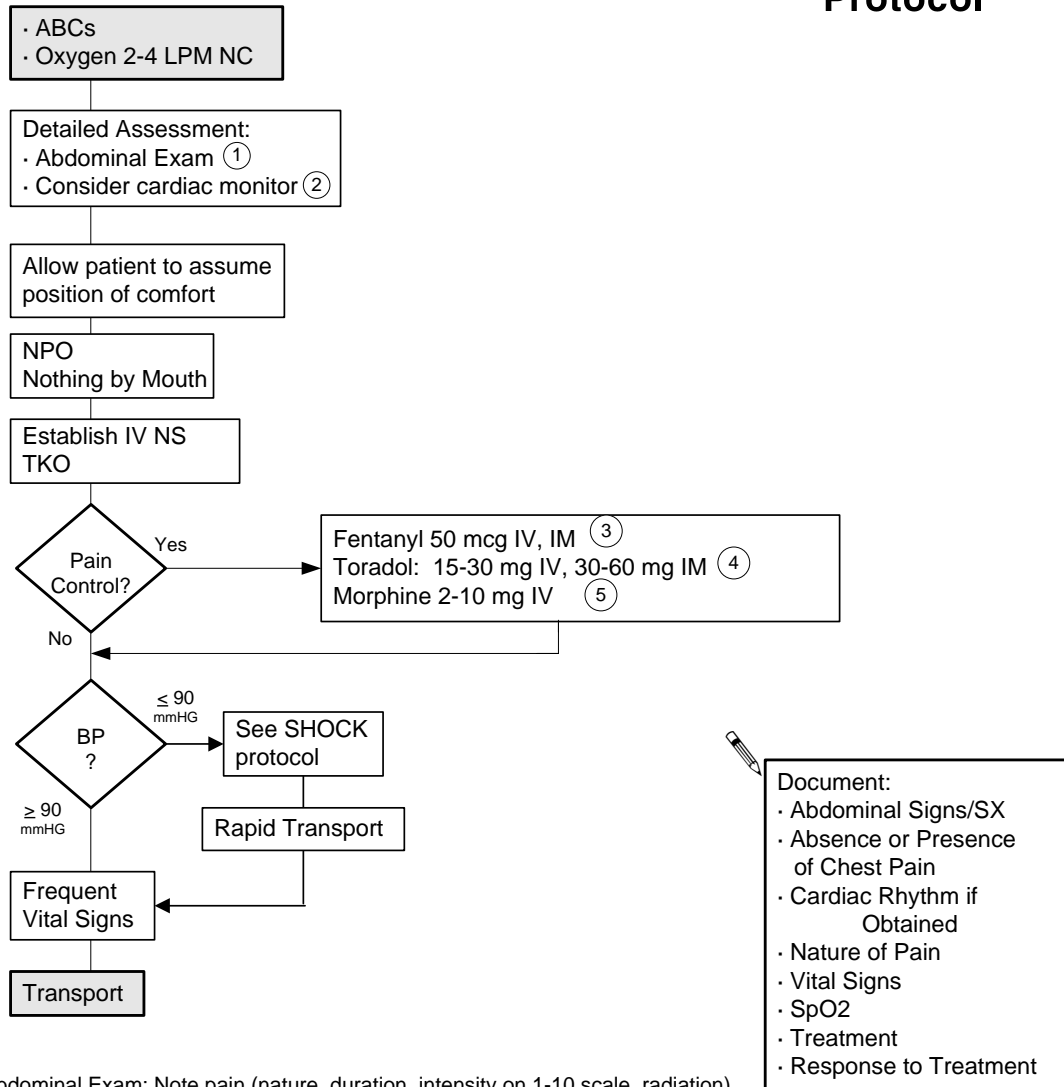


**Abdominal Pain:
Not related to pregnancy or trauma**

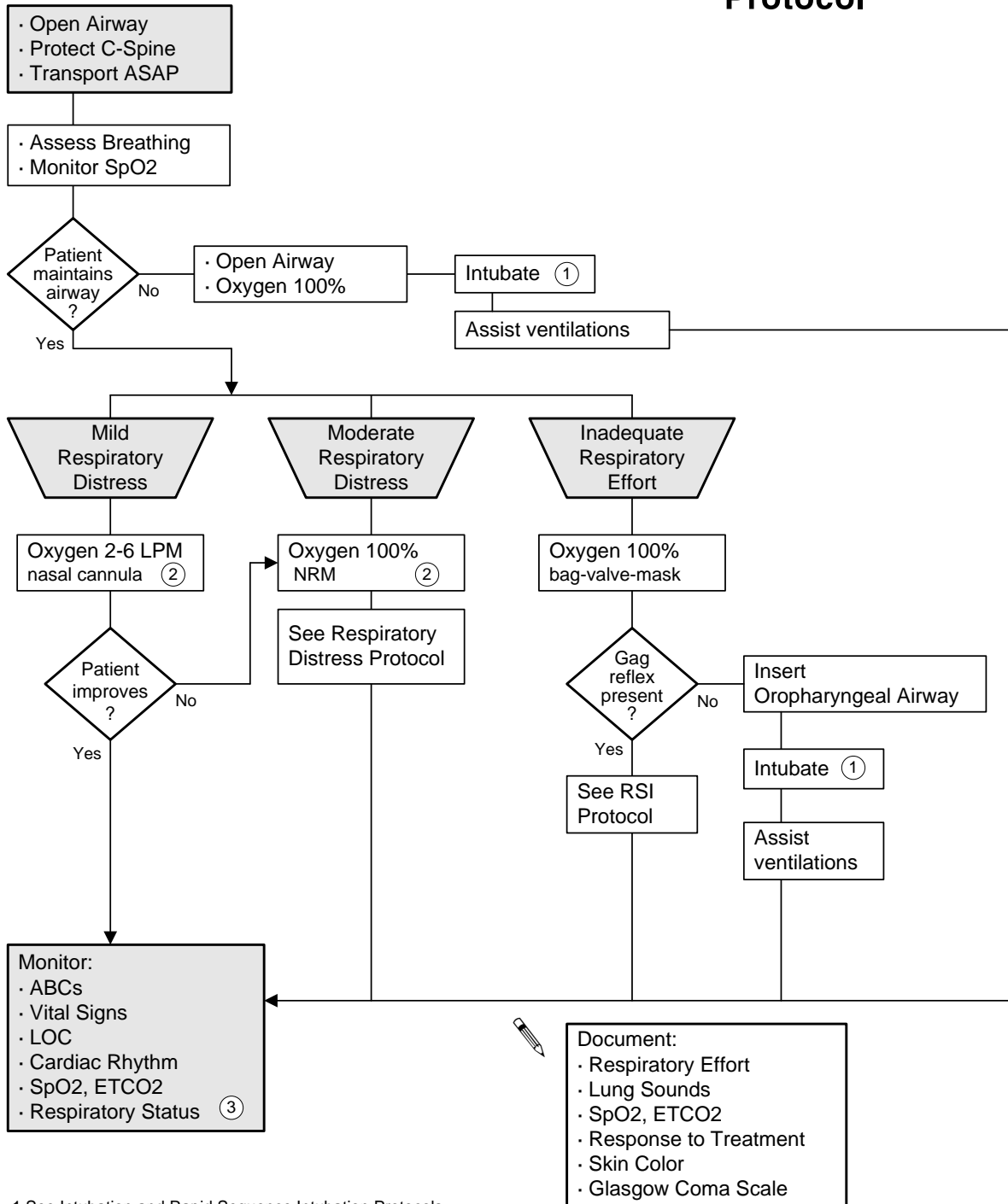
**ALS
Protocol**



- 1 Abdominal Exam: Note pain (nature, duration, intensity on 1-10 scale, radiation). Observe for palpable mass, always palpate with care. Auscultate prior to palpation. If AAA suspected initiate 2nd IV. Note associated signs & symptoms; (nausea, vomiting, bowel tones, guarding, rebound tenderness, distention). History: previous episodes, last meal, current medications, last menstrual period, possibility of pregnancy, bloody stool/ diarrhea, melena, hematemesis, fever
- 2 Be aware that ischemic cardiac pain can present as abdominal pain especially in older patients.
- 3 Fentanyl: repeat dose 50 mcg prn (titrate to pain). Physician order required for respiratory depression/compromise, shock, or altered mentation.
- 4 Toradol: Most effective for colic spastic type pain including gall bladder, kidney stones, and general pain control. Use caution if potential for bleeding and with elderly patients.
- 5 Morphine: May cause nausea/vomiting follow MS administration with Phenergan or Zofran.

Airway Management

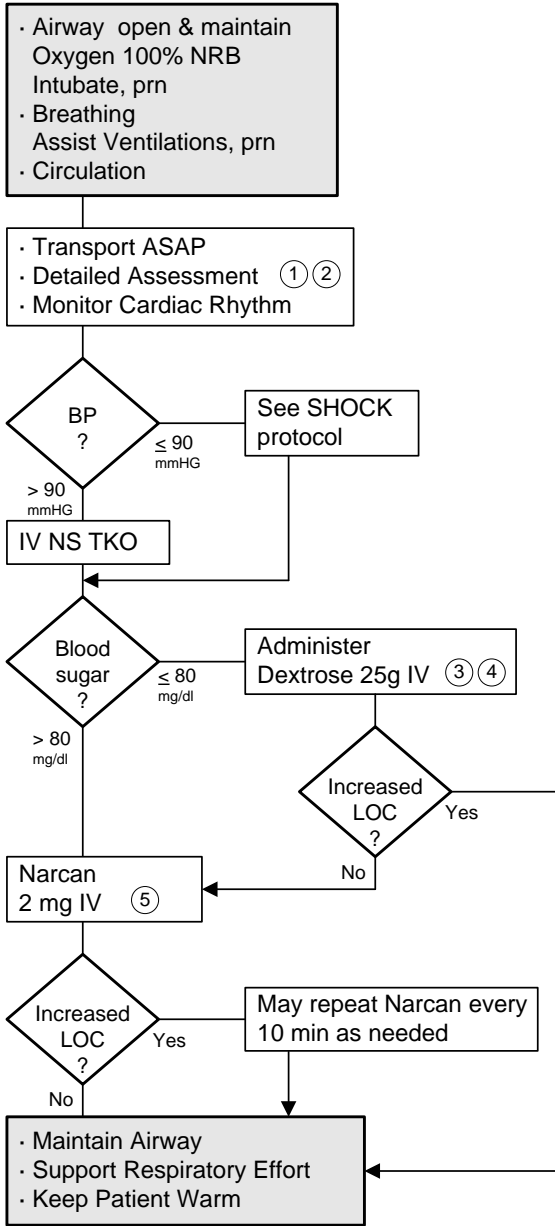
ALS Protocol



1 See Intubation and Rapid Sequence Intubation Protocols.
 2 COPD patients often use their Hypoxic Drive. In these cases, expect and accept SpO2 readings <90% & >85%. Lower concentrations of oxygen may be indicated yet never deprive a patient in respiratory distress of Oxygen.
 3 IF RESPIRATORY EFFORT OR LEVEL OF DISTRESS CHANGES MOVE TO THE APPROPRIATE ASPECT OR ARM OF THIS PROTOCOL.

Altered Mental Status Coma

ALS Protocol



- Possible causes:
- Head Injury
 - Cardiac Arrest
 - Diabetes
 - Seizure
 - Overdose
 - Hypertension

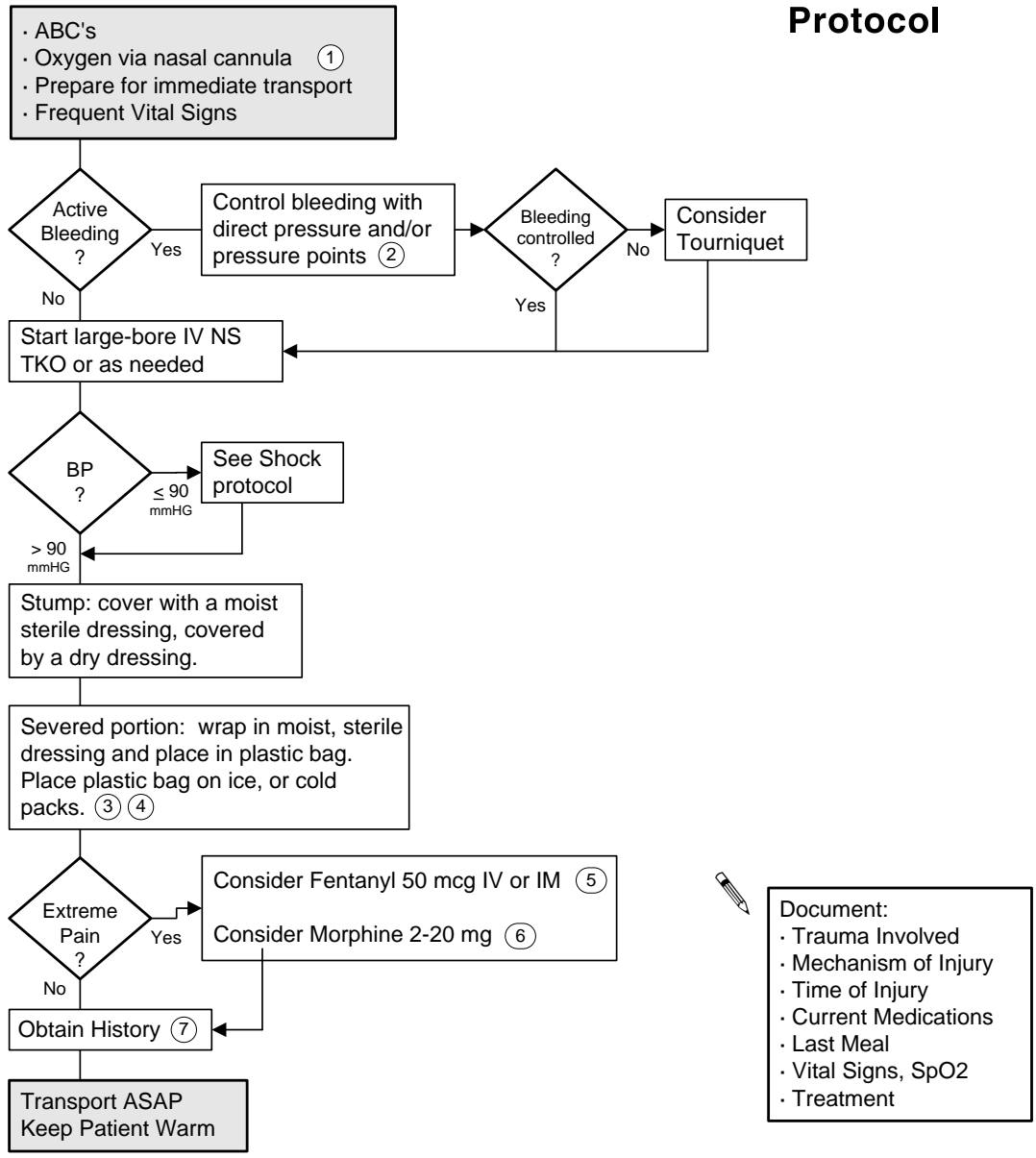
- Document:
- Glasgow Coma Scale
 - Clinical Response to Dextrose or Narcan
 - Blood Sugar
 - SpO2
 - IV Fluid Totals
 - Medical History
 - Exam
 - Vital Signs
 - Cardiac Rhythm

Eye Opening	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
Best Verbal Response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Best Motor Response	None	1
	Obeys Commands	6
	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
	Extension	2
	None	1

1 Detailed Assessment: Document Glasgow Coma Scale. Check odor on breath. Look for Medical Alert tags, needle tracks, and evidence of trauma.
 2 Observe environment closely for signs of potential overdose.
 3 If possibility of alcoholism or malnutrition exists, administer Thiamine 100 mg IV/IM prior to Dextrose.
 4 Dextrose: Recheck blood sugar 5 minutes following Dextrose. If blood sugar remains < 80 mg/dl repeat Dextrose. Pediatric dose is 0.25-0.5 gm/kg IV (use 25% solution in infants, 50% in children).
 5 Narcan 2-4mg may be administered prior to Dextrose administration if pupils are constricted, suggestive of narcotic effects. Pediatric dose is 0.1 mg/kg for newborn-5 years old, 2 mg for older children.

Amputation

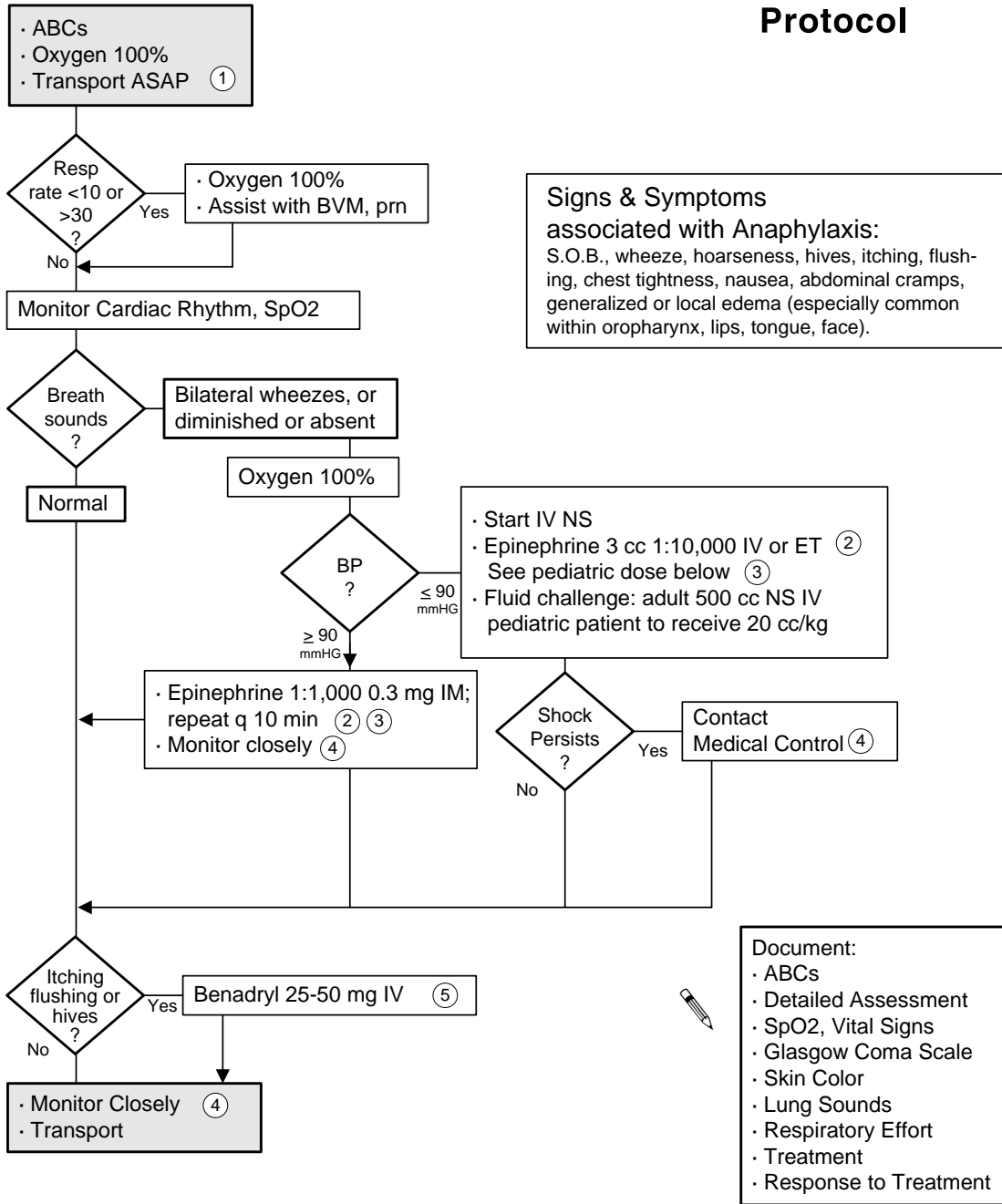
ALS Protocol



- 1 Administer higher concentrations if needed. Use a nonrebreathable mask if active bleeding is present or if the original blood loss was significant.
- 2 Use pressure point proximal to site if direct pressure does not control the bleeding.
- 3 Keep severed part moist. Do not allow to soak in a solution.
- 4 If transport delayed or otherwise extensive (entrapped patient, etc.), consider air transport and/or transporting severed part before patient, to allow early examination and surgical preparation for reimplantation.
- 5 Fentanyl: May repeat dose of 50 mcg prn (titrate to pain). Physician order required for respiratory depression/compromise, shock, or altered mentation.
- 6 Morphine may cause hypotension.
- 7 History: note time of amputation, mechanism involved, current medications, bleeding disorders. Exam: note anatomical location of amputation. Estimate total blood loss.

Anaphylaxis

ALS Protocol



Signs & Symptoms associated with Anaphylaxis:
 S.O.B., wheeze, hoarseness, hives, itching, flushing, chest tightness, nausea, abdominal cramps, generalized or local edema (especially common within oropharynx, lips, tongue, face).

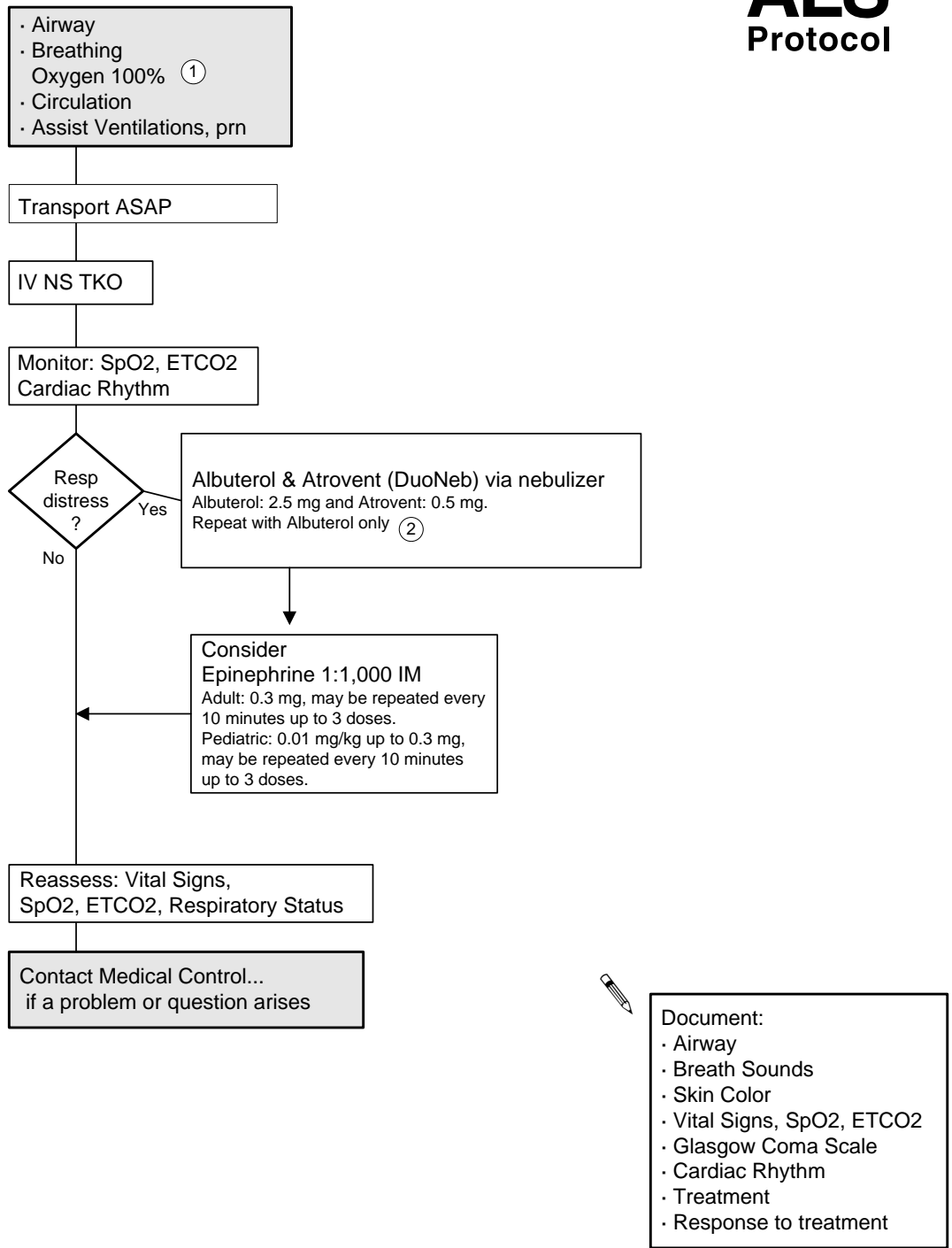
Document:

- ABCs
- Detailed Assessment
- SpO2, Vital Signs
- Glasgow Coma Scale
- Skin Color
- Lung Sounds
- Respiratory Effort
- Treatment
- Response to Treatment

- 1 Bee sting: gently remove stinger if still present.
- 2 Two (2) dilution's of epinephrine are available: 1:1,000 is appropriate for SQ/IM injections, 1:10,000 is for IV or ET use. Be sure to give the appropriate dilution.
- 3 Epinephrine: pediatric dose = 0.01 mg/kg 1:1,000 SQ/IM or 0.01 mg/kg 1:10,000 IV, ET
- 4 Contact Medical Control if symptoms/signs persist.
- 5 Benadryl (Diphenhydramine): pediatric dose = 1-2 mg/kg IM or slow IV.

Asthma

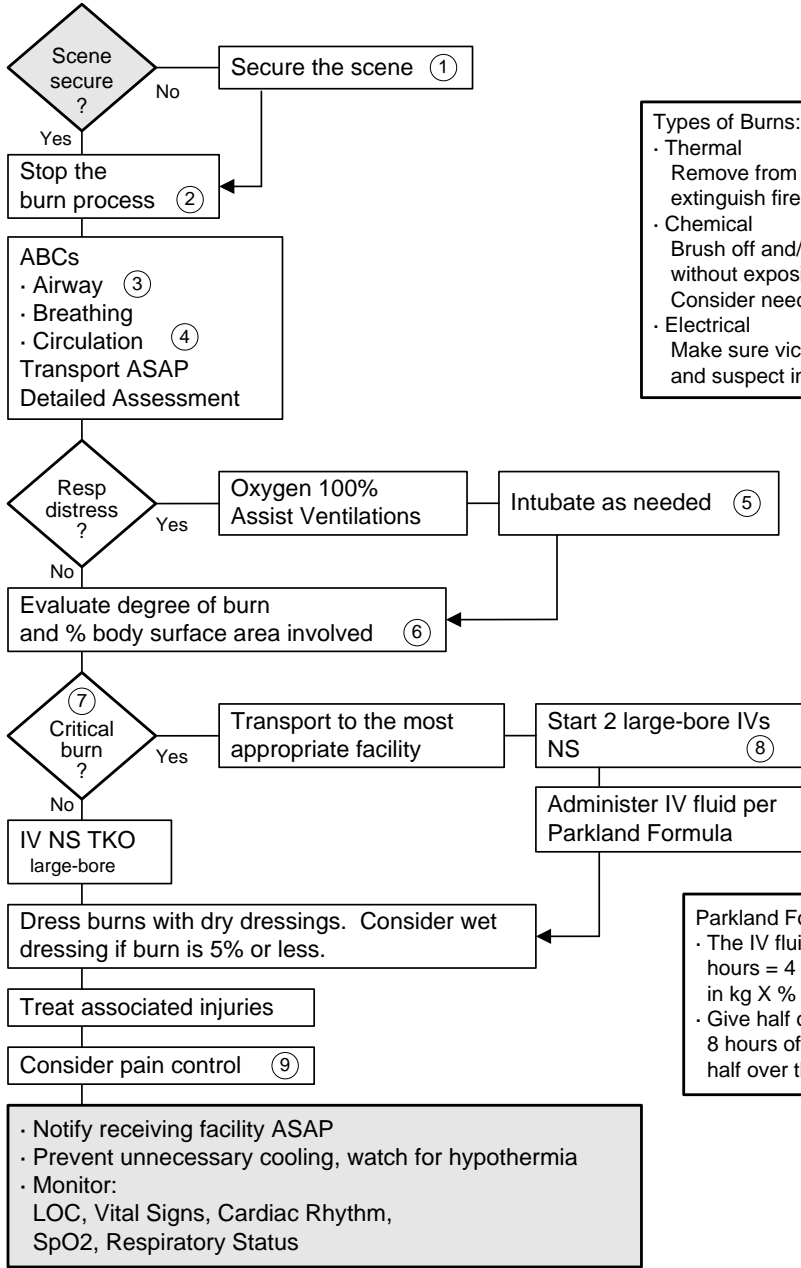
ALS Protocol



1 If COPD co-exists titrate Oxygen to maintain SpO2 > 90%.
2 Albuterol & Atrovent (DuoNeb): Repeat with Albuterol only every 10 minutes.
Discontinue use if patient develops chest pain or tachycardia increases.

Burns

ALS Protocol



Types of Burns:

- Thermal
Remove from environment and extinguish fire
- Chemical
Brush off and/or dilute chemical without exposing rescuer. Consider need for HAZMAT team.
- Electrical
Make sure victim is de-energized and suspect internal injuries

Parkland Formula:

- The IV fluid required for the first 24 hours = 4 ml of LR X the patient's weight in kg X % body surface area burned.
- Give half of the total fluid within the first 8 hours of the burn. Give the second half over the next 16 hours.

Document:

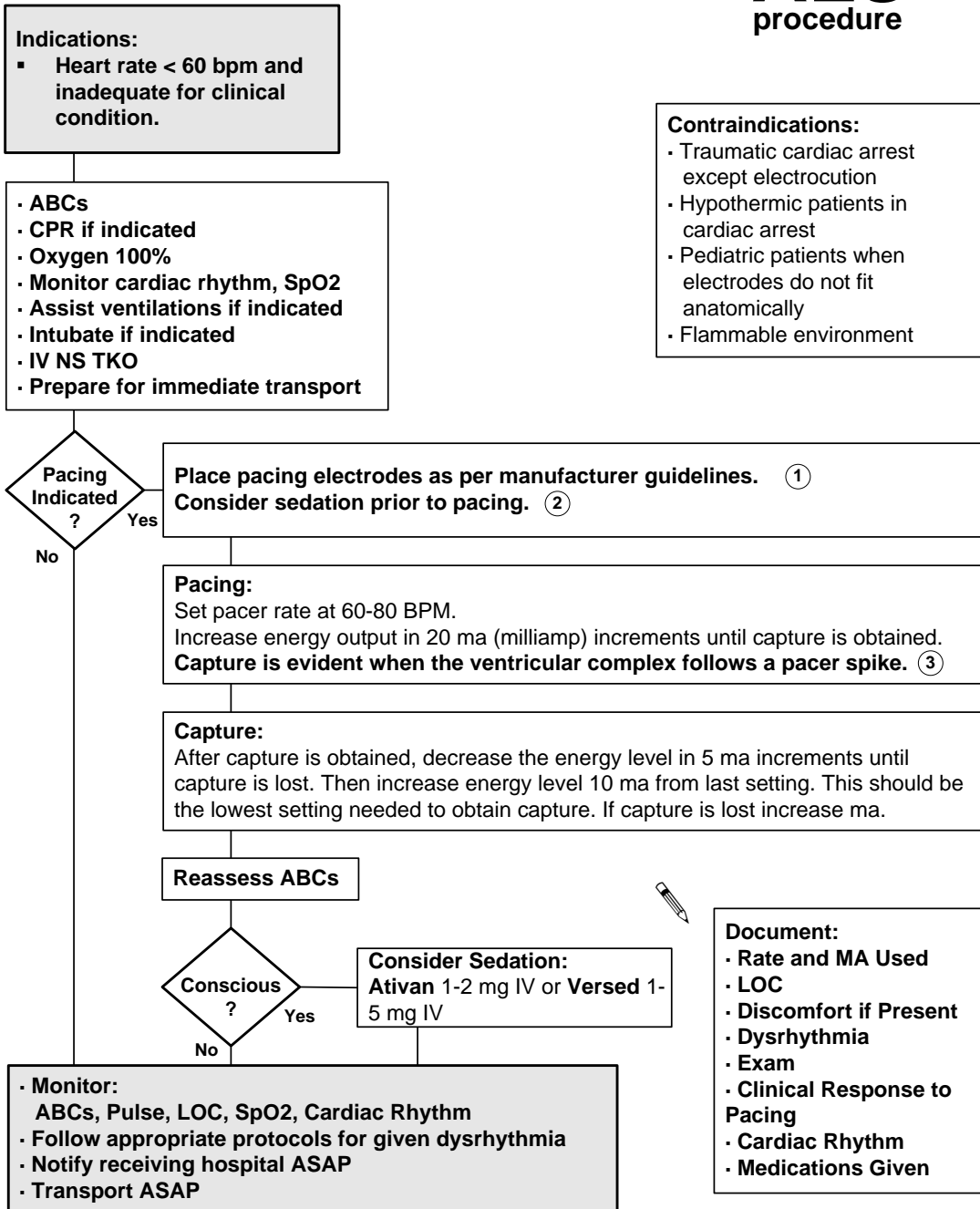
- Degree of Burn
- % of Body Burned
- Respiratory Status
- Singed Nares?
- SpO2
- Type of Burn
- Medical History
- Confined Space?

- 1 Make sure rescuers can safely help the victim.
- 2 Remove clothes, flood with water ONLY if flames or smoldering is present.
- 3 Consider Carbon Monoxide poisoning if victim was within a confined space. If potential for CO poisoning exists administer Oxygen 100%.
- 4 If shock is present consider underlying causes.
- 5 See RSI protocol if conscious. Consider needle cricothyrotomy if unable to intubate.
- 6 Note: the patient's palm represents 1% of their BSA. Use this as a reference.
- 7 Critical burn = • any degree 25% BSA • 3rd degree > 10% • respiratory injury • involvement of face, hands, feet, or genitalia • circumferential burns • associated injuries • electrical or deep chemical burns • underlying medical history (cardiac, diabetes) • age < 10 or > 50 years.
- 8 Start IVs within unburned areas if possible. Burned areas may be used if needed.
- 9 Fentanyl 50 mcg IV or IM. May repeat dose of 50 mcg prn (titrate to pain). Physician order required for respiratory depression/compromise, shock, or altered mentation. Or, Morphine 2-20 mg titrate (adult), 0.1-0.2 mg/kg (pediatrics).

BURNS

Cardiac Pacing: External

ALS procedure



1 Placement of electrodes should avoid breast tissue and large bony areas, such as the spine or sternum.

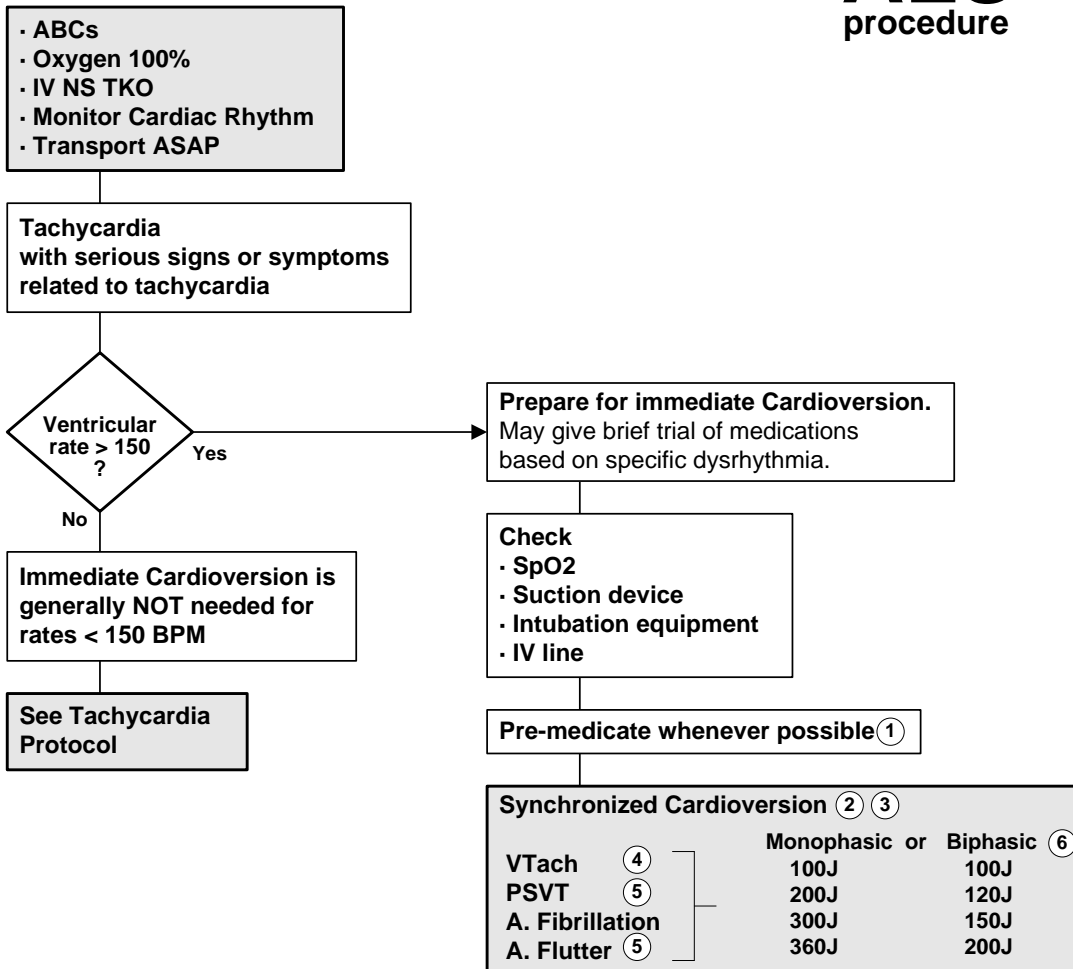
2 Sedation: Ativan 1-2 mg IV or Versed 1-5 mg IV titrate to effect

3 Electrical capture is evident when the ventricular complex consistently and immediately follows a pacer spike.

Mechanical capture is evident when a pulse is generated simultaneously with paced complexes.

Cardioversion

ALS procedure



- Document:**
- ABCs
 - Vital Signs
 - Cardiac Rhythm
 - SpO2
 - Lung Sounds
 - Glasgow Coma Scale
 - Treatment
 - Response to Treatment

- 1 Consider Sedation: Versed 1-5 mg SLOW IV.**
- 2 Note possible need for re-synchronize after each cardioversion.**
- 3 If delays in synchronization occur and clinical conditions are critical, go to immediate unsynchronized shocks.**
- 4 Treat polymorphic VT (irregular form and rate) like VF: 120J, 150J 200J biphasic..**
- 5 PSVT and Atrial Flutter often respond to lower energy levels.**
- 6 Clinically equivalent biphasic energy dose if appropriate, check device manufacturer.**

Chest Pain / Acute Coronary Syndrome

Suspected Ischemic Chest Pain

ALS Protocol

- ABCs
- Oxygen 4 LPM NC ①
- Monitor Cardiac Rhythm.
Obtain 12 lead ECG and transmit to appropriate hospital.
- IV NS TKO ②
- Transport ASAP to closest appropriate cardiac facility ⑧

- SpO2
- Vital Signs
- Obtain Medical History

- Assess Circulation**
- Is there a Volume problem?
 - Pump problem?
 - Rate problem?

- Consider the following treatment options:**
- Aspirin PO 150-325 mg ③
 - Nitroglycerin SL 0.4 mg ④
(see box below)
 - Nitroglycerin IV 5 mcg/min ⑤
(see box below)
 - Morphine IV 1-3 mg increments prn, or ⑥
 - Fentanyl 50 mcg IV or IM, prn. ⑦

Nitroglycerin is contraindicated if a patient is using phosphodiesterase inhibitors for erectile dysfunction.

Phosphodiesterase inhibitors include: Cialais, Levitra, Viagra, Revatio, sildenafil, tadalafil, danafil, gildanafil.

- Myocardial Infarction**
- Anterior Wall:**
- ST elevation in leads V1-V4
- Inferior Wall:**
- ST elevation in leads II, III, aVF
- Lateral Wall:**
- ST elevation in leads I, aVL, V5-6
- Posterior Wall:**
- ST depression and tall, broad (>0.04 sec) R wave in leads V1 and V2 (reciprocal changes)

12 Lead

I Lateral	aVR	V1 Septal	V4 Anterior
II Inferior	aVL Lateral	V2 Septal	V5 Lateral
III Inferior	aVF Inferior	V3 Anterior	V6 Lateral

- Oxygen:** adjust flow rate & route of administration as needed. Consider **hypoxic drive** in COPD and degree of respiratory effort. Non-COPD patients should be able to maintain SpO2 of 97% or higher. Increase oxygen concentration if SpO2 is low.
- IV:** Avoid the R wrist as IV site; all other R arm sites are acceptable. Consider and attempt to establish two IV lines.
- Aspirin** is relatively contraindicated in patients with active ulcer disease or asthma. Contraindicated in cases of known hypersensitivity to aspirin.
- Nitroglycerin SL:** sublingual is contraindicated if systolic BP < 100 mmHg.
- Nitroglycerin IV:** if normotensive, limit systolic BP drop to 10%, if hypertensive, limit drop to 30%. Never drop systolic BP below 100 mmHg. Nitroglycerin IV is indicated for suspected ischemic chest pain, unstable angina, acute pulmonary edema, acute MI.
- Morphine** is indicated for continuing pain and acute pulmonary edema.
- Fentanyl:** repeat dose 50 mcg prn (titrate to pain). Physician order required for respiratory depression/compromise, shock, or altered mentation.
- May bypass closest receiving hospital with 12 lead indicators and transport to appropriate receiving cardiac hospital.

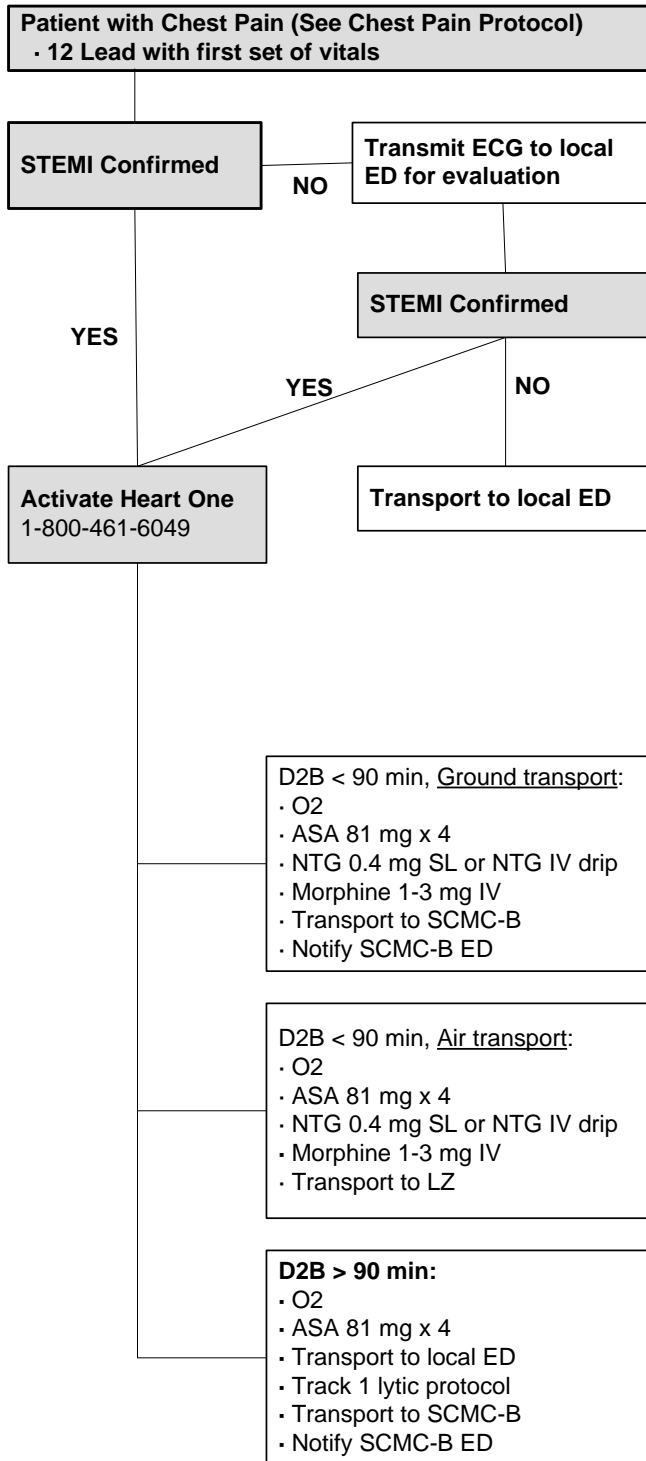


- Document:**
- ABCs
 - Medical History
 - Time of Onset of Signs & Symptoms
 - Cardiac Rhythm
 - Quality of Pulses
 - SpO2, VS
 - Glasgow Coma Scale
 - Color, Diaphoresis
 - Lung Sounds
 - Response to Treatment

**CHEST PAIN
ACUTE CORONARY SYNDROME**

HEART ONE STEMI PROTOCOL

ALS Protocol



Acute Myocardial Infarction
(ST elevation in two or more contiguous leads > 1mm)

Inferior

- ST elevation in leads II, III, aVF

Lateral

- ST elevation in leads I, aVL, V5-6

Septal

- ST elevation in leads V1, V2

Anterior

- ST elevation in leads V3, V4

Posterior

- ST depression and tall, broad (>0.04 sec) R wave in leads V1 and V2 (reciprocal changes)

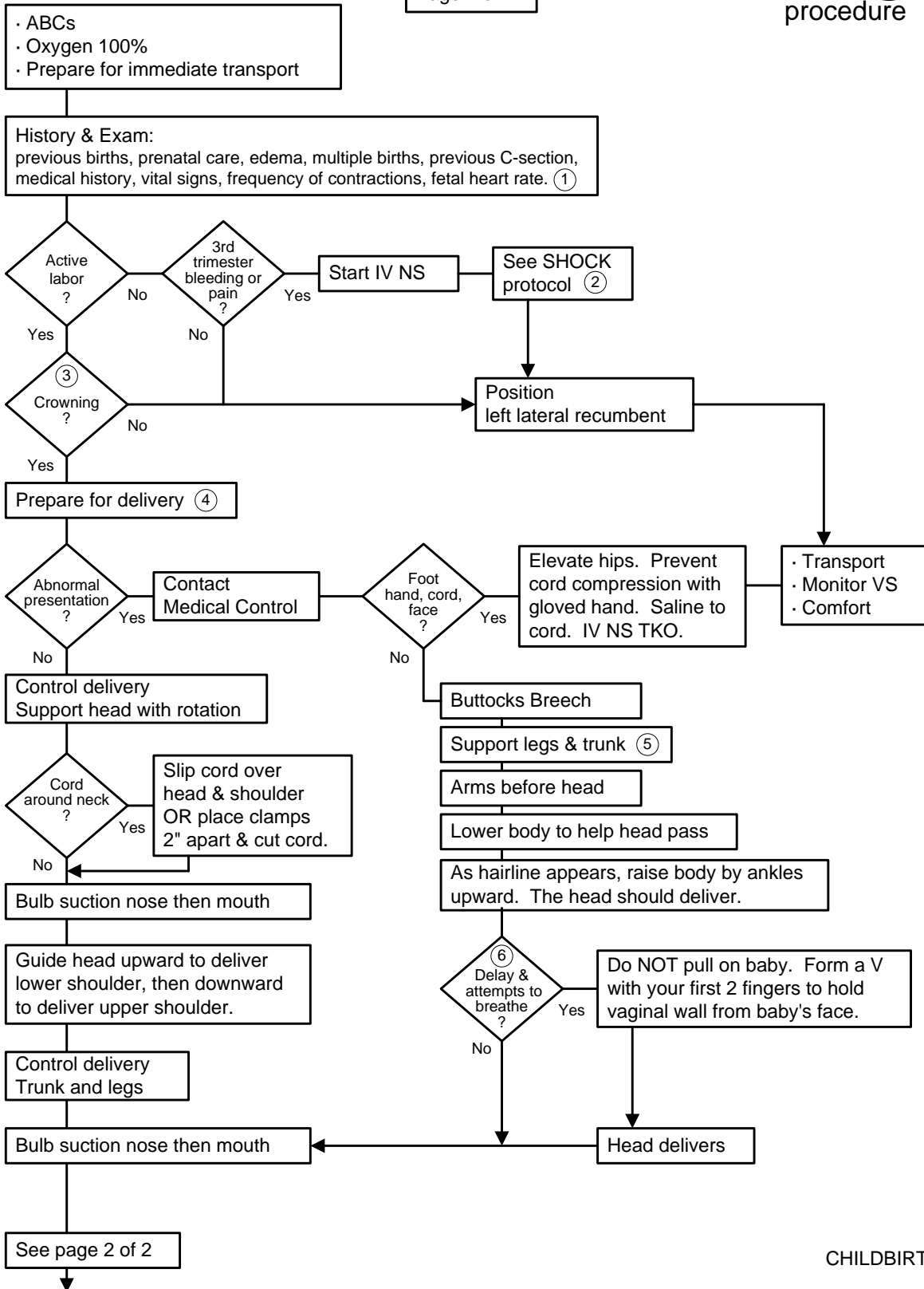
12 Lead

I Lateral	aVR	V1 Septal	V4 Anterior
II Inferior	aVL Lateral	V2 Septal	V5 Lateral
III Inferior	aVF Inferior	V3 Anterior	V6 Lateral

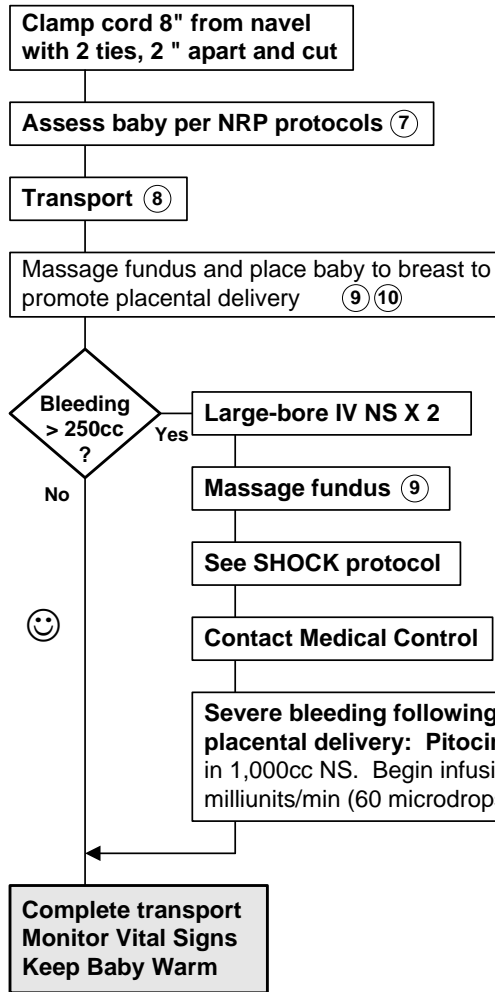
AirLink Arrival on scene:

- Heparin 60U/kg IV bolus x 1 per AirLink crew
- Integrelin 180 ug/kg IV bolus x 2 per AirLink crew
- Transport to SCMC-B
- Notify SCMC-B ED

Childbirth



continued from page two



Apgar Score			
sign	0	1	2
Heart rate	absent	<100	>100
Respiratory effort	absent	slow	good, crying
Muscle tone	limp	some flexion	active
Reflex irritability	no response	grimace	cough/sneeze
Color	blue, pale	body pink	completely pink

- Document:**
- Time of Birth
 - APGAR at 1 Min and 5 Min
 - Time of Placental Delivery
 - Estimated Fluid and Blood Loss
 - Complications if any
 - Care and Supportive Measures
 - Total IV Fluids Infused
 - Oxygen and Other Medications
 - Communication with Medical Control
 - Clinical Assessment and VS

- 1 Normal fetal heart rate = 120-150.
- 2 Do NOT perform a digital exam. Possible placental previa or abruptio placenta.
- 3 Crowning may first appear during a contraction. Look for crowning between and during contractions. NO digital exams. Do NOT allow anyone to perform a digital exam.
- 4 Deliver baby on the scene ONLY if delivery is imminent.
- 5 Do NOT pull on baby.
- 6 If the babies head does not deliver and the baby begins to breath with its face pressed against the vaginal wall, place a gloved hand in the vagina with the palm toward the babies face. Form a "V" with the index and middle finger on either side of the infant's nose and push the vaginal wall away from the infant's face to allow unrestricted respiration.
- 7 Note exact time of birth.
- 8 Keep baby warm. Dry surface, cover head and protect from falls.
- 9 Massage fundus: gentle but firm, intermittent massage.
- 10 Do NOT pull on cord.
- 11 Pitocin is contraindicated in presence of multiple babies.
- 12 Contact Medical Control prior to administration.

References:
 Bledsoe, Bryan: Paramedic Emergency Care. 32:965. 1994
 Caroline, Nancy: Emergency Care in the Streets. 35:775. 1991
 ECEMS, Effective 1/2008
 Copyright 2001-2011 East Cascade Emergency Medical Services

COMBITUBE SA Airway

ALS BLS Protocol

- ABCs
- Oxygen 100%
- Assist Ventilations, prn

Assemble & check equipment

Place the patient's head in a neutral position

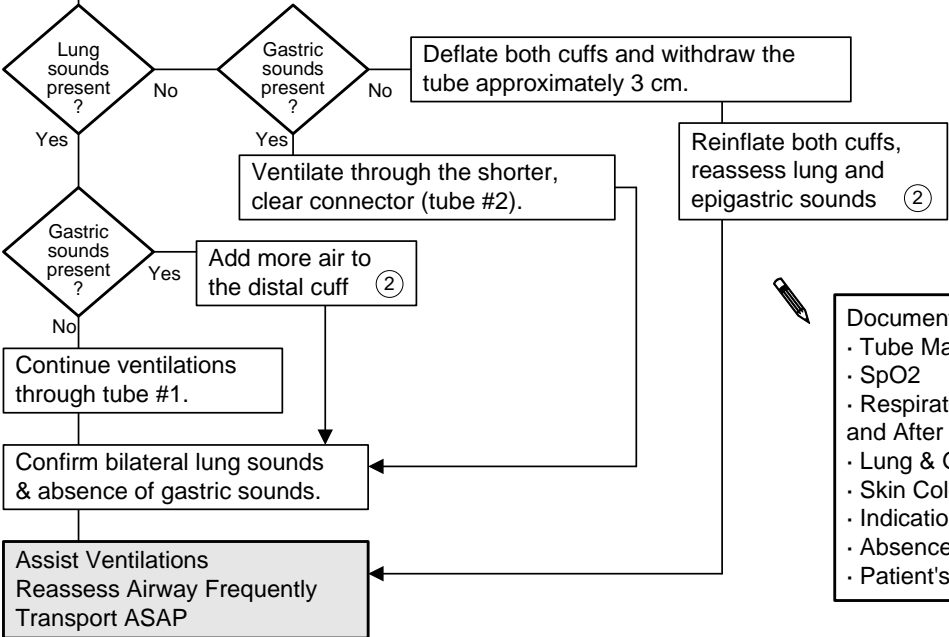
- Jaw-Lift Maneuver
- Insert device to the depth indicated by the markings on the tube. The black rings should be positioned between the patient's teeth.

Once the COMBITUBE SA is in place:
Inflate the pharyngeal cuff with 85 ml of air. ①

Inflate the distal cuff with 5-12 ml of air.

Begin ventilation through the longer, blue connector (tube #1).

Auscultate both lungs and the stomach



- Indications:
- Endotracheal intubation cannot be performed
 - Attempts at endotracheal intubation have been unsuccessful
 - Direct visualization of the larynx is inhibited by profuse bleeding

- Contraindications:
- Less than 4 feet tall
 - Patients with a gag reflex
 - Patients with known esophageal disease or alcoholism (possibility of esophageal varices exists)
 - Patients who have ingested a caustic substance

- Document:
- Tube Markings at Teeth
 - SpO2
 - Respiratory Status Before and After Treatment
 - Lung & Gastric Sounds
 - Skin Color
 - Indications for Use
 - Absence of Gag Reflex
 - Patient's Age, Height

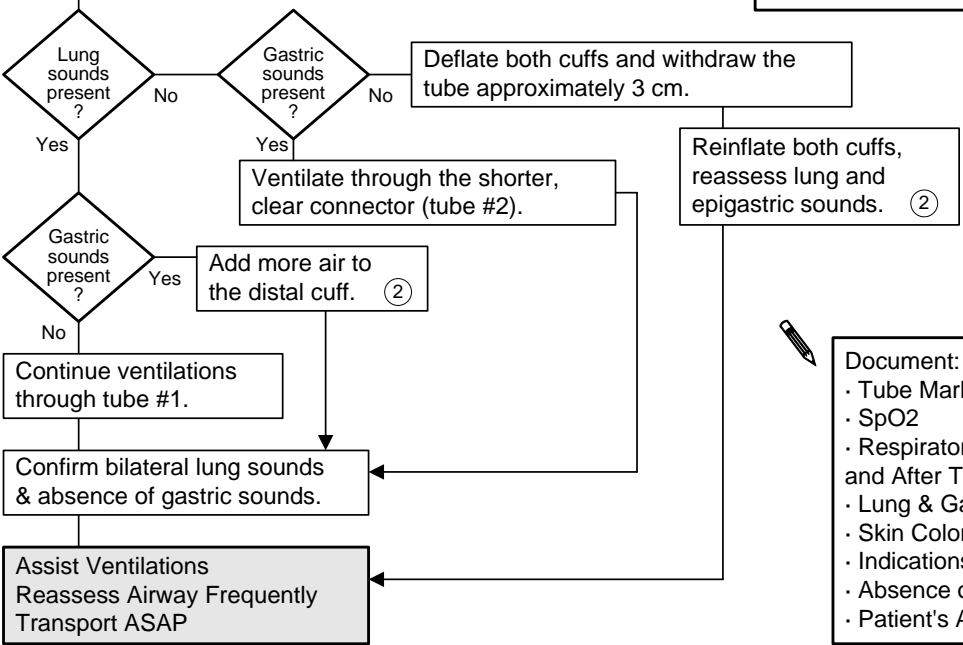
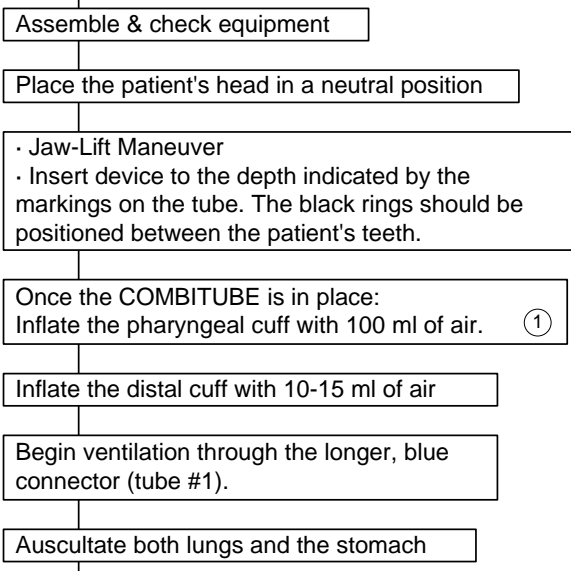
1 This seals the device in the posterior pharynx behind the hard palate. More air may be added to the pharyngeal cuff if an inadequate seal is detected during ventilation.

2 At NO time should the patient's airway or ventilatory status be compromised. If placement is unsuccessful, remove the device and return to oropharyngeal airway and assist via bag-valve-mask.

NOTE: This protocol is ONLY to be used with the Combitube SA and does NOT apply to the STANDARD Combitube.

COMBITUBE Airway
STANDARD Combitube

- ABCs
- Oxygen 100%
- Assist Ventilations, prn



**ALS
BLS
Protocol**

- Indications:
- Endotracheal intubation cannot be performed
 - Attempts at endotracheal intubation have been unsuccessful
 - Direct visualization of the larynx is inhibited by profuse bleeding

- Contraindications:
- Less than 5 feet tall
 - Patients with a gag reflex
 - Patients with known esophageal disease or alcoholism (possibility of esophageal varices exists)
 - Patients who have ingested a caustic substance

- Document:
- Tube Markings at Teeth
 - SpO2
 - Respiratory Status Before and After Treatment
 - Lung & Gastric Sounds
 - Skin Color
 - Indications for Use
 - Absence of Gag Reflex
 - Patient's Age, Height

1 This seals the device in the posterior pharynx behind the hard palate. More air may be added to the pharyngeal cuff if an inadequate seal is detected during ventilation.
2 At NO time should the patient's airway or ventilatory status be compromised. If placement is unsuccessful, remove the device and return to oropharyngeal airway and assist via bag-valve-mask.

NOTE: This protocol is ONLY to be used with the STANDARD Combitube and does NOT apply to the Combitube SA.

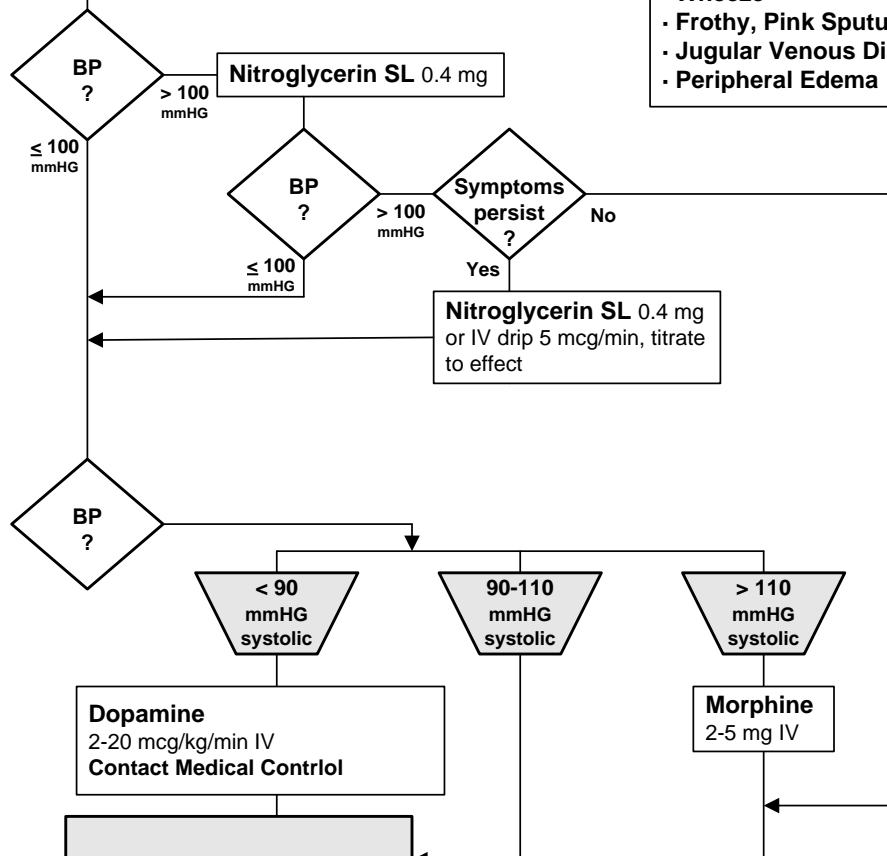
Congestive Heart Failure Pulmonary Edema: Acute

ALS Protocol

- ABCs
- Oxygen
- IV NS TKO
- Monitor Cardiac Rhythm
- Transport ASAP
- Vital Signs
- Consider CPAP (See CPAP Protocol)

Possible Signs & Symptoms:

- Dyspnea
- Rales
- Wheeze
- Frothy, Pink Sputum
- Jugular Venous Distention
- Peripheral Edema



- Observe Closely
- Transport ASAP
- Contact Medical Control if symptoms persist

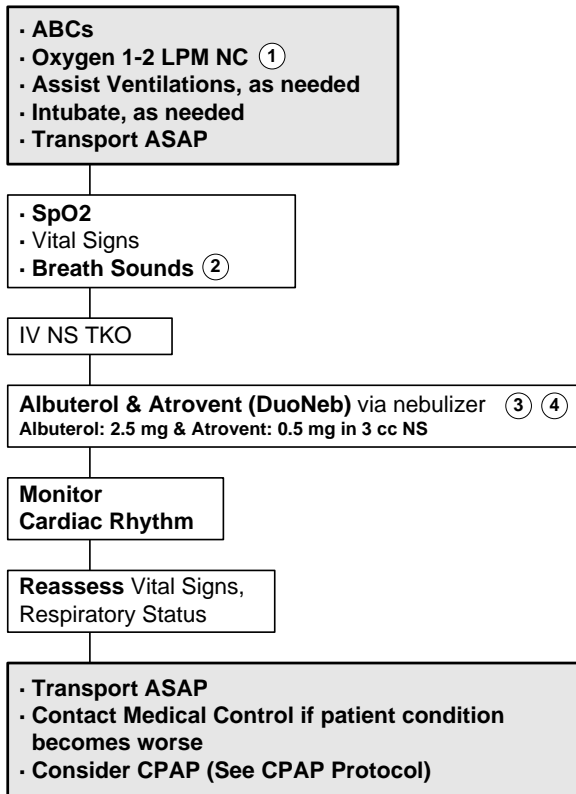
Nitroglycerin is contraindicated if a patient is using phosphodiesterase inhibitors for erectile dysfunction.

Phosphodiesterase inhibitors include: Cialis, Levitra, Viagra, Revatio, sildenafil, tadalafil, danafil, gildanafil.

- ### Document:
- Airway
 - Respiratory Effort
 - Lung Sounds
 - Presence of JVD
 - Cardiac Rhythm
 - SpO2, Vital Signs
 - Glasgow Coma Scale
 - Treatment
 - Clinical Response to Treatment
 - IV Fluid Totals
 - Medical History

COPD with exacerbation

ALS Protocol

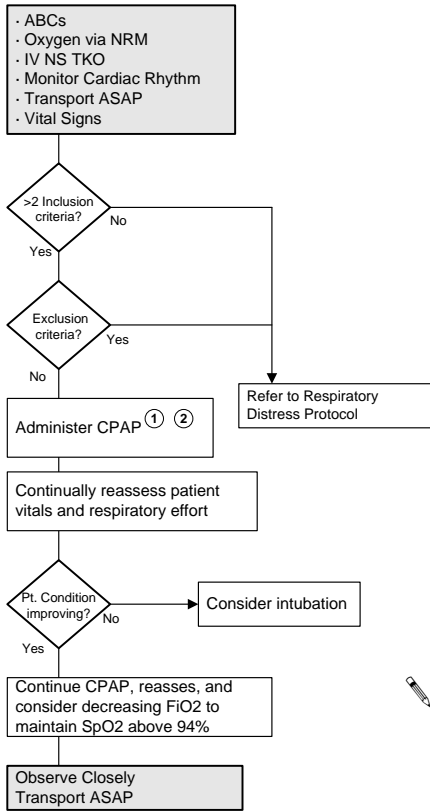


- Document:**
- Breath Sounds
 - SpO2
 - ETCO2 if Intubated
 - Vital Signs
 - Respiratory Status
 - Detailed Assessment
 - Skin Color, Moisture
 - Cardiac Rhythm
 - Glasgow Coma Scale
 - Response to Treatment

1 **Oxygen:** adjust flow rate & route of administration as needed. Consider **hypoxic drive** in COPD and degree of respiratory effort.
2 Be aware that worsened **wheezing in association with underlying COPD** may represent CHF, pneumothorax, and/or underlying infection.
3 **Albuterol & Atrovent (DuoNeb):** Repeat with Albuterol only every 10 minutes. Discontinue use if patient develops chest pain or increased tachycardia.
4 May use MDI (Metered Dose Inhaler) instead of nebulizer.

Continuous Positive Airway Pressure (CPAP)

ALS Protocol



- CPAP Inclusion Criteria**
- Respiratory Distress (plus two or more of the following)
 - Retractions or accessory muscle use
 - Suspected Pulmonary Edema
 - Respiratory rate >25 per minute
 - SpO2 <90%

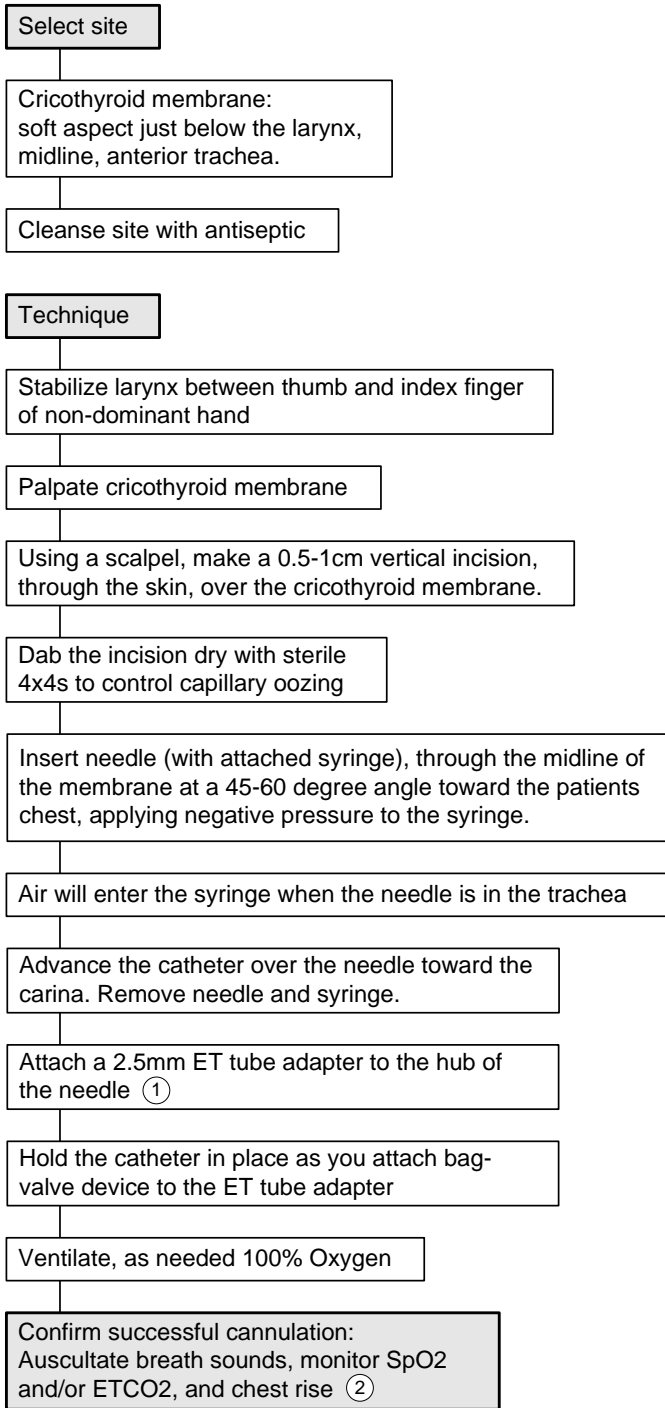
- CPAP Exclusion Criteria**
- Respiratory/ Cardiac Arrest
 - B/P <90 Systolic
 - Unresponsive to verbal
 - Inability to maintain patent airway
 - Major Trauma/ Pneumothorax
 - Vomiting or active GI Bleeding
 - < 8 years old
 - Not for use with trach

- Document:**
- Airway
 - Respiratory Effort
 - Lung Sounds
 - Cardiac Rhythm
 - SpO2, Vital Signs
 - Treatment
 - Clinical Response to Treatment
 - Medical History

1 Use caution during administration as mask may cause patient to feel claustrophobic. Explain procedure to patient.
 2. Start at 2-5 cmH2O. Max 10 cmH2O.

Cricothyrotomy: Needle

ALS procedure



Indications:
Severe facial or nasal injuries, anaphylaxis, chemical inhalation injury or when other means of establishing an airway are not adequate.

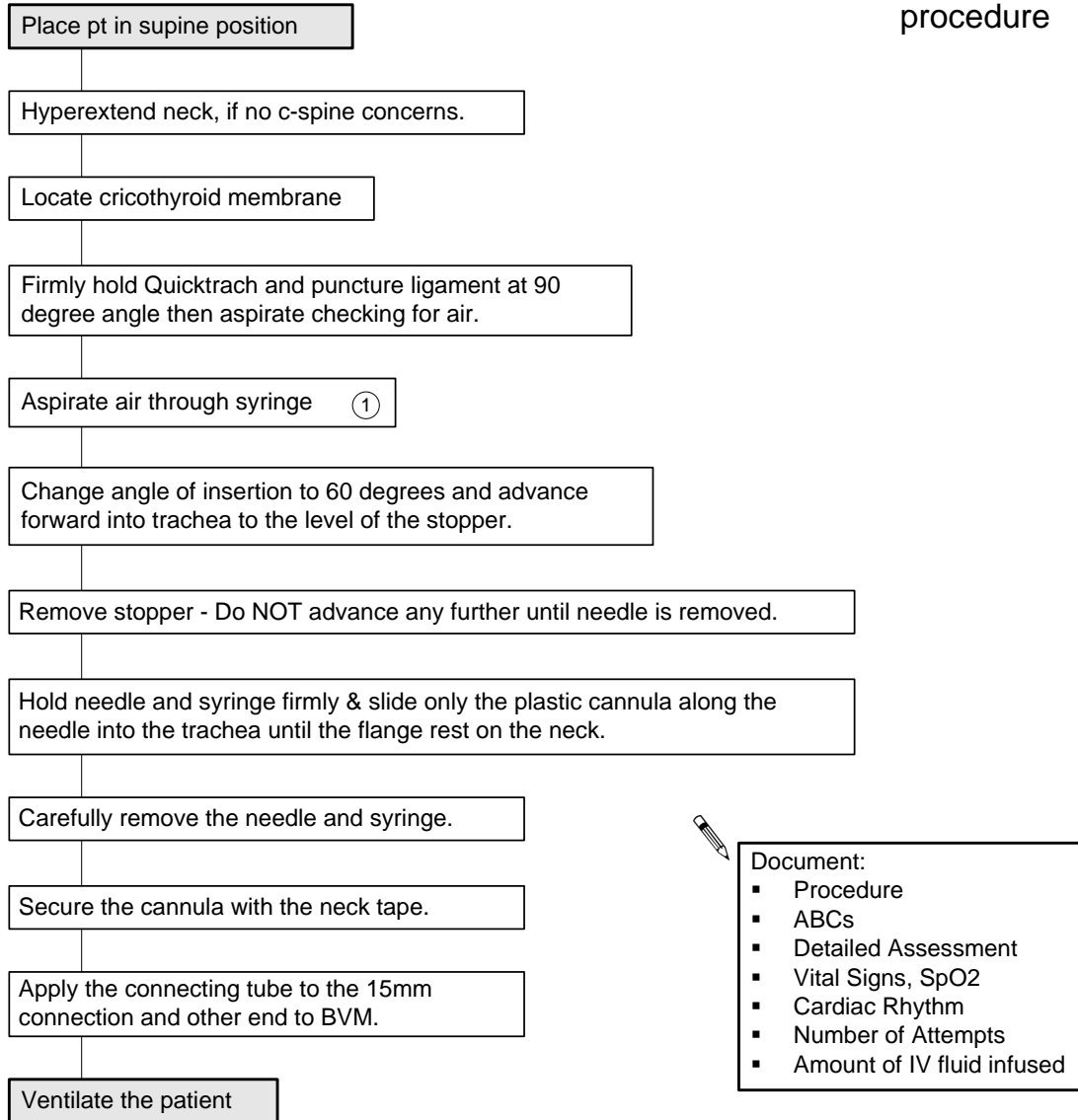
Contraindications:
patients who can be intubated or secured with a combitube

- Items needed:
- Scalpel
 - IV needle/catheter 10-12g
 - Antiseptic solution
 - Sterile gloves
 - Sterile 4x4s
 - Oxygen
 - Bag-valve device
 - 2.5mm ET tube adapter
 - Eye protection
 - Jet Ventilation tubing

1 Transtracheal Jet Ventilation: Optimal ventilation may be achieved by transtracheal jet ventilation. Deliver ventilations at a ratio of 1:4 (1 second of oxygen/jet ventilation, 4 seconds off, to allow passive exhalation). Tubing should be prepared in advanced and attached to an Oxygen source.

2 If the catheter becomes occluded, irrigate the catheter with 2-3 ml of sterile NSaline.

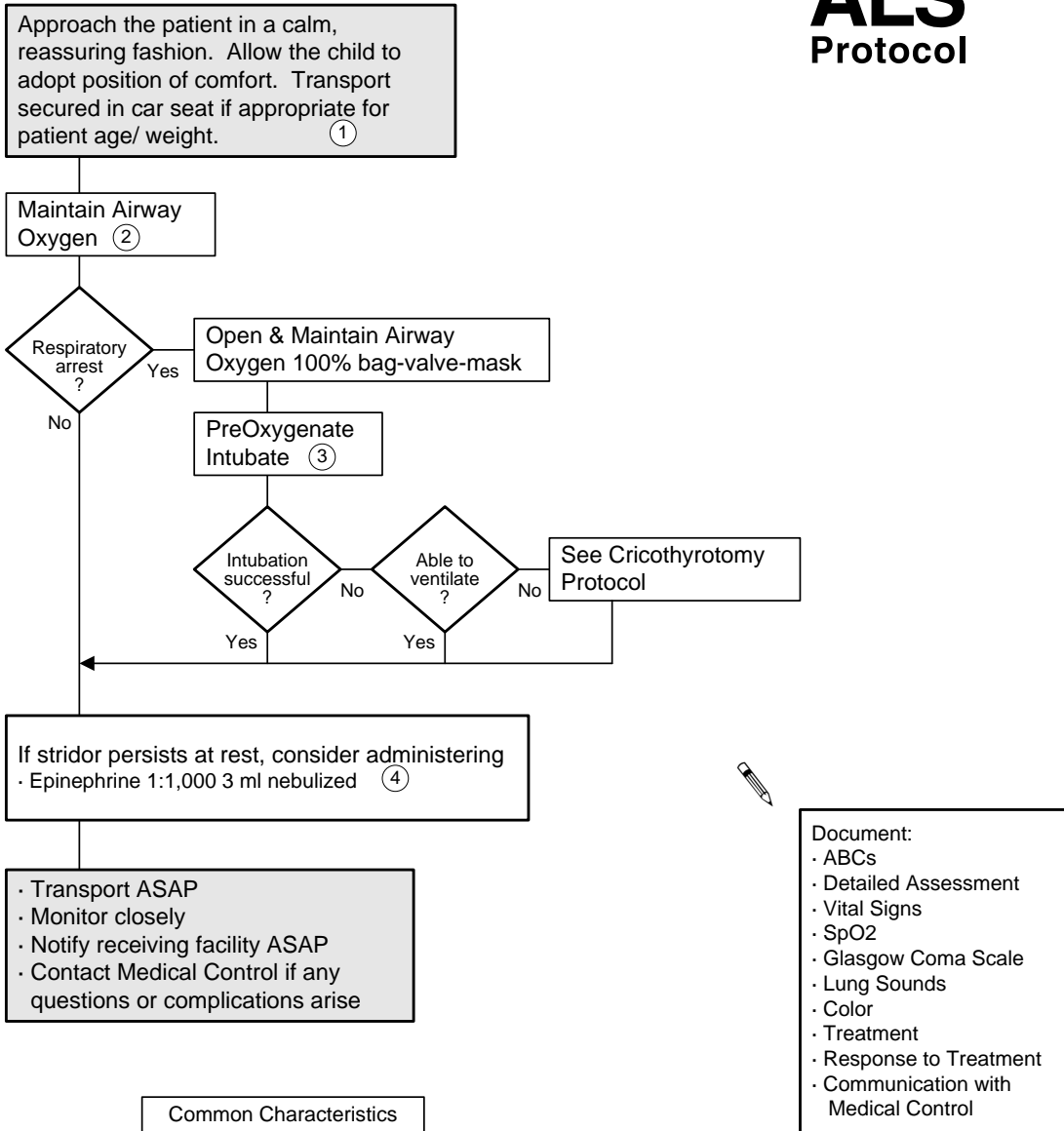
Cricothyrotomy: Quicktrach



1 If aspiration of air is not possible because of an extremely thick neck, you may remove stopper and carefully insert needle further until entrance into the trachea is made.

Croup & Epiglottitis

ALS Protocol



Common Characteristics

Epiglottitis:

- Age usually > 2 years
- Onset rapid
- Signs & Symptoms

Fever, often look sick. Air hunger, nasal flaring, restlessness, drooling, retractions. Wants to sit upright.

Croup:

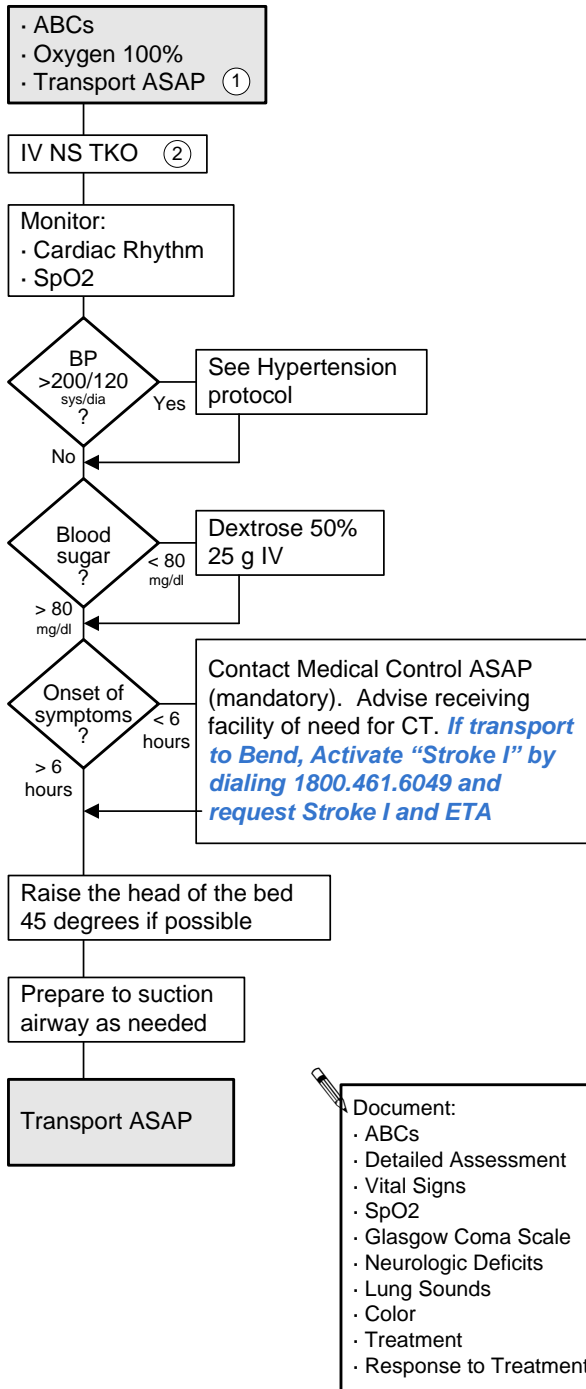
- Age 6 months - 4 years
- Onset gradual
- Signs & Symptoms

Often preceded by an upper respiratory infection. Worse at night. May or may not have a fever. Condition varies from mild to severe.

1 Avoid startling the patient. Anxiety is likely to exacerbate the child's condition.
 2 Consider blow-by Oxygen. Pediatric patients rarely tolerate a mask.
 3 See Rapid Sequence Intubation Protocol as needed.
 4 Can be given as a continuous neb

CVA Stroke
Cerebral Vascular Accident

ALS Protocol



EMS/ED Triage Stroke Screening

I. Stroke Symptoms

1. Sudden numbness or weakness of face, arm, or leg, specifically to one side of body
2. Sudden confusion, trouble speaking or understanding speech
3. Sudden trouble seeing in one or both eyes
4. Sudden trouble walking, dizziness, loss of balance or coordination
5. Sudden severe headache with no known cause

II. FAST Stroke Screen (Face-arm-Speech-Time):

- Facial Droop?
 - Have patient smile or show teeth
 - ✓ Normal: both sides of face move equally
 - ✓ Abnormal: One side of face weak/unequal/movement absent
- Arm Drift?
 - Extend arms, close eyes, palms up
 - ✓ Normal: Both arms move equally or not at all
 - ✓ Abnormal: One arm drifts compared to the other
- Speech?
 - Ask patient to repeat, "Bend is snowy in the Winter"
 - ✓ Normal: Patient uses correct words with no slurring
 - ✓ Abnormal: Patient uses inappropriate or slurred words or mute
- Time?
 - Time of onset is < 6 hrs?
 - Patient last seen normal?

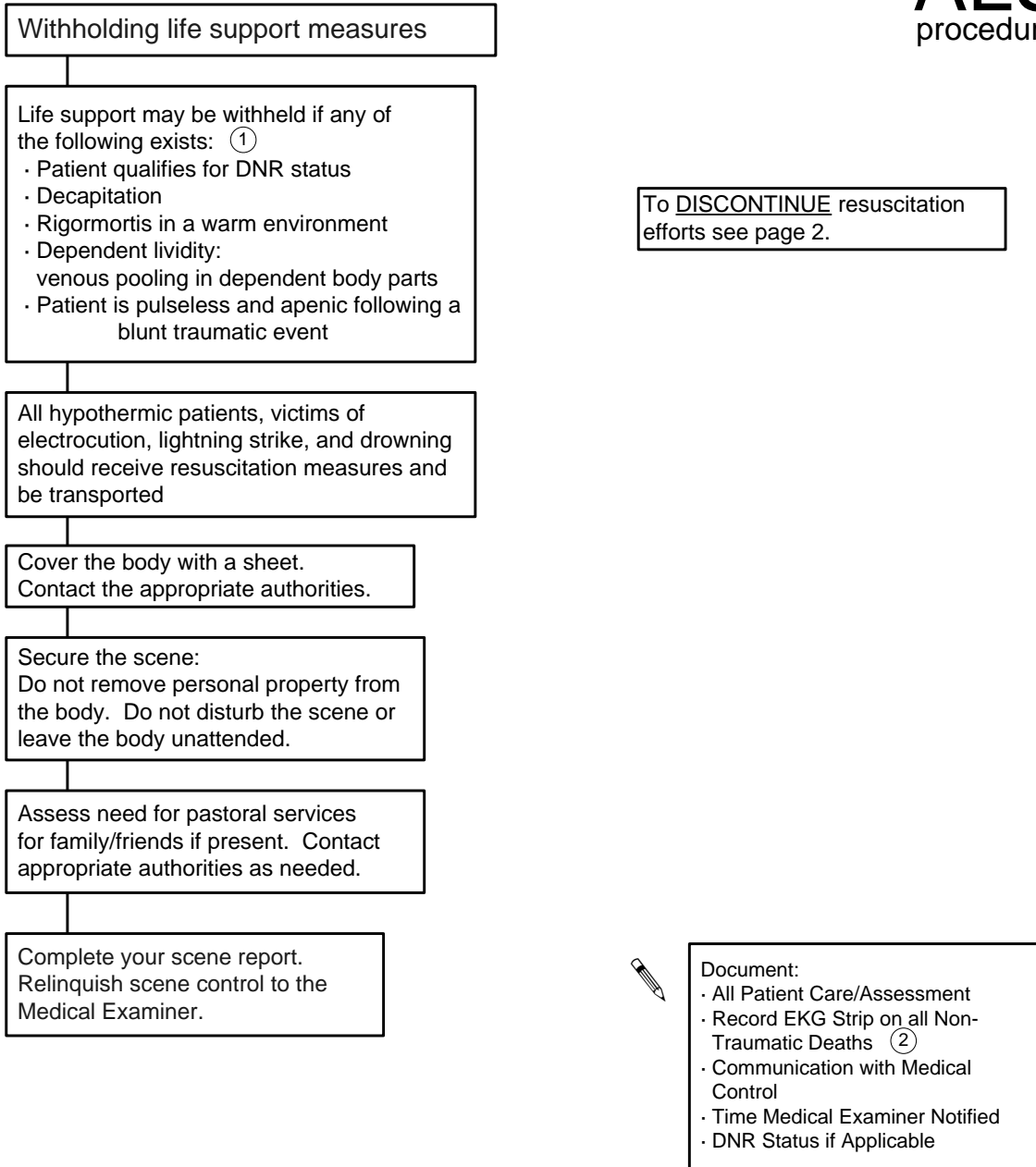
III. If patient has:

1. Any of the 5 stroke symptoms, &/or
2. Any abnormal findings on the FAST screen, &
3. Symptoms < 6 hrs in duration

1 Time in the field must be minimized, consider rapid transport depending on patient presentation.

2 Glucose-containing solutions should be avoided unless hypoglycemia is documented by rapid glucose test.

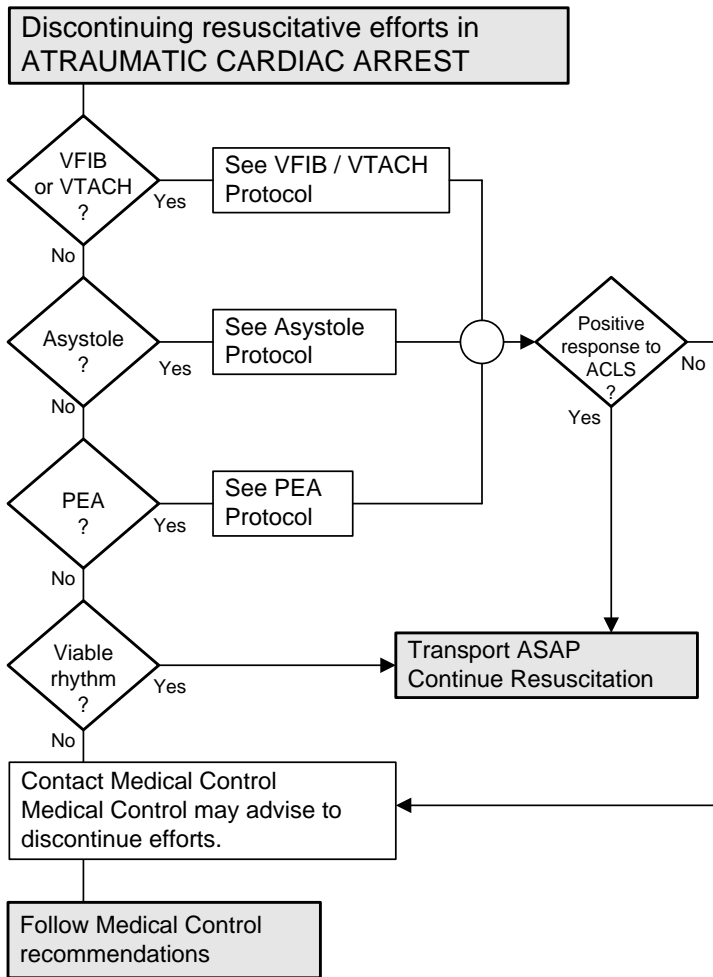
Death in the Field



1 Contact Medical Control
2 Record calibration of cardiac monitor as well as patient rhythm.

Death in the Field

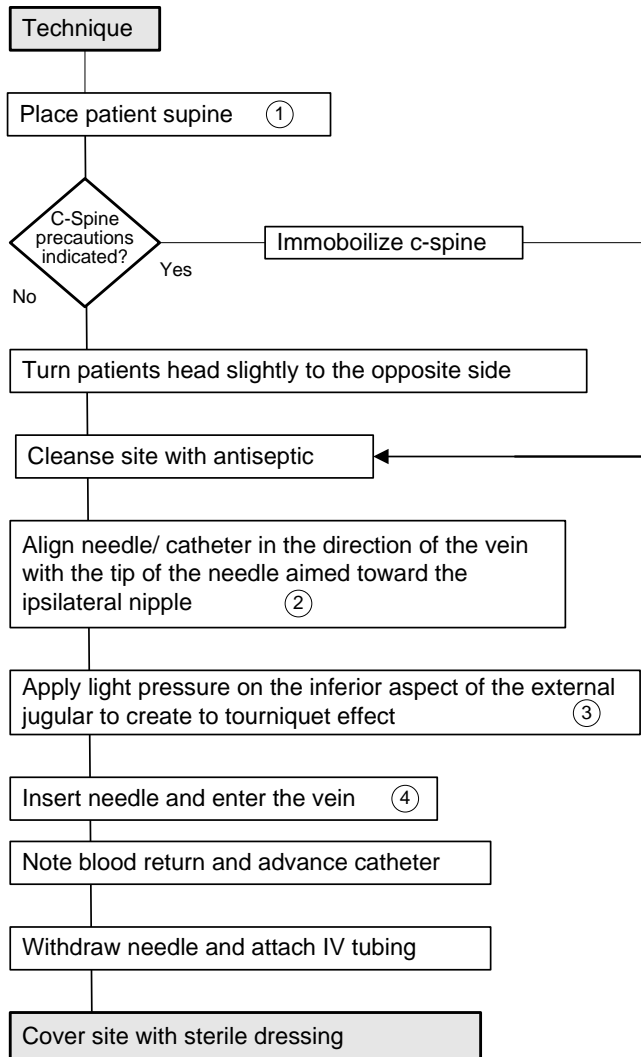
ALS BLS Protocol



Death in the Field
PAGE 2

External Jugular Cannulation

ALS
procedure



- Items needed:
- IV Needle/ catheter
 - IV Fluid
 - IV Tubing
 - Antiseptic
 - Tape
 - Dressing

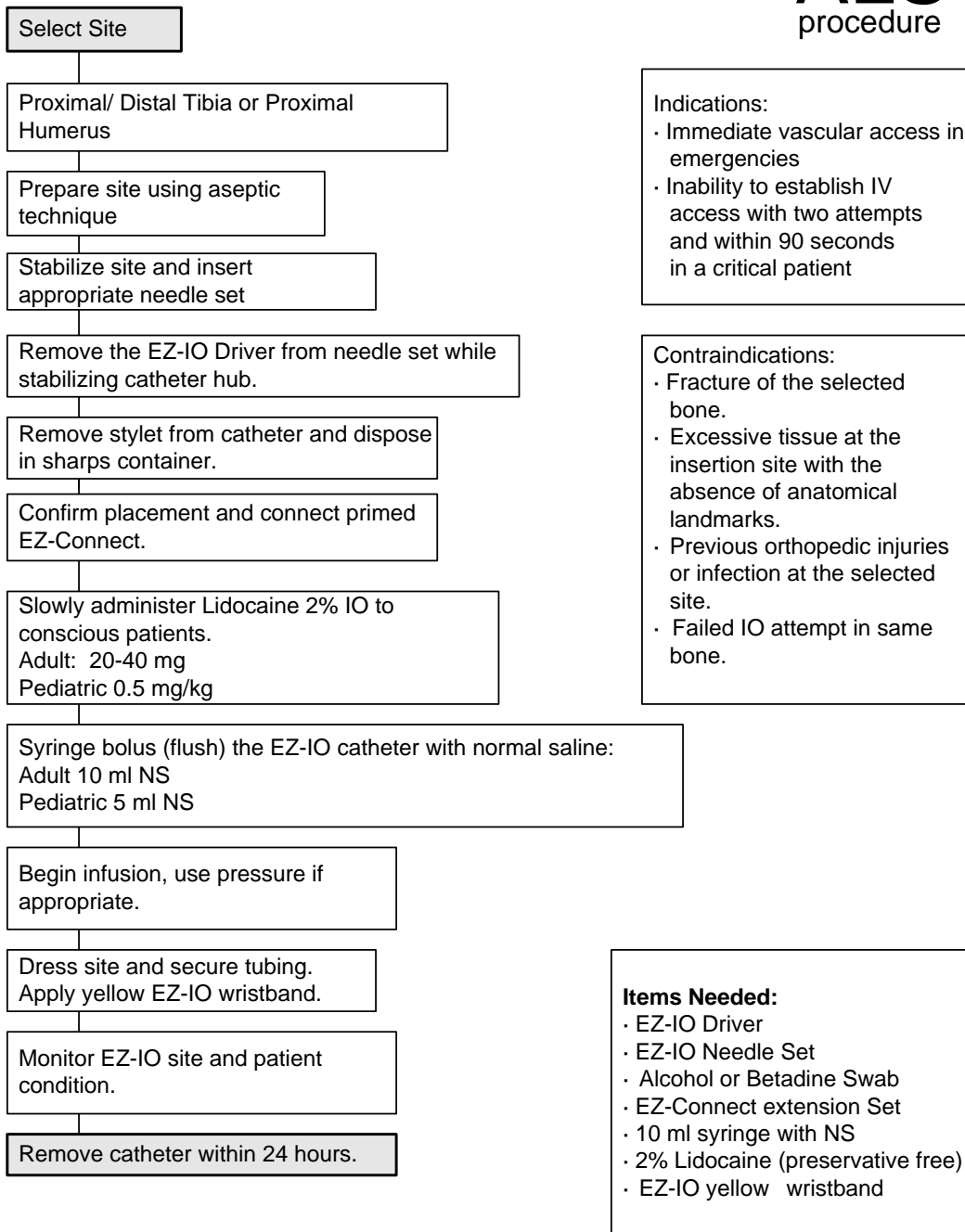


- Document:
- Procedure
 - ABC's
 - Detailed Assessment
 - Vital signs, SpO2
 - Cardiac Rhythm
 - Number of attempts
 - Amount of IV fluid administered.

- 1 Trendelenburg position is an ideal position. This position is not mandatory, yet will help distend the external jugular vein and decrease the likelihood of introducing air into the vein.
- 2 Ipsilateral: "on the same side." If you are cannulating the right external jugular vein the needle should be aimed toward the right nipple.
- 3 Light pressure below the vein will help distend the vein. This is best done by an able assistant.
- 4 Be certain air is not allowed to enter the vein.

Intraosseous Infusion EZ-IO

ALS procedure



Glasgow Coma Scale



Adult & Children

Glasgow Coma Scale		
Eye Opening	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
Best Verbal Response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
	None	1
Best Motor Response	Obeys Commands	6
	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
	Extension	2
	None	1

Infant & Toddler

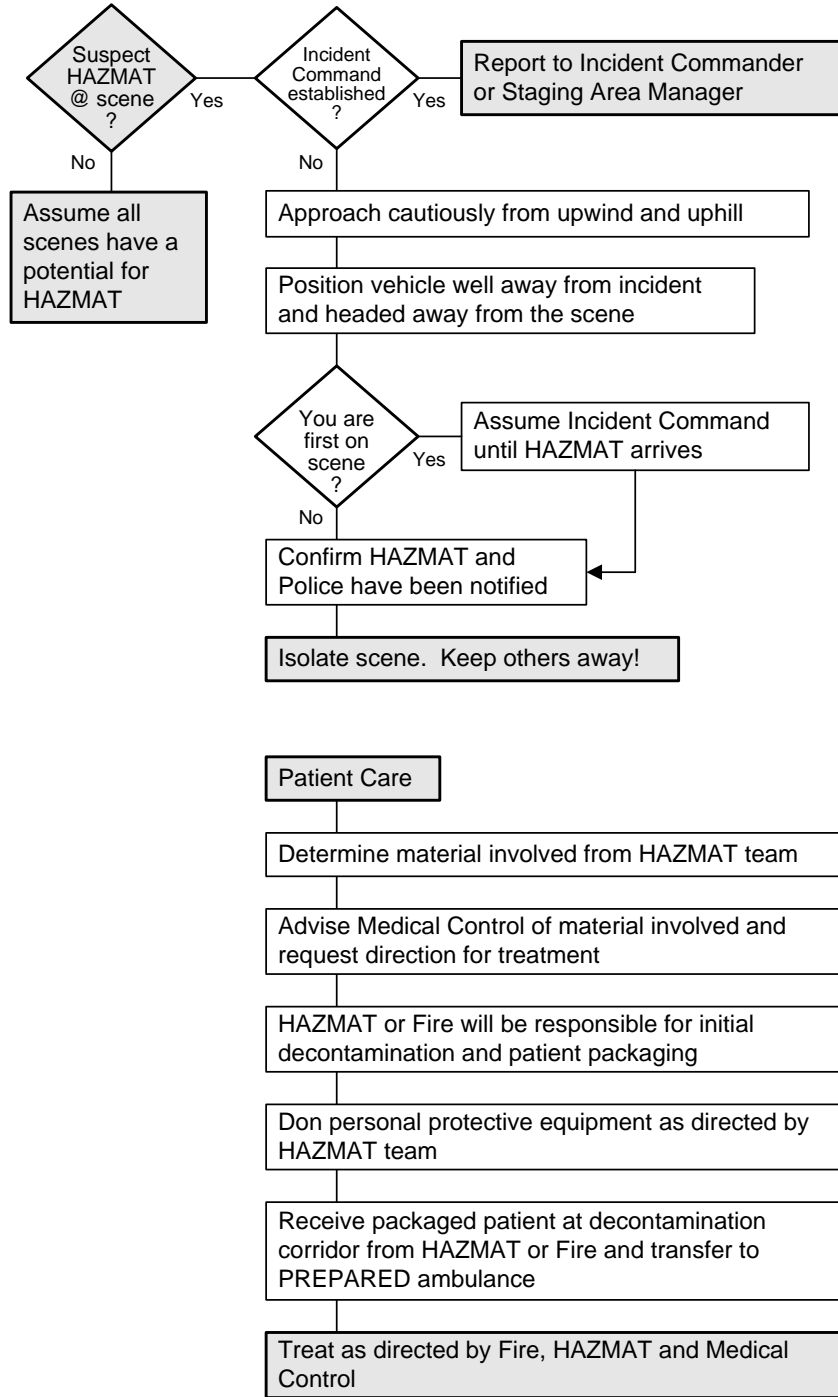
Glasgow Coma Scale		
Eye Opening	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
Best Verbal Response	Smiles, Interacts	5
	Consolable	4
	Cries to Pain	3
	Moans to Pain	2
	None	1
Best Motor Response	Normal Movement	6
	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
	Extension	2
	None	1

Glasgow Coma Scale

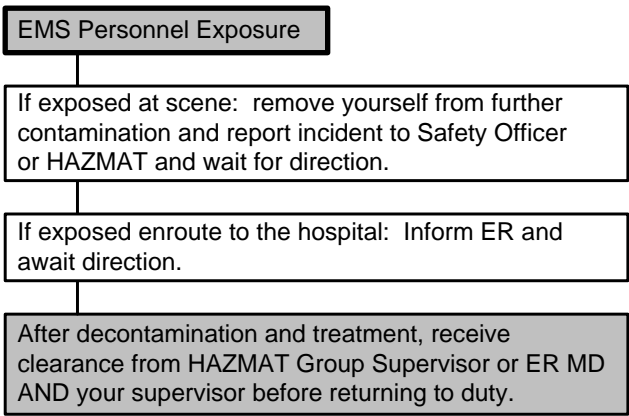
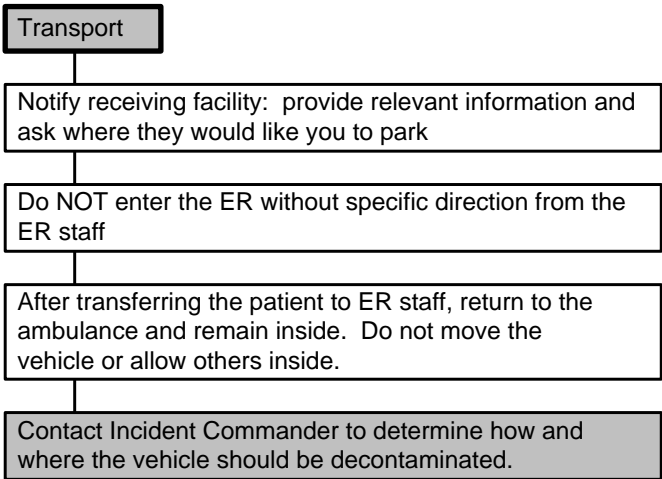
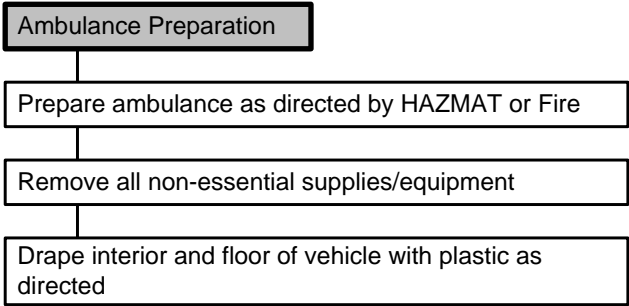
Assess the patient in each category (eye opening, best verbal response, best motor response) and add the scores from each category. Example: if the patient's BEST verbal response is a string of muffled, incomprehensible words give them a 2 for that category. The patient's Glasgow Coma Scale will be the total of all three categories. A Glasgow Coma Scale of 7 indicates coma.


Reassess the patient's score frequently, record each observation and the time it was made.

HAZMAT
For Non-HAZMAT personnel



See page 2 of 2



 Document:

- Patient Care
- Response to Treatment
- Hazardous Material
- Communication with ER, Medical Control, HAZMAT
- Measures Taken to Limit Exposure
- Decontamination

Hypertension
not related to pregnancy

ALS Protocol

· ABC's
· Oxygen 2-4 lpm NC ①
· Transport ASAP

IV NS TKO


Monitor:
SpO2
Cardiac Rhythm
Vital Signs

Consider Nitroglycerine IV 5 mcg/ min ② ③

Supportive care
Reassurance

Notify receiving Facility

Hypertensive Crisis =
Systolic BP \geq 200 mmHG
Diastolic BP \geq 130 mmHG
and symptoms of end organ
compromise, i.e., congestive
heart failure, pulmonary edema,
unstable angina, changes in
mental status, CNS changes,
renal disease.

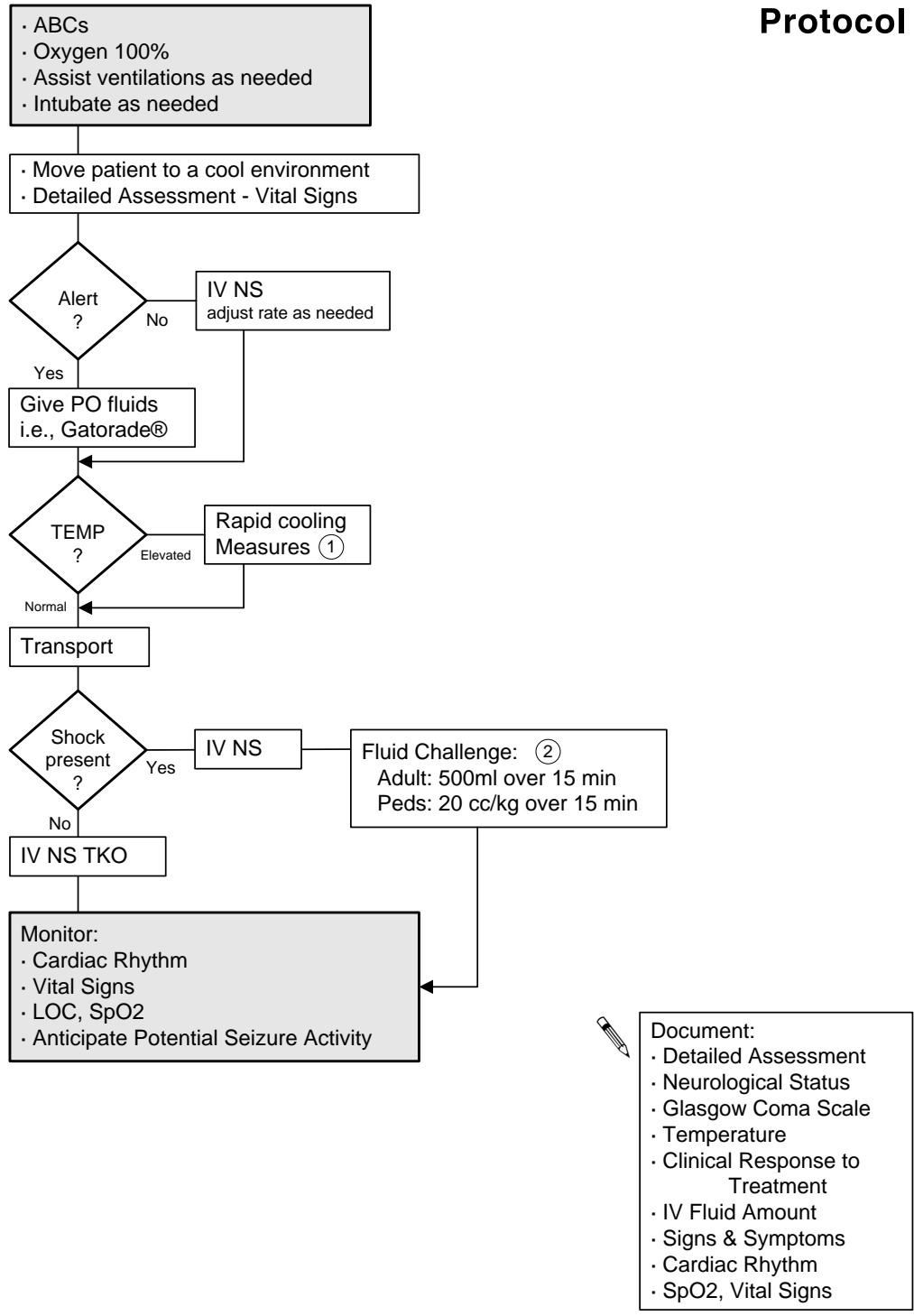
 Document:
· Airway
· Cardiac Rhythm
· Vital Signs, SpO2
· Glasgow Coma Scale
· Treatment
· Communication with
Medical Control

- 1 Adjust oxygen concentration to patient needs. Consider hypoxic drive in COPD.
- 2 The overall goal in pharmacologic therapy is to reduce the patient's blood pressure slowly. Contact Medical Control
- 3 NTG SL 0.4 mg is option if IV NTG unavailable.

Note: If hypertension is associated with head injury or CVA use medications cautiously.

Hyperthermia

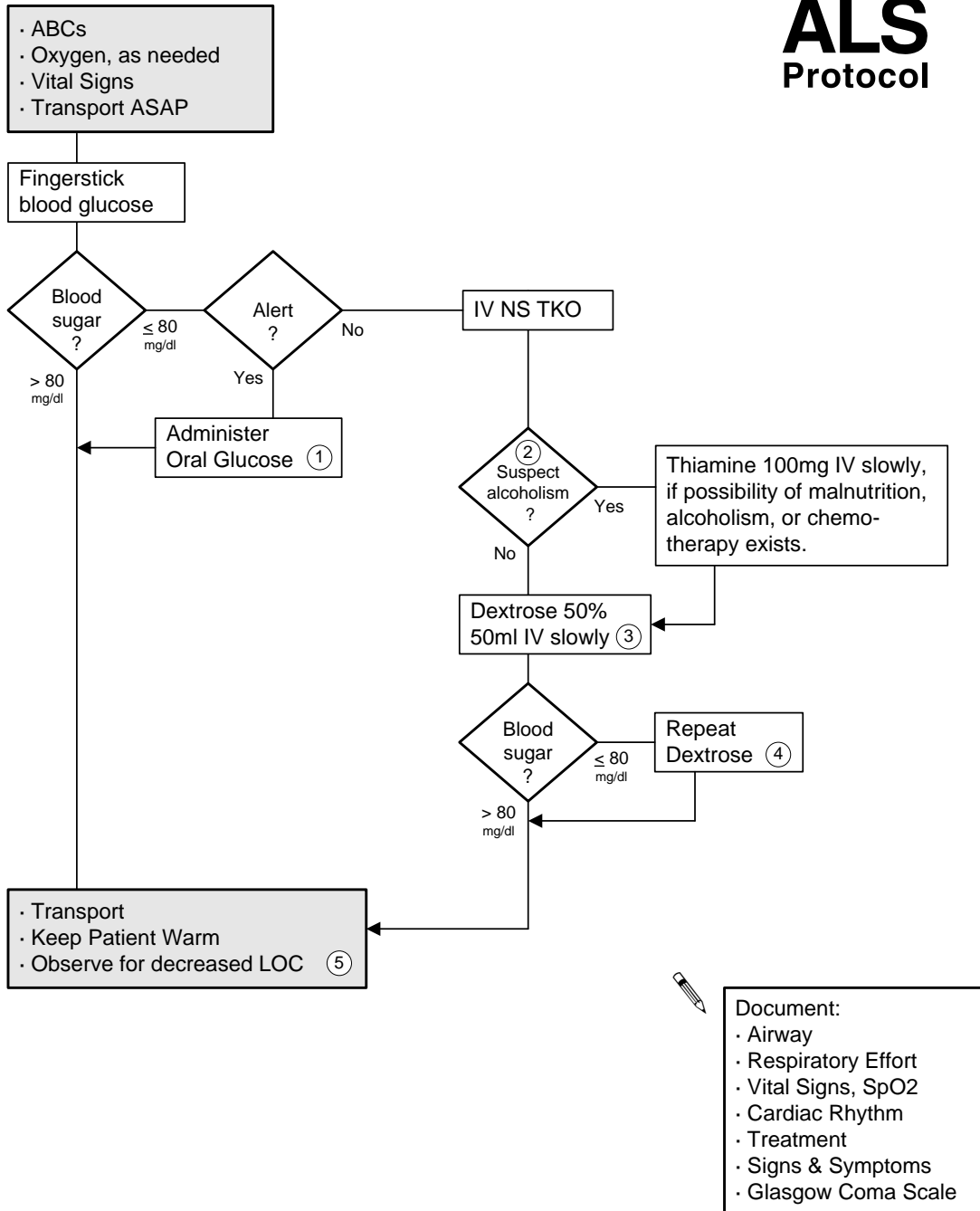
ALS Protocol



1 Fan patient, apply moist dressings. Guard against shivering.
 2 Monitor patient response to IV fluids closely. BP will usually return to normal quickly.
 Administer IV fluids as needed. Do not overload the patient.

Hypoglycemia

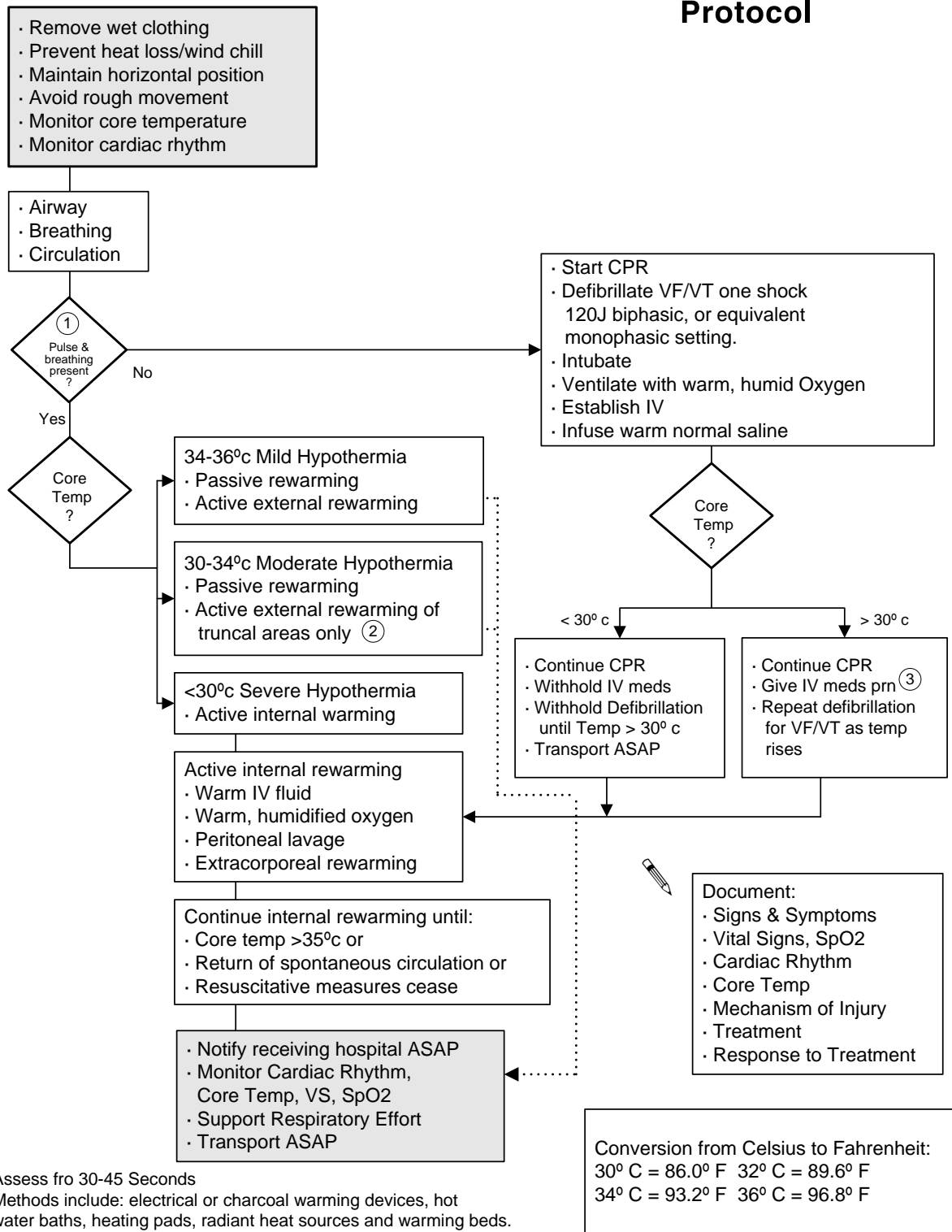
ALS Protocol



- 1 Full glass of sweetened juice or Glucose Oral Paste 12.5g PO. Must have an intact gag reflex.
- 2 Thiamine is indicated in acute alcoholism, malnutrition, and in chemotherapy therapy.
- 3 Dextrose pediatric dose is 0.25 - 5 gm/kg IV (use 25% solution)
- 4 If unable to gain IV access consider Glucagon 1 mg IM.
- 5 Observe for decreased LOC, focal neurological findings, and hypothermia.

Hypothermia

ALS Protocol



- 1 Assess for 30-45 Seconds
- 2 Methods include: electrical or charcoal warming devices, hot water baths, heating pads, radiant heat sources and warming beds.
- 3 Give IV medications at longer than standard intervals.

Conversion from Celsius to Fahrenheit:
 30° C = 86.0° F 32° C = 89.6° F
 34° C = 93.2° F 36° C = 96.8° F

Induced Hypothermia

Following post-resuscitation from sudden cardiac arrest

ALS Protocol

- **Indications**
 - ROSC > 5 min post cardiac arrest
 - Unconscious, GCS 3
 - Systolic BP \geq 100 mmHg (may use vasopressors to maintain)
- **Contraindications**
 - < 18 y/o
 - Traumatic cardiac arrest or significant hemorrhage
 - Hypothermia already present
 - Pulmonary Edema
 - Known pregnancy
 - Refractory or recurrent VF/VT, 2nd or 3rd heart blocks

- SpO₂
- ETCO₂
- Vital Signs
- Obtain Medical History

Procedure

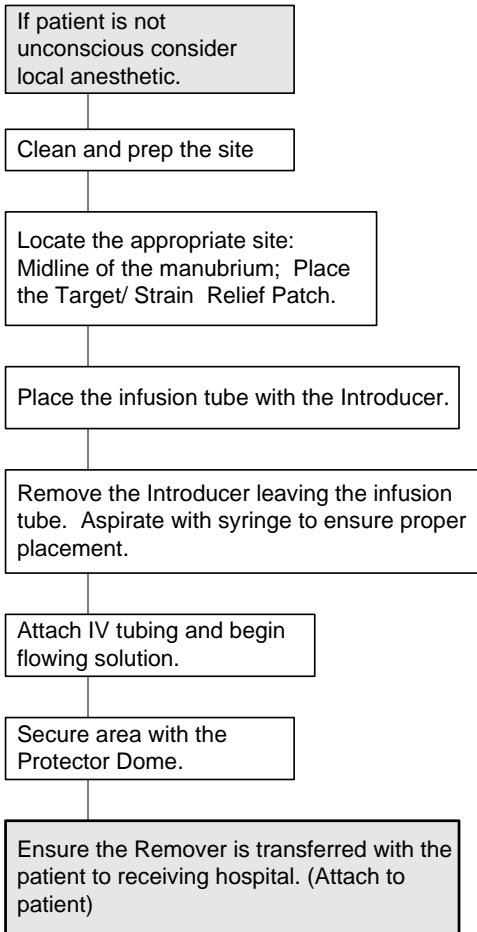
- Remove patient's clothing (undergarments may remain)
- Obtain 12 Lead ECG; if STEMI transport to SCMC-B Cath Lab.
- Begin cooling process with chemical ice packs applied to groin and axilla (wet towels may be used along with ice packs)
- If feasible, establish a large-bore IV. Using high pressure bag or other method, rapidly infuse up to 2 L of chilled (39 °F) NS
- Do not administer medications at the same time through the same IV line as the chilled saline
- If patient begins to shiver, move, or have increased level of consciousness
 - Administer **5.0 mg Midazolam** IV/IO. May repeat to a Max of 10.0 mg as long as systolic BP is \geq 100 mmHg
 - If patient continues to shiver, and is intubated, consider administering **0.1 mg/kg Vecuronium**
- Transport to closest facility capable of continuing induced hypothermia



- Document:**
- ABCs
 - Medical History
 - Time of Onset of Signs & Symptoms
 - Cardiac Rhythm
 - Quality of Pulses
 - SpO₂, VS
 - Glasgow Coma Scale
 - Treatments/Meds administered
 - Lung Sounds
 - Response to Treatment

Adult Intraosseous Infusion F.A.S.T.1

ALS procedure




Indications:

- All IV access attempts have failed.
- Circulatory shock, drug overdose, severe hemorrhage, multi-systems trauma, or serious burns.
- Without IO access in critical situations, the alternative may be death.

Items needed:

- Introducer
- Infusion Tube
- Target/ Strain - Relief Patch
- Protector Dome
- Remover
- IV Solution with Tubing

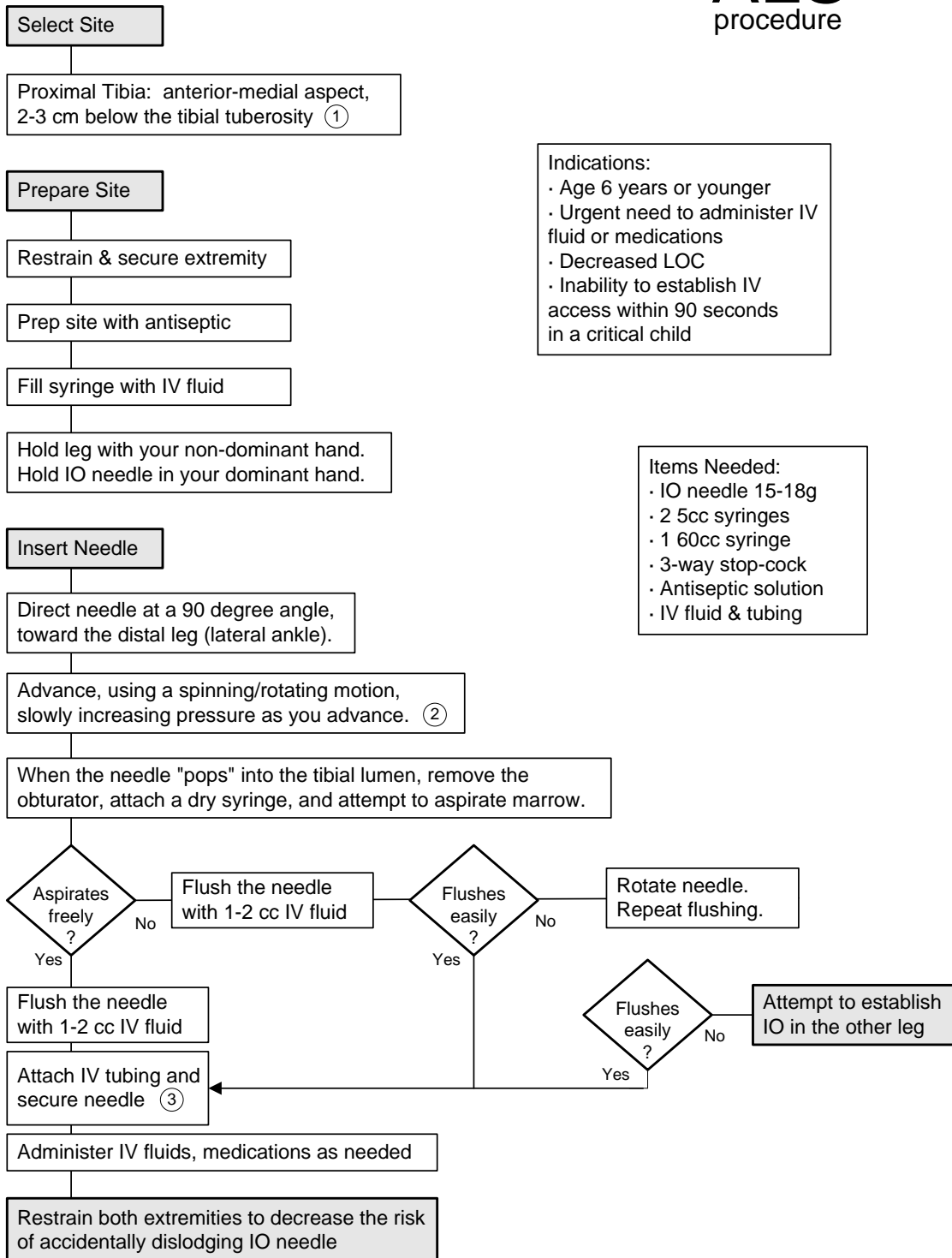


Document:

- ABCs
- Detailed Assessment
- Vital Signs
- SpO2
- Glasgow Coma Scale
- Time of IO insertion

Intraosseous Infusion: Pediatric

ALS procedure



1 Alternate site: distal tibia; anterior-medial aspect, 2-3 cm proximal to the medial malleolus.

2 Avoid a rocking motion!

3 Use a 3-way stop-cock and a 60 cc syringe to administer IV fluid via boluses.

Intubation: Nasotracheal

- ABCs
- Oxygen 100%
- Assist Ventilations, prn
- Transport ASAP

Preparation

Choose ET tube 1 mm smaller than optimal for orotracheal intubation

Inspect suction, laryngoscope, test inflate ETT cuff, lubricate tube

PreOxygenate patient with 100% Oxygen

Monitor SpO2

Determine which nare is clearest

Spray Neo-Syneprine spray into naris

Anesthetize naris with Lidocaine jelly 2%

Technique

Anytime the patient goes 30 seconds without ventilation, stop the procedure and hyperventilate for 30-60 seconds before intubation is re-attempted.

Insert & advance ET tube along nasal floor

If impassable, try the other naris

The curve of the tube should follow the curvature of the anatomy

Gently advance the ET tube while rotating it medially 15-30 degrees until maximal air flow is heard through the tube

Swiftly advance ET tube during inhalation

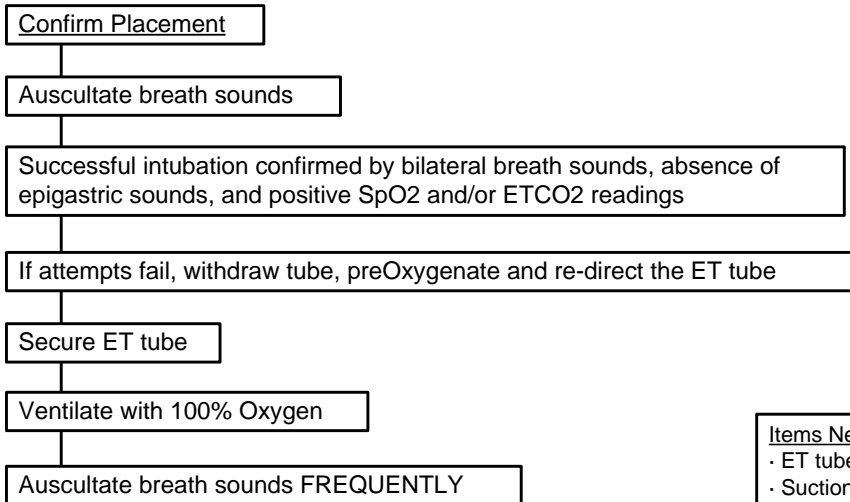
Inflate cuff with 5-8 cc of air

See page 2 of 2

Indications:
When definitive airway control is required, the patient has spontaneous ventilations and laryngoscopy is difficult.



ALS procedure



Items Needed :

- ET tubes
- Suction
- Oxygen source
- Bag-valve-mask
- Stethoscope
- Syringe, 10 cc
- Lubricant, water soluble
- SpO₂ monitor
- Gloves, eye shield
- Lidocaine jelly 2%
- Neo-Syneprine spray
- Tape



Document:

- ABCs
- Detailed Assessment
- Vital Signs
- SpO₂, ETCO₂
- Glasgow Coma Scale
- Lung Sounds
- Absence of Epigastric sounds
- Methods Used to Verify ET Tube Placement
- Chest Rise
- Condensation Present?
- Secured at (Marking)
- Skin Color
- Naris Used
- Medications Used
- Communication with Medical Control if any

Intubation: Orotracheal

ALS procedure

- ABCs
- Oxygen 100%
- Assist Ventilations, prn
- Transport ASAP

Preparation

Position yourself at the patient's head

Inspect suction, laryngoscope, test inflate ETT cuff

PreOxygenate patient with 100% Oxygen

Monitor SpO2

Indications:
When the patient is unable to protect their airway, i.e., coma, respiratory or cardiac arrest, or when prolonged ventilation is needed.

Technique

Anytime the patient goes 30 seconds without ventilation, stop the procedure and hyperventilate for 30-60 seconds before intubation is re-attempted.

Place patient in sniffing position ①

Inspect oropharynx for secretions, foreign bodies, dentures ②

Suction as needed

Hold laryngoscope in left hand

Open the patient's mouth with fingers of your right hand

Gently insert laryngoscope blade in the right side of the mouth

Move the blade toward midline, displacing the tongue to the left

Curved blade: advance blade tip into the vallecula

Straight blade: advance the blade tip under the epiglottis

Gentle upward traction will expose the glottic opening ③ ④

Advance ET tube through the right side of the mouth and through the vocal cords ⑤

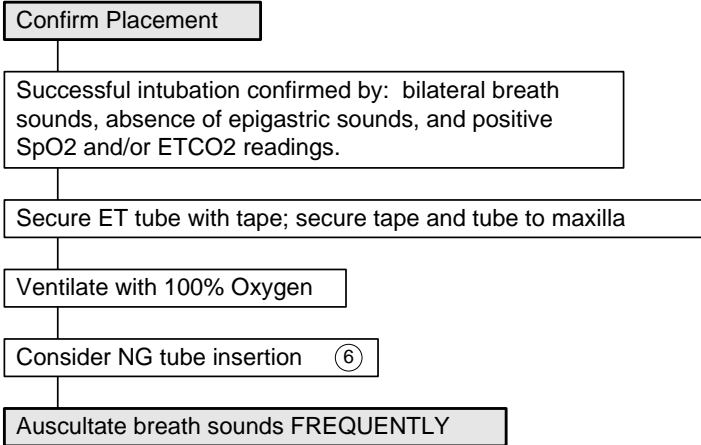
Inflate cuff with 5-8 cc of air

Note depth markings of ET tube

See page 2 of 2

INTUBATION:
OROTRACHEAL

ALS procedure



- Items Needed:
- Laryngoscope
 - Various blades
 - ET tubes
 - Suction
 - Oxygen source
 - Bag-valve-mask
 - Stethoscope
 - Stylet
 - Syringe, 10 cc
 - Lubricant, water soluble
 - SpO2 monitor
 - Gloves, eye shield
 - NG tube
 - Tape



- Document:
- ABCs
 - Detailed Assessment
 - Vital Signs
 - SpO2, ETCO2
 - Glasgow Coma Scale
 - Lung Sounds
 - Absence of Epigastric Sounds
 - Methods Used to Verify ET Tube Placement
 - Condensation Present?
 - Chest Rise
 - Secured at (Marking)
 - Skin Color
 - Medications used
 - Communication with Medical Control if any

- 1 Maintain strict c-spine precautions if potential for c-spine injury exists.
- 2 Remove dentures.
- 3 Avoid applying pressure on teeth or lips.
- 4 Never use a prying motion. Do not use the teeth as a fulcrum!
- 5 Advance the ET tube: ensure the tube cuff is 1 to 2.5 cm below the vocal cords (on an adult).
- 6 Use oral route instead of nasal insertion if facial or head injury exists.

King Airway LT(S)-D

ALS BLS Protocol

- ABCs
- Oxygen 100%
- Assist Ventilations, prn
- Transport ASAP

- Indications:**
- Endotracheal intubation cannot be performed
 - Attempts at endotracheal intubation have been unsuccessful
- Contraindications:**
- Responsive patients with an intact gag reflex
 - Patients with known esophageal disease
 - Patients who have ingested caustic substances

Preparation

Choose the correct size LT(S)-D:

<u>Patient Height</u>	<u>King LT-D</u>	<u>Inflation</u>	<u>King LTS-D</u>
35-45 inches	Size 2 (Green)	Inflation: 25-35ml	n/a
41-51 inches	Size 2.5 (Orange)	Inflation: 30-40ml	n/a
4-5 feet	Size 3 (Yellow)	Inflation: 45-60ml	Size 3 Inflation: 40-55ml
5-6 feet	Size 4 (Red)	Inflation: 60-80ml	Size 4 Inflation: 50-70ml
> 6 feet	Size 5 (Purple)	Inflation: 70-90ml	Size 5 Inflation: 60-80ml

Test cuff inflation system, remove air from cuff prior to insertion

Apply water-based lubricant to the beveled distal tip and posterior aspect of the tube

Technique

Hold the King LT(S)-D at the connector with dominant hand. With non-dominant hand, open mouth and apply chin lift, unless contraindicated by C-spine precautions or patient position. Using a lateral approach, introduce tip into corner of mouth

Advance the tip behind the base of tongue, while rotating tube back to midline so that the blue orientation line faces chin of patient

Without exerting excessive force, advance tube until base of connector is aligned with teeth or gums

Inflate cuff with appropriate volume of air as indicated by the color code on the syringe

Begin ventilation with 100% oxygen, while bagging patient to assess ventilation, withdraw the LT(S)-D until ventilation is easy and free flowing

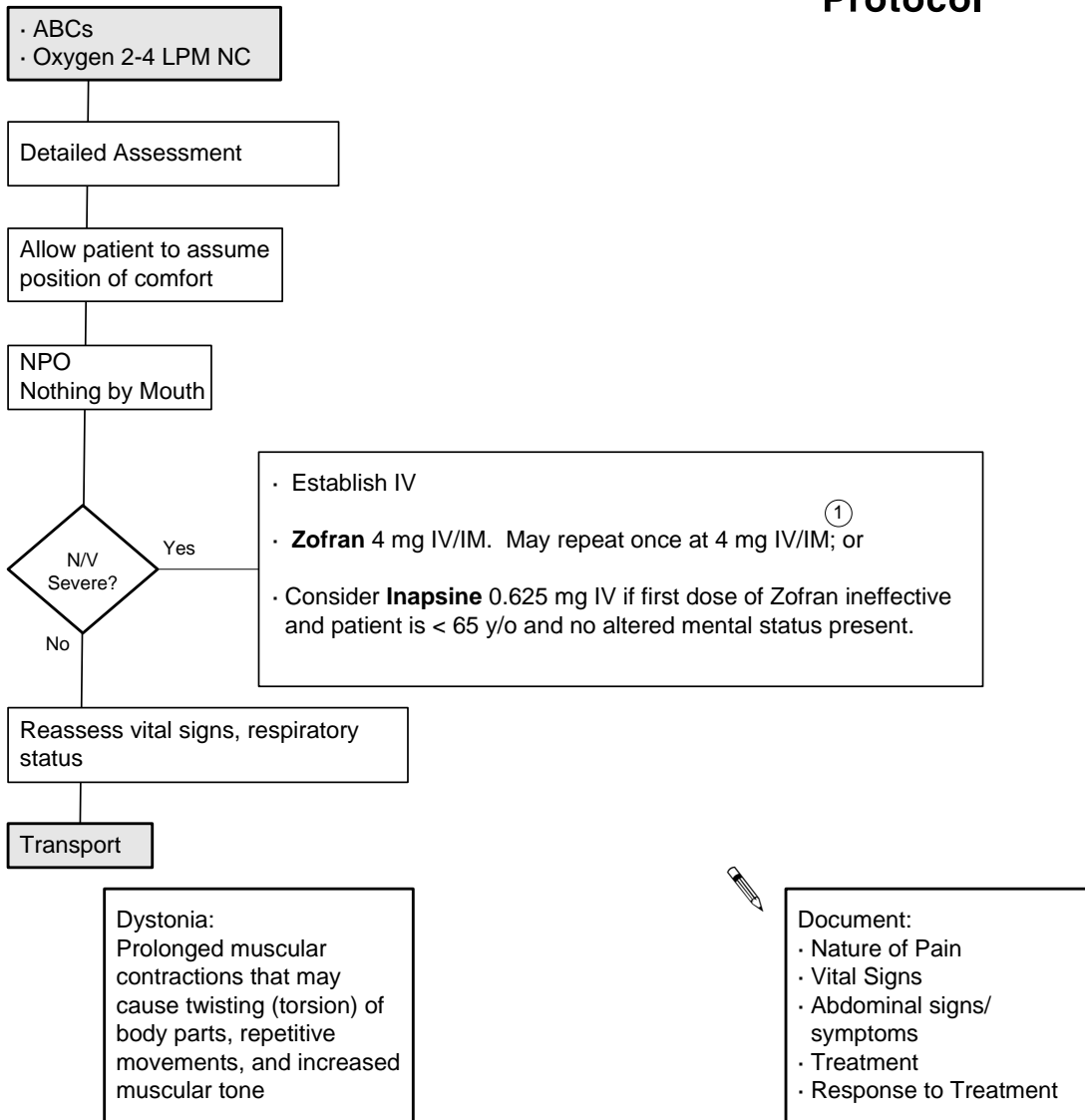
If necessary, add additional volume to cuffs to maximize seal of the airway

Confirm proper placement by auscultation, chest movement, oxygen saturation, and verification of CO2 by capnography.

Assist Ventilations
Reassess Airway Frequently

Nausea/ Vomiting:

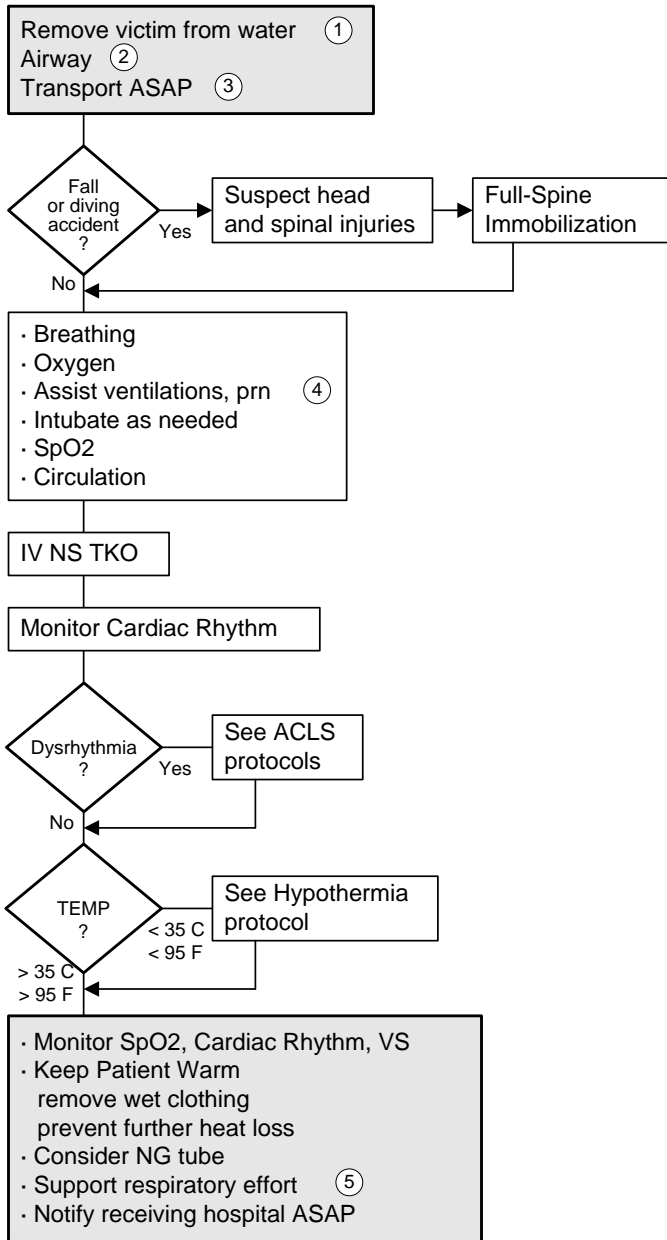
ALS Protocol



1 Be prepared for dystonic reactions, if pt. shows signs/ symptoms administer Benadryl 25 mg. See information box above.

Near Drowning

ALS Protocol

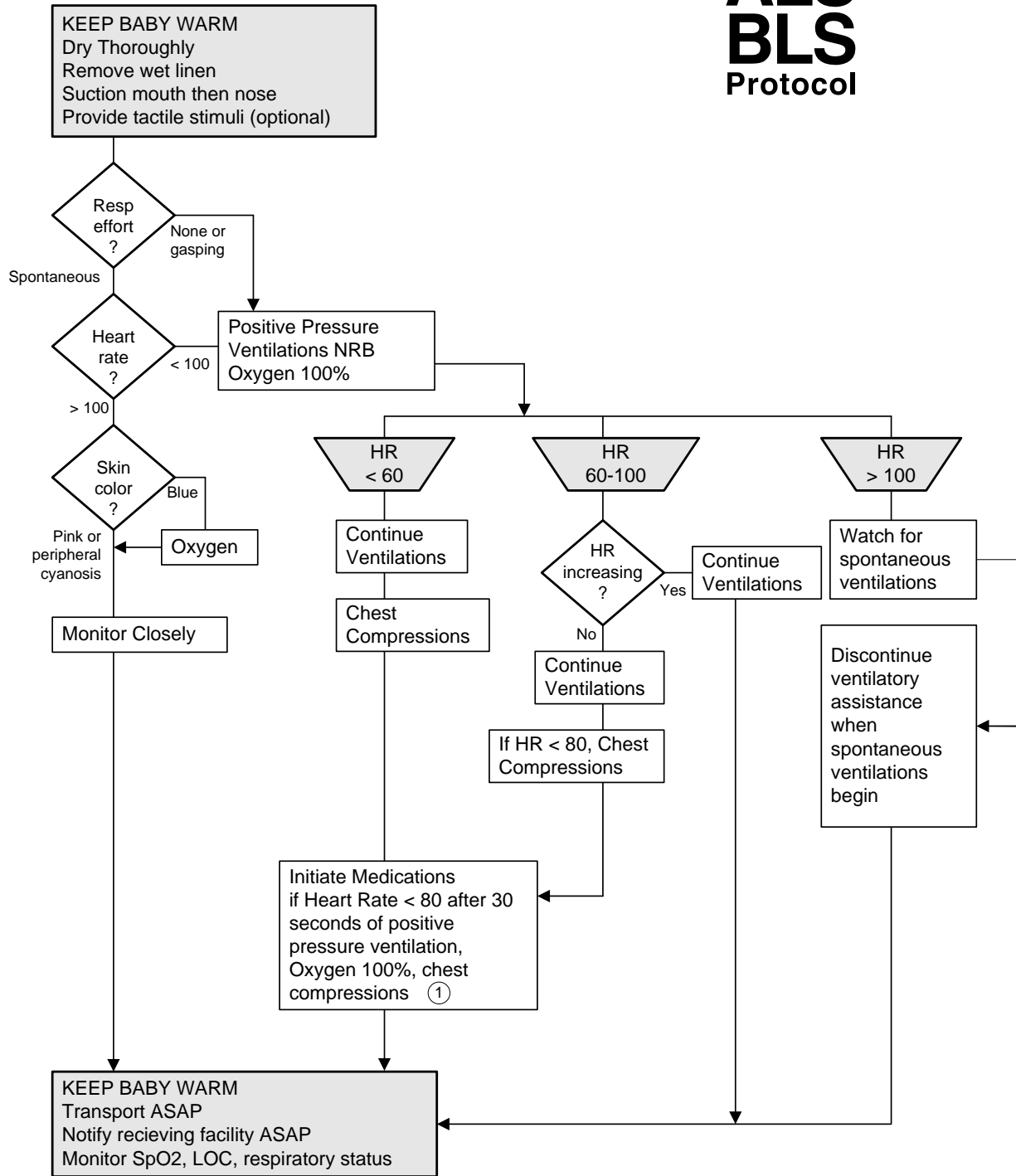


- Document:
- Medications
 - Onset & Duration of LOC
 - Recent or Chronic Illness
 - Trauma
 - Seizure Activity
 - Activity Prior to LOC
 - Pregnancy
 - Glasgow Coma Scale
 - SpO2
 - Capillary Refill
 - Cardiac Rhythm
 - Vital Signs

1 To be performed by a trained rescuer with appropriate equipment.
 2 Ventilation should be initiated while the patient is being rescued.
 3 All near-drowning victims should be examined by a physician.
 4 Use PEEP if available.
 5 Observe for Pulmonary Edema.

Neonatal Resuscitation

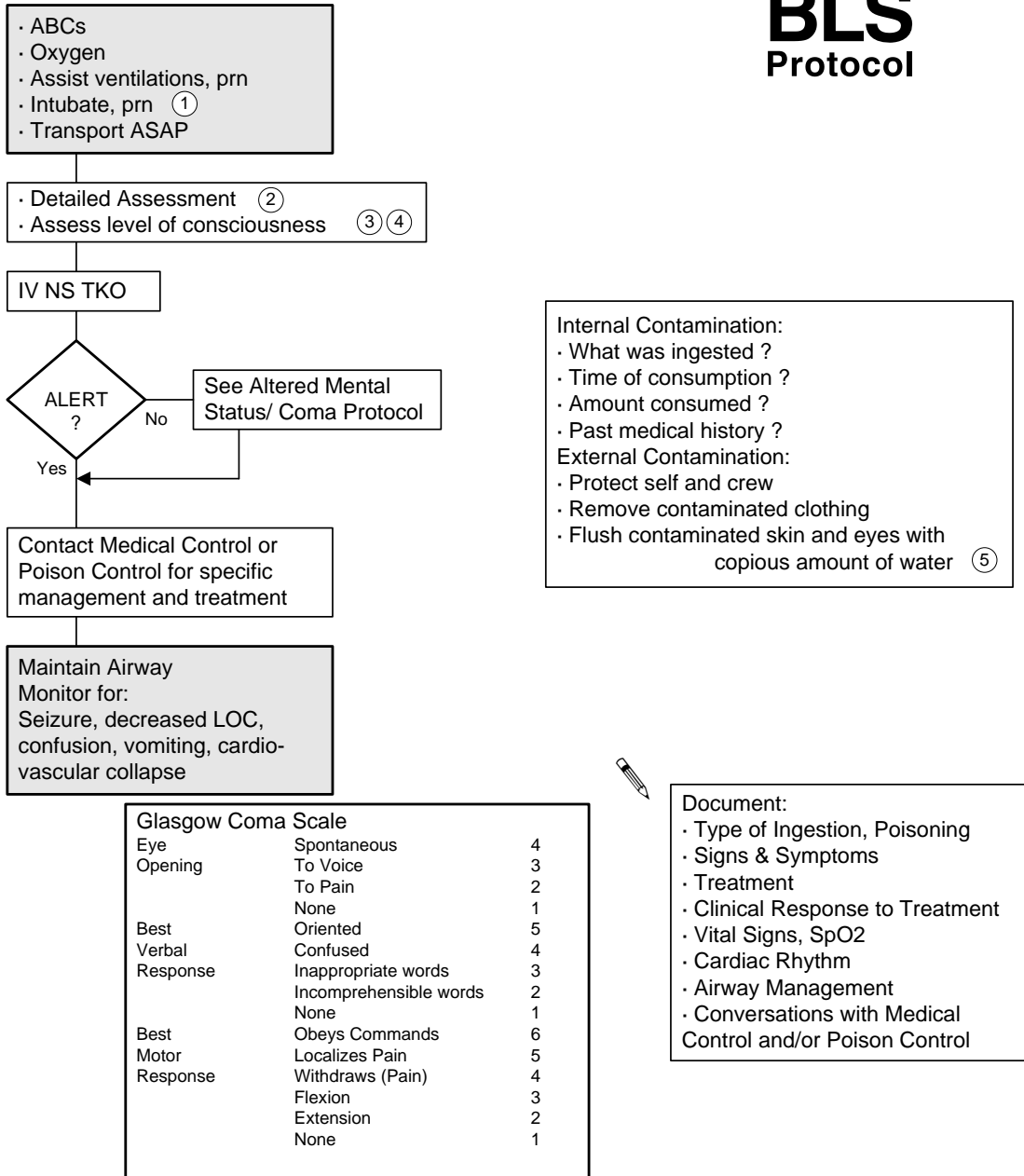
ALS BLS Protocol



1 If ALS is not on the scene, request ALS Backup. Transport ASAP.

Overdose and Poisoning General Management

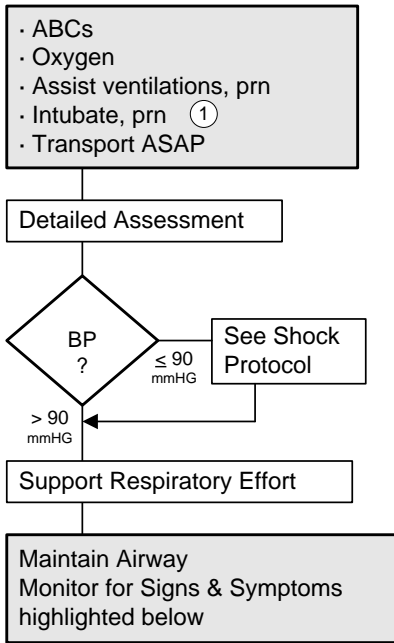
ALS BLS Protocol




- 1 ALS Procedure.
- 2 Observe environment closely for signs of potential overdose.
- 3 Pupillary response may indicate type of overdose/poisoning; pinpoint pupils: narcotics, opiates, phenothiazines, cholinergics; dilated pupils: tricyclics, anticholinergics, cocaine.
- 4 Determine and document Glasgow Coma Scale.
- 5 Exceptions include yet are not limited to: phosphorous, sodium metal, phenol, hydrochloric acid, sulfuric acid. Contact Medical Control.

Overdose: Barbiturate

ALS BLS Protocol



Potential Signs & Symptoms of Barbiturate Overdose:
 CNS and respiratory depression, confusion, stupor, coma, ataxia, vertigo, headache, hypotension, cardiovascular collapse, hypothermia, hyperthermia.

-  Document:
- Signs & Symptoms
 - Treatment
 - Clinical Response to Treatment
 - Vital Signs, SpO2
 - Cardiac Rhythm
 - Respiratory Status
 - Glasgow Coma Scale
 - Airway Management
 - Conversations with Medical Control and/or Poison Control

Glasgow Coma Scale		
Eye Opening	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
Verbal Response	Best Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
Motor Response	None	1
	Best Obeyes Commands	6
	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
	Extension	2
	None	1

1 ALS Procedure. If ALS is not present and procedure is indicated, request ALS Backup.

Overdose: Carbon Monoxide Poisoning



- ABCs
- Oxygen 100% NRB Mask
- Assist ventilations, prn ①
- Intubate, prn ②
- Transport ASAP

- Detailed Assessment ③
- Assess Level of Consciousness

IV NS TKO ②

Consider need for Hyperbaric Chamber

If air transport is considered, avoid transport via non-pressurized aircraft ④

Maintain Airway Support Respiratory Effort



Document:

- Signs & Symptoms
- Treatment
- Clinical Response to Treatment
- Vital Signs, SpO2
- Cardiac Rhythm
- Skin Color
- Respiratory Status
- Airway Management
- Conversations with Medical Control and/or Poison Control

Potential Signs & Symptoms of Carbon Monoxide Poisoning:

Mild headache, dyspnea on mild exertion, irritability, fatigue, nausea, vomiting, confusion, ataxia, syncope, seizures, incontinence, respiratory arrest, skin may be bright red in some cases.

Glasgow Coma Scale		
Eye	Spontaneous	4
Opening	To Voice	3
	To Pain	2
	None	1
Best	Oriented	5
Verbal Response	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
	None	1
Best	Obeys Commands	6
Motor Response	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
	Extension	2
	None	1

1 PEEP may be beneficial.

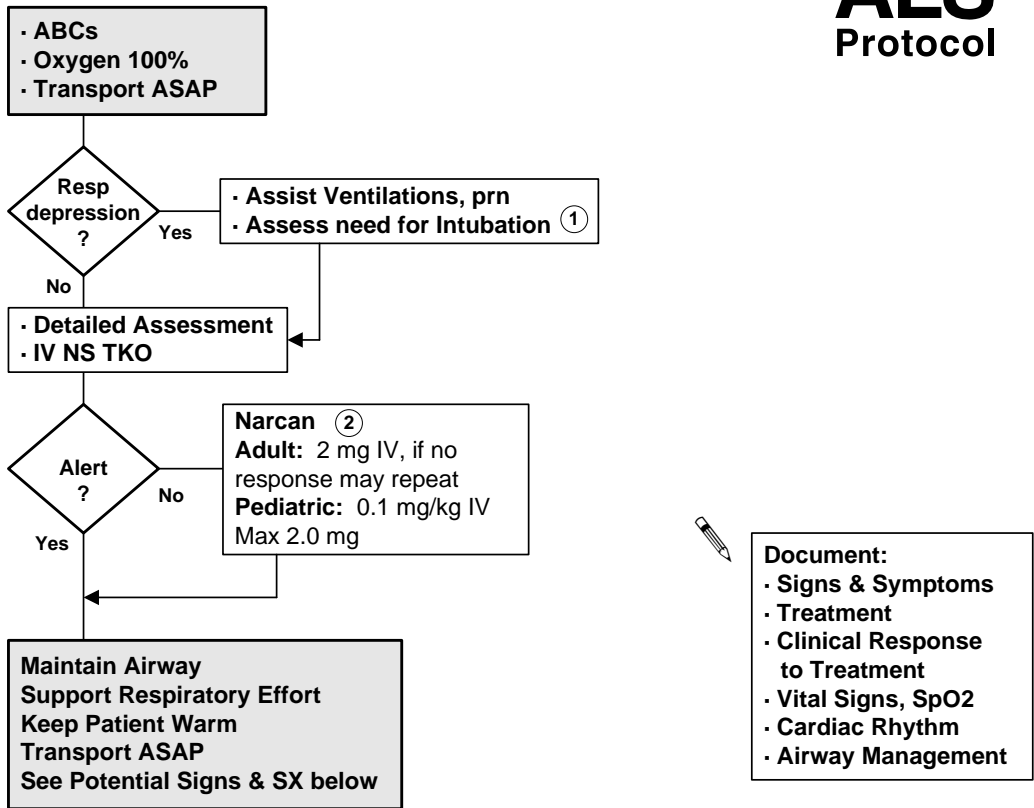
2 ALS Procedure.

3 A patient with a carboxyhemoglobin level of 15-40% will usually show variable signs and symptoms: confusion, headache, other CNS disturbances. Carboxyhemoglobin levels > 40% will usually leave the patient obtunded. Note: if your carboxyhemoglobin level is 20%, the best possible TRUE SpO2 will be 80% (as 20% of the heme-receptor sites are bound by CO) and yet your SpO2 monitor will read 100%. A SpO2 monitor does not distinguish CO from O2. IMPORTANT: administer 100% Oxygen.

4 Helicopters are not pressurized, yet transport via helicopter (at low altitude) may still be indicated and preferred over ground transport if ground transport is significantly slower. Many but not all fixed-wing air ambulances are pressurized.

Overdose: Narcotic

ALS Protocol



Potential Signs & Symptoms of Narcotic Overdose:
 CNS & respiratory depression, drowsiness, nausea, vomiting, pinpoint pupils, coma, cyanosis, bradycardia.

Glasgow Coma Scale		
Eye	Spontaneous	4
Opening	To Voice	3
	To Pain	2
	None	1
Best	Oriented	5
Verbal Response	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
	None	1
Best	Obeys Commands	6
Motor Response	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
	Extension	2
	None	1

1 Consider administering Narcan (while assisting ventilations) before intubation. A brief trial of Narcan may quickly reverse the patient's condition and eliminate the need for intubation. At no time should aggressive and adequate airway management be delayed. A trial of Narcan may be given before intubation only if the airway is secure.

2 Narcan: half-life is short, 30-80 minutes. Be prepared to repeat treatment as the effect of Narcan may wear off. Anticipate a rapid onset. Be prepared to restrain combative and/or confused patients.

Overdose: Organophosphate Exposure ①

ALS BLS Protocol

- Scene Safety, see Haz-Mat Protocol
- ABCs ②
- Oxygen 100% NRB Mask
- Assist ventilations, prn
- Intubate, prn ③
- Transport ASAP

- Detailed Assessment
- Assess level of consciousness
- Monitor Cardiac Rhythm ③

IV NS TKO or as needed ②

Consult with Medical Control for Atropine administration ④

Maintain Airway
Support Respiratory Effort
Transport ASAP

Potential Signs & Symptoms of Organophosphate Exposure:
SLUDGE:
Salivation, Lacrimation, Urination,
Defecation, Gastrointestinal Upset, Emesis



Document:

- Signs & Symptoms
- Treatment
- Clinical Response to Treatment
- Vital Signs, SpO2
- Cardiac Rhythm
- Respiratory Status
- Airway Management
- Mechanism of Exposure
- Conversations with Medical Control and/or Poison Control

1 Includes Parathion, Malathion.

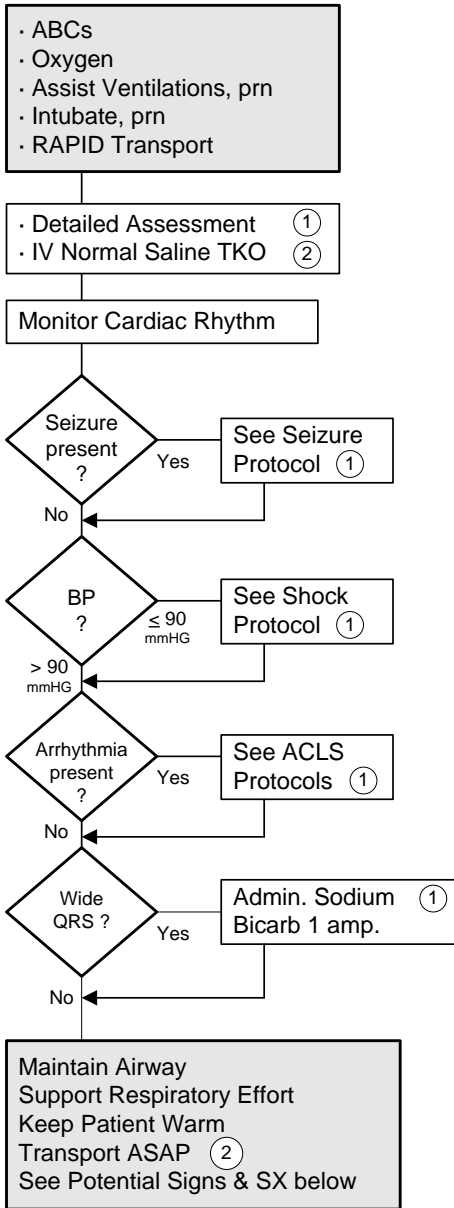
2 If ALS is not on the scene, request ALS Backup.

3 ALS Procedure.

4 Large doses of Atropine may be indicated. If unable to reach Medical Control quickly and the patient exhibits any of the signs or symptoms highlighted in "Potential Signs & Symptoms of Organophosphate Exposure" give Atropine 1-2 mg slow IV (adult).

Overdose: Tricyclic

ALS Protocol



Tricyclics include: (brand names)
 Amitriptyline (amitril, elavil, endep, emitrip, enovil, etrafon, limbitrol, triavil). Amoxapine (asendin). Desipramine (norpamin). Doxepin (sinaquan). Imipramine (tofranil). Maprotiline (ludiomil). Nortriptyline (aventyl, pamelor). Protriptyline (vivactil). Trimipramine (surmontil).

Document:

- Signs & Symptoms
- Treatment
- Clinical Response to Treatment
- Vital Signs, SpO2
- Cardiac Rhythm
- Airway Management

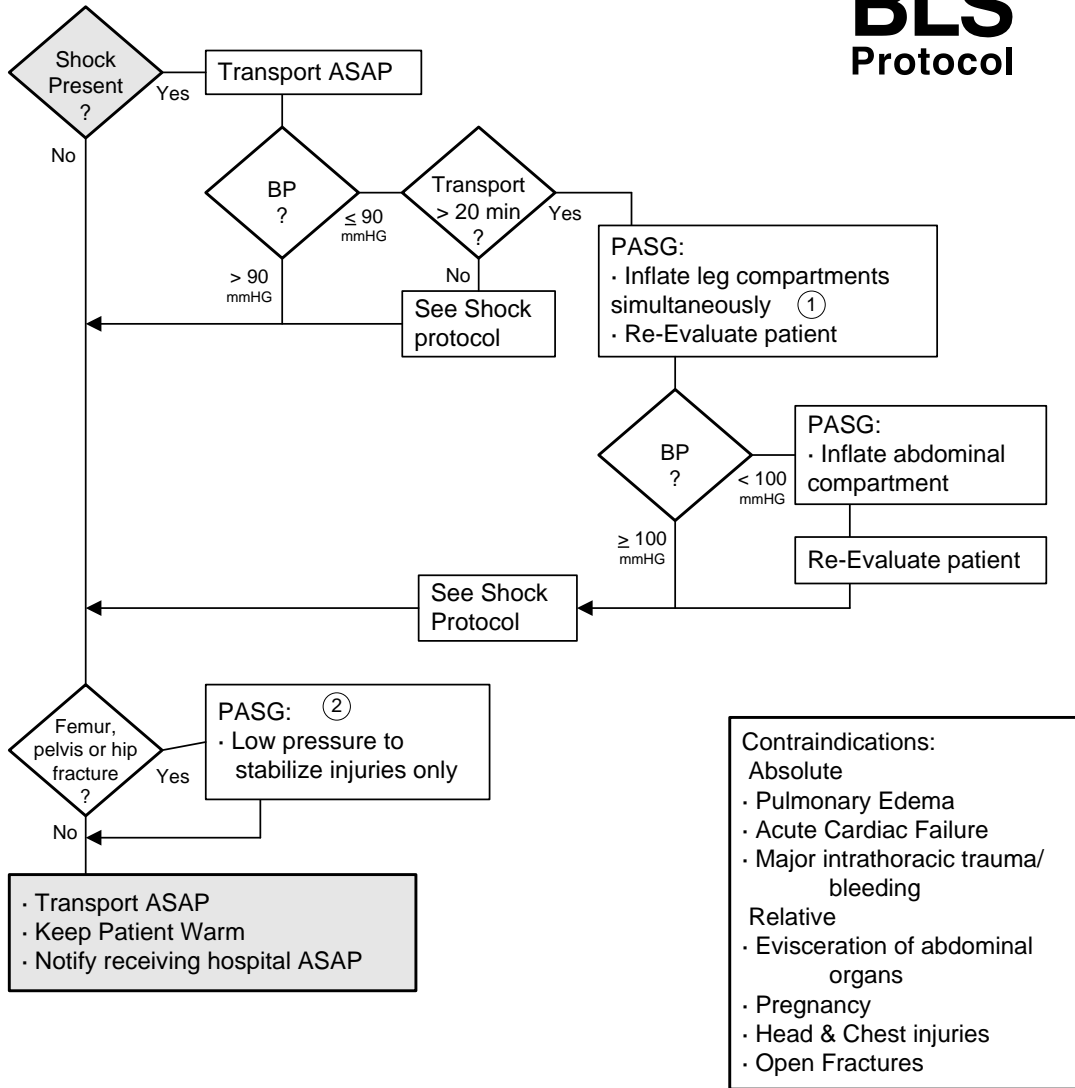
Glasgow Coma Scale		
Eye	Spontaneous	4
Opening	To Voice	3
	To Pain	2
	None	1
Best	Oriented	5
Verbal	Confused	4
	Inappropriate words	3
Response	Incomprehensible words	2
	None	1
	Best	Obeys Commands
Motor	Localizes Pain	5
	Withdraws (Pain)	4
Response	Flexion	3
	Extension	2
	None	1

Potential Signs & Symptoms of Tricyclic Overdose:
 Wide QRS, tachycardia, ventricular arrhythmias, hypoventilation, decreased LOC, seizures, cardiovascular collapse, hypotension.

- 1 If ANY of the signs or symptoms listed in "Potential Signs & Symptoms of Tricyclic Overdose" exist, alkalinize the patient by administering 1 amp of Sodium Bicarbonate every 30-60 minutes. Goal of alkalinization is a serum pH of 7.50-7.55.
- 2 Notify receiving facility ASAP especially if hypotensive, arrhythmias, or seizure present.

PASG Criteria
Pneumatic Anti-shock Garment

ALS BLS Protocol



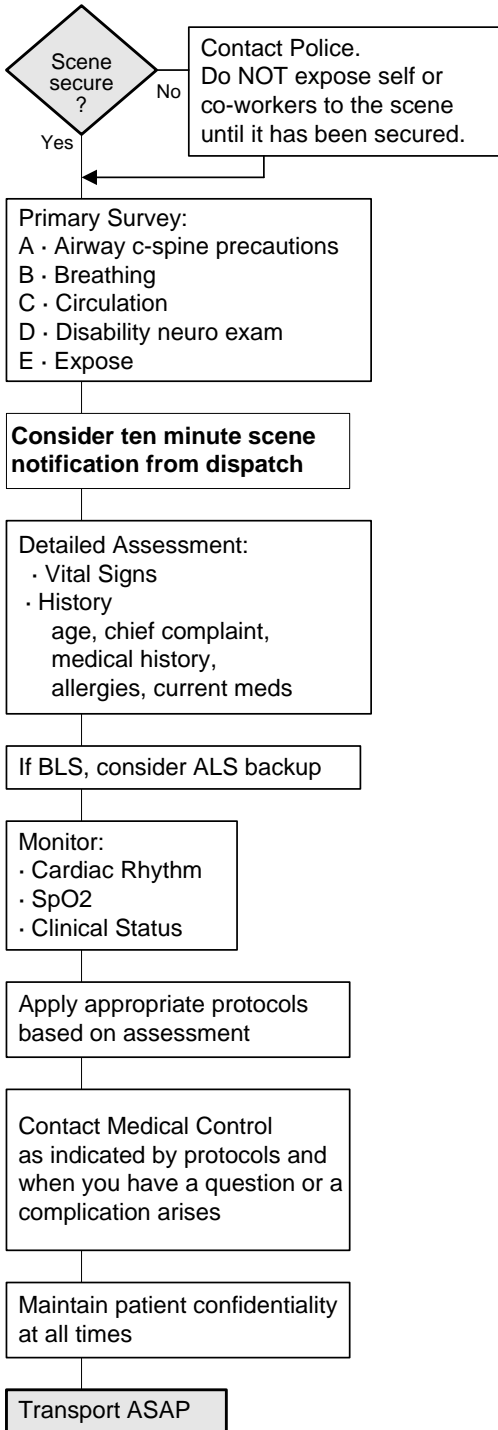
- Contraindications:**
- Absolute**
- Pulmonary Edema
 - Acute Cardiac Failure
 - Major intrathoracic trauma/bleeding
- Relative**
- Evisceration of abdominal organs
 - Pregnancy
 - Head & Chest injuries
 - Open Fractures

- Document:**
- Indications
 - Vital Signs, SpO2
 - Exact time applied
 - BP Before and After PASG
 - Pressure Indicated on Gauges if Present

1 Inflate legs simultaneously until velcro straps start to slip, garment indents slightly or systolic BP reaches 100 mmHG.
2 Maintain the original PASG pressures if PASG have been inflated to treat the patient for shock.

Patient Care

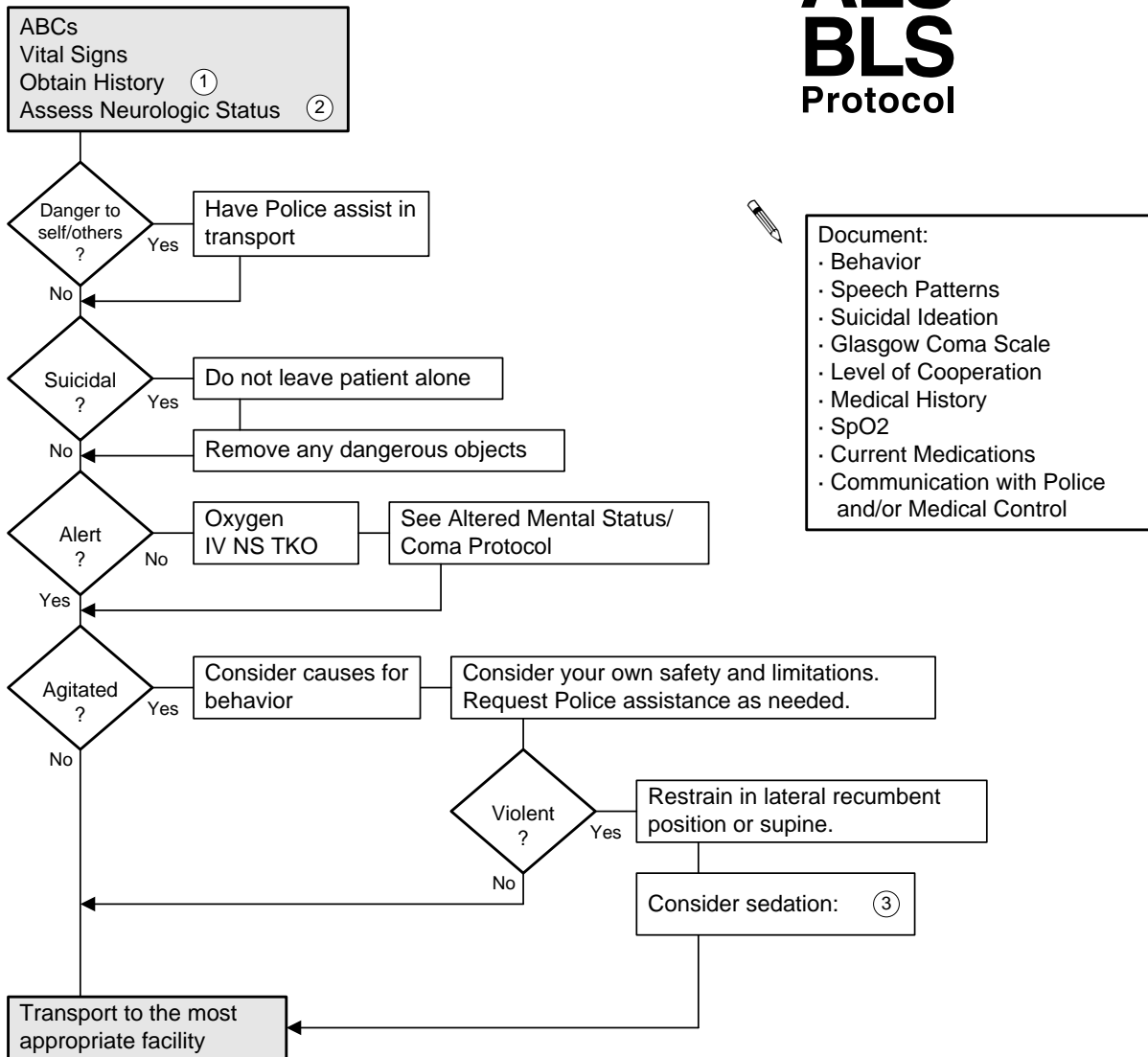
ALS BLS Protocol



- Document:
- ABCs
 - Detailed Assessment
 - Vital Signs
 - Cardiac Rhythm
 - SpO2, ETCO2
 - Neurologic Findings
 - Glasgow Coma Scale
 - Medical History
 - Current Medications
 - Allergies
 - Treatment Prior to Your Arrival
 - Treatment You Provide
 - Response to Treatment
 - Communication with Medical Control

Psychiatric & Behavioral Disorders

ALS BLS Protocol



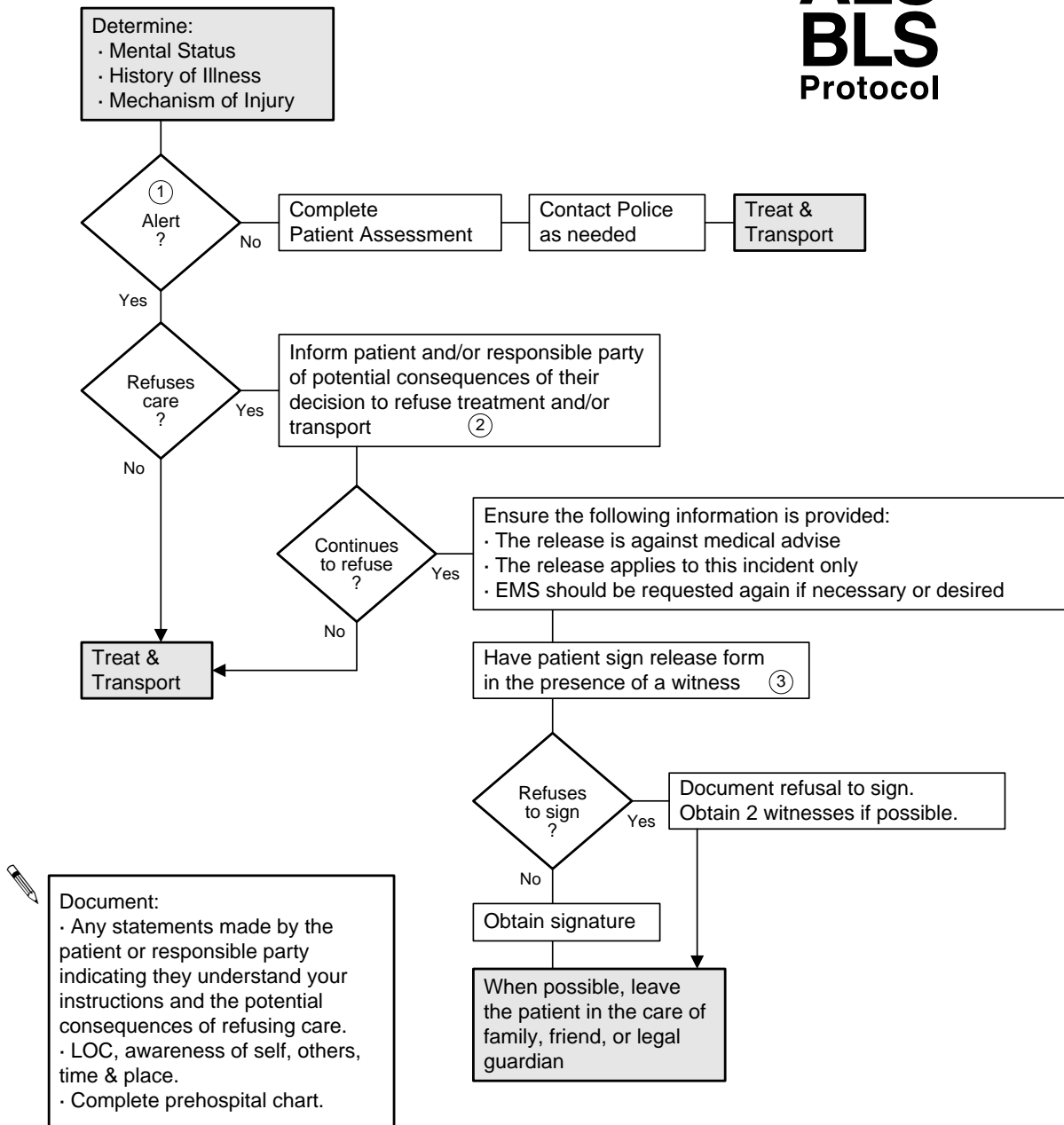
1 Note: Bizarre behavior, abrupt change in behavior, suicidal ideation, possible drug or alcohol ingestion, history of diabetes, etc. Look for Medic Alert tag.

2 Consider possibility of hypoglycemia. A low blood sugar can cause agitation, confusion, irritability.

3 Consider 1) Haloperidol 5 mg IM 2) Versed or Ativan 2 mg IM 3) Benadryl 25-50 mg IM. Contact medical control for IV administration of two or more medications.

Refusal of Care

ALS BLS Protocol



NOTE: This protocol assumes it is medically indicated to treat and/or transport this patient.

1 "Alert" implies the patient is conscious, oriented to person, place, time, and event. Glasgow Coma Scale = 15.

2 Ensure patient understands these consequences.

3 Witness should be someone other than EMS personnel, if possible, and must sign the release.

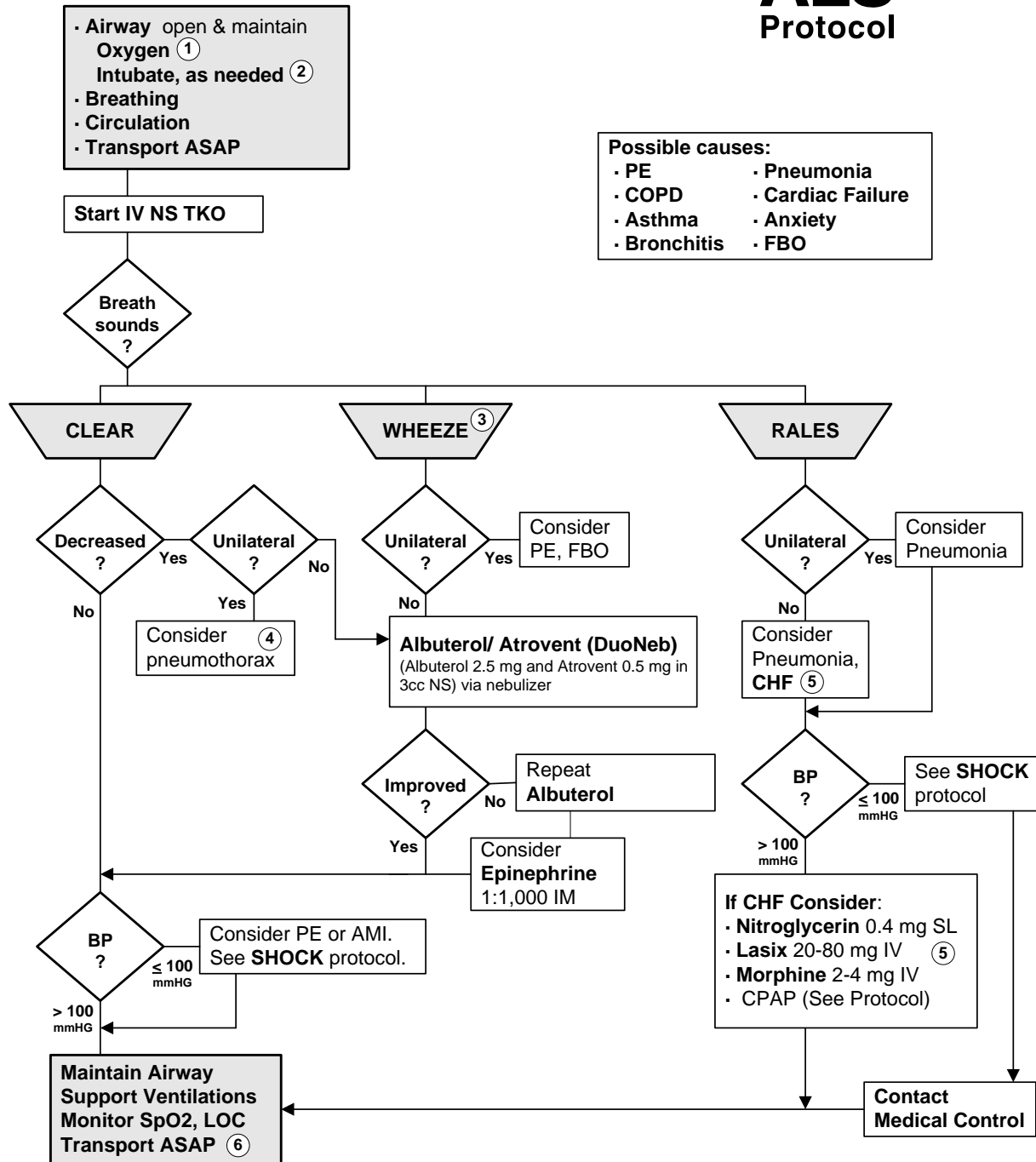
ECEMS, Effective 9/2008

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REFUSAL OF CARE

Respiratory Distress

ALS Protocol



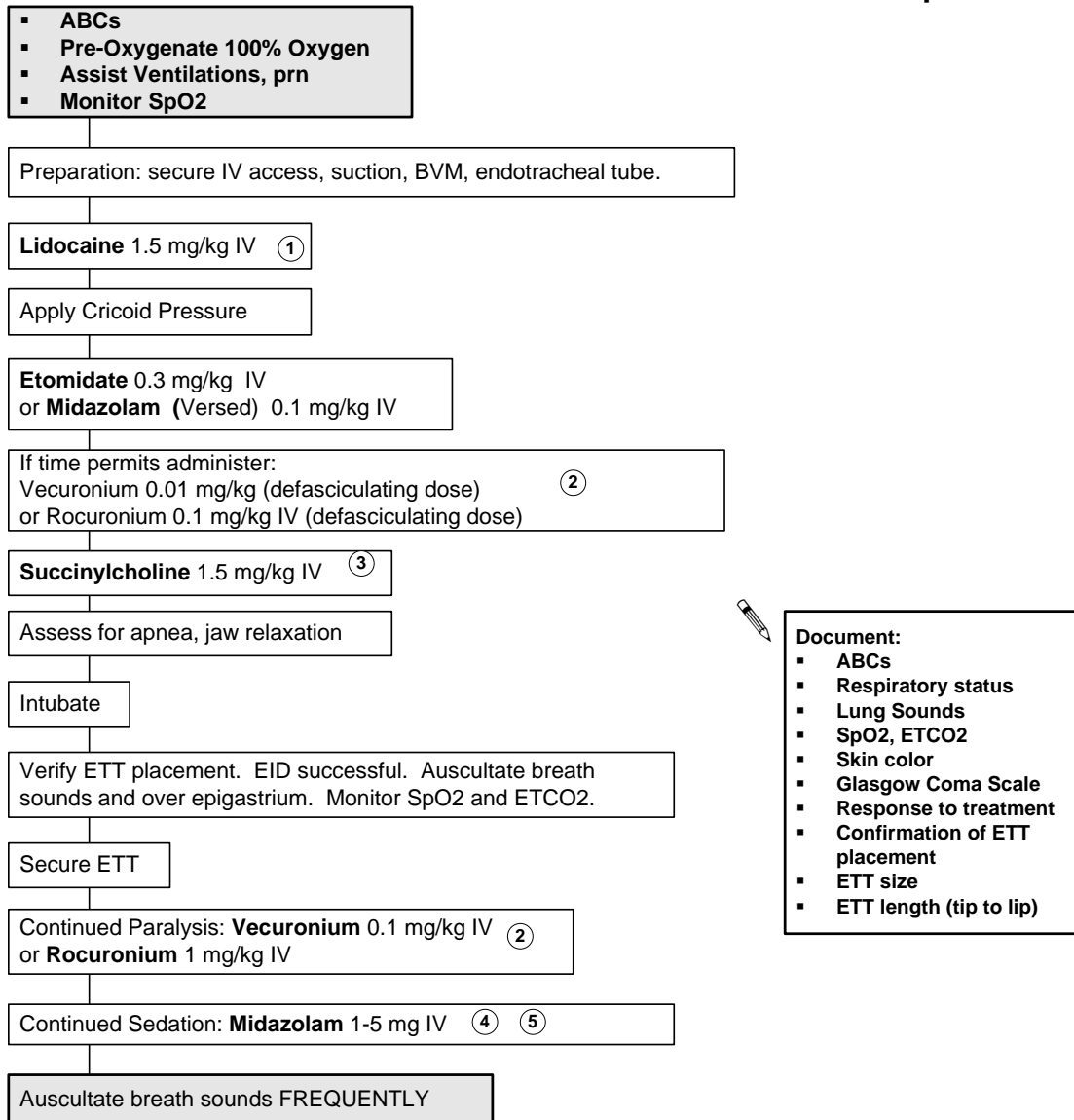
- Possible causes:**
- PE
 - COPD
 - Asthma
 - Bronchitis
 - Pneumonia
 - Cardiac Failure
 - Anxiety
 - FBO

1 COPD patients often use their hypoxic drive. In these cases expect & accept SpO2 readings < 90 and > 85%.
 2 Parameters for intubation include (yet are not limited to): decreased LOC · SpO2 < 90% despite therapy · respiratory rate < 10 > 29 · patient responds with single word phrases, obvious signs of fatigue · use of accessory muscles.
 3 Wheeze may be caused by: CHF, PE, ASTHMA, aspiration.
 4 Consider Tension Pneumothorax. If present, see **Tension Pneumothorax Decompression Protocol**.
 5 See **Congestive Heart Failure/Pulmonary Edema Protocol**.
 6 Transport ASAP. Do not delay transport at any time in this protocol.

RESPIRATORY DISTRESS

Rapid Sequence Intubation Adult

ALS procedure



1 Lidocaine indicated in head injured or suspected CVA patient. Lidocaine aids in blunting the gag reflex.

2 May use Atracurium or Pancuronium.

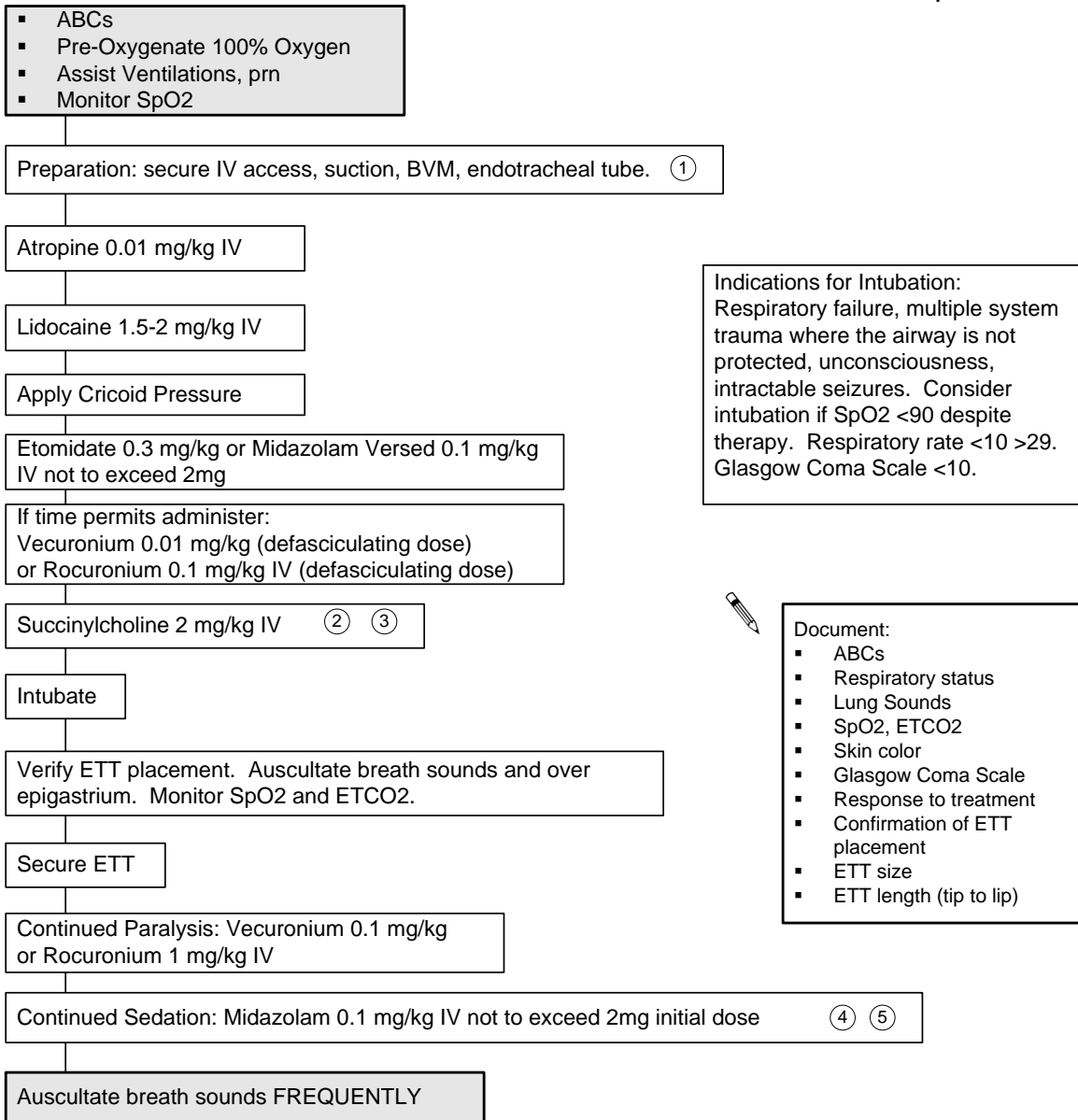
3 **Succinylcholine:** obtain history regarding allergies. Do not administer in Dialysis patient if potassium level is not known, potassium is known to be elevated, or if a familial history of Malignant Hyperthermia is noted. Succinylcholine is contraindicated in penetrating eye injuries and severe burns or crush injuries that are more than 24 hours old. The onset of Succinylcholine is 30-60 seconds, duration is 8-10 minutes. Use **Vecuronium** or **Rocuronium** if Succinylcholine is contraindicated.

4 Midazolam 1-5mg if BP > 80; if BP < 80 consider Fentanyl 50-100 mcg slow IV.


5 Keep the patient warm. Paralyzed patients lose their natural ability to generate heat.

Rapid Sequence Intubation Pediatric

ALS
procedure



Indications for Intubation:
Respiratory failure, multiple system trauma where the airway is not protected, unconsciousness, intractable seizures. Consider intubation if SpO2 <90 despite therapy. Respiratory rate <10 >29. Glasgow Coma Scale <10.

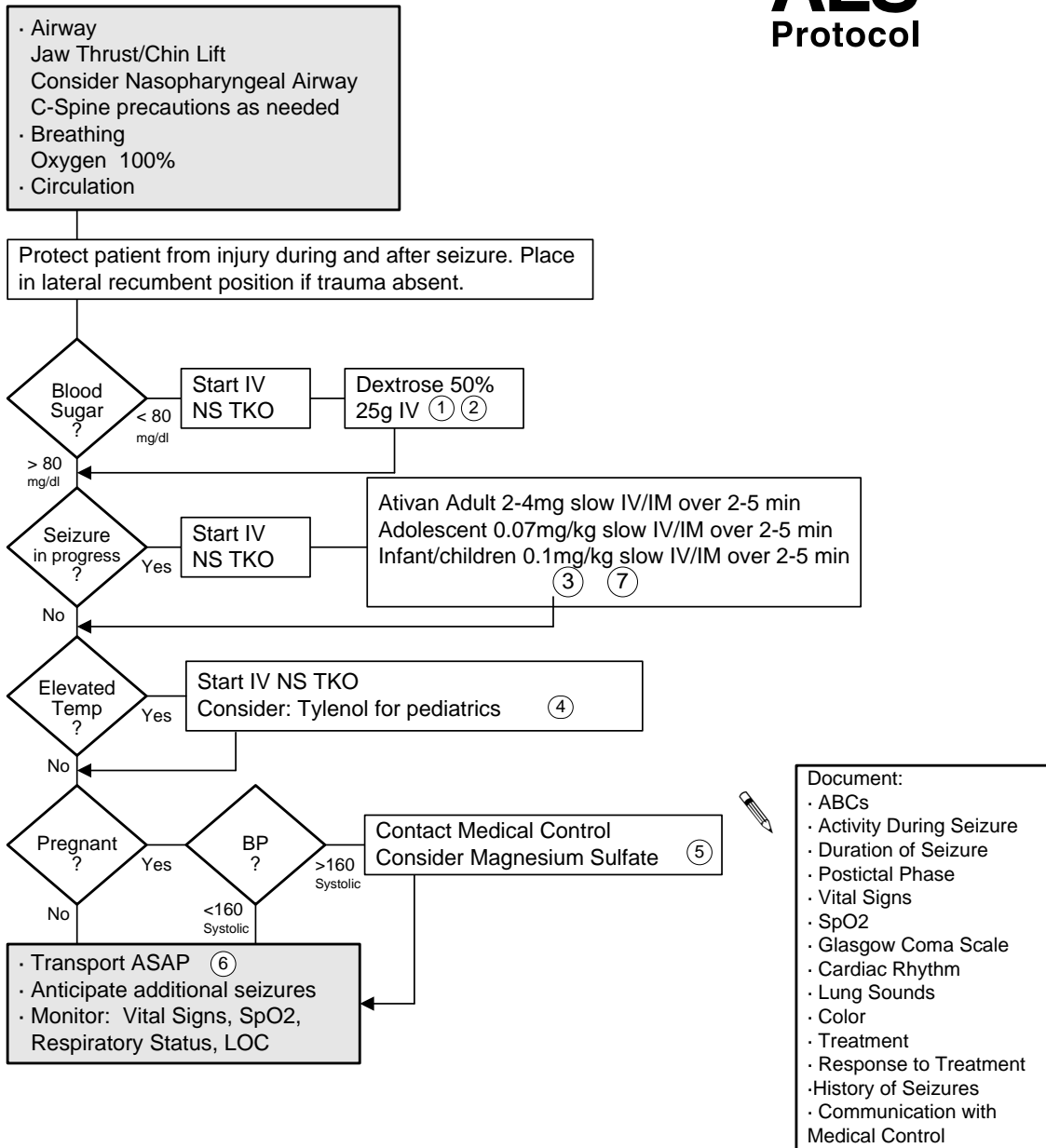
 Document:

- ABCs
- Respiratory status
- Lung Sounds
- SpO2, ETCO2
- Skin color
- Glasgow Coma Scale
- Response to treatment
- Confirmation of ETT placement
- ETT size
- ETT length (tip to lip)

- 1 ETT: Have on hand, one size smaller and one size larger.
- 2 Obtain history regarding allergies. Do not administer if familial history of Malignant Hyperthermia is noted.
- 3 **Succinylcholine** is contraindicated in penetrating eye injuries and severe burns or crush injuries that are more than 24 hours old. The onset of Succinylcholine is 30-60 seconds, duration is 8-10 minutes. Use **Vecuronium** or **Rocuronium** if Succinylcholine is contraindicated.
- 4 Consider pain control measures (Fentanyl or Morphine IV) if the patient was experiencing pain.
- 5 Keep the patient warm. Paralyzed patients lose their natural ability to generate heat.

Seizure

ALS Protocol

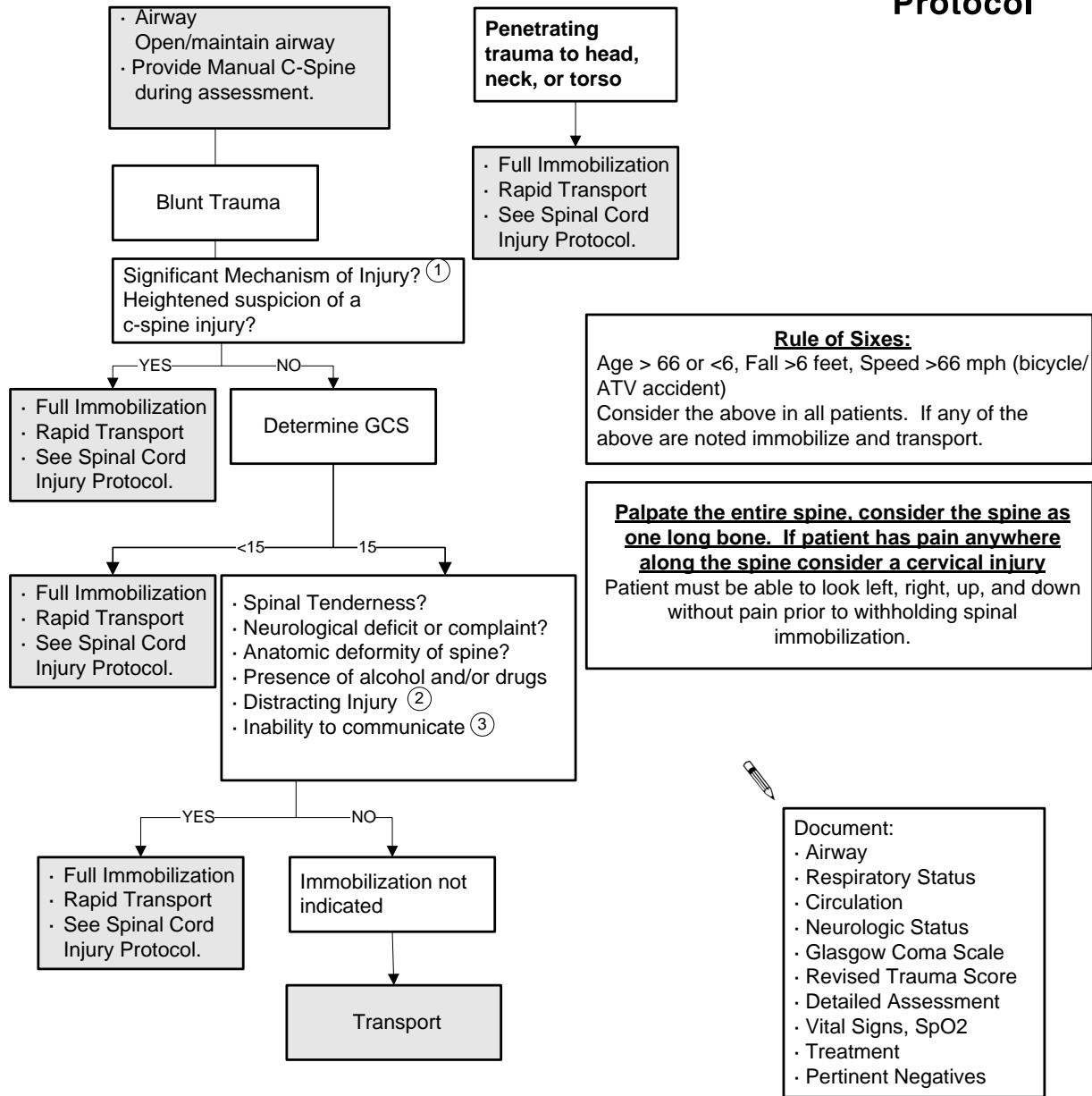


- Document:
- ABCs
 - Activity During Seizure
 - Duration of Seizure
 - Postictal Phase
 - Vital Signs
 - SpO2
 - Glasgow Coma Scale
 - Cardiac Rhythm
 - Lung Sounds
 - Color
 - Treatment
 - Response to Treatment
 - History of Seizures
 - Communication with Medical Control

1 Administer Dextrose 25% in children (1-12 years), Dextrose 10% in infants (newborn-1 year). Administer Thiamine 100 mg IM prior to Dextrose if you suspect alcoholism or malnutrition.
 2 Blood Sugar: recheck following initial Dextrose dose. If blood sugar remains < 80 mg/dl, repeat initial dose.
 3 Ativan (lorazepam): may be considered in pediatric patients (28 days to 12 years). Administer IV DILUTED 1:1 with Normal Saline IV fluid.
 4 Tylenol (acetaminophen): 10 mg/kg PO (if gag reflex is intact). Administer rectal suppository (same dose) if the patient is vomiting, the patient's gag reflex absent or in question, or the patient is not alert.
 5 Magnesium Sulfate: Contact Medical Control for dosing regimen.
 6 Provide a quiet, calm environment.
 7 A second dose may be repeated for each age group in 10-15 min. Adult second dose is 4mg, max dose of 8 mg. Adolescent second dose is 0.07mg/kg max of 4 mg. Infants second dose is 0.05mg/kg max of 4mg.

ALS Protocol

Selective Spinal Immobilization



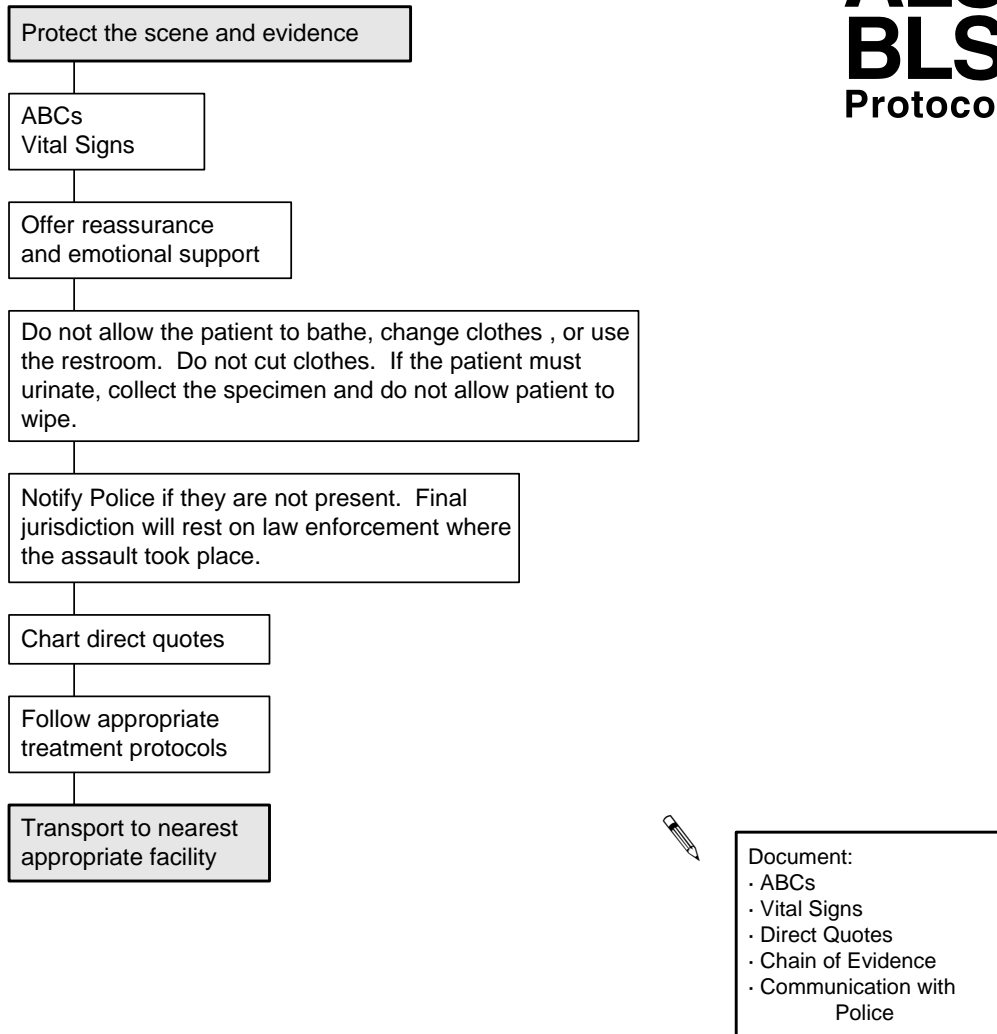
1. Concerning Mechanism of Injury—Any mechanism that produced a violent impact to the head, neck, torso, or pelvis. Incidents producing sudden acceleration and/or deceleration, or lateral bending forces to the neck or torso. Any fall especially in elderly persons. Ejection from a motorized vehicle including motorcycles, scooters, etc.. Victim of shallow water diving accident.

2. Distracting Injury—Any injury that may have the potential to impair the patients ability to appreciate other injuries. Examples include 1) Long bone injury 2)a visceral injury requiring surgical consultation; 3) a large laceration, degloving injury, or crush injury; 4) large burns, or 5) any other injury producing acute functional impairment.

3. Inability to Communicate—Any patient who, for reasons not specified above, cannot clearly communicate so as to actively participate in their assessment. Examples: speech or hearing impaired, those who only speak a foreign language, and small children.

Sexual Assault

ALS BLS Protocol



Shock

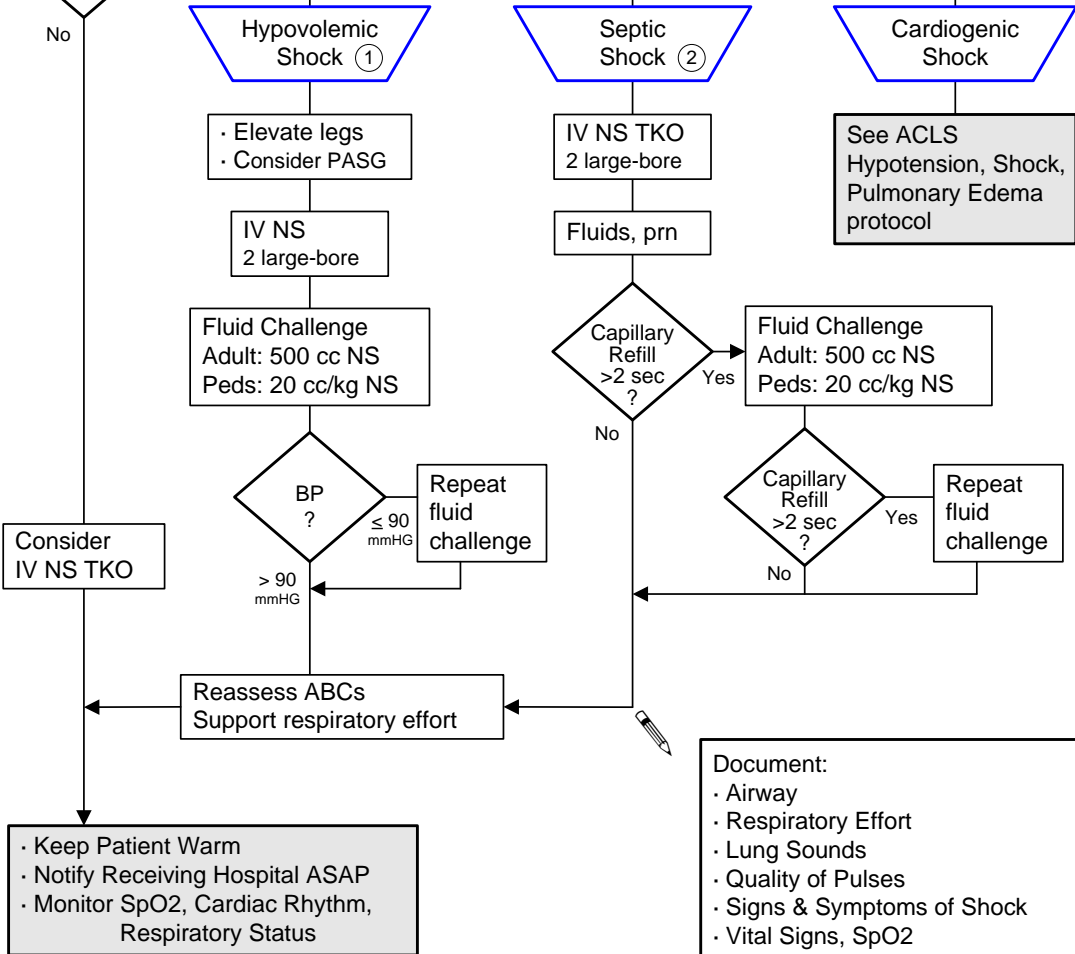
ALS Protocol

- ABCs
- Oxygen 100%
- Assist Ventilations, prn
- Intubate, prn
- SpO2
- Transport ASAP

- Signs & Symptoms of Shock:
- Pulse > 120
 - BP < 90 systolic
 - Delayed capillary refill
 - Confusion, restlessness, apathy
 - Thirst, postural syncope
 - Skin moist/cool

Detailed Assessment

Shock present ?

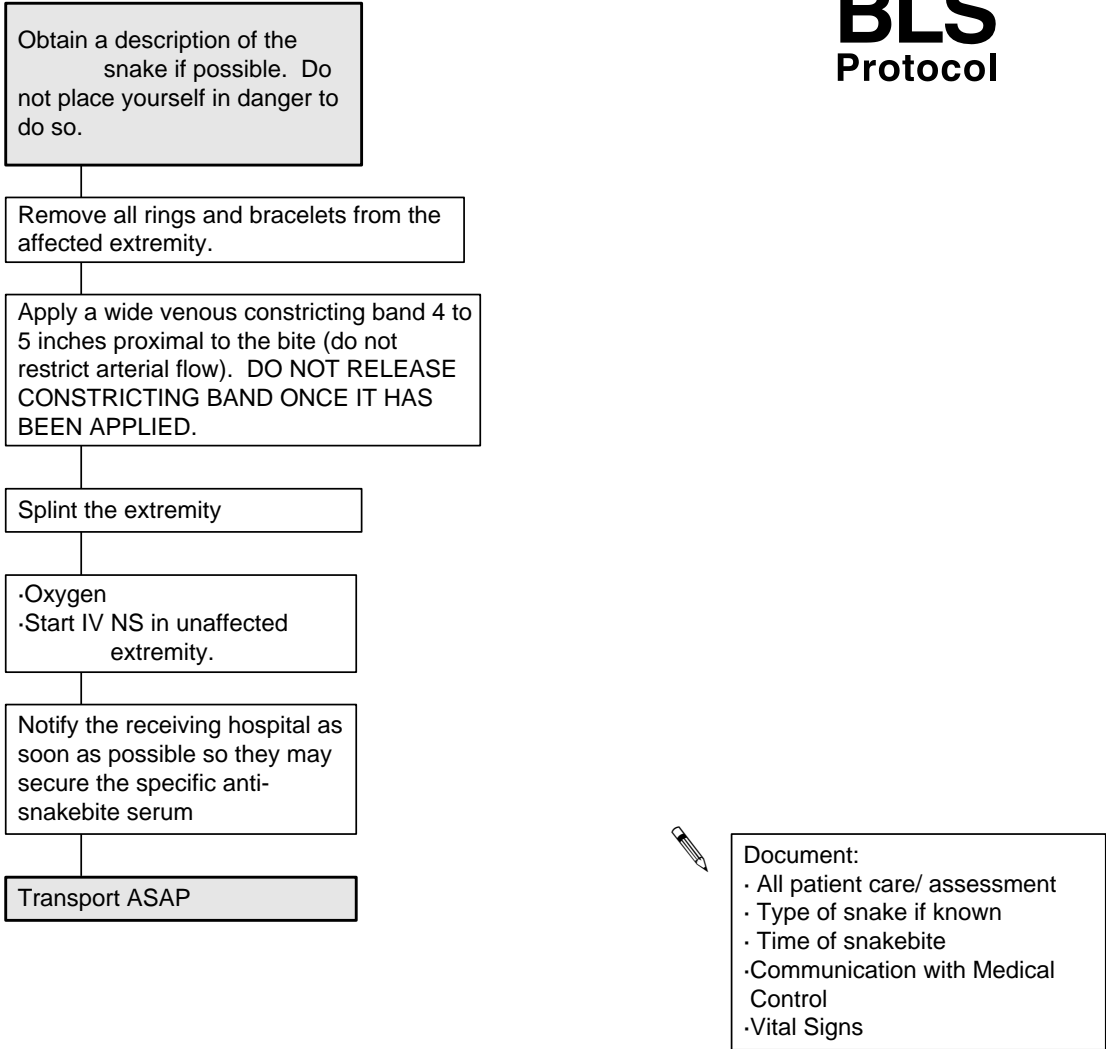


1 See trauma protocols if appropriate. Control external bleeding.
2 Septic shock in a child is a medical emergency. Expedite transport.

- Document:
- Airway
 - Respiratory Effort
 - Lung Sounds
 - Quality of Pulses
 - Signs & Symptoms of Shock
 - Vital Signs, SpO2
 - Glasgow Coma Scale
 - Skin Color, Temperature
 - Cardiac Rhythm
 - Response to Fluid Bolus
 - Core Temp in Septic Shock

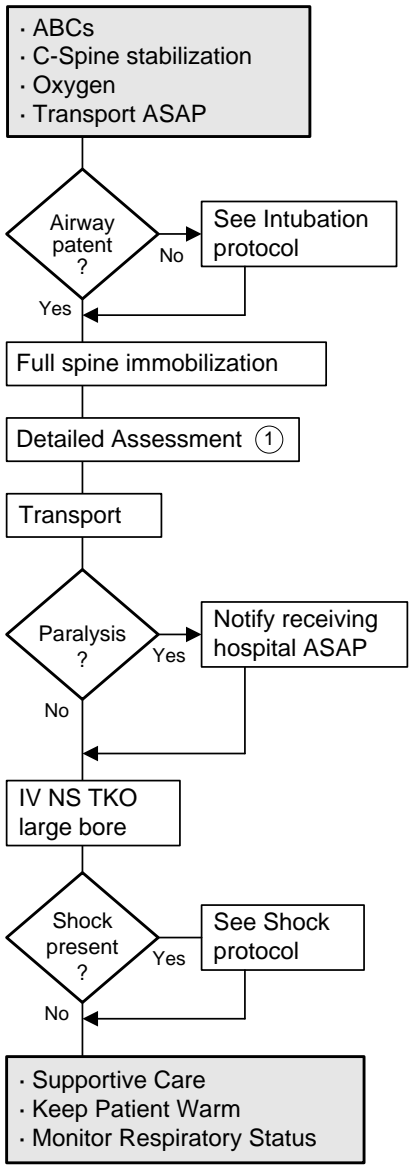
Snakebite

ALS BLS Protocol




Spinal Cord Injury Suspected

ALS Protocol



Significant findings:

- Significant injury above clavicles
- Loss of consciousness
- Paralysis, weakness, numbness, tingling within extremities
- Point tenderness over spine

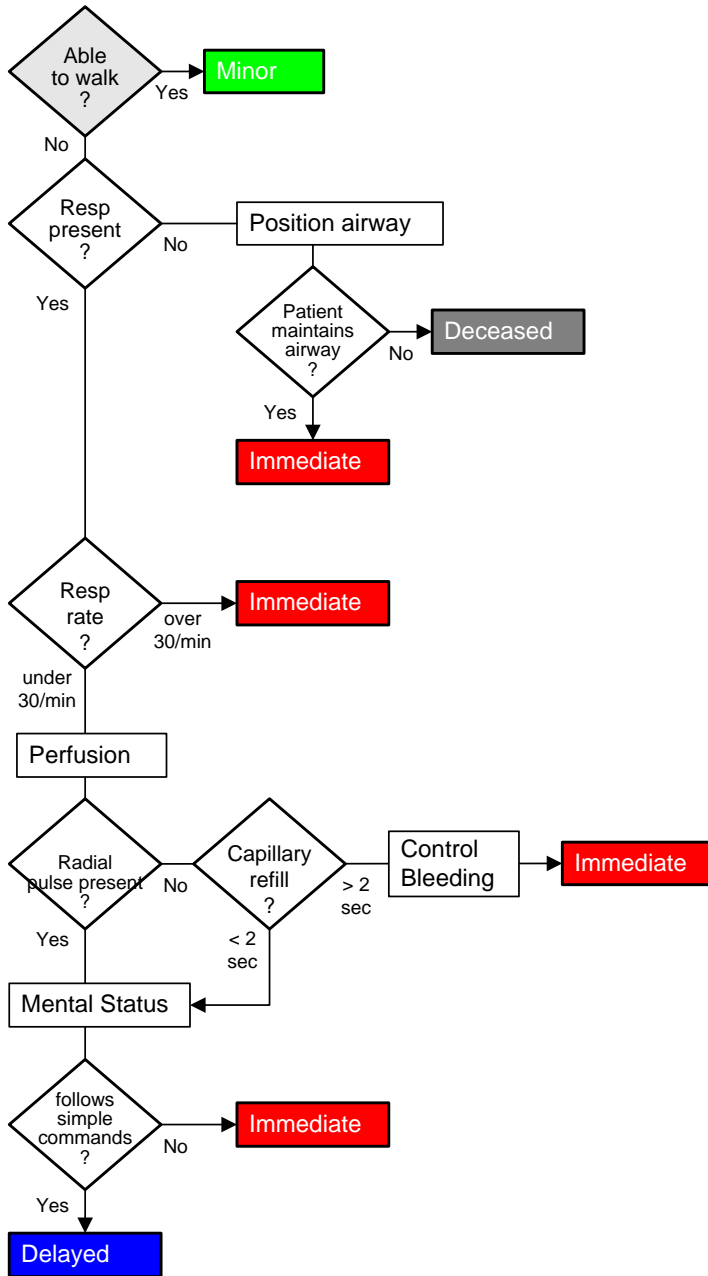
 Document:

- Airway
- Glasgow Coma Scale
- Vital Signs, SpO2
- Evidence of Paralysis or Paresthesia
- Loss of Consciousness
- Mechanism of Injury
- Presence or Lack of Tenderness Over Spine
- Treatment

1 Detailed Assessment to include frequent neurological checks. Determine level of injury-dermatome involved.

START Triage

ALS BLS Protocol

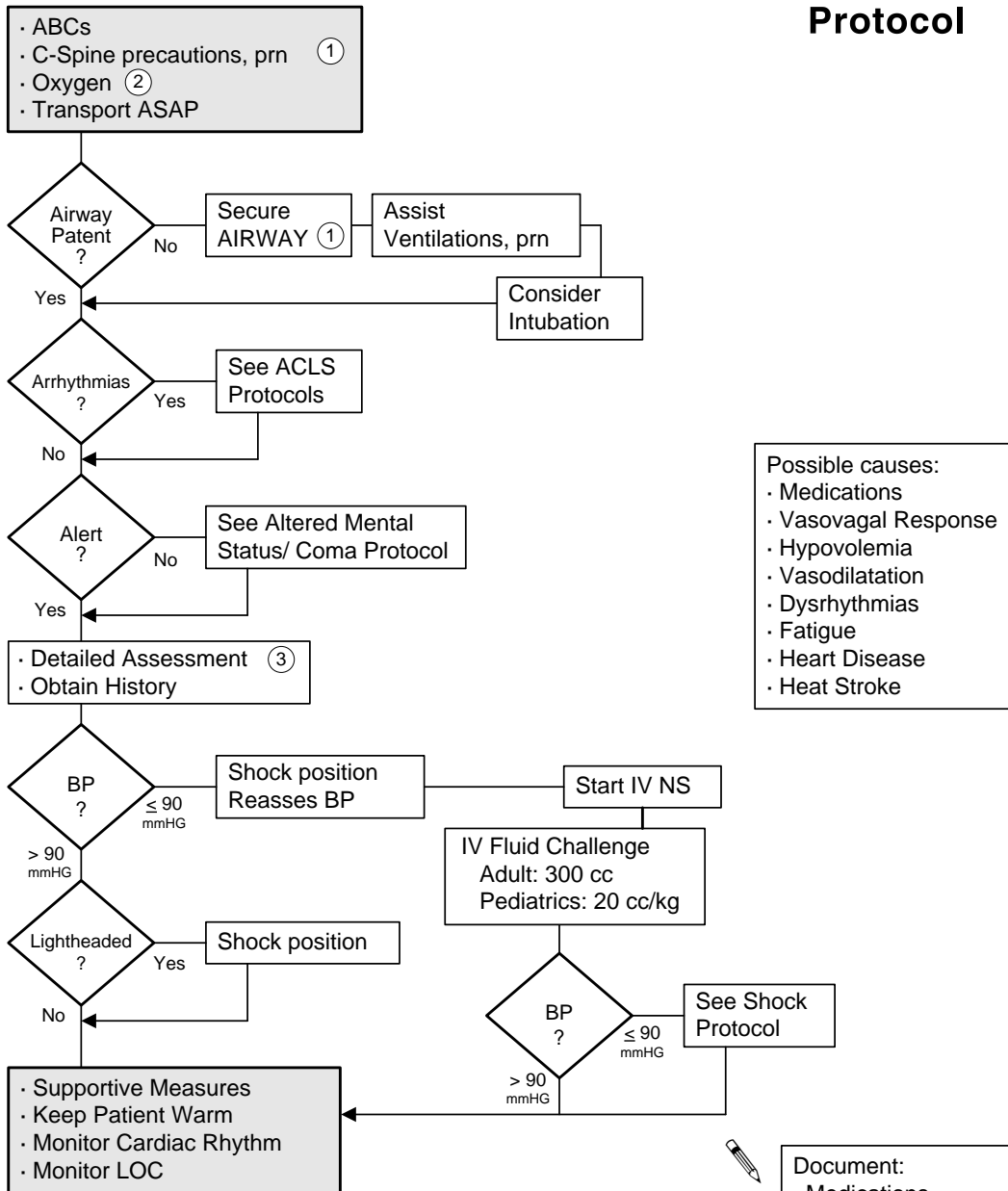


The clinician should view this protocol as an adjunct to your systems disaster plan ONLY if START Triage is a part of that plan. This protocol does not constitute or attempt to substitute for a disaster plan and should only be used in conjunction with a system-wide response, approved in your area.

Adapted from START Triage, originally developed by:
 Hoag Memorial Hospital Presbyterian and
 Newport Beach Fire Department
 ECEMS, Effective 1/2008
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Syncope

ALS Protocol



- Possible causes:
- Medications
 - Vasovagal Response
 - Hypovolemia
 - Vasodilatation
 - Dysrhythmias
 - Fatigue
 - Heart Disease
 - Heat Stroke

- Document:
- Medications
 - Onset & Duration of LOC
 - Activity Prior to LOC
 - Recent or Chronic Illness
 - Trauma
 - Seizure Activity
 - SpO2, GCS, Vital Signs
 - Capillary Refill
 - Cardiac Rhythm

1 Consider spinal immobilization if associated with fall or trauma.
 2 High concentration of oxygen may be indicated. Consider hypoxic drive in COPD.
 3 Monitor SpO2, Cardiac Rhythm, Capillary Refill, Glasgow Coma Scale.

Tension Pneumothorax Decompression

- ABCs
- Oxygen 100%
- Assist Ventilations, prn

Select site: affected side, 2nd intercostal space, mid-clavicular line

Cleanse site with antiseptic. Nick skin with scalpel.

Insert 10-14 g needle: advance over the superior aspect of the 3rd rib. Attempt to aspirate with an attached syringe as you advance. ①

If under tension, air will fill the syringe

If blood is aspirated, consider hemothorax

Advance catheter and remove needle and syringe

Attach Heimlich Valve

Secure Heimlich Valve to the patient's chest

Auscultate breath sounds FREQUENTLY

Monitor SpO₂, cardiac rhythm, clinical status, and if intubated End Tidal CO₂

- Items Needed:
- IV needle 10-14 g with catheter
 - Heimlich Valve
 - Scalpel
 - Antiseptic solution
 - Tape



- Document:
- ABCs
 - Respiratory status
 - SpO₂
 - Vitals Signs
 - Cardiac Rhythm
 - Lung sounds before and after decompression
 - Skin color
 - Chest rise
 - Capillary refill
 - Response to treatment
 - Site selection

Signs & Symptoms to look for when assessing Tension Pneumothorax

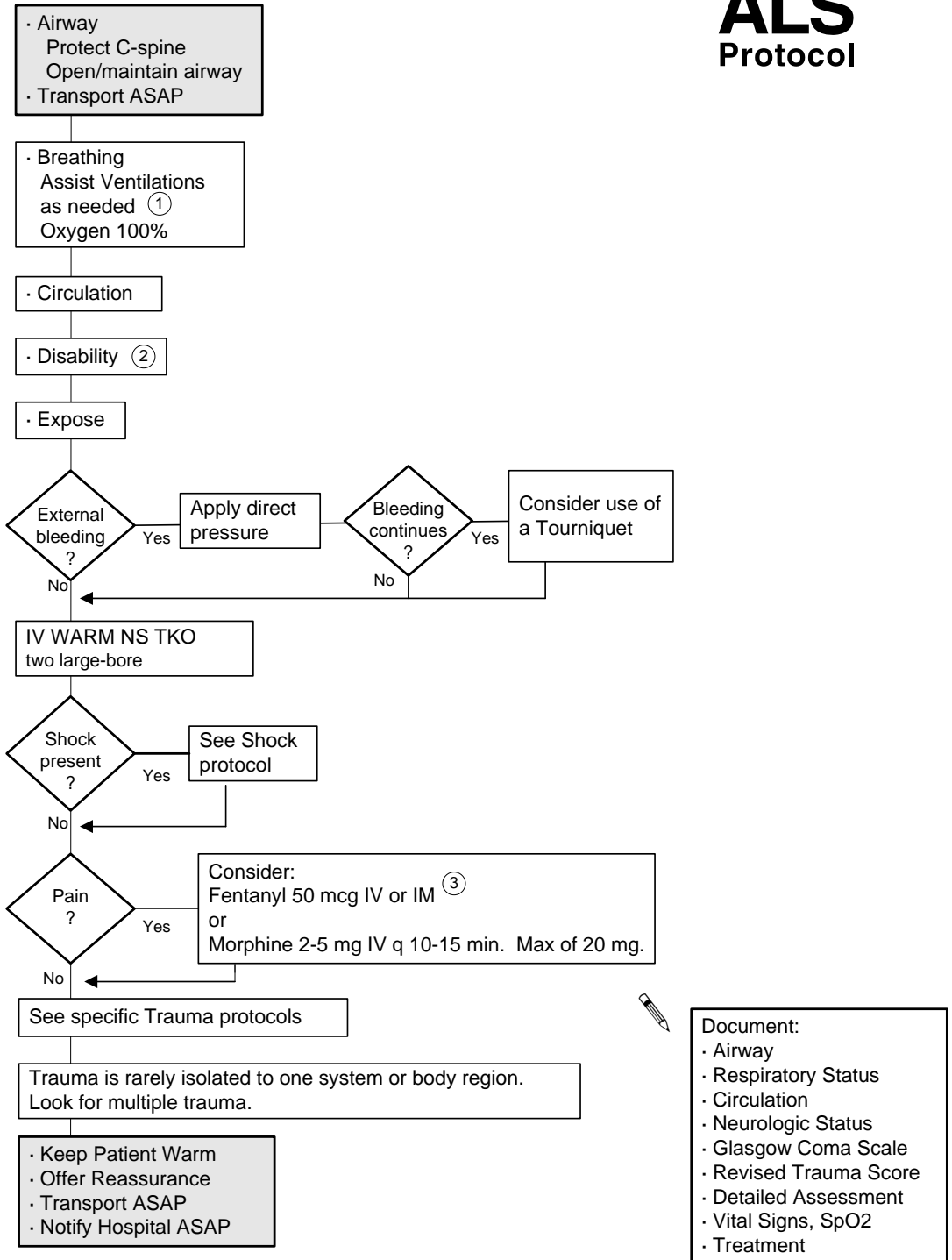
- Shock
- Respiratory distress
- Decreased breath sounds on the affected side
- Hyperinflated affected side
- Distended neck veins
- Tracheal deviation
- Increased resistance to positive ventilation
- Asymmetrical chest rise

1 Syringe: you can, as an option, add sterile NS to the syringe. If air enters the syringe bubbles will surface in the syringe. This will give you a visual clue that air is escaping from the chest during insertion.

TENSION
PNEUMOTHORAX
DECOMPRESSION

Trauma: General Management

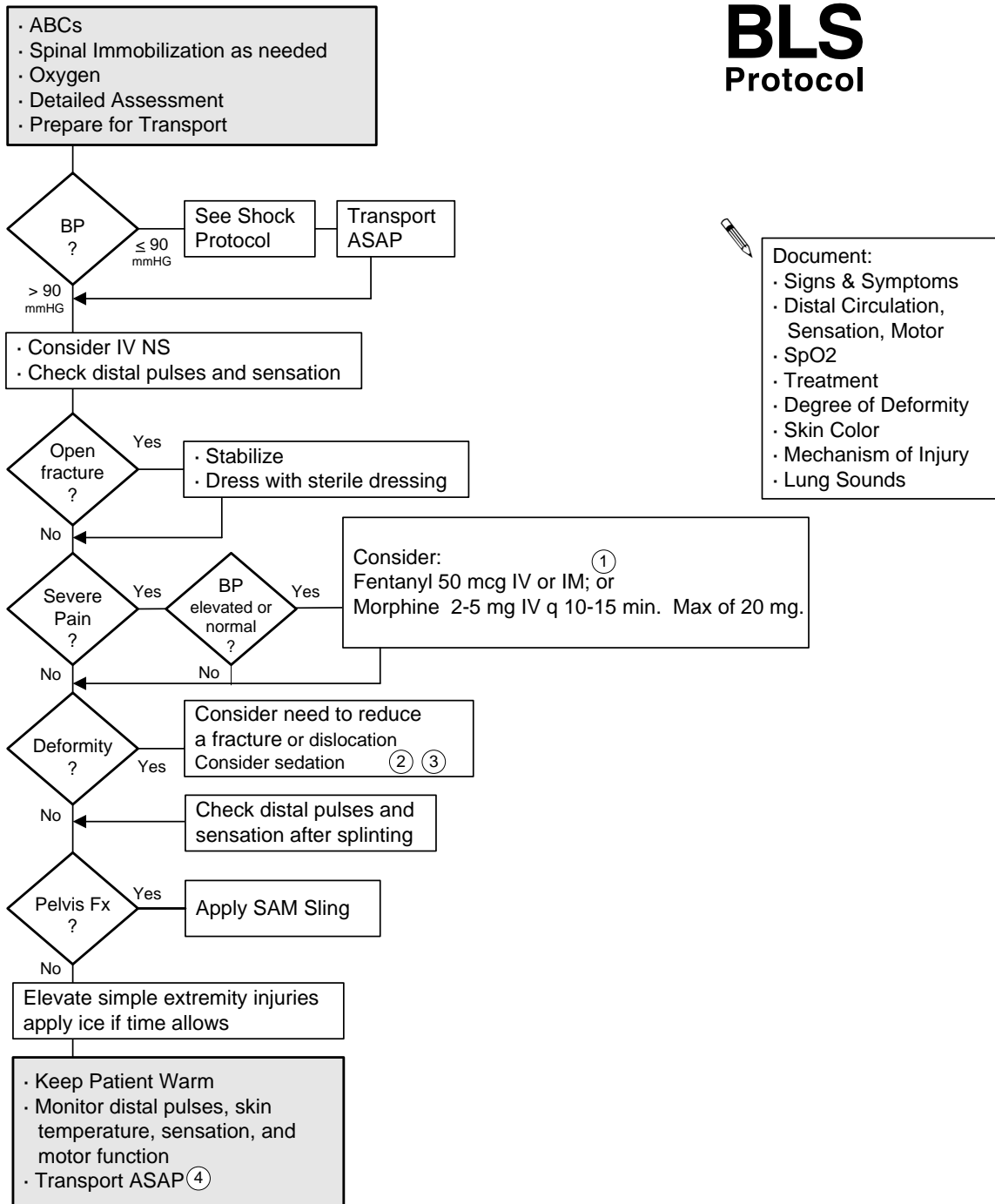
ALS Protocol



1 Intubate as needed. See Intubation & RSI protocols.
 2 Calculate Glasgow Coma Scale and Revised Trauma Score.
 3 Fentanyl: repeat dose 50 mcg prn (titrate to pain). Physician order required for respiratory depression/compromise, shock, or altered mentation.

Trauma: Orthopedic

ALS BLS Protocol



1 Fentanyl: repeat dose 50 mcg prn (titrate to pain). Physician order required for respiratory depression/compromise, shock, or altered mentation.
 2 Immobilize the joint above & below the injury. IF indicated, realign fractures by applying gentle axial traction: a. To restore circulation distally, b. To immobilize adequately, i.e. realign femur fracture.
 3 Dislocations: Contact Medical Control if circulation is compromised.
 4 SpO2 monitoring may help you confirm circulation within an extremity.

Trauma Score: Revised

ALS BLS Protocol

Revised Trauma Score		
Respiratory Rate	10-29	= 4
	> 29	= 3
	6-9	= 2
	1-5	= 1
	NONE	= 0
.....		
Systolic BP mmHg	> 89	= 4
	76-89	= 3
	50-75	= 2
	1-49	= 1
	NO PULSE	= 0
.....		
Glasgow Coma Scale	13-15	= 4
	9-12	= 3
	6-8	= 2
	4-5	= 1
	3	= 0
Revised Trauma Score		<input type="text"/>

To calculate the Revised Trauma Score:
 Determine the patient's Respiratory Rate.
 If the RR is greater than 29 breathes per minute
 the patient receives a score of 3.
 You then calculate the patient's Systolic BP. If
 the patient's Systolic BP is less than 49 they
 receive a score of 1 for Systolic BP.
 Now calculate the Glasgow Coma Scale.
 If the patient's GCS is 8, the patient receives a
 score of 2 in this category.
 Add the 3 scores together. This gives you the
 patient's Revised Trauma Score. In this
 example, the RTS would be 6. Lower scores
 are associated with higher mortality. To see
 how to calculate a Glasgow Coma Scale, go to
 the Glasgow Coma Scale Protocol.

Adult & Children

Glasgow Coma Scale		
Eye	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
.....		
Best Verbal Response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible words	2
.....		
Best Motor Response	Obeys Commands	6
	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
.....		
	Extension	2
	None	1

Infant & Toddler

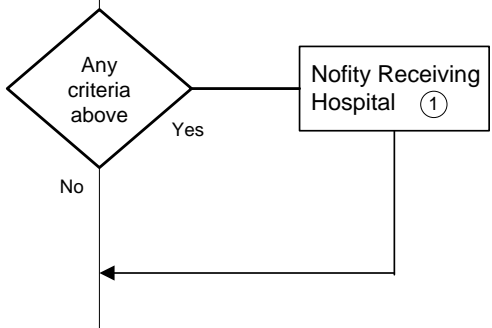
Glasgow Coma Scale		
Eye	Spontaneous	4
	To Voice	3
	To Pain	2
	None	1
.....		
Best Verbal Response	Smiles, Interacts	5
	Consolable	4
	Cries to Pain	3
	Moans to Pain	2
.....		
Best Motor Response	Normal Movement	6
	Localizes Pain	5
	Withdraws (Pain)	4
	Flexion	3
.....		
	Extension	2
	None	1

Trauma System Entry

ALS BLS Protocol

- Scene Safety
- Airway
 - Protect C-spine
 - Open/maintain airway
 - Breathing
 - Assist Ventilations as needed
 - Oxygen 100%
 - Circulation
 - Transport ASAP

Entry Criteria : Vital Signs (<u>Mandatory</u>) *Syst BP <90mmHg *Resp. distress w/ rate <10 or >29 *GCS <12 Anatomy (<u>Mandatory</u>) Penetrating head/neck/torso/ or groin Amputation above wrist or ankle Spinal cord inj w/ paralysis Flail chest 2 or more obvious femur or humerus fx			Mechanism (<u>Mandatory</u>) *Death of same car occupant *Pt ejected from enclosed vehicle *Heavy extrication >20min High Energy Transfer (<u>Discretionary</u>) *Fall > 20ft *Ped. hit @ 20 mph or thrown 15ft. *Rollover *MC, ATV, bicycle crash *Significant impact or intrusion	Comorbidity (<u>Discretionary</u>) *Age (<5 or >55) *Bleeding disorder or anticoagulants *Cardiac/Resp. disease, Diabetes, Cirrhosis, or Morbid Obesity *Pregnancy *Immunosuppressed *Presence of intoxicants *Other_____
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If Helicopter transports patient, it is the responsibility of the ground agency to contact the receiving hospital and notify them of the trauma system entry. Responding ground agency need to forward a PHCR to the receiving hospital ASAP.

See specific Trauma protocols ②

Trauma is rarely isolated to one system or body region. Look for multiple trauma.

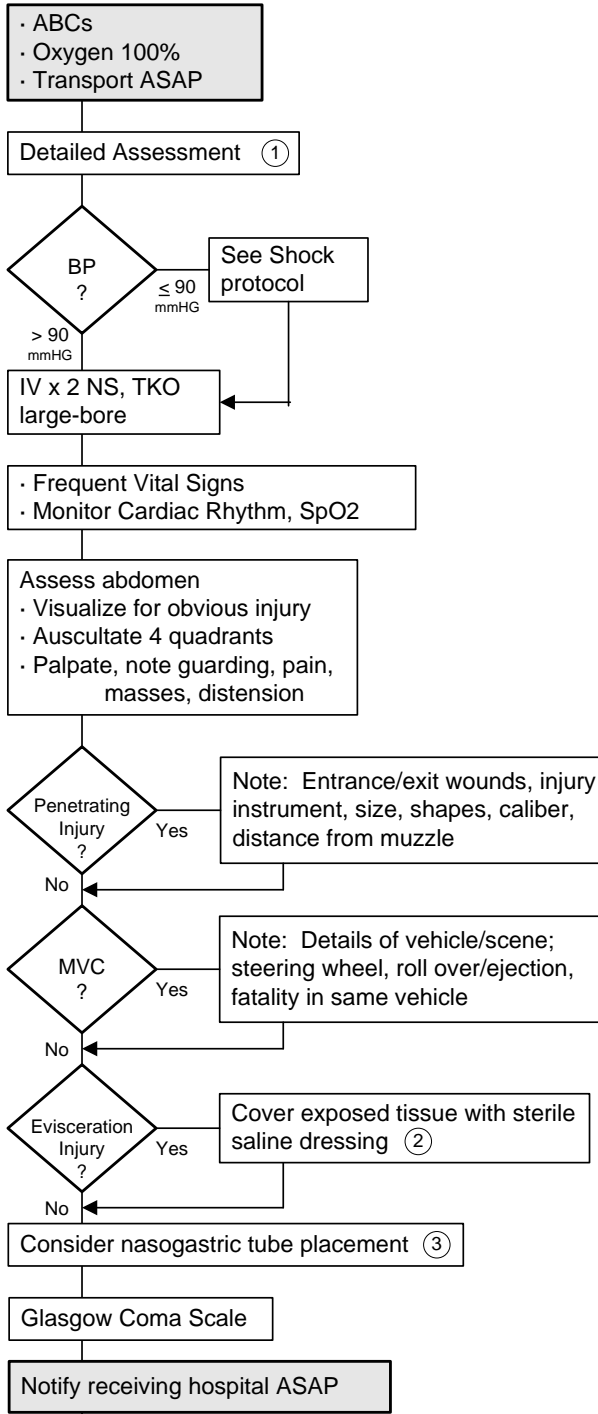
- Keep Patient Warm
- Offer Reassurance
- Transport ASAP ③
- Notify Hospital ASAP


- Document:
- Airway
 - Respiratory Status
 - Circulation
 - Neurologic Status
 - Glasgow Coma Scale
 - Revised Trauma Score
 - Detailed Assessment
 - Vital Signs, SpO2
 - Treatment
 - Trauma Band Number

1 Advise receiving hospital of Trauma System Entry. Advise receiving hospital of trauma criteria met and ETA. Provide any additional pt. information if time and resources permit.
 2 If high index of suspicion but patient does not meet trauma system criteria ensure receiving hospital has adequate patient information to prepare for patient arrival.
 3 Consider Helicopter transport if appropriate. If landing the helicopter at a Hospital landing zone, notify that hospitals ED that you are using their landing zone for a Trauma System Entry being flown to SCMC-Bend.

Trauma: Abdominal

ALS Protocol

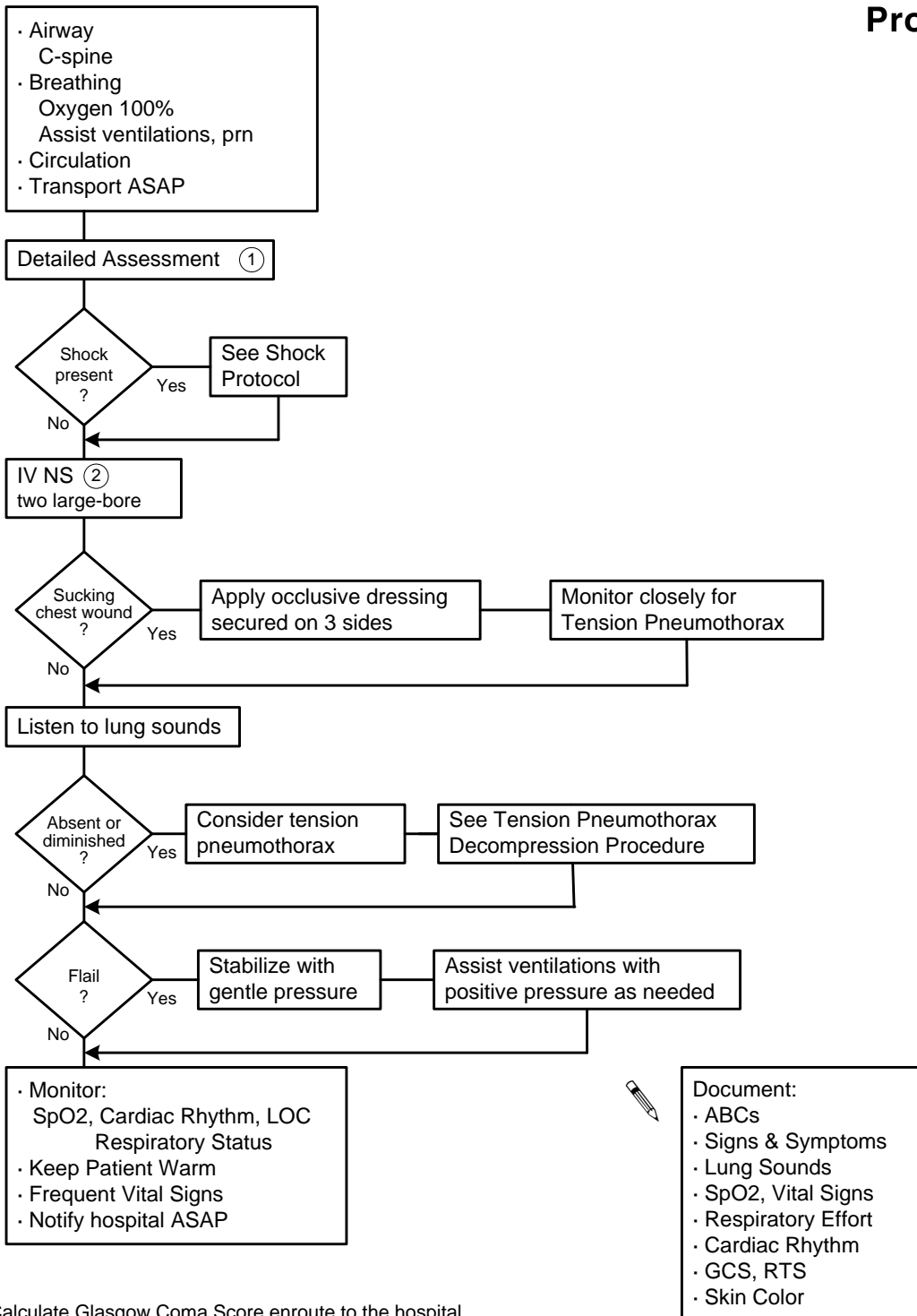


 Document:

- ABCs
- Signs & Symptoms
- Tenderness
- Firmness of Abdomen
- Distention
- Echymosis
- Guarding
- Mechanism of injury
- VS, SpO2, Cardiac Rhythm
- Revised Trauma Score
- Glasgow Coma Score

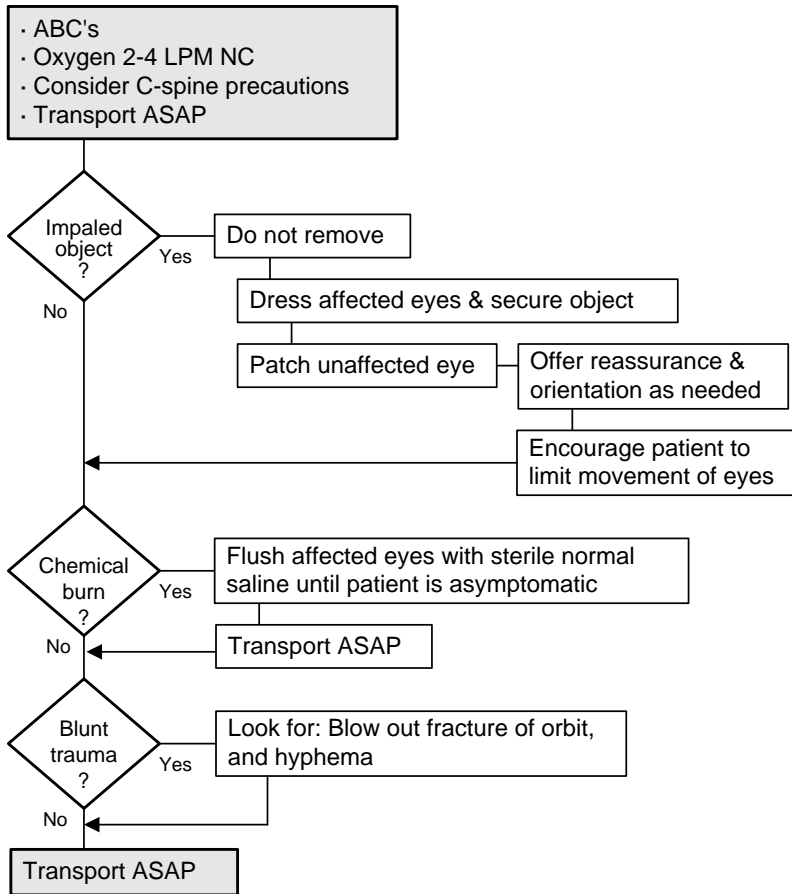
1 Assessment: associate injury site with underlying anatomy. Notify receiving hospital if trauma system criteria is met.
 2 Do not reduce or attempt to reinsert abdominal contents.
 3 Insert gastric tube orally, not nasally, **and** avoid nasal endotracheal intubation IF evidence or suspicion of facial or head trauma exists.

Trauma: Chest



1 Calculate Glasgow Coma Score enroute to the hospital.
2 Administer IV fluids as needed. Do not overload the patient.

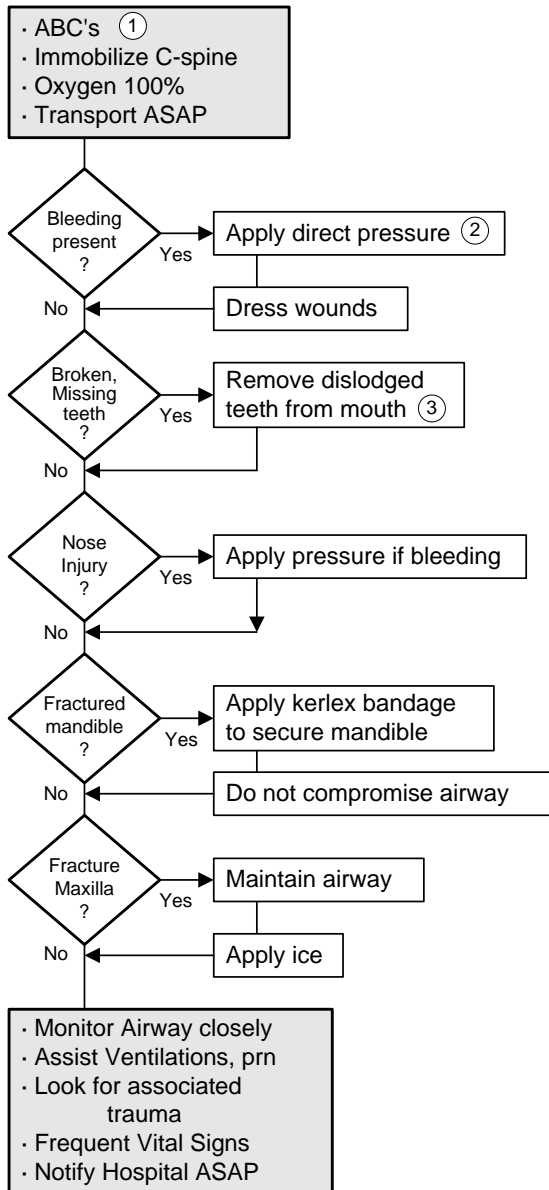
Trauma: Eye Injury



- Document:
- Signs & Symptoms
 - Appearance of Eye
 - Quality, Nature of Pain
 - Pupil, Size, Reaction to Light
 - Treatment
 - Glasgow Coma Scale
 - Revised Trauma Score
 - Mechanism of Injury

Trauma: Facial

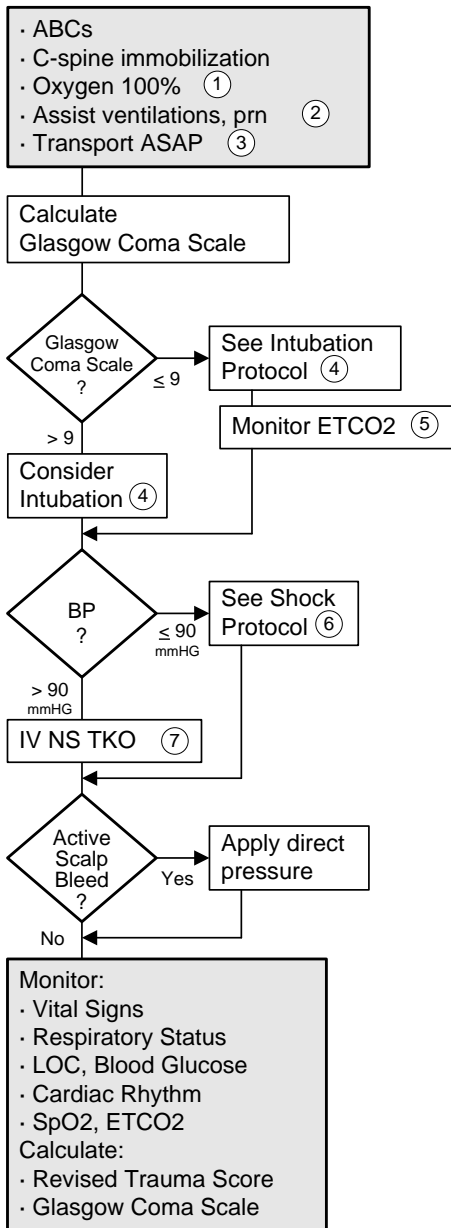
ALS BLS Protocol



- Document:
- Signs & Symptoms
 - Airway
 - Respiratory Effort
 - Lung Sounds
 - SpO2
 - Pupil: Size, Reaction to Light
 - Eyes Conjugate?
 - Jugular Venous Distention?
 - Trachea, Midline?
 - Fluid from Ears?
 - Fontanels in Infant
 - Treatment
 - Glasgow Coma Scale
 - Revised Trauma Score
 - Mechanism of Injury

1 If you are BLS and the patient has airway problems, respiratory distress or is hemodynamically unstable, request ALS Backup ASAP.
 2 Use pressure point if needed.
 3 If you find an intact missing tooth pick it up by its crown (protect root) and place in NS or milk while enroute to the hospital. If you are more than 20 minutes out of the receiving hospital, Contact Medical Control.

Trauma: Head Injury



ALS Protocol

Glasgow Coma Scale			
Eye	Spontaneous	4	
Opening	To Voice	3	
	To Pain	2	
	None	1	
Best	Oriented	5	
Verbal	Confused	4	
	Inappropriate words	3	
	Incomprehensible words	2	
Response	None	1	
	Best	Obeys Commands	6
	Motor	Localizes Pain	5
Response	Withdraws (Pain)	4	
	Flexion	3	
	Extension	2	
	None	1	

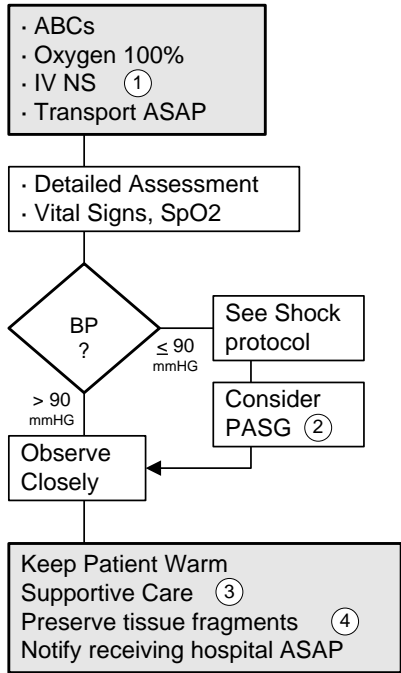


- Document:
- ABCs
 - Signs & Symptoms
 - Glasgow Coma Scale
 - Revised Trauma Score
 - SpO2, ETCO2, VS
 - Cardiac Rhythm
 - Motor/Sensation
 - Lung Sounds
 - Respiratory Effort
 - Skin Color
 - Mechanism of Injury
 - Onset & Duration of LOC

- Oxygen 100% per non-rebreathable mask or bag-valve-device as needed.
- Aggressive ventilatory support may be needed. If the patient's ventilations are not effective secure the patient's airway and assist ventilations.
- Every head-injured patient who has had a period of unconsciousness must be evaluated at a hospital.
- Avoid nasal intubation.
- End-Tidal CO2 should be maintained between 25-35 mmHg.
- Treat hypotension. Head injury may cause shock in infants.
- Start 2 large-bore IVs.

Vaginal Bleeding

ALS Protocol



- Possible causes:
- Miscarriage
 - Trauma
 - Infection
 - Placenta previa
 - Abruptio placentia
 - Ectopic pregnancy

- Document:
- Gravida (5)
 - Para (6)
 - Estimated Blood Loss
 - Color of Blood
 - Presence of Tissue
 - Last Menstrual Period
 - Possibility of Pregnancy
 - Possibility of Assault
 - Vital Signs, SpO2
 - Detailed Assessment

- 1 Large-bore IV. If bleeding is significant start a second IV and adjust IV flow rate to patient condition. If hypotensive, give a fluid bolus of 250-500 cc BSS.
- 2 PASG: Do not inflate the abdominal compartment. Inflating leg compartments may be helpful. **Contact Medical Control before applying PASG** in this scenario.
- 3 If possibility of assault exists maintain chain of evidence and, If possible, have a female attendant in the patient care area.
- 4 Collect tissue fragments and blood if present.
- 5 Gravid: pregnant, heavy with child. Record the number of times the patient states she has been pregnant, i.e., Gravida, 3 indicates the patient has been pregnant 3 times, including her current pregnancy if she is pregnant at the time of the exam.
- 6 Para: this is the number of live, viable births she has delivered.