

TMI PRE-HOSPITAL PROTOCOLS



Tactical Medics International

No set of protocols can effectively cover every clinical situation. Therefore, the protocols and guidelines that follow are not intended to be, nor should any practitioner substitute them for exercise of professional judgment. There are situations involving patient care, both common and unusual that require the individual to exercise practitioner's clinical judgment. If there are any questions regarding a condition that meets ALS protocol, contact Medical Control.

Approved: _____

By: _____
TMI Medical Director

1st edition created _____

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Procedures



12 Lead ECG

Clinical Indications:

1. Suspected cardiac patient
2. Suspected tricyclic overdose
3. Electrical injuries
4. Syncope

Procedure:

1. Assess the patient and monitor cardiac status.
2. Administer oxygen if the patient warrants.
3. If the patient is unstable, definitive treatment is the priority. If the patient is stable or stabilized after treatment perform a 12 Lead ECG.
4. Prepare ECG monitor and connect the patient with electrodes.
5. Expose the chest and prep as necessary. Modesty of the patient should be respected.
6. Apply chest leads and extremity leads using the following landmarks:

RA – right arm

LA – left arm

RL – right leg

LL – left leg

V1 – 4th intercostals space at right sternal border

V2 – 4th intercostals space at left sternal border

V3 – directly between V2 & V4

V4 – 5th intercostals space at midclavicular line

V5 – level with V4 at left anterior axillary line

V6 – level with V5 at left midaxillary line

7. Instruct patient to remain still.
8. Press appropriate button to acquire 12 Lead ECG.
9. If the monitor detects signal noise (such as patient motion or a disconnected electrode), the 12 Lead acquisitions will be interrupted until the noise is removed.
10. Monitor the patient while continuing with the treatment.
11. Document the procedure, time, results on/with the patient report.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway Change-Tracheostomy Tube

Clinical Indications:

1. Presence of tracheostomy site.
2. Urgent or emergent indication to change the tube, such as obstruction that will not clear with suction, dislodgement, or inability to oxygenate/ventilate the patient without other obvious explanation.

Procedure:

1. Have all airway equipment prepared for standard airway management, including equipment of orotracheal intubation and failed airway.
2. Have airway device (endotracheal tube or tracheostomy tube) of the same size as the tracheostomy tube that is currently in place as well as 0.5 sizes smaller available.
3. Lubricate the replacement tube and check the cuff.
4. Remove the tracheostomy tube from mechanical ventilation devices and use a bag-valve device to pre-oxygenate the patient as much as possible.
5. Once all equipment is in place, remove devices securing the tracheostomy tube, including sutures and/or supporting bandages.
6. If applicable, deflate the cuff on the tube. If unable to aspirate air with a syringe, cut the balloon off to allow the cuff to lose pressure.
7. Remove the tracheostomy tube.
8. Insert the replacement tube. Confirm placement via standard measures except for esophageal detection (which is ineffective for surgical airways).
9. If there is any difficulty placing the tube, re-attempt procedure with the smaller tube.
10. If difficulty is still encountered, use standard airway procedures such as oral bag-valve mask or endotracheal intubation (as per protocol). **More difficulty with tube changing can be anticipated for tracheostomy sites that are immature- i.e., less than two weeks old. Great caution should be exercised in attempts to change immature tracheostomy sites.**
11. Document procedure, confirmation, patient response, and any complications in the PCR.

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Airway Combitube

Clinical Indications:

1. In an apneic patient when endotracheal intubation is not possible or not available.
2. Patient must be > 5 feet and > 16 years of age, no known esophageal disease, and/or no known ingestion of caustic substances.
3. Patient must be unconscious.

Procedure:

1. Preoxygenate the patient.
2. Lubricate the tube.
3. Grasp the patient's tongue and jaw with your gloved hand and pull forward.
4. Gently insert the tube until the teeth are between the printed rings.
5. Inflate line 1 (blue pilot tube) leading to the pharyngeal cuff with 85 cc air.
6. Inflate line 2 (white pilot balloon) leading to the distal cuff with 15 cc air.
7. Ventilate the patient through the blue tube.
8. Auscultate for breath sounds over epigastric area and then the lungs.
9. If breath sounds are positive and epigastric sounds are negative, continue ventilation through the blue tube. The tube is in the esophagus. In the esophageal mode, stomach contents can be aspirated through the # 2 tube, while relieving gastric distention.
10. If breath sounds are negative and epigastric sounds are positive, attempt ventilation through the shorter, #2 white tube and reassesses for epigastric and lungs sounds. If breath sounds are present and the chest rises, you have intubated the trachea and continue ventilation through tube #2.

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Airway Intubation Confirmation End-Tidal CO2 Detector

Clinical Condition:

The end tidal CO2 detector shall be used with intubation with spontaneous circulation.

Procedure:

1. Attach End-Tidal CO2 detector to endotracheal tube.
2. Note color change. A color change or CO2 detection will be documented on each respiratory failure or cardiac arrest patient.
3. The CO2 detector shall remain in place with the airway and monitored color change is to be documented and monitored as procedures are done to verify or correct the airway problem.
4. Tube placement should be verified frequently and always with each patient move or loss of color change in the End Tidal CO2 detector.
5. Document the procedure and the results on/with the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway Intubation Confirmation with Esophageal Bulb

Clinical Indications:

To assist in determining and documenting the correct tube placement of endotracheal or nasotracheal tube placement.

Procedure:

1. Complete intubation as per Airway Intubation-Oral or Airway Intubation-Nasal protocols.
2. Place the bulb device over the proximal end of the ETT or NTT. Squeeze the bulb to remove air prior to securing the bulb on the tube.
3. Once secured on the tube, release the bulb.
4. If the bulb expands evenly and easily, this indicates probable tracheal intubation. Assessment of the patient's breath sounds bilaterally should also be performed.
5. If the bulb does not expand easily, this indicates possible esophageal intubation and the need to reassess the airway.
6. Document the result in the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway-Nasotracheal Intubation

Clinical Indications:

1. A spontaneously breathing patient in the need of intubation (inadequate respiratory effort, evidence of hypoxia or carbon dioxide retention, or the need for airway protection).

Procedure:

1. Premedicate the patient with nasal spray.
2. Select the largest and least obstructed nostril and insert a lubricated nasal airway to help dilate the nasal passage.
3. Preoxygenate the patient. Lubricate the tube.
4. Remove the nasal airway and gently insert the tube keeping the bevel of the tube toward the septum.
5. Continue to pass the tube listening for air movement and looking for condensation in the tube. As the tube approaches the larynx, the air movement gets louder.
6. Gently and evenly advance the tube through the glottic opening on inspiration. This facilitates passage of the tube and reduces the incidence of trauma to the vocal cords.
7. Upon entering the trachea, the tube may cause the patient to cough, buck, strain, or gag. **Do not remove the tube!** This is normal, but be prepared to control the cervical spine and the patient, be alert for vomiting.
8. Auscultate for bilaterally equal breath sounds and the absence of epigastric sounds.
9. Inflate the cuff.
10. Confirm tube placement using End Tidal CO₂ or bulb device.
11. Secure the tube.
12. Document the procedure, time, and the result (success) on/with the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway-Nebulizer Inhalation Therapy

Clinical Indications:

Patients experiencing bronchospasm.

Procedure:

1. Gather the necessary equipment.
2. Assemble the nebulizer kit.
3. Instill the premixed Albuterol into the reservoir well of the nebulizer.
4. Connect the nebulizer device to oxygen adequate flow to produce a steady visible mist.
5. Instruct the patient to inhale normally through the mouthpiece of the nebulizer. The patient needs to have a good lip seal around the mouthpiece.
6. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in the utilizing all of the solution.
7. Monitor the patient for medication effects. This should include the patient's assessment of his/her response to the treatment and reassessment of vital signs, ECG, and breath sounds.
8. Document the treatment, dose, and route on/with the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway-Needle Cricothyrotomy

Clinical Indications:

1. Failed Airway Protocol
2. Management of an airway when standard airway procedures cannot be accomplished or have failed in a patient < 3 years old.

Procedure:

1. Have suction supplies available and ready.
2. Locate the cricothyroid membrane utilizing anatomical landmarks.
3. Use the non-dominant hand to secure the membrane.
4. Prep the area with an antiseptic swab.
5. Using the syringe and the finder needle supplied in the commercial needle cricothyrotomy kit (or a 5cc syringe attached to a 14 gauge catheter over needle device if needed), insert the needle through the cricothyroid membrane at a 45-60 degree caudal angle.
6. Aspirate for air with the syringe throughout the procedure.
7. Once air returns easily, stop advancing the device.
8. Attach jet ventilation device to port of device is used in step 5 above. If jet ventilation is not available, then attach the barrel of a 3 to 5 cc syringe to the device and attach a bag valve device to the barrel of the syringe, or apply the adapter from a 3.5 ETT tube to the catheter hub.
9. Assess breath sounds. Make certain ample time is used not only for inspiration but expiration as well.
10. Secure needle by best method available; recognize that this method may be direct hands on control of the device throughout the entire transport.
11. If unable to obtain an adequate airway, resume basic airway management and transport the patient as soon as possible.
12. Regardless of success or failure of needle cricothyrotomy, notify the receiving hospital at the earliest possible time of a surgical airway emergency.
13. Document time/procedure/confirmation/change in patient condition on the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway-Orotracheal Intubation

Clinical Indication:

1. An unconscious patient without a gag reflex who is apneic or is demonstrating inadequate respiratory effort.
2. Any patient medicated for RSI (rapid sequence induction)

Procedure:

1. Prepare all equipment and have suction ready.
2. Preoxygenate the patient.
3. Open the patient's airway and holding the laryngoscope in the left hand, insert the blade into the right side of the mouth and sweep the tongue to the left.
4. Use the blade to lift the tongue and epiglottis (either directly with the straight blade or indirectly with the curved blade).
5. Once the glottic opening is visualized, slip the tube through the cords and continue to visualize until the cuff is past the cords.
6. Remove the stylet and inflate the cuff with 10 cc of air.
7. Auscultate for bilaterally equal breath sounds and absence of sounds over the epigastrium. This should be repeated frequently and after movement of manipulation.
8. Confirm tube placement using an End Tidal CO₂ detector or an esophageal bulb device.
9. Secure the tube.
10. Document ETT size, time, results (success), and placement location by centimeter marks either at the patient's teeth or lips on/with the PCR. Also document before and after each movement of positive or negative breath sounds.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway Respirator Operations

Clinical Indications:

Transport of an intubated patient.

Procedure:

1. Confirm the placement of the tube as per the airway protocol.
2. Ensure adequate oxygen delivery to the respirator device.
3. Preoxygenate the patient as much as possible with bag valve device.
4. Remove BVD and attach tube to respiration device.
5. Per instructions of device, set initial respiration valves.
6. Assess breath sounds. Allow for adequate expiratory time. Adjust respirator settings as clinically indicated.
7. If any worsening of patient condition, decrease oxygen saturation, or any other question regarding the function of the respirator, remove the respirator and resume bag valve device operations.
8. Document time, complications, and patient response on the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway-Rapid Sequence Induction

Clinical Indications:

Need for airway control in a patient who has a gag reflex or trismus.

Contraindications:

1. Known neuromuscular disease such as myasthenia gravis, amyotrophic lateral sclerosis, muscular dystrophy, Guillain-Barre syndrome.
2. Chronic renal failure and or hemodialysis.
3. Patient or family history of malignant hyperthermia.
4. Known preexisting hyperkalemia.
5. Known hypersensitivity to succinylcholine.

Procedure:

1. Preoxygenate patient with 100% oxygen via NRB or BVM.
2. Monitor oxygen saturation with pulse oximetry and heart rhythm with ECG.
3. Ensure functioning IV access.
4. Evaluate for difficult airway.
5. Prepare equipment (intubation kit, BVM/BVD, suction, RSI medications, combitube, cricothyrotomy kit, CO2 detection devices).
6. Stroke/head trauma suspected? Lidocaine 1mg/kg.
7. Administer Etomidate 0.3mg/kg adult (20mg) pediatric 0.3mg/kg.
8. Administer Versed 2-5mg IVP adult. 0.1mg/kg pediatric.
9. In line c-spine stabilization by second caregiver (in setting of trauma).
10. Administer Succinylcholine 1.5mg/kg IVP (100mg).
11. Apply cricoid pressure (by third caregiver).
12. Intubate trachea.
13. Verify tube placement
 - a. Auscultation
 - b. ET CO2 device
 - c. Pulse oximetry
14. May repeat Succinylcholine 1.5mg/kg IVP. (100mg adult)
15. Release cricoid pressure and secure the tube.
16. Once position confirmed and tube stabilized, may administer Vecuronium 10mg IVP as needed for paralysis/sedation.
17. Re-verify tube placement after every move and upon arrival in the ED.
18. Document the procedure, time, and result (success) on/with the PCR

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Airway Suctioning-Advanced

Clinical Indications:

Obstruction of the airway (secondary secretions, blood or any other substance) in a patient currently being assisted by an airway adjunct such as a naso-tracheal tube, endotracheal tube, Combitube, tracheostomy tube, or a cricothyrotomy tube.

Procedure:

1. Ensure suction device is in proper working order.
2. Preoxygenate the patient as soon as possible.
3. Attach suction catheter to a suction device, keeping sterile plastic covering over catheter.
4. Using the suprasternal notch and the end of the airway into the catheter will be placed as guides, measure the depth desired for the catheter (judgment must be used regarding the depth of suctioning with cricothyotomy and tracheostomy tubes).
5. If applicable, remove ventilation devices from the airway.
6. With the thumb port of the catheter uncovered, insert the catheter through the airway device.
7. Once the desired depth (measured in #4 above) has been reached, occlude the thumb port and remove the suction catheter slowly.
8. Reattach ventilation device (e.g, bag-valve) and ventilate the patient.
9. Document time and result in the PCR.

Airway Suction-Basic

Clinical Indications:

Obstruction of the airway (secondary secretions, blood or any other substance) in a patient who cannot maintain or keep the airway clear.

Procedure:

1. Ensure suction device is in proper working order with suction tip in place.
2. Preoxygenate the patient as is possible.
3. Explain the procedure to the patient if they are coherent.
4. Examine the oropharynx and remove any potential foreign bodies or material, which may occlude the airway if dislodged by the suction device.
5. If applicable, remove ventilation devices from the airway.
6. Use the suction device to remove any secretions, blood or other substance.
7. The alert patient may assist with this procedure.
8. Reattach ventilation device and ventilate or assist the patient.
9. Record time and result of the suctioning in the PCR.

Airway Surgical Cricothyrotomy

1. INDICATION:

Inability to perform oral/nasal intubation.

Massive midface trauma.

2. EQUIPMENT:

- Skin prep
- Scalpel
- Hemostat or Trousseau Dilator
- 6.0-7.0 ETT
- Bag-Valve-Trach

3. PROCEDURE:

1. Prepare skin.
2. With non-dominant hand, palpate cartilaginous landmarks (thyroid cartilage and cricoid ring); keep hand there. Palpate cricothyroid membrane with index finger.
3. With scalpel in dominant hand, incise skin; repalpate membrane, stab through membrane.
4. Dilate airway opening with hemostat/ dilator.
5. Place ETT into airway and inflate cuff.
6. Confirm placement:
7. Assess breath sounds over both chest and lack of epigastric sounds.
8. Use ETCO₂ detector.

Once position confirmed and tube stabilized, may administer **Vecuronium 10mg IVP** and **Midazolam 2-5mg IVP** as needed for paralysis/sedation.

Assessment Adult

Clinical Indications:

Any patient requesting a medical evaluation that is too large to be measured with a Broselow-Luten Resuscitation Tape.

Procedure:

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, need for additional resources, by-stander safety, and patient/caregiver interaction.
2. Assess need for additional resources.
3. Initial assessment includes a general impression as well as the status of a patient's airway, breathing and circulation.
4. Assess mental status (e.g., AVPU) and disability (e.g, GCS).
5. Control major hemorrhage and assess overall priority patients.
6. Perform focused history and physical based on patient's chief complaint.
7. Assess need for clinical interventions.
8. Complete critical interventions and perform a complete secondary exam to include a baseline set of vital signs as directed by protocol.
9. Maintain an on-going assessment throughout transport; to include patient response/possible complications of interventions, need for additional interventions, and assessment of evolving complaint/conditions.

Assessment Pediatric

Clinical Indications:

Any child that can be measured with the Broselow-Luten Resuscitation Tape.

Procedure:

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, need for additional resources, by-stander safety, and patient/caregiver interaction.
2. Assess patient using the pediatric triangle of ABC's:
 - a. Airway and appearance: speech/cry, muscle tone, interactiveness, look/gaze, movement of extremities.
 - b. Work of breathing: absent or abnormal airway sounds, use of accessory muscles, nasal flaring, body positioning.
 - c. Circulation to skin: pallor, mottling, cyanosis
3. Establish spinal immobilization if suspicion of spinal injury.
4. Establish responsiveness appropriate for age (AVPU, GCS, ect.).
5. Color code using length based tape.
6. Assess disability (pulse, motor, sensory function, papillary reaction).
7. Perform a focused history and physical exam. Recall that pediatric patients easily experience hypothermia and thus should not be left uncovered any longer than necessary to perform an exam.
8. Record vital signs.
9. Include immunizations, allergies, and medications, past medical history, last meal, and events leading up to the injury or illness where appropriate.
10. Treat chief complaint as per protocol.

Blood Glucose Analysis

Clinical Indications:

Patients with suspected hypoglycemia (diabetic emergencies, change in mental status, bizarre behavior, ect.)

Procedure:

1. Gather and prepare equipment.
2. Blood samples for performing glucose analysis should be obtained simultaneously with intravenous access.
3. Place correct amount of blood on reagent strip or site on glucometer per the manufacture's instructions.
4. Time the analysis as instructed by the manufacturer.
5. Document the glucometer reading and treat the patient as indicated by the analysis and protocol.
6. Repeat glucose analysis as indicated for reassessment after treatment and as per protocol.

Certification Requirements:

Attend equipment in-services.

Capnography

Clinical Indications:

Capnography shall be used when available in the following situations.

Clinical Indications:

1. Acute Respiratory Distress
 - a. COPD
 - b. Asthma
 - c. Suspected bronchospasm of other origin
 - d. Acute pulmonary edema
2. Drug overdose/administration
 - a. Sedatives
 - b. Narcotics
3. Closed Head Injury

After intubation, EtCO₂ monitoring can provide guidance.

 - i. Carefully guide your ventilations to maintain an EtCO₂ of 30 mmHg.
 - ii. The above can be generally accomplished by mechanical ventilation at 12-15 bpm.
4. Tube Confirmation
 - a. Cardiac arrest
 - b. Rapid sequence induction

Capnography provides an excellent way to continuously monitor tube placement and guide mechanical ventilation.

Procedure:

1. Attach capnography sensor to the patient, and then to input of machine.
2. Note CO₂ level and waveform changes. These should be documented on the PCR.
3. Continuously monitor the capnogram throughout treatment and transport.
4. Any loss of CO₂ detection or waveform indicates an airway problem and should be addressed, treat the patient first, and then look for evidence of equipment failure.
5. Tube placement should be verified frequently and always with each patient move or loss of EtCO₂ value or waveform.
6. Document the procedure and results on/with the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Cardioversion

Clinical Indications:

Perfusing ventricular tachycardia or a supraventricular tachycardia in an unstable patient. The following symptoms may indicate an unstable patient: chest pain, hypotension, respiratory distress, altered LOC.

Procedure:

1. Confirm the presence of dysrhythmia and evaluate the patient's hemodynamic status.
2. Premedicate with sedation as needed. Be prepared to assist ventilation's if necessary.
3. Apply combo pads to the patient's chest.
4. Set the defibrillator to the cardioversion mode by depressing the "SYNC" key.
5. Set the appropriate energy level.
6. Charge to the appropriate energy level.
7. Assertively state "CLEAR" and visualize that no one, including yourself, is in contact with the patient.
8. Deliver the countershock by depressing the discharge button; hold the discharge button until shock is delivered. There may be a momentary delay while the machine detects the R wave.
9. Assess the patient's response to the cardioversion.
10. Document the dysrhythmia and the response to the cardioversion with EKG strips.

***If the patient deteriorates into ventricular fibrillation or pulseless ventricular tachycardia, prepare for immediate defibrillation (unsynchronized shock!!!).

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Chest Decompression

Clinical Indications:

Tension pneumothorax

Procedure:

1. Confirm presence of a tension pneumothorax or identify strong clinical evidence in a rapid deteriorating patient in the setting of a major trauma.
2. Locate the insertion site at the second intercostals space at the midclavicular line on the affected side of the chest.
3. Prep the insertion site.
4. Insert the 2 inch, large gauge angiocath with a 10cc syringe attached, by directing the needle just over the top of the third rib (2nd intercostals space) to avoid intercostals nerves and vessels, which are located on the inferior rib borders.
5. Advance the catheter 1-2 inches through the chest wall. Pull back on the plunger of the syringe as the needle is advanced. Tension should be felt until the needle enters the pleural space. A “pop” or “give” may also be felt. Do not advance the needle any further.
6. Withdraw the needle and advance the catheter until flush with the skin. Listen for a gush or hiss of air, which confirms placement and diagnosis. CAUTION: this is frequently missed due to ambient noise.
7. Dispose of the needle properly.
8. Secure the catheter and rapidly transport the patient providing appropriate airway assistance.

Certification Requirements:

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Childbirth

Clinical Indications:

Imminent delivery with crowning.

Procedure:

1. Delivery should be controlled so as to allow a slow controlled delivery of the infant. This will prevent injury to the mother and infant.
2. Support the infant's head as needed.
3. Check for the umbilical cord surrounding the neck. If it is present, slip it over the head. If unable to free the cord from the neck, double clamp the cord and cut between the clamps.
4. Suction the airway with a bulb syringe.
5. Grasping the head with hands over the ears, gently pull down to allow delivery of the anterior shoulder.
6. Gently pull up on the head to allow delivery of the posterior shoulder.
7. Slowly deliver the remainder of the infant.
8. Clamp the cord 2 inches from the abdomen with two clamps and cut the cord between the clamps.
9. Record APGAR scores at 1 and 5 minutes.
10. Follow the Newly Born Protocol for further treatment.
11. The placenta will deliver spontaneously, usually within 5 minutes of the infant. Do not force the placenta to deliver.
12. Massaging the uterus may facilitate delivery of the placenta and decrease bleeding by facilitating uterine contractions.
13. Continue rapid transport to the hospital.

Cardiopulmonary Resuscitation (CPR)

Clinical Indications:

Basic life support for patients in cardiac arrest.

Procedure:

1. Assess the patient's level of responsiveness.
2. If no response, open the patient's airway with the head-tilt, chin lift and look, listen, and feel for respiratory effort. If the patient may have sustained C-spine trauma, use the modified jaw thrust while maintaining immobilization of the C-spine. For infants, positioning the head in a sniffing position is the most effective method for opening the airway.
3. If no respiratory effort, give two rescue breaths via appropriately sized BVM.
4. Check for pulse for at least 10 seconds.
5. If no pulse begin chest compressions based on chart below.

Age	Location	Depth	Rate
Infant	Over sternum, between nipples (inter-mammary line), 2-3 fingers	0.5 to 1 inch (1/3 the anterior-posterior chest dimension)	At least 100/minute
Child	Over sternum, just cephalad from the xiphoid process, heel of one hand	1 to 1.5 inches (1/3 the anterior-posterior chest dimension)	80-100/minute
Adult	Over sternum, just cephalad from the xiphoid process, hands interlocked with fingers	1.5 to 2 inches (1/3 the anterior-posterior chest dimension)	80-100/minute

6. Provide at least 12 to 20 breaths per minute with BVM.
7. Reassess for pulse every 1 to 2 minutes.
8. Document the time and procedure in the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Defibrillation Manual

Clinical Indications:

Cardiac arrest with ventricular fibrillation or pulseless ventricular tachycardia.

Procedure:

1. Clinically confirm the diagnosis of cardiac arrest and identify the need for defibrillation.
2. After application of an appropriate conductive agent if needed, apply defibrillation paddles or hands free pads to the patient's chest in the proper position (right of the sternum at 2nd ICS and anterior axillary line at 5th ICS).
3. Set the appropriate energy level (adult- 200, 300, 360 joules; peds- 2 joules/kg initially with repeat dose of 4 joules/kg) for monophasic devices. Biphasic for adult 120, 150, 200 joules. Peds is same as monophasic.
4. Charge the defibrillator to the selected energy level.
5. Assure proper placement of the paddles or pads.
6. Assure proper contact by applying 25 pounds of pressure on each paddle or make sure Combo pads have good contact with patient.
7. Assertively state "CLEAR" and visualize that no one, including yourself, is in contact with the patient.
8. Deliver the countershock by depressing discharge button(s) when using paddles, or depress the shock button for hands free operation.
9. Assess the patient's response.
10. Document the dysrhythmia and the response to defibrillation with ECG strips on/with PCR.
11. Repeat the procedure as indicated by patient response and ECG rhythm.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

External Cardiac Pacing

Clinical Indications:

1. Patients with symptomatic bradycardia after no response to atropine or primary treatment if unable to start an IV.
2. Pediatric patients requiring external transcutaneous pacing require the use of pads.
3. If used in asystole, it must be early.

Procedure:

1. Oxygen, ECG monitor, IV (if possible) should be in place prior to pacing.
2. Confirm the presence of the dysrhythmia (include a copy of the ECG strip if possible) and evaluate the patient's hemodynamic status.
3. Adjust the QRS amplitude so the machine can sense the intrinsic QRS activity.
4. Apply pacing pads to the patient's chest in either of the following positions, anterior-anterior or anterior-posterior.
5. Attach the pacing pads to the therapy cable from the machine.
6. Turn pacer on.
7. Observe the ECG screen for a "sense" marker on the QRS complex. If a "sense" marker is not present, readjust the ECG size or select another lead.
8. Set the desired pacing rate.
9. Start at the lowest setting and increase current slowly while observing the ECG screen for evidence of electrical pacing capture.
10. Assess the patient's response to the pacing therapy.
11. Consider the use of sedation or analgesia if the patient is uncomfortable.
12. Document the dysrhythmia and the response to the external pacing with ECG strips.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Injections-Subcutaneous, Intramuscular

Clinical Indications:

When medication administration is necessary and the medication must be given via the SQ or IM route or as an alternative route in selected medications.

Procedure:

1. Receive and confirm medication order or perform according to standing orders.
2. Prepare equipment and medication expelling air from the syringe.
3. Explain the procedure to the patient and reconfirm patient allergies.
4. The most common site for SQ injection is the arm. Injection volume should not exceed 1 cc.
5. The possible injection sites for intramuscular injection include the arm, buttock, and thigh. Injection volume should not exceed 1cc for the arm and not more than 2cc in the thigh or buttocks.
6. The thigh should be used for injections in pediatric patients and injection volume should not exceed 1cc.
7. Expose the selected site and cleans with alcohol.
8. Insert the needle into the skin with a smooth, steady motion
 - SQ: 45 degree angle with the skin pinched**
 - IM: 90 degree angle with skin flat**
9. Aspirate for blood.
10. Inject the medication.
11. Withdraw the needle quickly and dispose of properly.
12. Monitor the patient for desired therapeutic effects as well as any possible side effects.
13. Document the medication, dose, route, and time on/with PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Nasogastric Tube Insertion

Clinical Indications:

Gastric decompression in intubated patients or for administration of activated charcoal in patients with altered mental status.

Procedure:

1. Estimate the insertion length by superimposing the tube over the body from the nose to the stomach.
2. Flex the neck if not contraindicated to facilitate esophageal passage.
3. Liberally lubricate the distal end of the tube and pass through the patient's nostril along the floor of the nasal passage. This increases the difficulty of the insertion and may cause bleeding.
4. In the setting of an unconscious, intubated patient with facial trauma, oral insertion of the tube may be considered or preferred.
5. Continue to advance the tube gently until the appropriate distance is reached.
6. Confirm tube placement by injecting 20cc of air and auscultate for the swish or bubbling of air over the stomach. Additionally, aspirates gastric contents and confirm proper placement.
7. Secure the tube.
8. Decompress the stomach of air and food either by connecting the tube to suction or manually aspirating with the large catheter tip syringe.
9. Document the procedure, time and result on/with PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Restraints

Clinical Indications:

Patients with actual or potential threat to self or others.

Procedure:

1. Evaluate the need for restraints. Restraints should be considered only as a last resort after verbal techniques have failed.
2. Request law enforcement assistance.
3. The least amount of restraint necessary to accomplish the desired purpose should be used.
4. The restraints should not be limiting to the patient's peripheral or central circulation or respiratory status.
5. Soft restraints such as cravats or roller bandages can be used for extremity restraints.
6. The restraints should be frequently monitored during transport.
7. Document on/with PCR.

Venous Access-Existing Catheters

Clinical indications:

Access of an existing venous catheter for medication or fluid administration.

Procedure:

1. Cleans the port of the catheter with an alcohol wipe.
2. Using a 5cc of normal saline, access the port with sterile technique and gently attempt to flush the saline.
3. If there is no resistance, no evidence of infiltration, and no pain experienced by the patient, the proceed to step 4. If there is resistance, evidence of infiltration, pain experienced by the patient, or any concern that the catheter may be clotted or dislodged, do not use the catheter.
4. Begin administration of medications of IV fluids slowly and observe for any signs of infiltration. If difficulties are encountered, stop the infusion and reassess.
5. Record procedure, any complications, and fluid/medications administered in the PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Venous Access-External Jugular Access

Clinical Indications:

External jugular vein cannulation is indicated in a critically ill patient who requires intravenous access for fluid or medication administration and in whom an extremity vein is not obtainable.

Procedure:

1. Place the patient in a supine head down position. This helps to distend the vein and prevents air embolism.
2. Turn the patient's head toward the opposite side if no risk of cervical injury exists.
3. Prep the site as per peripheral IV site.
4. Align the catheter with the vein and aim toward the same side shoulder.
5. "Tourniqueting" the vein lightly with one finger above the clavicle, puncture the vein midway between the angle of the jaw and the clavicle and cannulate the vein in the usual method.
6. Attach the IV and secure the catheter avoiding circumferential dressing or taping.
7. Document the procedure, time, and result on/with PCR.

Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

Venous Access-Extremity

Clinical Indication:

Any patient where intravenous access is indicated (significant trauma or mechanism, emergent or potentially emergent medical condition).

Procedure:

1. Inspect the IV solution for expiration date, cloudiness, discoloration, leaks, or the presence of particles.
2. Connect the IV tubing to the solution in a sterile manner. Fill the drip chamber half full and then flush the tubing bleeding all air bubbles from the line.
3. Place the constricting band around the patient's extremity to restrict venous flow only.
4. Select a vein and an appropriate gauge catheter for the vein and the patient's condition.
5. Prep the skin with an antiseptic solution.
6. Insert the needle with the bevel up into the skin in a steady, deliberate motion until the bloody flashback is visualized in the catheter.
7. Advance the catheter into the vein. Never reinsert the needle through the catheter. Dispose of the needle into the proper container without recapping.
8. Draw blood samples when appropriate.
9. Remove the constricting band and connect the IV tubing or saline lock.
10. Open the IV to assure free flow of the fluid and then adjust the flow rate as per protocol or as clinically indicated.
11. Cover the site with sterile dressing and secure the IV tubing.
12. Document the procedure, time and results on/with PCR.

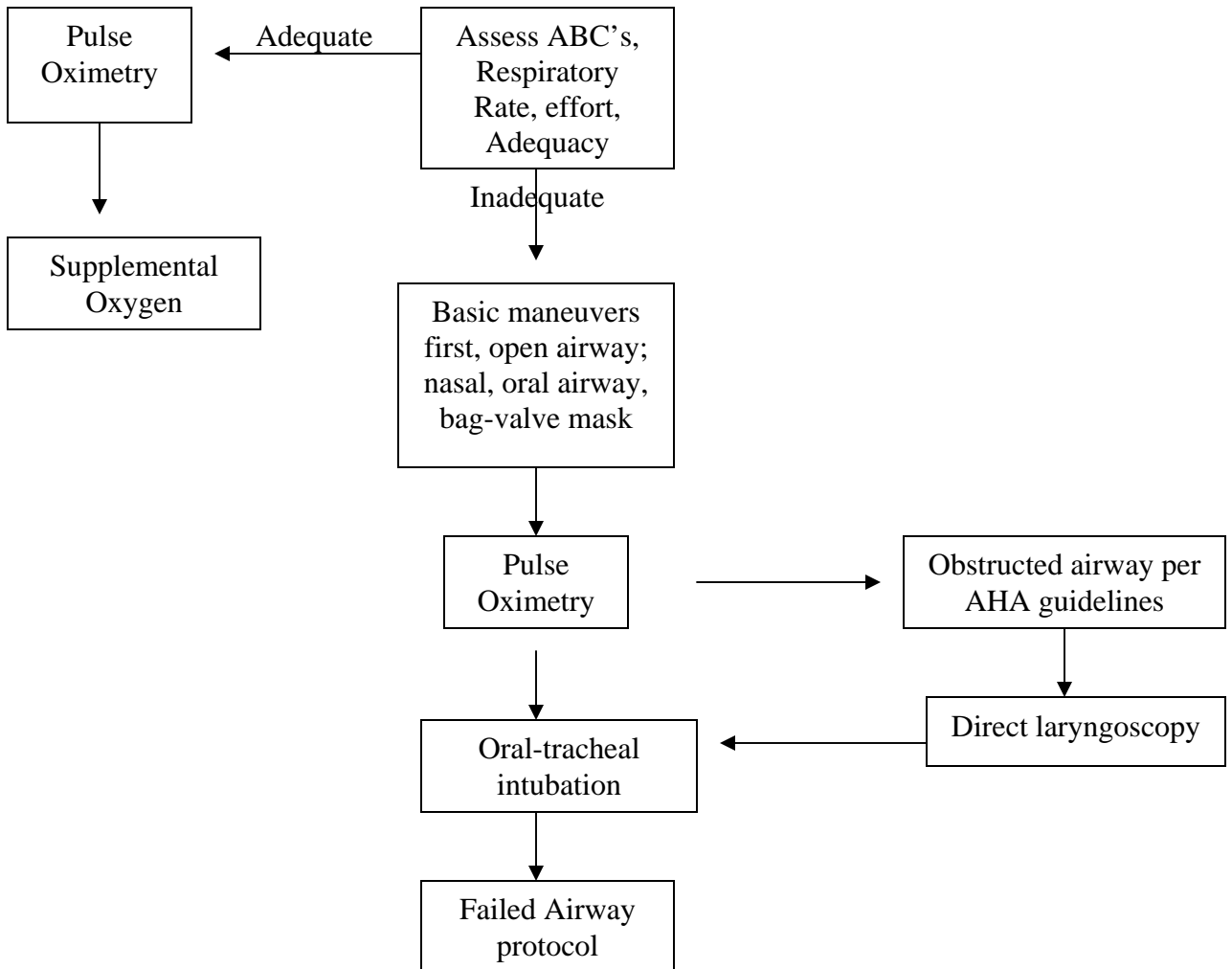
Certification Requirements:

Successfully complete an annual skill evaluation inclusive of the indications, contraindications, technique and possible complications of the procedure.

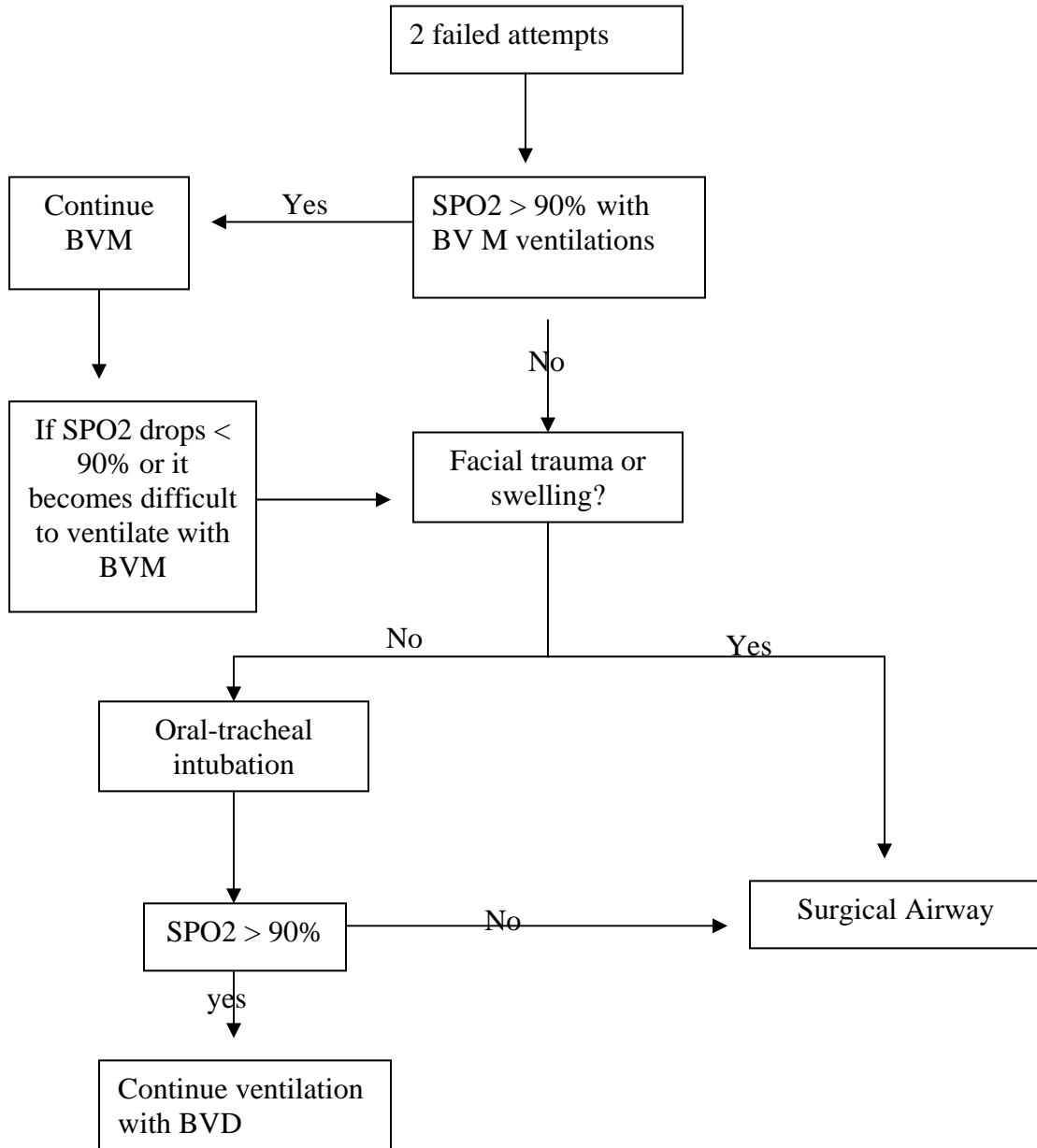
General Protocols



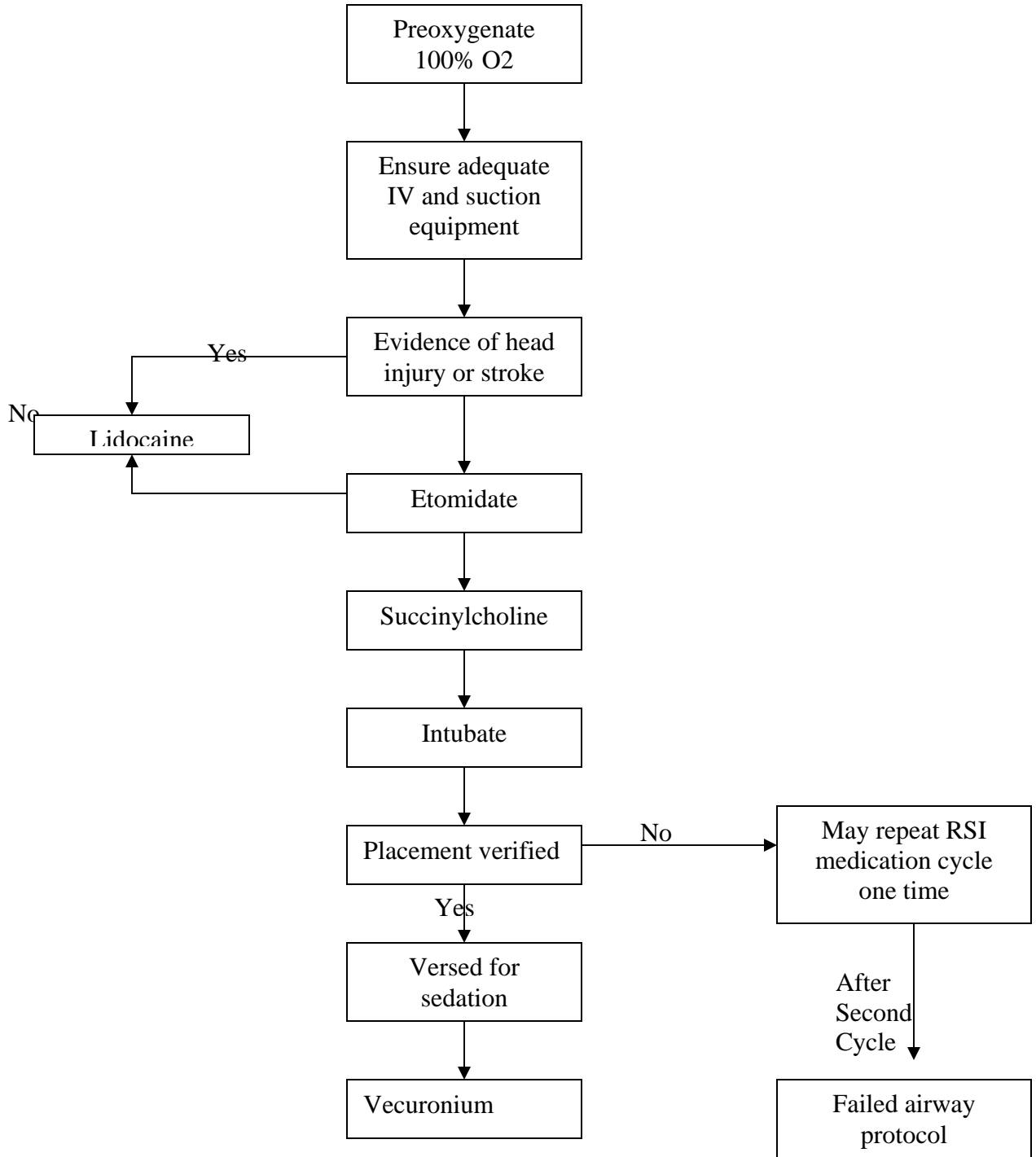
Airway, Adult



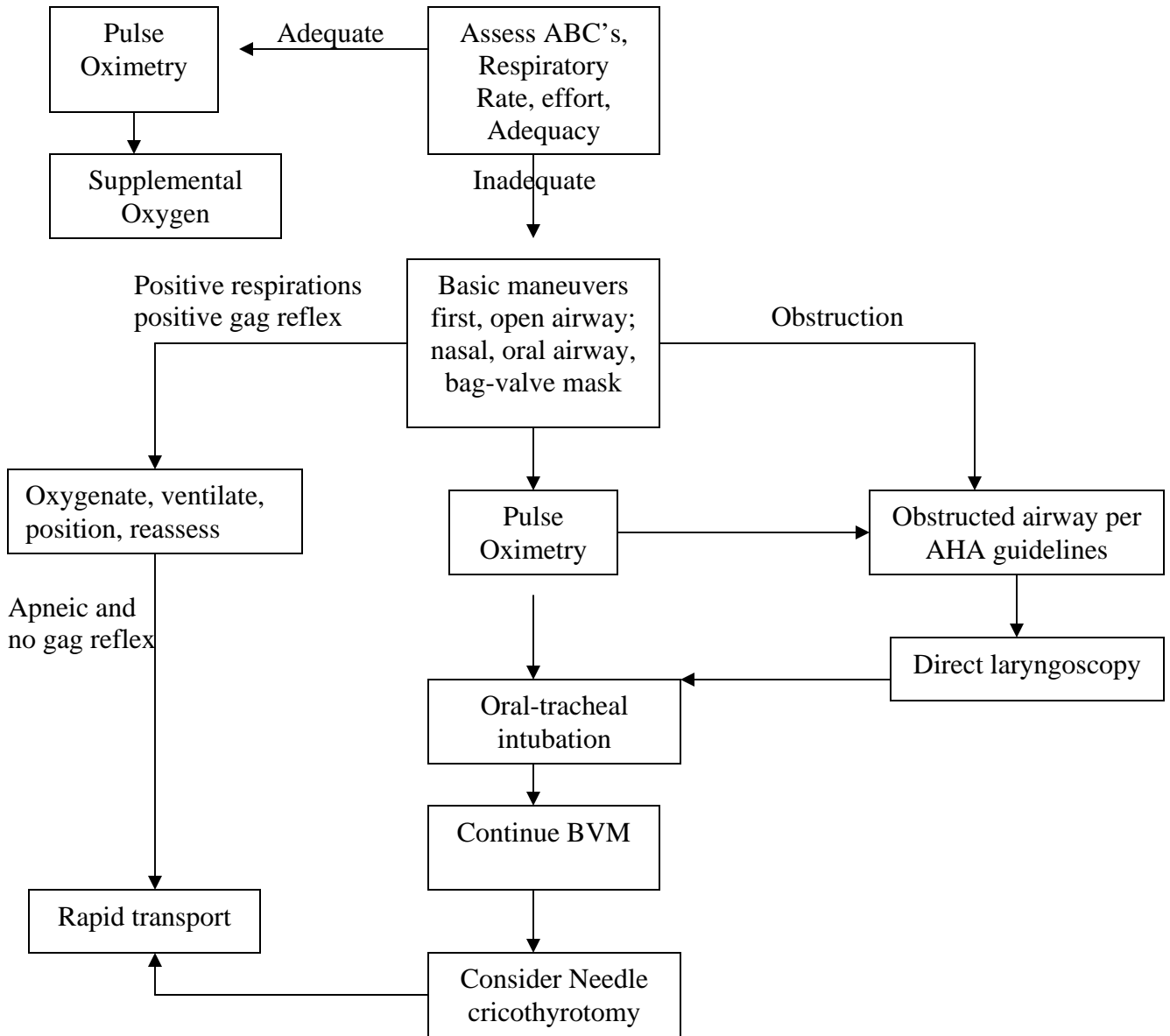
Airway, Adult-Failed



Airway, RSI

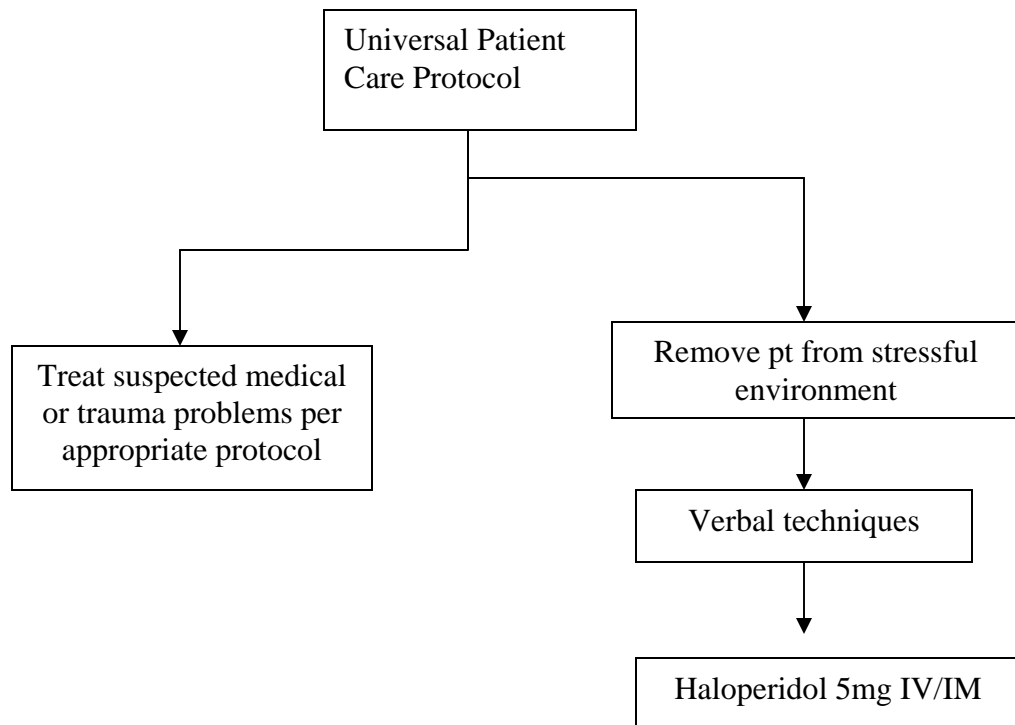


Airway, Pediatric

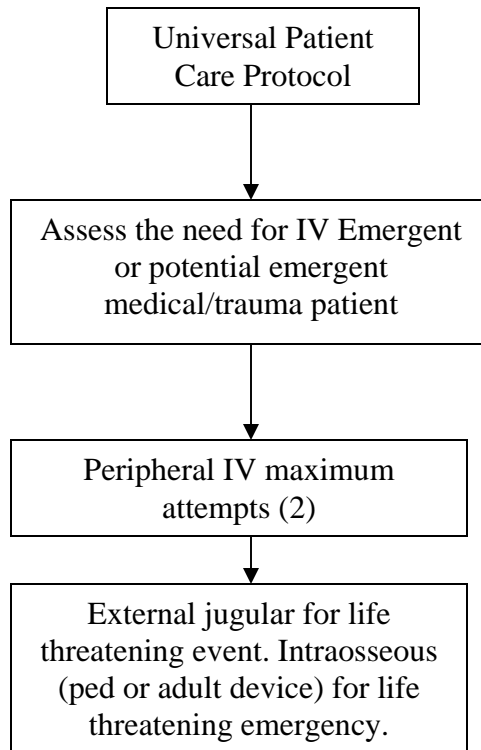


Behavioral

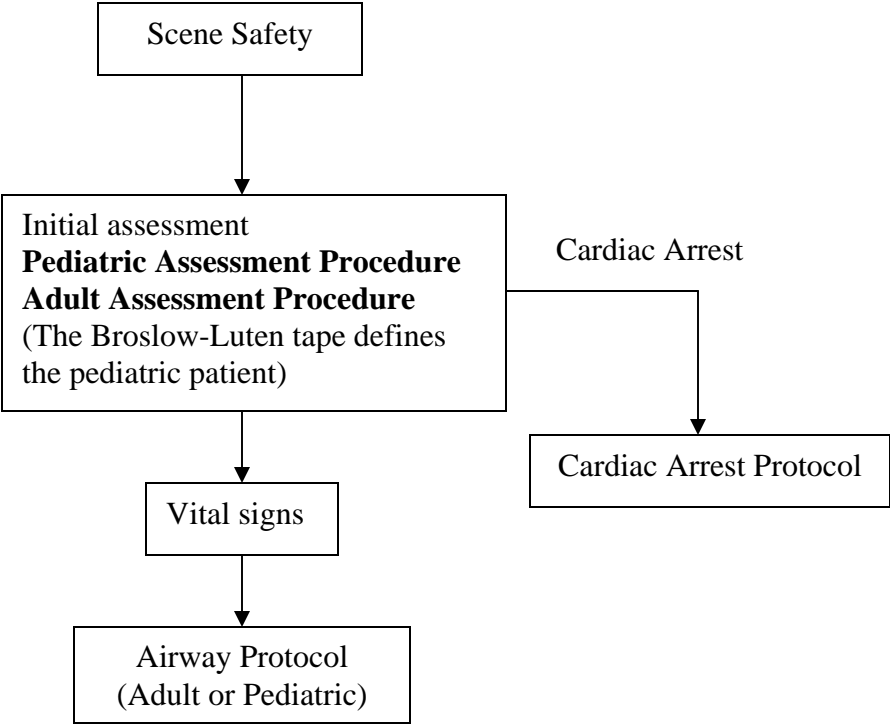
<p>History:</p> <ol style="list-style-type: none"> 1. Situational crisis 2. Psychiatric illness 3. Injury to self or threats to others 4. Substance abuse/overdose 5. Diabetes 	<p>Signs and Symptoms:</p> <ol style="list-style-type: none"> 1. Anxiety, agitation, confusion 2. Affect change, hallucinations 3. Delusional 4. Combative violent 5. Expression of suicidal/homicidal thoughts 	<p>Differential:</p> <ol style="list-style-type: none"> 1. See altered mental status differential 2. Alcohol intoxication 3. Toxin/substance abuse 4. Withdraw syndromes 5. Depression 6. Bipolar 7. Schizophrenia 8. Anxiety disorders
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IV



Universal Patient Care Protocol

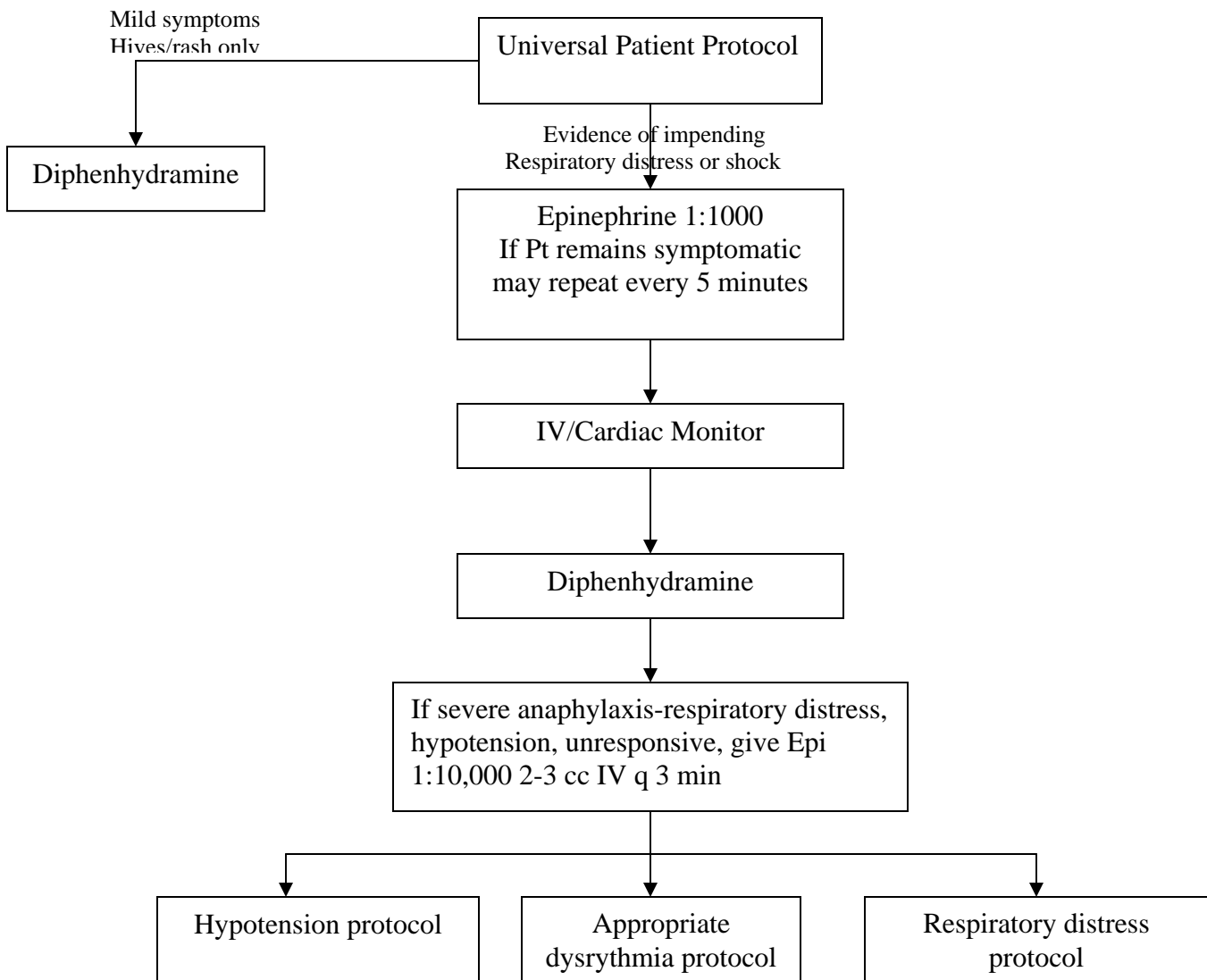


Medical Protocols



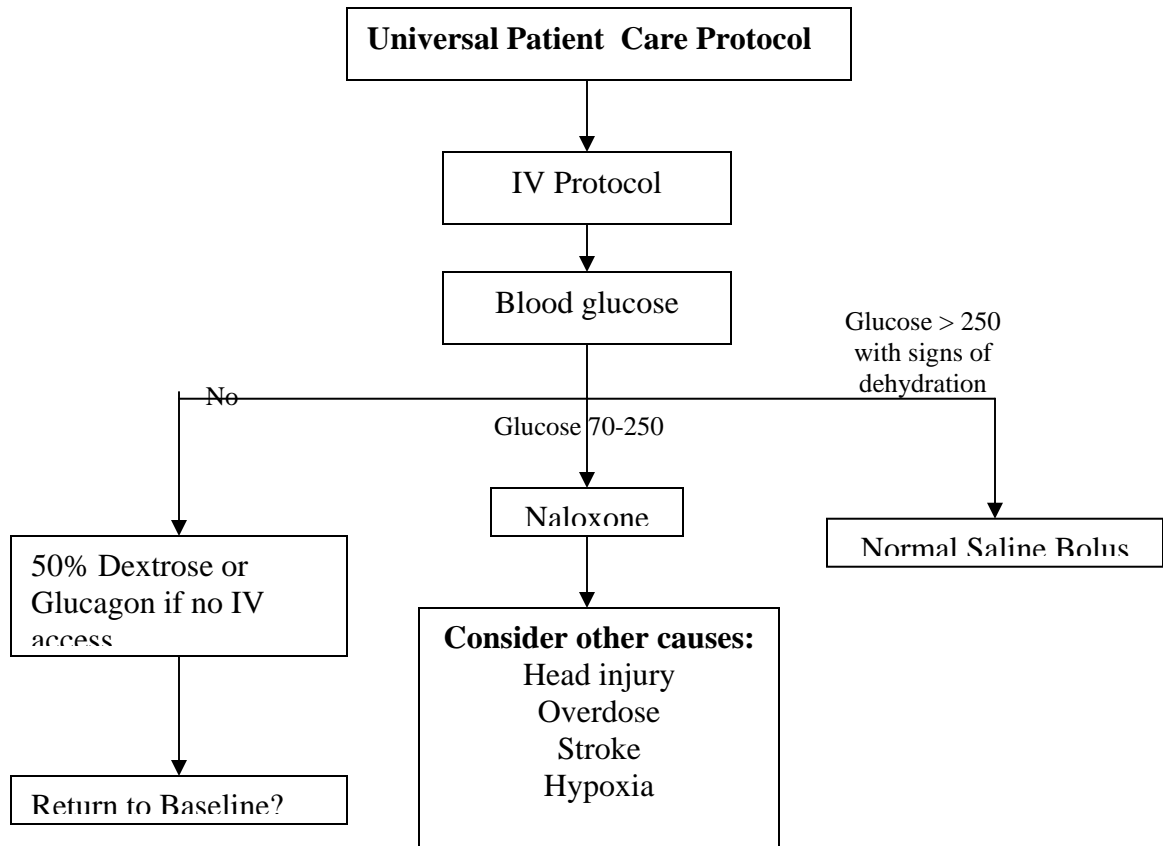
Allergic Reaction

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Onset & location 2. Insect sting or bite 3. Food allergy/exposure 4. Medication allergy/exposure 5. New clothing, soap, detergent 6. Past history of reactions 7. Past medical history 	<ol style="list-style-type: none"> 1. Itching or hives 2. Coughing/wheezing or respiratory distress 3. Chest or throat constriction 4. Difficulty swallowing 5. Hypotension or shock 6. Edema 7. Nausea & vomiting 	<ol style="list-style-type: none"> 1. Urticaria (rash only) 2. Anaphylaxis 3. Shock 4. Angioedema (drug induced) 5. Aspiration/airway obstruction 6. Vasovagal effect 7. Asthma or COPD 8. CHF



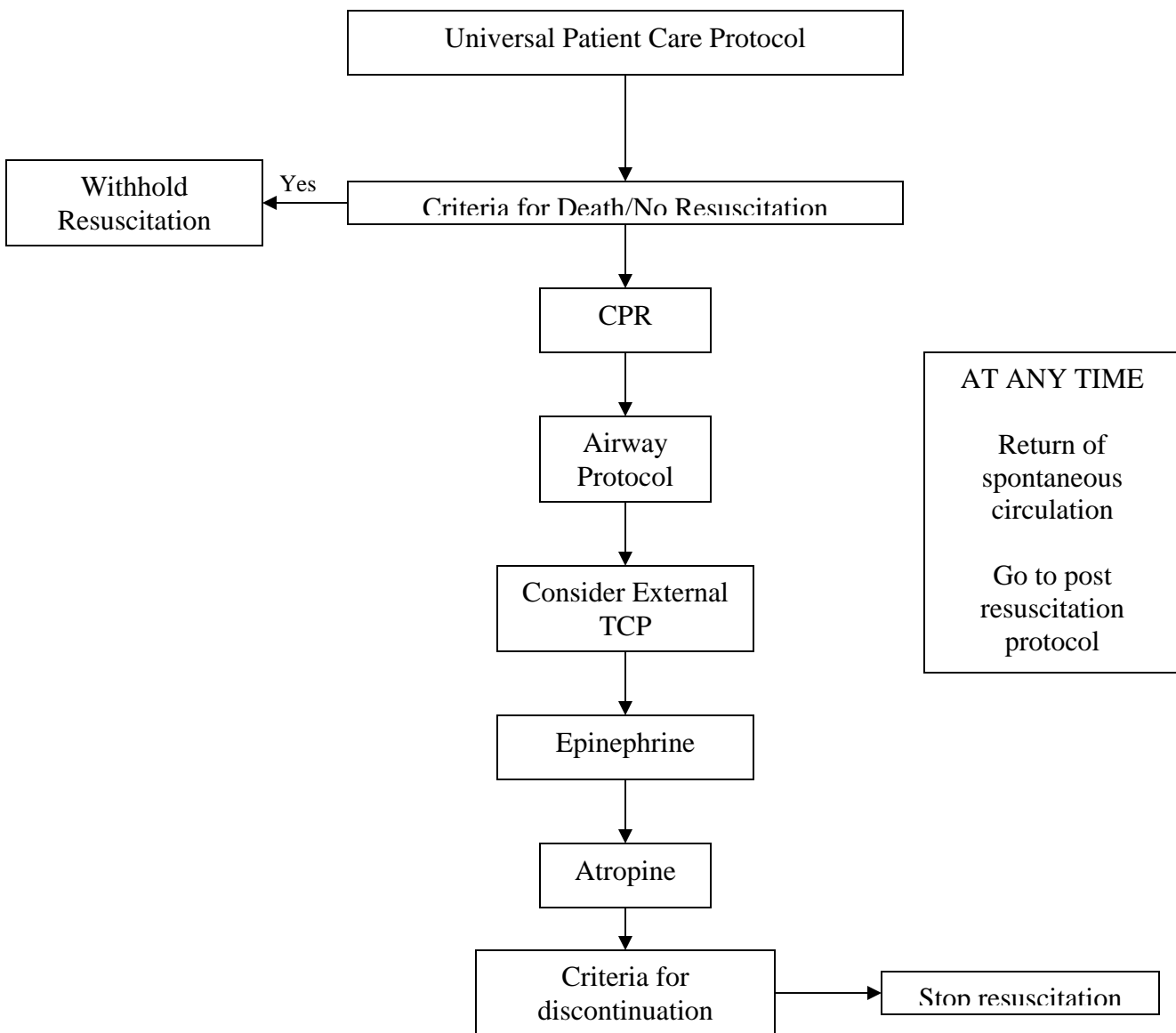
Altered Mental Status

<p>History:</p> <ol style="list-style-type: none"> 1. Known diabetic, medic alert tag 2. Drugs, drug paraphernalia. 3. Report of illicit drug use or toxic ingestion. 4. Past medical history 5. Medications. 6. History of Trauma. 	<p>Signs/Symptoms:</p> <ol style="list-style-type: none"> 1. Decreased mental status. 2. Change in base line mental status 3. Bizarre behavior. 4. Hypoglycemia 5. Hyperglycemia. 	<p>Differential:</p> <ol style="list-style-type: none"> 1. Head trauma. 2. CNS (stroke, tumor, seizure infection). 3. Cardiac 4. Thyroid 5. Shock 6. Diabetes 7. Toxicology 8. Acidosis/alkalosis 9. Environmental exposure 10. Pulmonary 11. Electrolyte imbalance 12. Psychiatric disorder.
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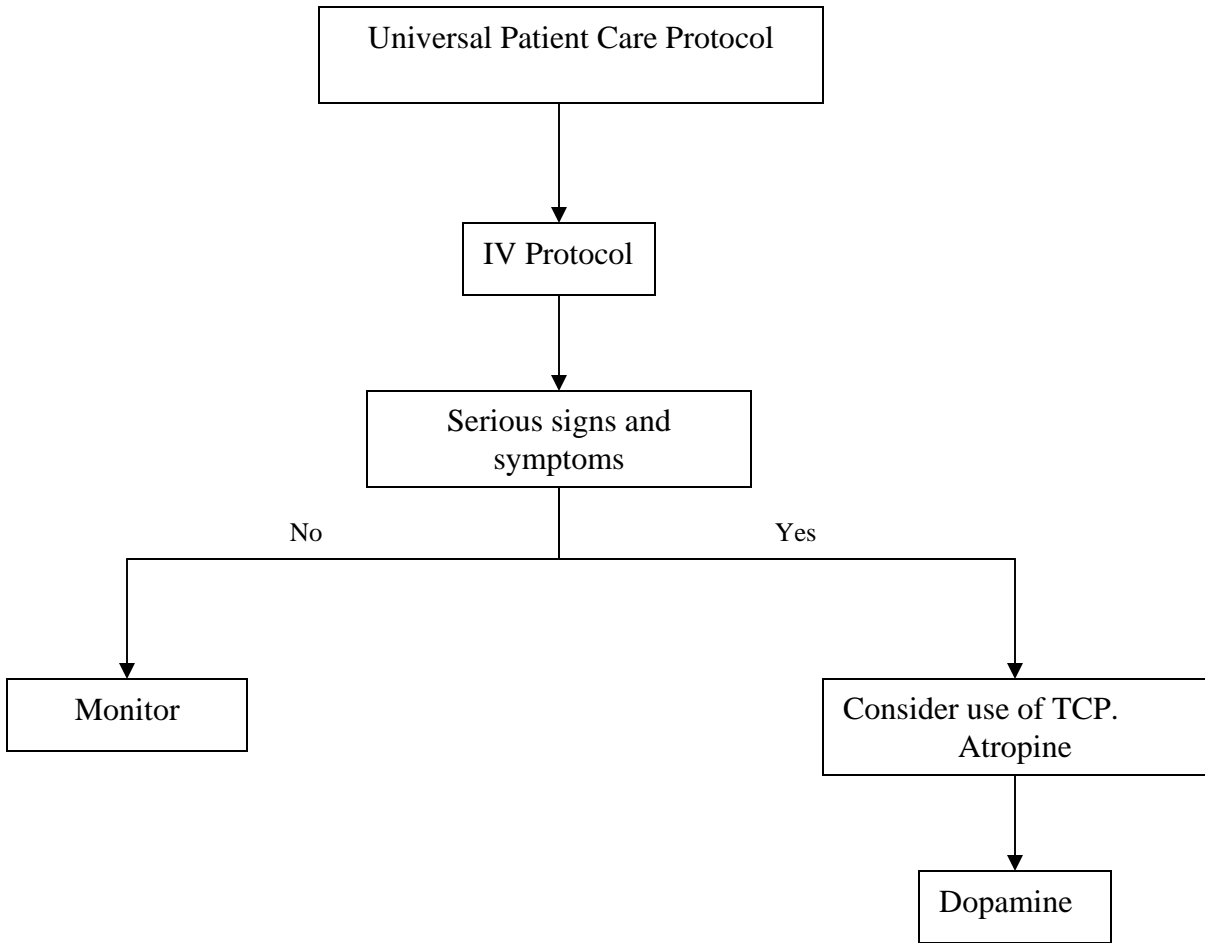
Asystole

History:	Signs and Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Past Medical history. 2. Medications 3. Events leading to arrest. 4. End stage renal disease. 5. Estimated downtime 6. Suspected hypothermia 7. Suspected overdose 8. DNR or Living Will 	<ol style="list-style-type: none"> 1. Pulseless 2. Apenic 3. No electrical activity on ECG 	<ol style="list-style-type: none"> 1. Medical or Trauma 2. Hypoxia 3. Potassium (Hypo/Hyper) 4. Drug Overdose 5. Acidosis 6. Hypothermia 7. Device (lead) error 8. Death



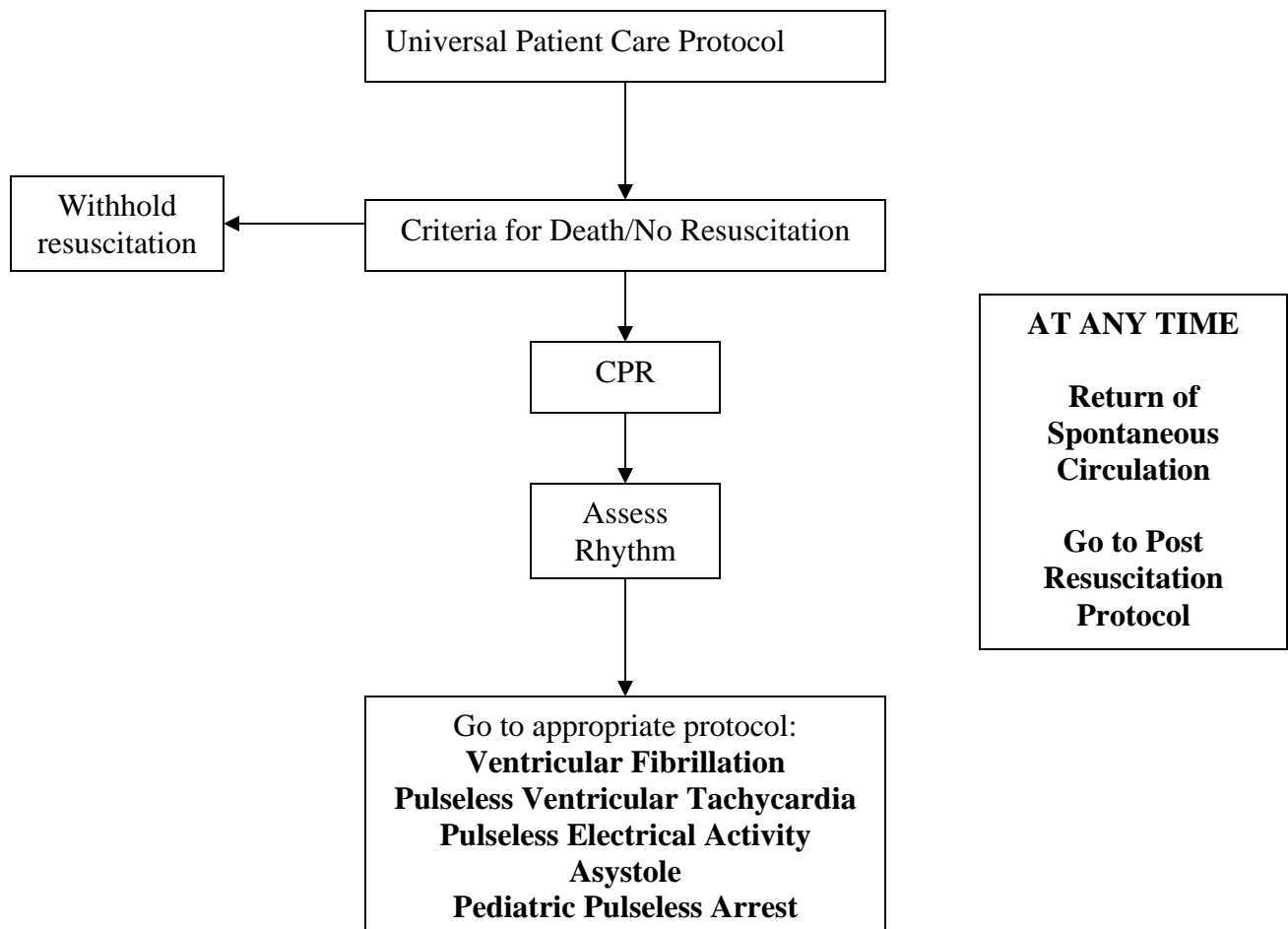
Bradycardia

History: <ol style="list-style-type: none"> 1. Past medical history 2. Medications 3. Beta-Blockers 4. Calcium Channel Blockers: Clonidine, Digitalis 5. Pacemaker 	Signs & Symptoms: <ol style="list-style-type: none"> 1. HR < 60/min plus 2. Chest Pain 3. Respiratory distress 4. Hypotension or shock 5. Altered mental status 6. Syncope 7. Ventricular ectopy 	Differential: <ol style="list-style-type: none"> 1. Acute MI 2. Hypoxia 3. Hypothermia 4. Sinus Bradycardia 5. Athletes 6. Head Injury or stroke 7. Spinal cord lesion 8. AV Blocks
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Cardiac Arrest

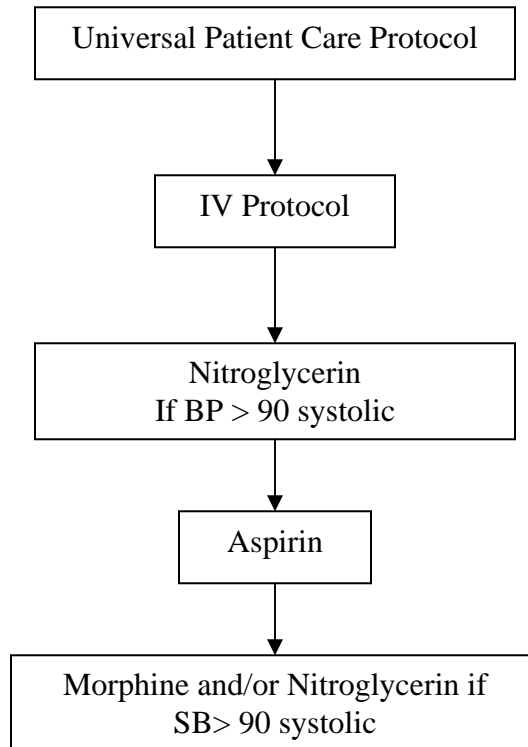
History: <ol style="list-style-type: none"> 1. Events leading to arrest 2. Estimated downtime 3. Past medical history 4. Medications 5. Existence of terminal illness 6. Signs of lividity, rigor mortis 7. DNR or Living Will 	Signs & Symptoms: <ol style="list-style-type: none"> 1. Unresponsiveness 2. Apneic 3. Pulseless 	Differential: <ol style="list-style-type: none"> 1. Medical vs. Trauma 2. V. Fib vs. Pulseless V. tach 3. Asystole 4. Pulseless electrical activity
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Chest Pain

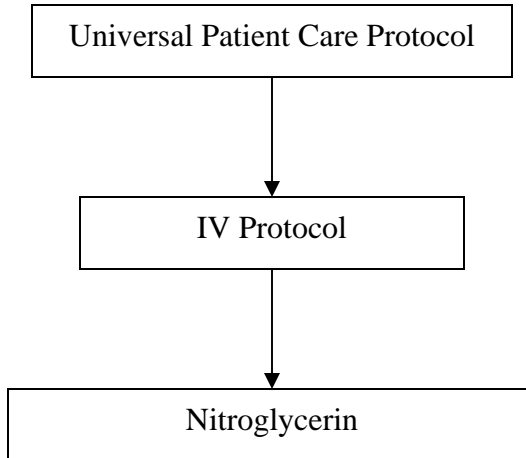
Suspected Cardiac Arrest

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Age 2. Medications 3. Viagra 4. Past medical history (MI, Angina, Diabetes) 5. Allergies 6. Recent physical exertion 7. Onset 8. Palliation/Provocation 9. Quality (crampy, constant, sharp, dull) 10. Region/Radiation 11. Severity (1-10) 12. Time (duration/repetition) 	<ol style="list-style-type: none"> 1. CP (pain, pressure, aching, vice-like tightness) 2. Location (substernal, epigastric, arm, jaw, neck, shoulder) 3. Radiation of pain 4. Pale, diaphoresis 5. Nausea, vomiting, dizziness. 	<ol style="list-style-type: none"> 1. Trauma vs. Medical 2. Angina vs. MI 3. Pericardia 4. Pulmonary embolism 5. Asthma/COPD 6. Pneumothorax 7. Aortic dissection or aneurysm 8. Gastric reflux 9. Esophageal spasms 10. Chest wall injury or pain 11. Pleural pain



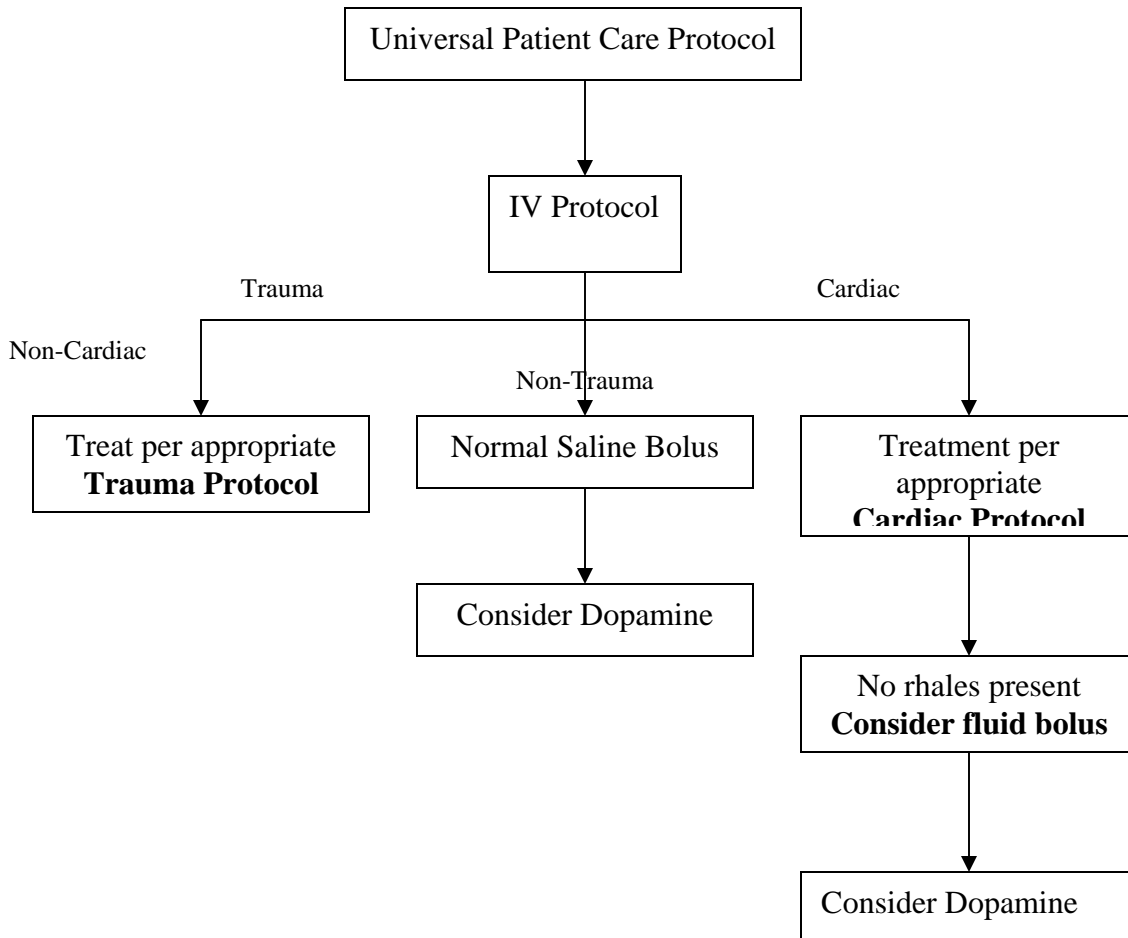
Hypertension

<p>History:</p> <ol style="list-style-type: none"> 1. Documented hypertension 2. Related disease, CVA, renal failure, cardiac 3. Medications 4. Viagra 5. Pregnancy 	<p>Signs & Symptoms:</p> <p>One of these:</p> <ol style="list-style-type: none"> 1. Systolic BP 200 or greater 2. Diastolic BP 120 or greater. <p>And at least one of these:</p> <ol style="list-style-type: none"> 1. Headache 2. Nosebleed 3. Blurred Vision 4. Dizziness 5. Respiratory Distress 6. Confusion 	<p>Differential:</p> <ol style="list-style-type: none"> 1. Hypertensive encephalopathy 2. Primary CNS injury (Cushing's response = bradycardia with hypertension) 3. MI 4. Aortic dissection 5. Pre-eclampsia/eclampsia
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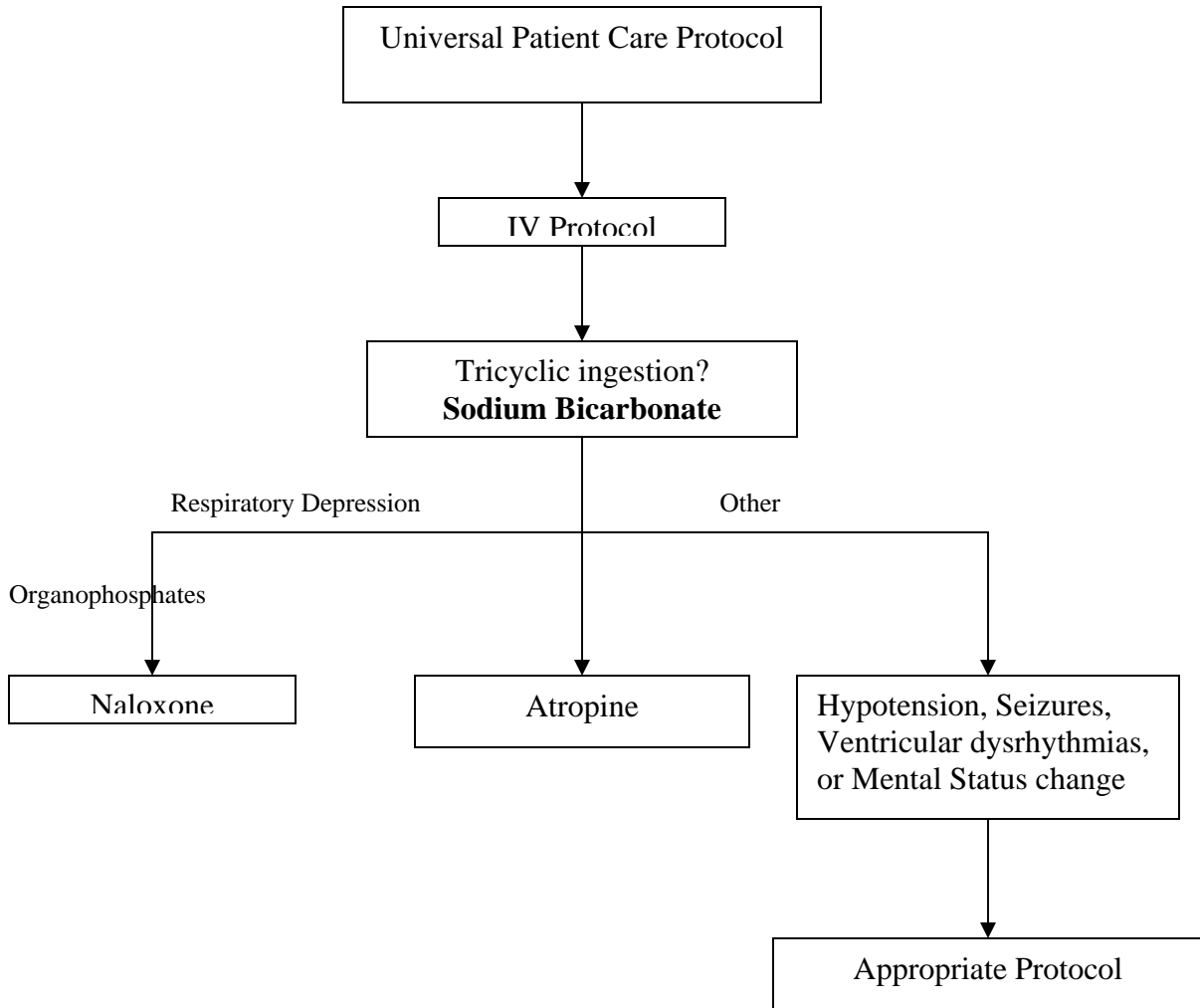
Hypotension Shock (Non-Trauma)

<p>History:</p> <ol style="list-style-type: none"> 1. Blood loss – vaginal or gastrointestinal bleeding, AAA, ectopic. 2. Fluid loss – vomiting, diarrhea, fever 3. Infection 4. Cardiac ischemia (MI, CHF) 5. Medications 6. Allergic reaction 7. Pregnancy 	<p>Signs & Symptoms:</p> <ol style="list-style-type: none"> 1. Restlessness, confusion 2. Weakness, dizziness 3. Weak, rapid pulse 4. Pale, cool, clammy skin 5. Delayed capillary refill 6. Hypotension 7. Coffee-ground emesis 8. Tarry stools 	<p>Differential:</p> <ol style="list-style-type: none"> 1. Shock: <ul style="list-style-type: none"> Hypovolemic Cardiogenic Septic Neurogenic Anaphylactic 2. Ectopic pregnancy 3. Dysrhythmias 4. Pulmonary embolus 5. Tension pneumothorax 6. Medication effect/overdose 7. Vasovagal 8. Physiologic (pregnancy)
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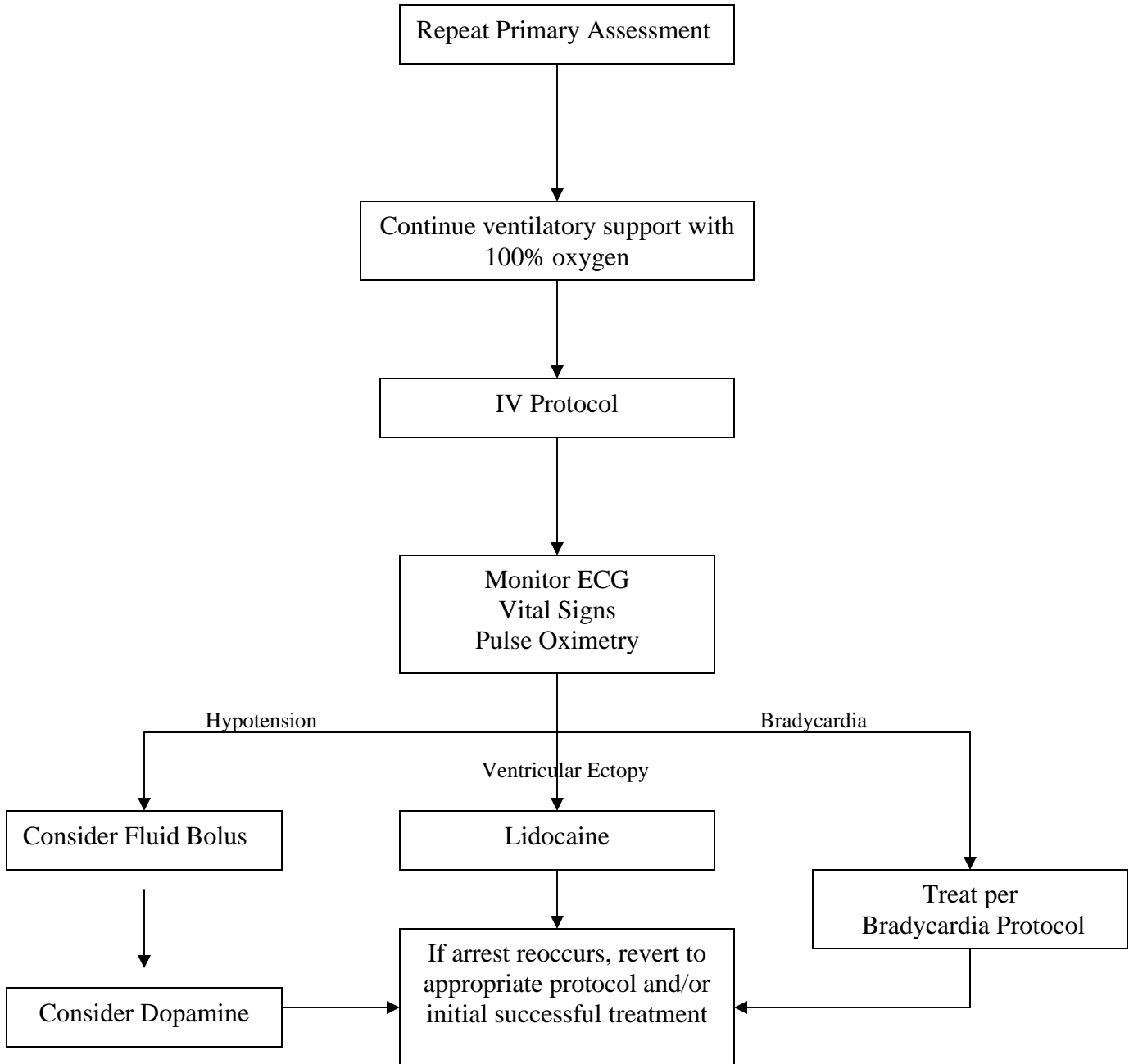
Overdose Toxic Ingestion

History:	Signs & Symptoms	Differential:
<ol style="list-style-type: none"> 1. Ingestion or suspected ingestion of a potentially toxic substance 2. Substance ingested, route, quantity 3. Time of ingestion 4. Reason (suicidal, accidental, criminal) 5. Available medications in home 6. Past medical history 	<ol style="list-style-type: none"> 1. Mental status changes 2. Hypotension/hypertension 3. Decreased respiratory rate 4. Tachycardia, dysrhythmias 5. Seizures 	<ol style="list-style-type: none"> 1. Tricyclic antidepressants 2. Acetaminophen 3. Depressants 4. Stimulants 5. Anticholinergic 6. Cardiac medications 7. Solvents, Alcohols, Cleaning Agents 8. Insecticides (organophosphates)



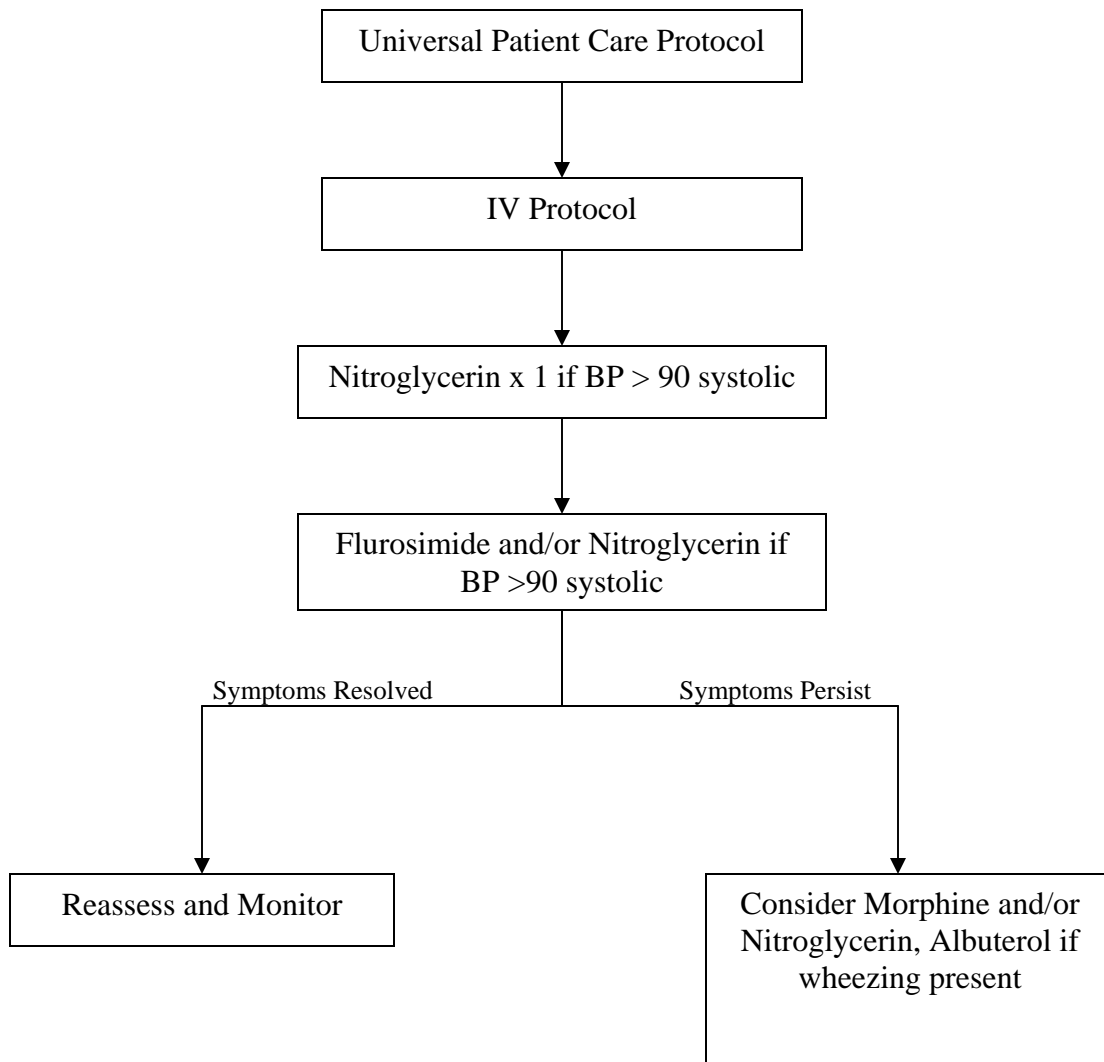
Post Resuscitation

History: 1. Respiratory arrest 2. Cardiac arrest	Signs & Symptoms: 1. Return of pulses	Differential: 1. Continue to address specific differentials associated with the original dysrhythmia.
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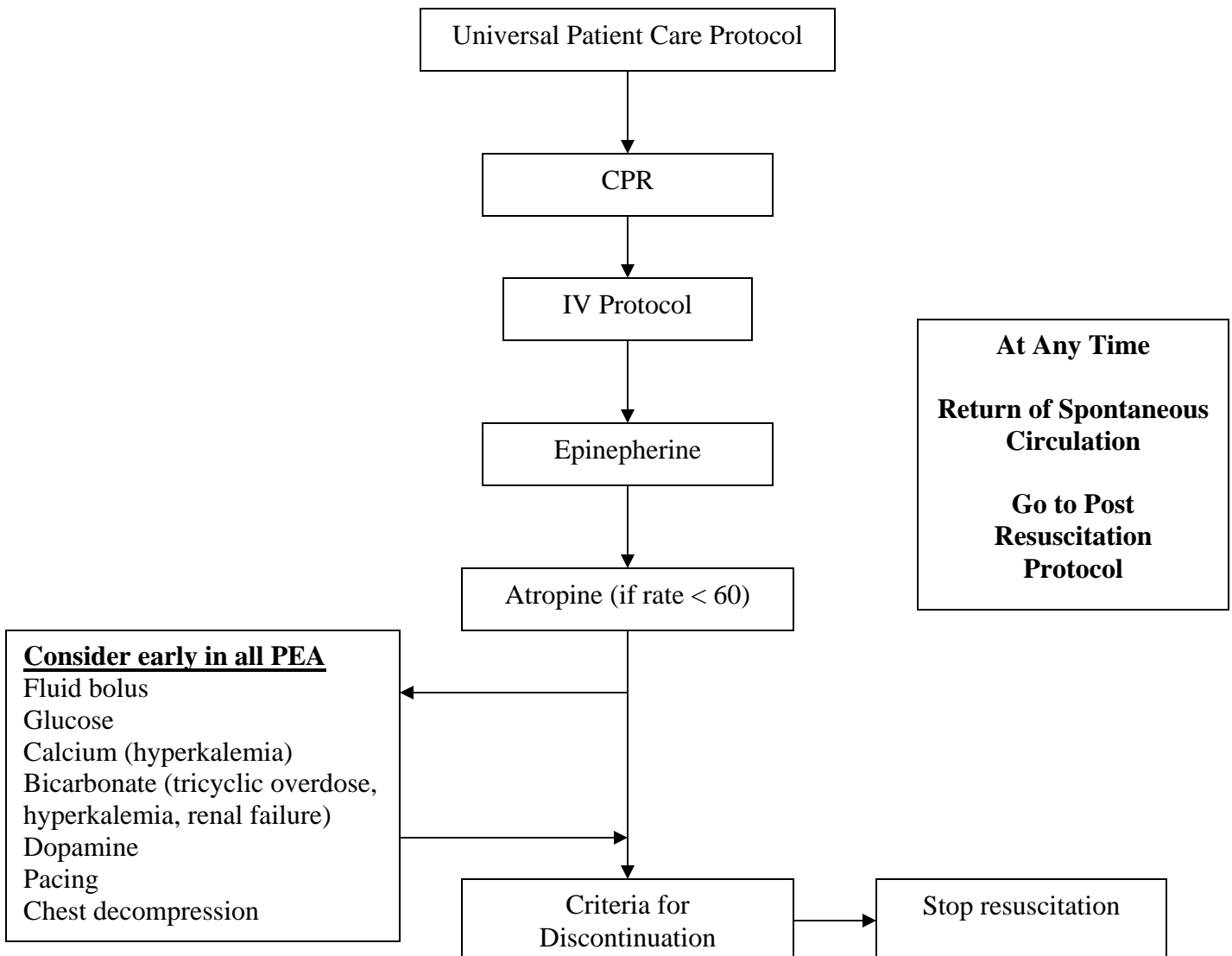
Pulmonary Edema

History: <ol style="list-style-type: none"> 1. Congestive Heart Failure 2. Past medical history 3. Medications 4. Cardiac history 	Signs & Symptoms: <ol style="list-style-type: none"> 1. Respiratory distress, bilateral rhales 2. Apprehension, orthopnea 3. JVD 4. Pink frothy sputum 5. Peripheral edema 6. Hypotension, shock 7. Chest pain 	Differential: <ol style="list-style-type: none"> 1. MI 2. Congestive heart failure 3. Asthma 4. Anaphylaxis 5. Aspiration 6. COPD 7. Pleural Effusion 8. Pneumonia 9. Pulmonary embolus 10. Pericardial tamponade
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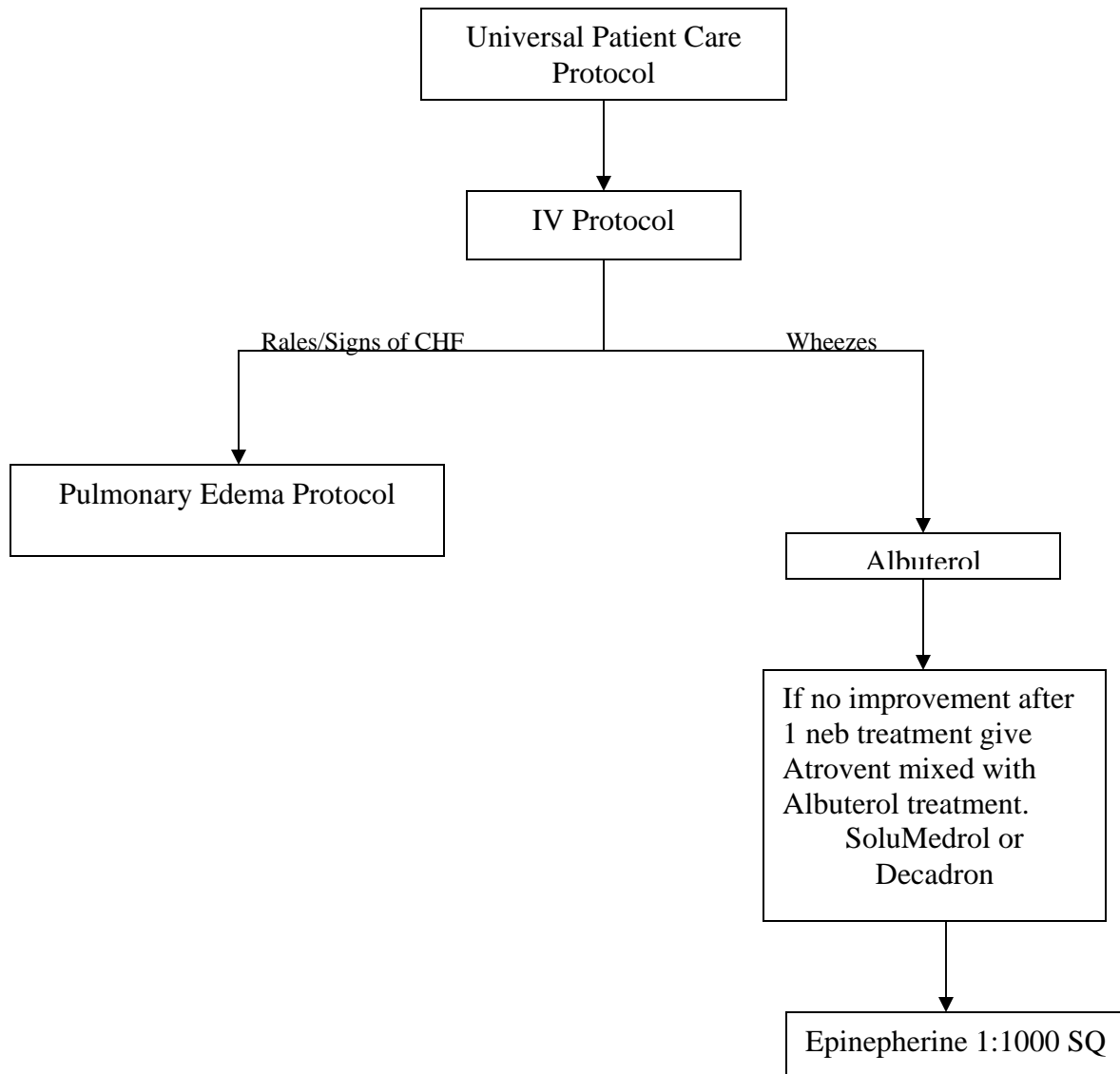
Pulseless Electrical Activity (PEA)

History: <ol style="list-style-type: none"> 1. Past medical history 2. Medications 3. Events leading to arrest 4. End stage renal disease 5. Estimated downtime 6. Suspected hypothermia 7. Suspected Overdose 8. DNR or Living Will 	Signs & Symptoms: <ol style="list-style-type: none"> 1. Pulseless 2. Apneic 3. Electrical activity on ECG 	Differential: <ol style="list-style-type: none"> 1. Hypovolemia (trauma, AAA, other) 2. Cardiac tamponade 3. Hypothermia 4. Drug overdose 5. Massive MI 6. Hypoxia 7. Tension pneumothorax 8. Pulmonary embolus 9. Acidosis 10. Hyperkalemia
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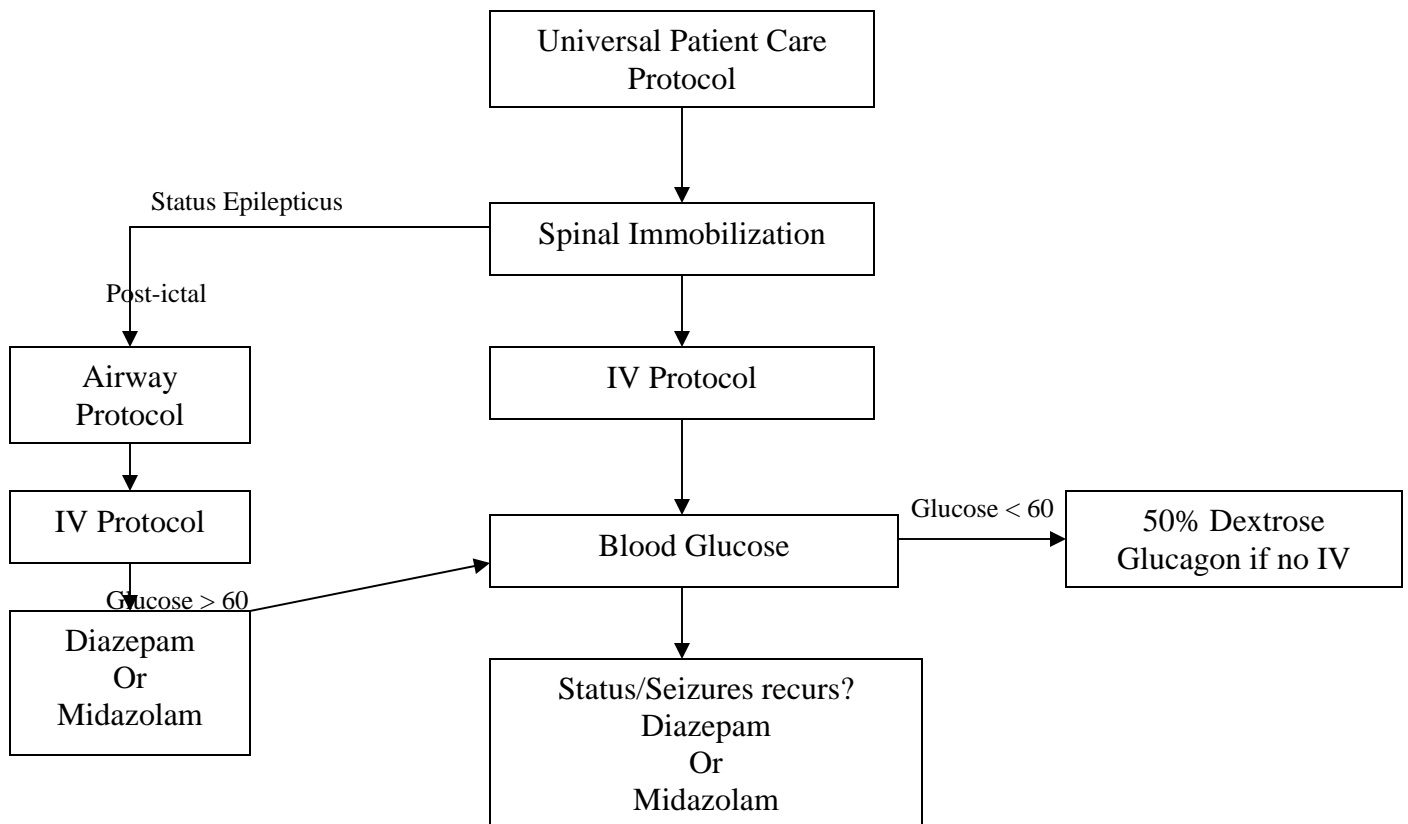
Respiratory Distress

History: <ol style="list-style-type: none"> 1. Asthma, COPD, Chronic bronchitis, emphysema, CHF 2. Home treatment (oxygen nebulizer) 3. Medications 4. Toxic exposure, smoke inhalation 	Signs & Symptoms: <ol style="list-style-type: none"> 1. Shortness of breath 2. Pursed lip breathing 3. Decreased ability to speak 4. Increased respiratory rate and effort 5. Wheezing, rhonchi 6. Use of accessory muscles 7. Fever, cough 8. Tachycardia 	Differential: <ol style="list-style-type: none"> 1. Asthma 2. Anaphylaxis 3. Aspiration 4. COPD 5. Pleural effusion 6. Pneumonia 7. Pulmonary embolus 8. Pneumothorax 9. Cardiac 10. Pericardial tamponade 11. Hyperventilation 12. Inhaled toxin
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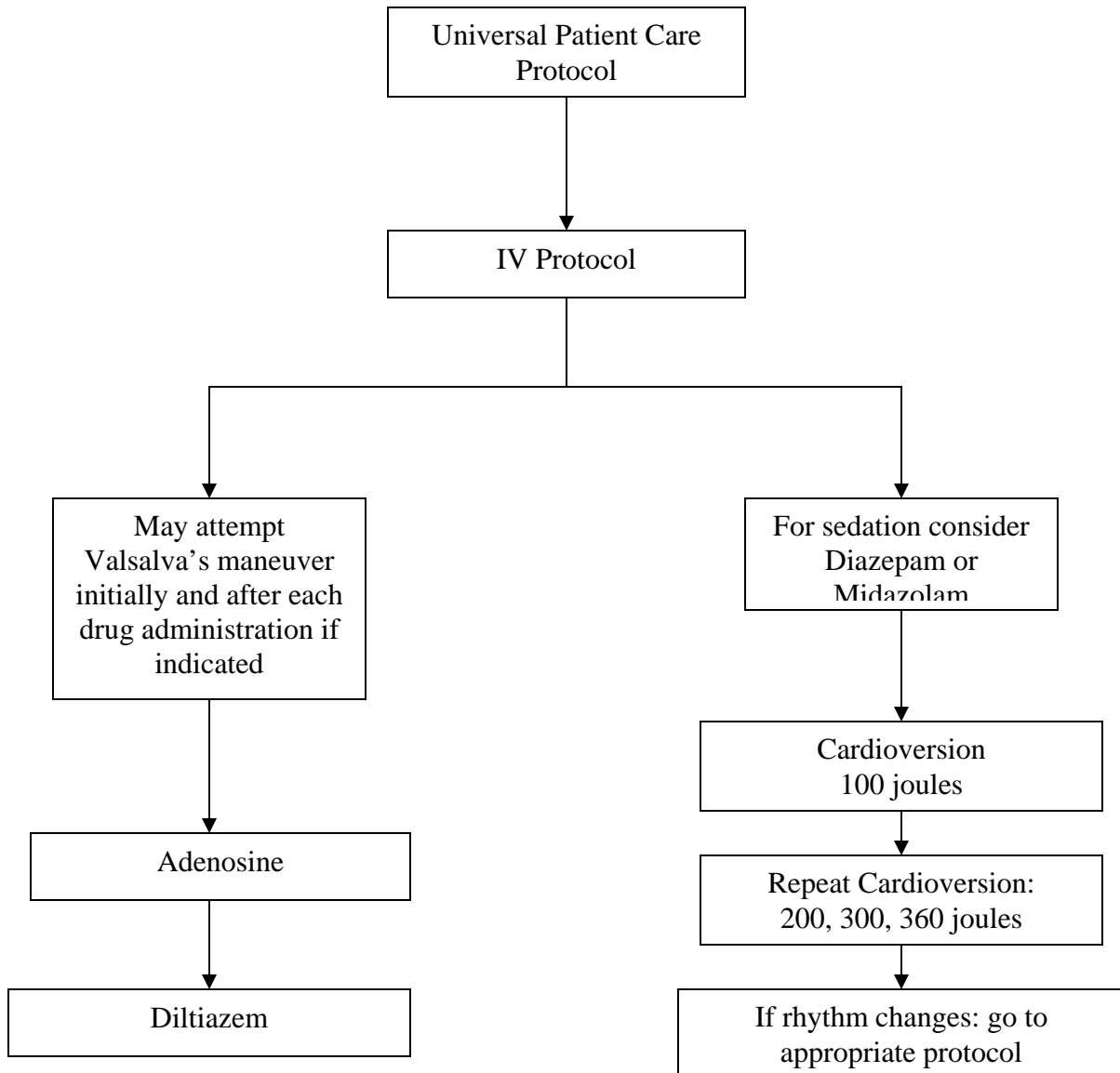
Seizure

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Reported/witnessed seizure activity 2. Previous seizure history 3. Medical alert tag 4. Seizure medications 5. History of trauma 6. History of diabetes 7. History of pregnancy 	<ol style="list-style-type: none"> 1. Decreased mental status 2. Sleepiness 3. Incontinence 4. Evidence of trauma 	<ol style="list-style-type: none"> 1. CNS (head) trauma 2. Tumor 3. Metabolic, hepatic or renal failure 4. Hypoxia 5. Electrolyte abnormality 6. Drugs, medications, non-compliance 7. Infection/fever 8. Alcohol withdrawal 9. Stroke 10. Hyperthermia



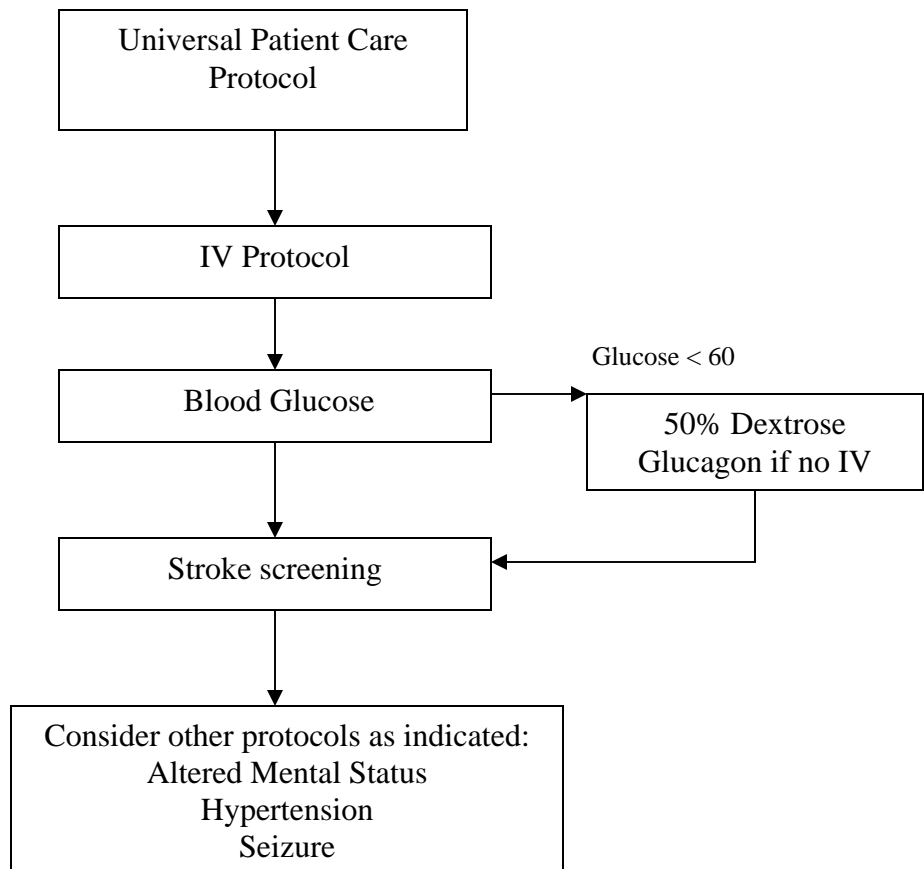
Supraventricular Tachycardia

History: <ol style="list-style-type: none"> 1. Medications 2. Diet 3. Drugs 4. Past medical history 5. History of palpitations 6. Syncope/near syncope 	Signs & Symptoms: <ol style="list-style-type: none"> 1. HR >150/min 2. QRS < .12 sec 3. Dizziness, CP, SOB 4. Potential presenting rhythm 	Differential: <ol style="list-style-type: none"> 1. Heart disease (WPW, Valvular) 2. Sick sinus syndrome 3. MI 4. Electrolyte imbalance 5. Exertion, Pain, Emotional stress 6. Fever 7. Hypoxia 8. Hypovolemia or anemia 9. Drug effect/overdose 10. Hyperthyroidism 11. Pulmonary embolus
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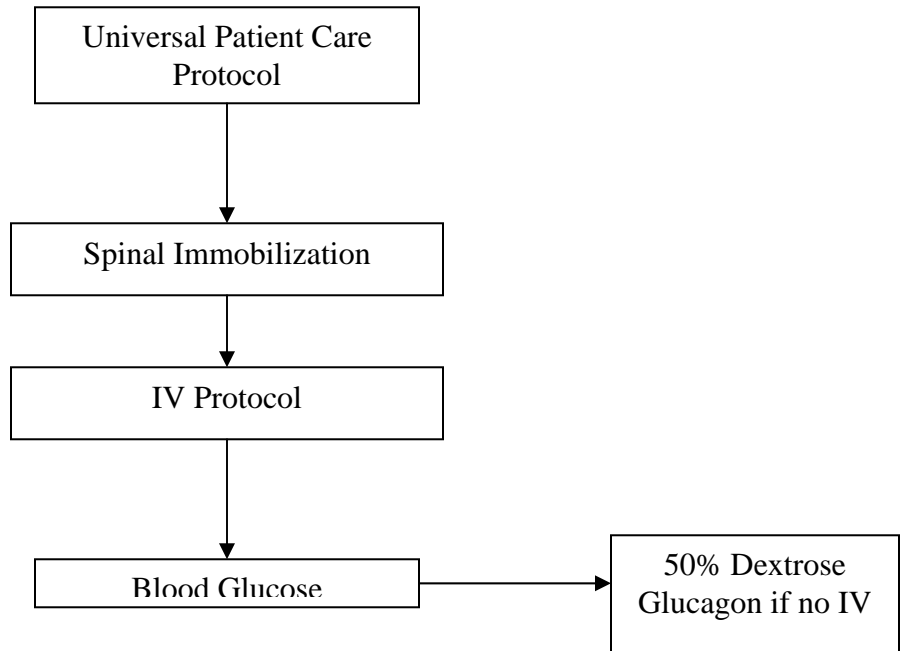
Suspected Stroke

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Previous CVA, TIA's 2. Previous cardiac/vascular surgery 3. Associated disease, diabetes, hypertension, CAD 4. Atrial Fibrillation 5. Medications 6. History of trauma 	<ol style="list-style-type: none"> 1. Altered mental status 2. Weakness/paralysis 3. Blindness or other sensory loss 4. Aphasia/Dysarthria 5. Syncope 6. Vertigo 7. Vomiting 8. Headache 9. Seizures 10. Respiratory pattern change 11. Hypertension 	<ol style="list-style-type: none"> 1. See altered mental status 2. TIA 3. Seizure 4. Hypoglycemia 5. Stroke 6. Thrombotic, Embolic, Hemorrhagic 7. Tumor 8. Trauma



Syncope

<p>History:</p> <ol style="list-style-type: none"> 1. Cardiac history, stroke, seizure 2. Occult blood loss 3. Females: LMP, vaginal bleeding 4. Fluid loss: nausea, vomiting, diarrhea 5. Past medical history 6. Medications 	<p>Signs & Symptoms:</p> <ol style="list-style-type: none"> 1. Loss of consciousness with recovery 2. Lightheadedness dizziness 3. Palpitations, slow or rapid pulse 4. Pulse irregularity 5. Decreased blood pressure 	<p>Differential:</p> <ol style="list-style-type: none"> 1. Vasovagal 2. Orthostatic hypotension 3. Cardiac syncope 4. Micturation/Defication syncope 5. Psychiatric 6. Stroke 7. Hypoglycemia 8. Seizure 9. Shock (see shock protocol) 10. Toxicology 11. Medication effect
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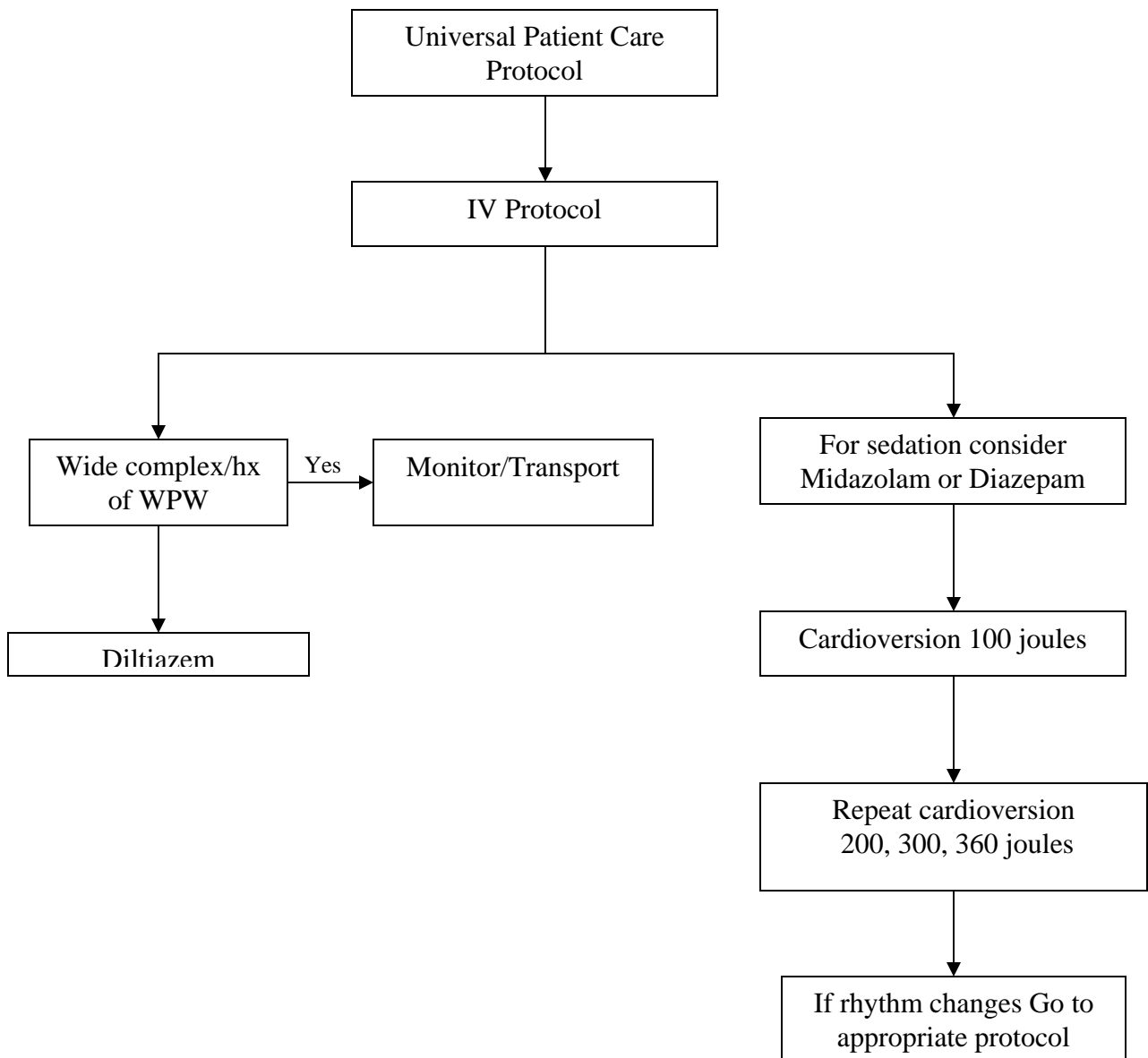
At Any Time

If relevant signs/symptoms found go to appropriate protocol:

Dysrhythmia
Altered Mental Status
Hypotension

Uncontrolled Atrial Fibrillation

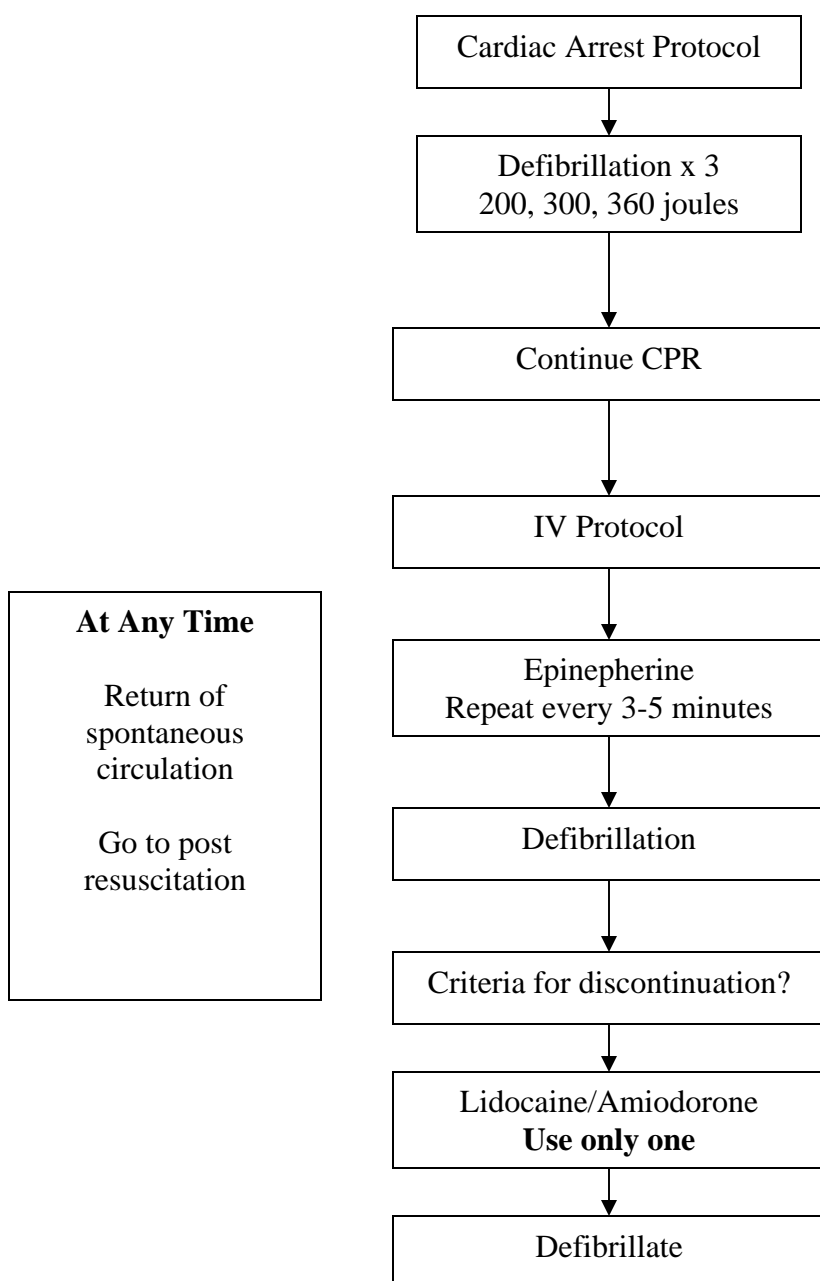
History: <ol style="list-style-type: none"> 1. Mediations for Atrial Fibrillation 2. Drugs (nicotine, cocaine) 3. Past History 4. History of palpitations 5. Syncope/near syncope 	Signs & Symptoms: <ol style="list-style-type: none"> 1. Chest Pain 2. Respiratory distress 3. Decreased LOC 4. BP < 90 5. HR > 120 6. Shock 7. Pulmonary congestion 8. CHF 9. AMI
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Ventricular Fibrillation

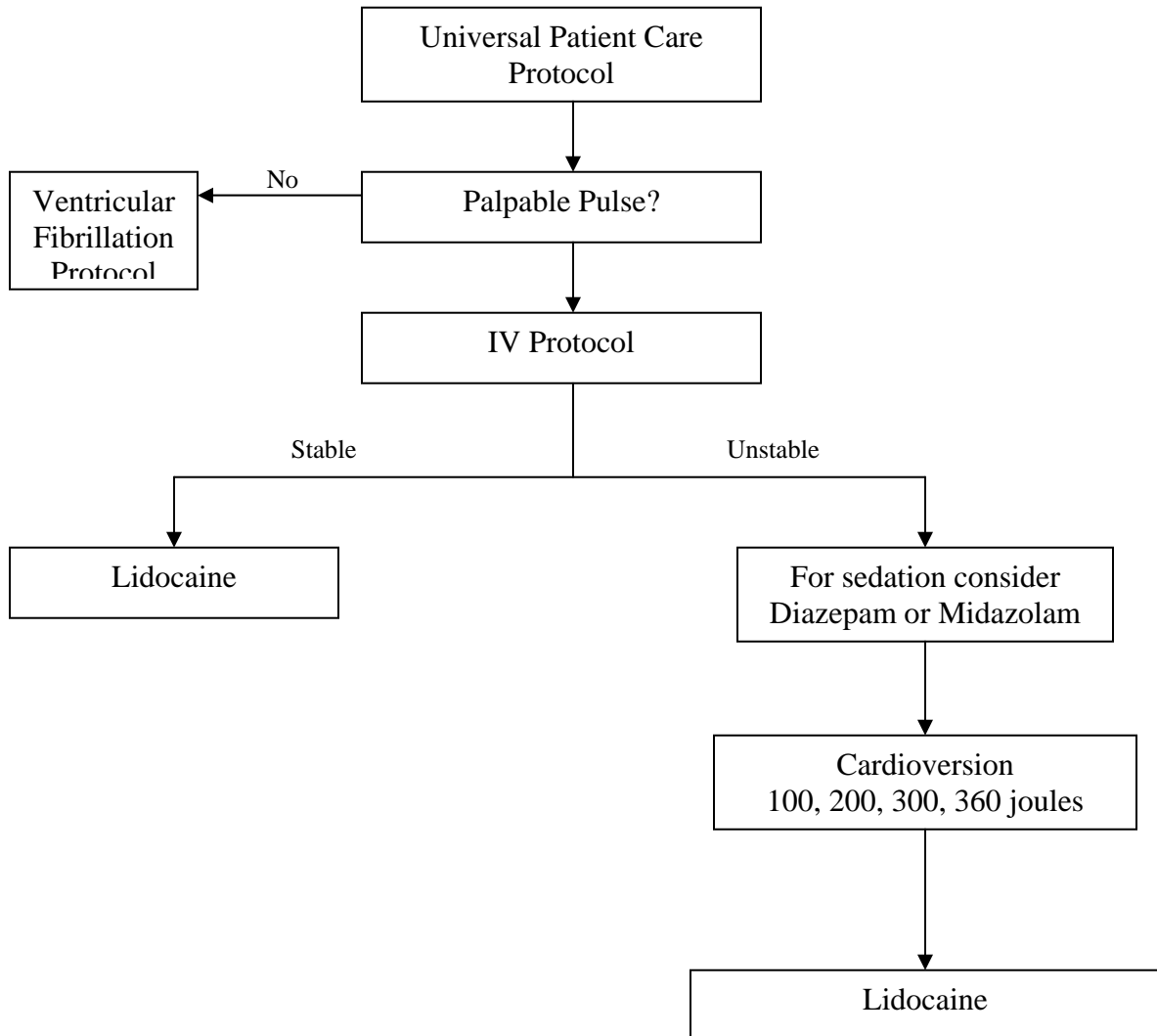
Pulseless Ventricular Tachycardia

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Estimated down time 2. Past medical history 3. Medications 4. Events leading to arrest 5. Renal failure/dialysis 6. DNR or Living Will 	<ol style="list-style-type: none"> 1. Unresponsive, apneic, pulseless 2. Ventricular fibrillation or ventricular tachycardia on ECG 	<ol style="list-style-type: none"> 1. Asystole 2. Artifact/Device failure 3. Cardiac 4. Endocrine/Metabolic 5. Drugs 6. Pulmonary



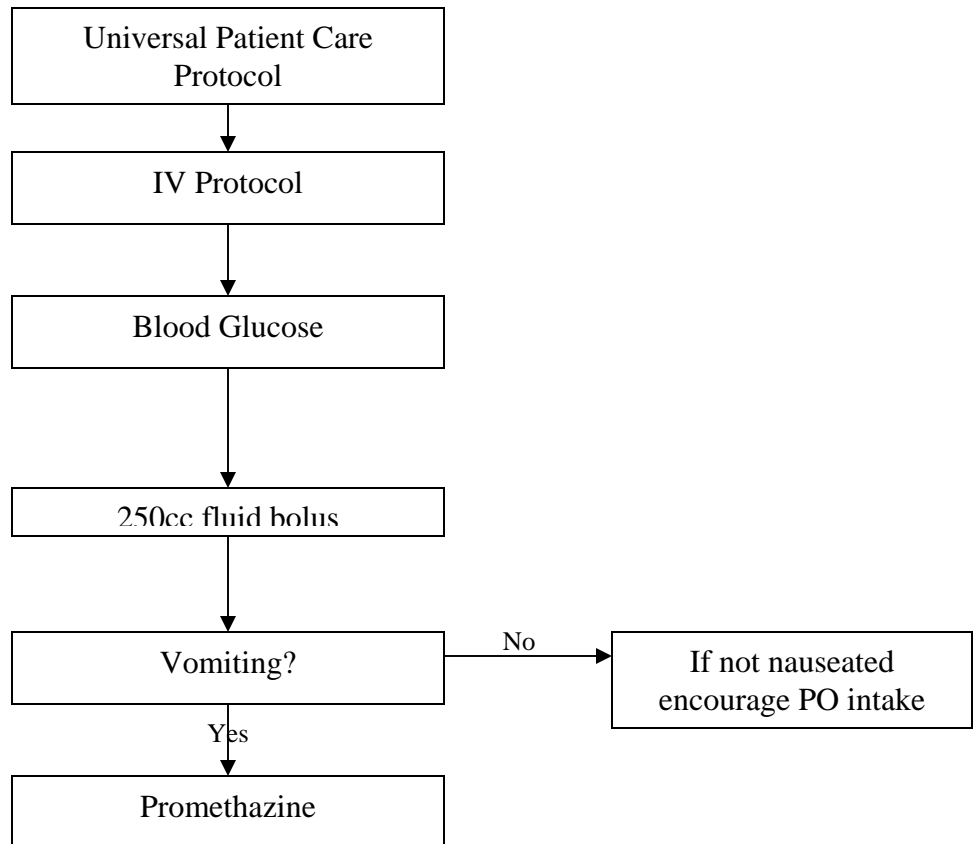
Ventricular Tachycardia

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Past medical history 2. Syncope/near syncope 3. Palpitations 4. Pacemaker 5. Allergies 	<ol style="list-style-type: none"> 1. Ventricular tachycardia on ECG 2. Conscious, rapid pulse 3. Chest pain, shortness of breath 4. Dizziness 5. Rate usually 150-180 bpm for sustained V-Tach 	<ol style="list-style-type: none"> 1. Artifact/Device Failure 2. Cardiac 3. Endocrine/Metabolic 4. Drugs 5. Pulmonary



Vomiting

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Age 2. Time of last meal 3. Last bowel movement/emesis 4. Duration of problem 5. Other sick contacts 6. Past medical history 7. Past surgical history 8. Medications 9. Menstrual history 10. Travel history 11. Bloody emesis/diarrhea 	<ol style="list-style-type: none"> 1. Pain 2. Distention 3. Constipation 4. Diarrhea 5. Anorexia 6. Radiation <p>Associated symptoms: Fever, HA, blurred vision, weakness, malaise, myalgia, cough, dysuria, mental status change</p>	<ol style="list-style-type: none"> 1. CNS 2. MI 3. Drugs 4. GI or Renal disorders 5. Diabetic ketoacidosis 6. Infections 7. Electrolyte abnormalities 8. Food or toxin induced 9. Medication or substance abuse 10. Pregnancy 11. Psychologic

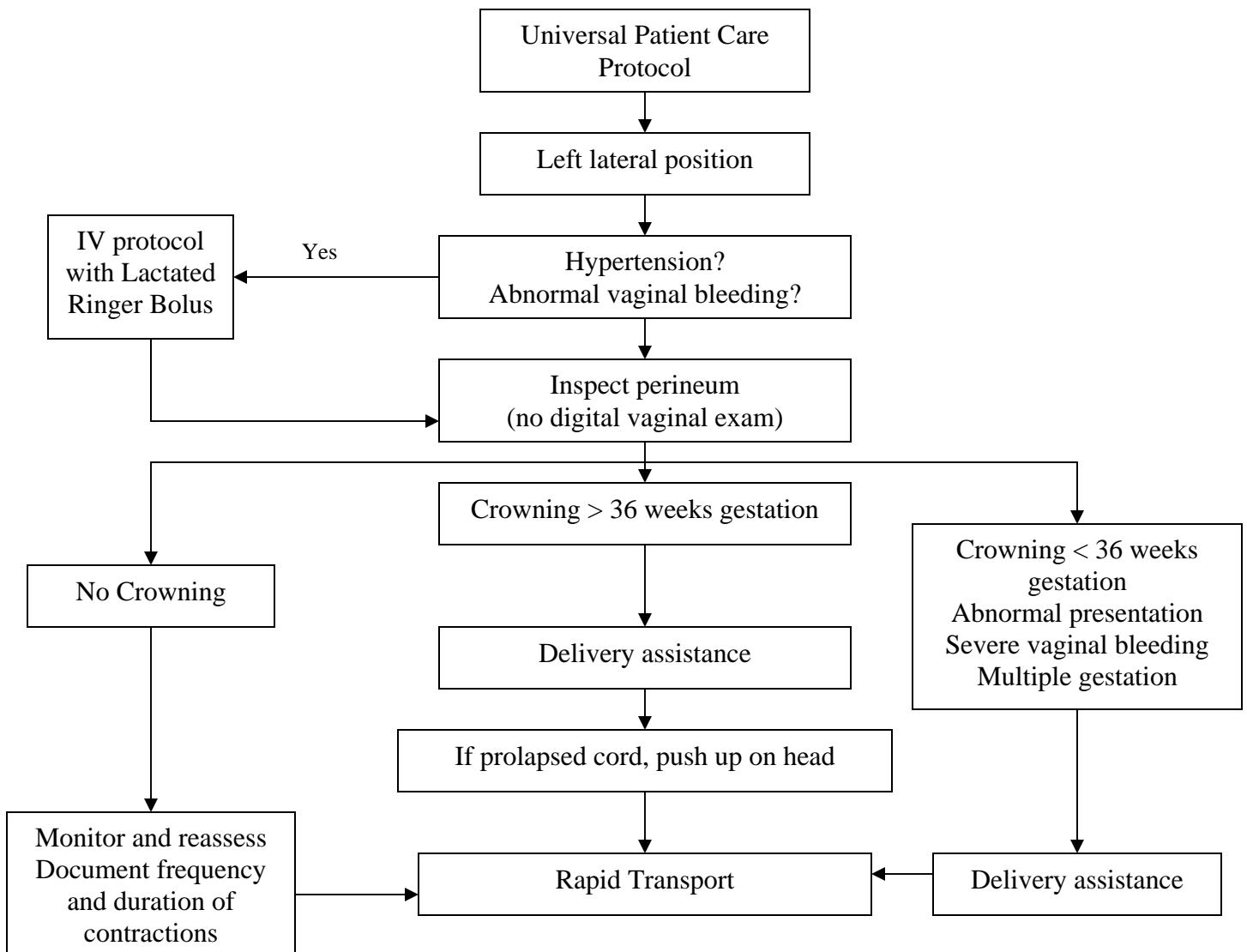


Pediatric/OB Emergencies



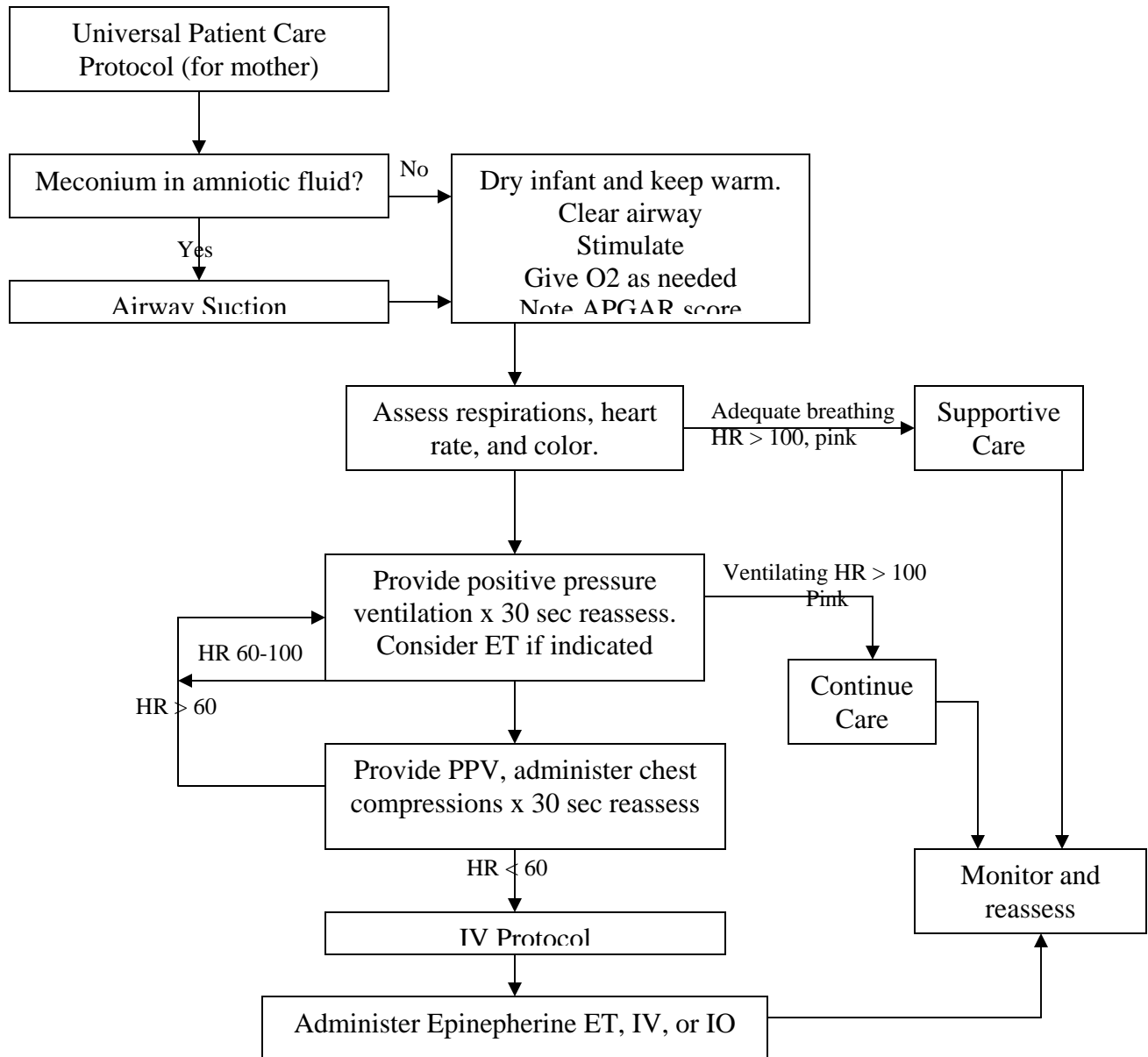
Childbirth/Labor

History: <ol style="list-style-type: none"> 1. Due date 2. Time contractions started/how often 3. Rupture of membranes 4. Time/amount of any vaginal bleeding 5. Sensation of fetal activity 6. Past medical and delivery history 7. Medications 	Sings & Symptoms: <ol style="list-style-type: none"> 1. Spasmodic pain 2. Vaginal discharge or bleeding 3. Crowning or urge to push 4. Meconium 	Differential: <ol style="list-style-type: none"> 1. Abnormal presentation: <ul style="list-style-type: none"> Buttock Foot Hand 2. Prolapsed cord 3. Placenta previa 4. Abruptio placenta
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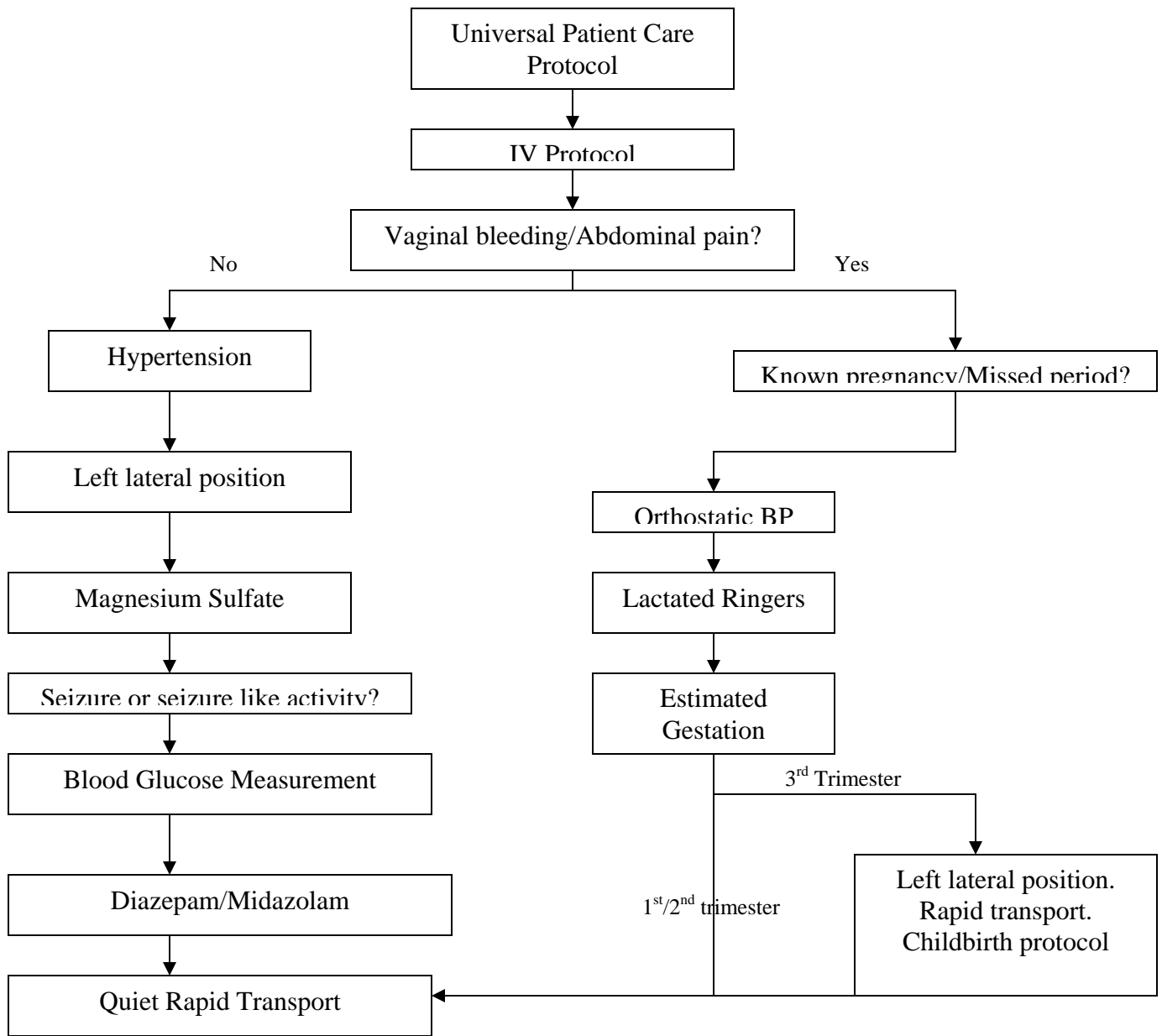
Newly Born

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Due dates & gestation age 2. Multiple gestation (twins ect.) 3. Meconium 4. Delivery difficulties 5. Congenital disease 6. Dedications (maternal) 7. Maternal risk factors substance abuse, smoking 	<ol style="list-style-type: none"> 1. Respiratory disease 2. Peripheral cyanosis or mottling (normal) 3. Central cyanosis (abnormal) 4. Altered level of responsiveness 5. Bradycardia 	<ol style="list-style-type: none"> 1. Airway failure secretions, respiratory drive 2. Infection 3. Maternal medication effect 4. Hypovolemia 5. Hypoglycemia 6. Congenital heart disease 7. Hypothermia



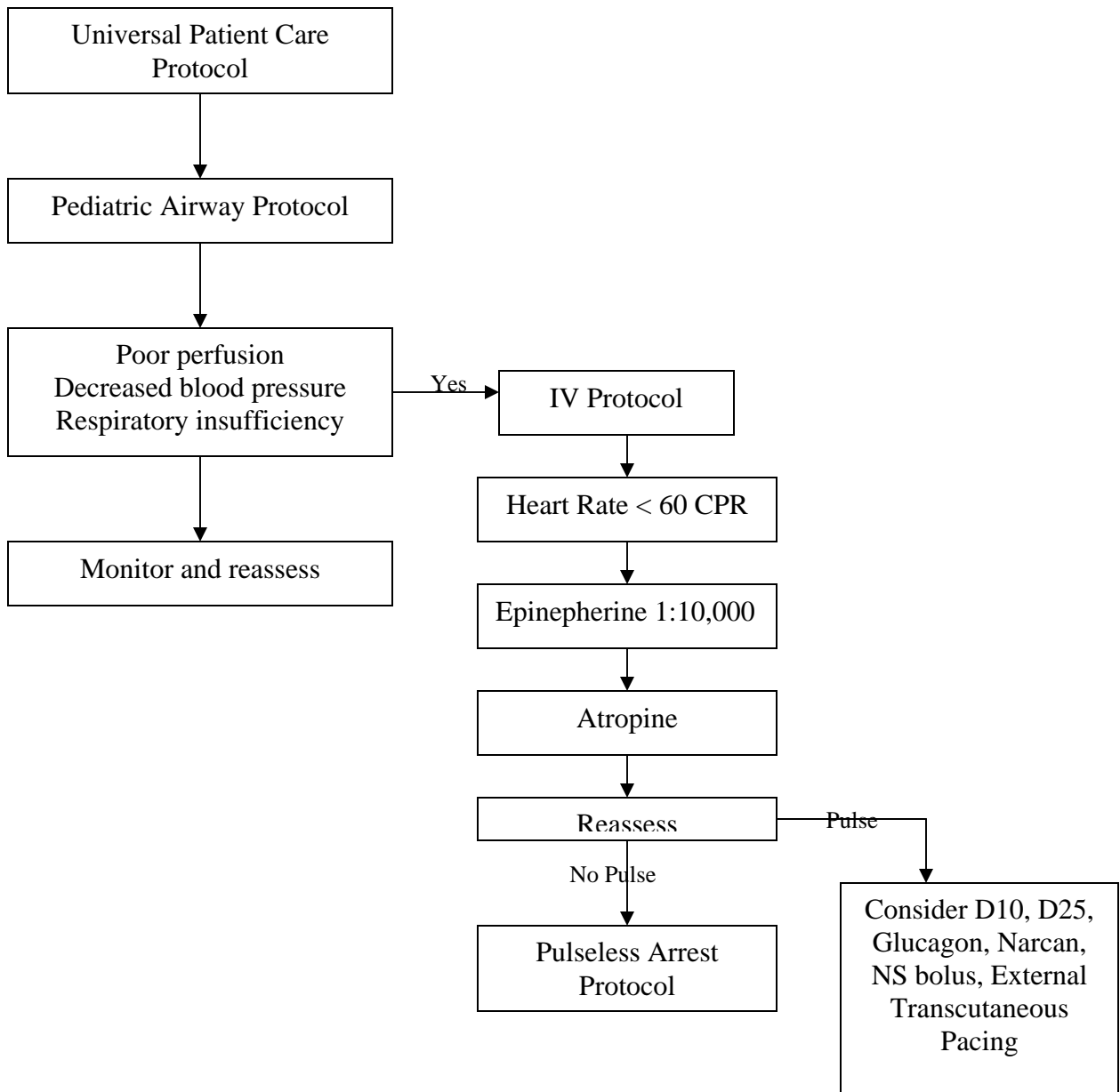
Obstetrical Emergency

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Past medical history 2. Hypertension meds 3. Prenatal care 4. Prior pregnancies/births 5. Gravida/Para 	<ol style="list-style-type: none"> 1. Vaginal bleeding 2. Abdominal pain 3. Seizures 4. Hypertension 5. Severe headache 6. Visual changes 7. Edema of hands or face 	<ol style="list-style-type: none"> 1. Pre-eclampsia/Eclampsia 2. Placenta previa 3. Placenta abruptio 4. Spontaneous abortion



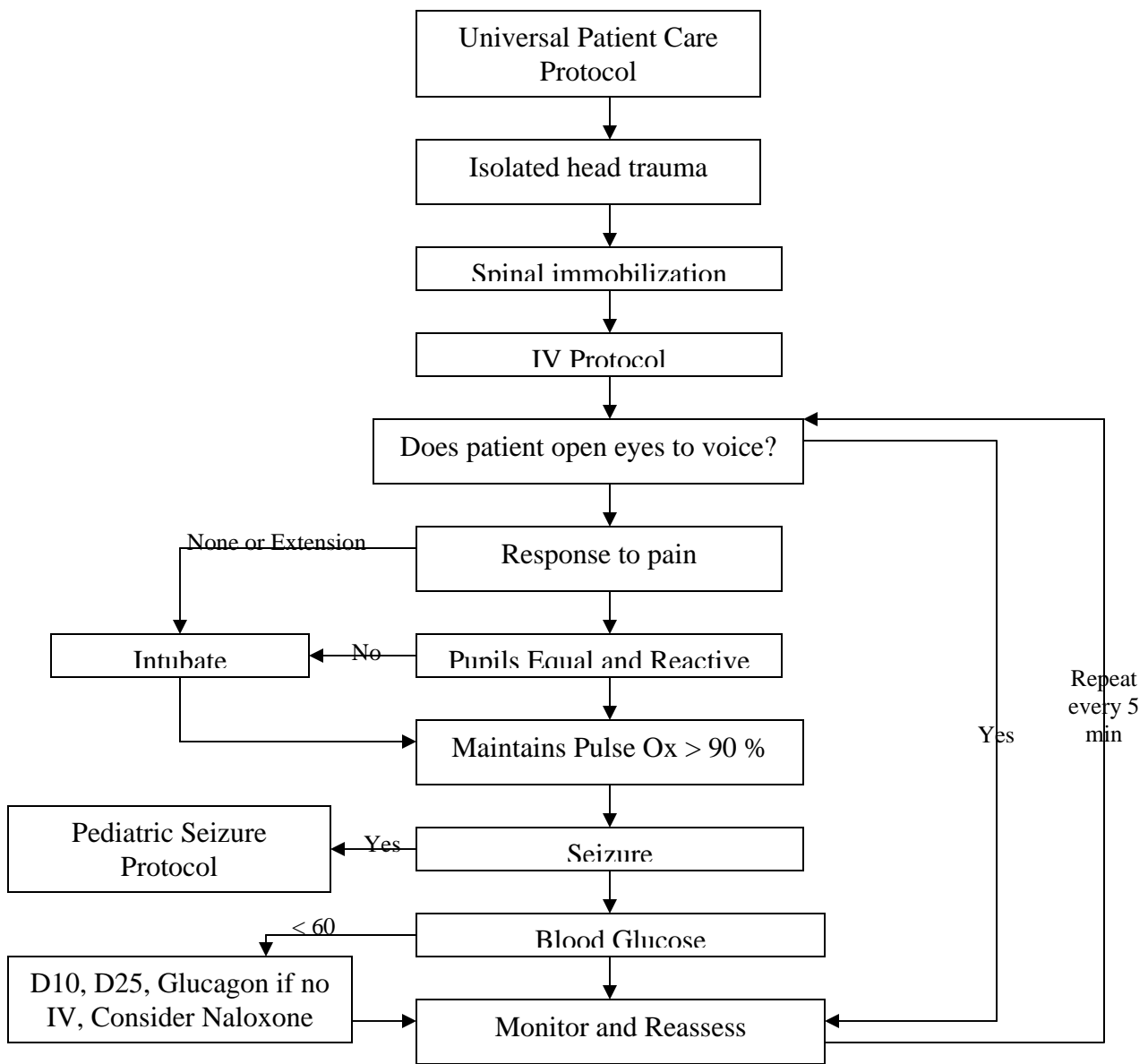
Pediatric Bradycardia

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Past medical history 2. Foreign body exposure 3. Respiratory distress or arrest 4. Apnea 5. Possible toxic or poison exposure 6. Congenital disease 7. Medication 	<ol style="list-style-type: none"> 1. Decreased heart rate 2. Delayed capillary refill or cyanosis 3. Mottled, cool skin 4. Hypotension or arrest 5. Altered level of consciousness 	<ol style="list-style-type: none"> 1. Respiratory effort 2. Respiratory obstruction Foreign body/secretions croup/epiglottitis 3. Hypovolemia 4. Hypothermia 5. Infection/Sepsis 6. Medications or Toxins 7. Hypoglycemia 8. Trauma



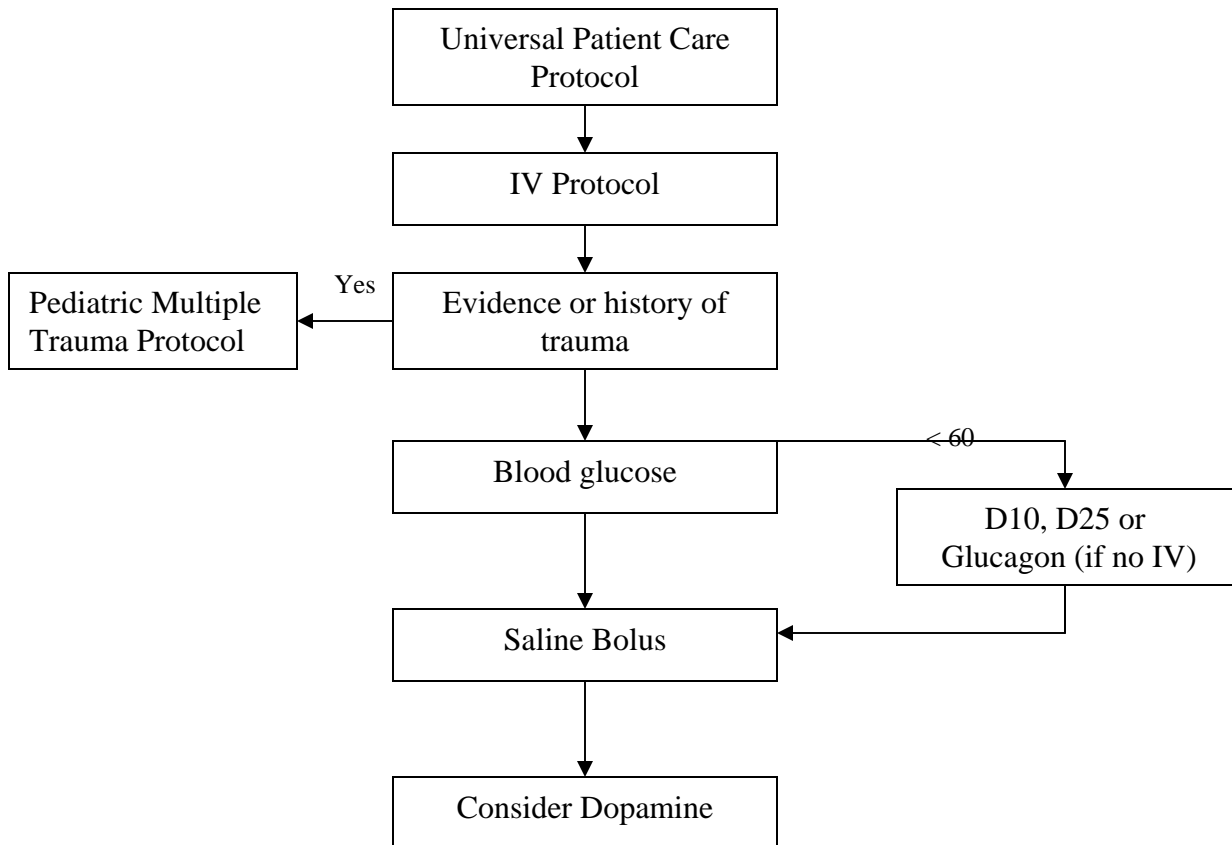
Pediatric Head Trauma

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Time of injury 2. Mechanism 3. Loss of consciousness 4. Bleeding 5. Past medical history 6. Medications 7. Evidence for multi-trauma 	<ol style="list-style-type: none"> 1. Pain, swelling, bleeding 2. Altered mental status 3. Unconscious 4. Respiratory distress/failure 5. Vomiting 6. Major traumatic mechanism of injury 7. Seizure 	<ol style="list-style-type: none"> 1. Skull Fx 2. Brain injury 3. Epidural hematoma 4. Subdural hematoma 5. Subarachnoid hemorrhage 6. Spinal injury 7. Abuse



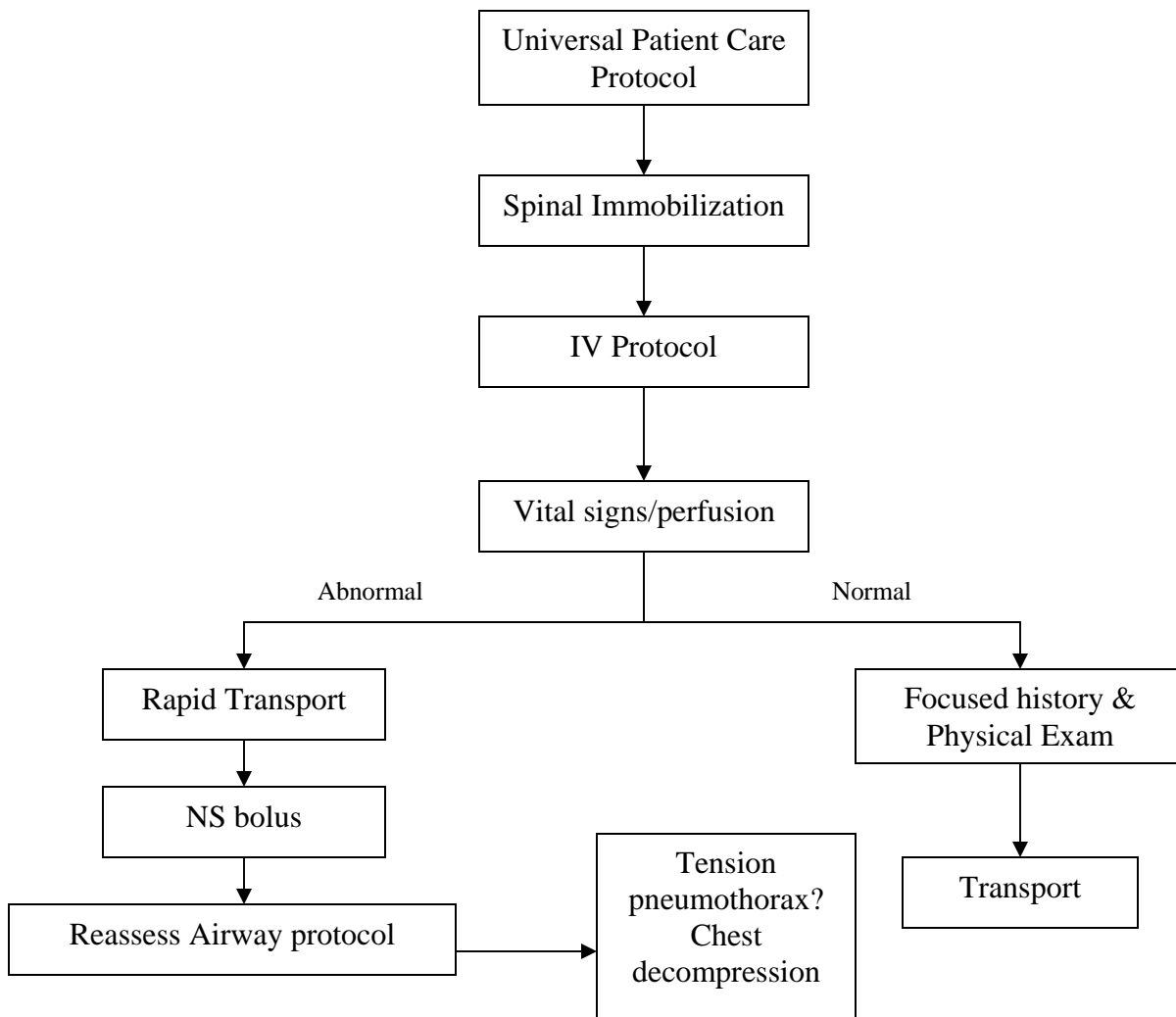
Pediatric Hypotension Shock (Non-Trauma)

<p>History:</p> <ol style="list-style-type: none"> 1. Blood loss 2. Fluid loss Vomiting Diarrhea Fever 3. Infection 	<p>Signs & Symptoms:</p> <ol style="list-style-type: none"> 1. Restlessness, confusion, weakness 2. Dizziness 3. Increased HR, rapid pulse 4. Decreased BP 5. Pale, cool, clammy skin 6. Delayed capillary refill 	<p>Differential:</p> <ol style="list-style-type: none"> 1. Trauma 2. Infection 3. Dehydration Vomiting Diarrhea Fever 4. Congenital heart disease 5. Medication or toxin
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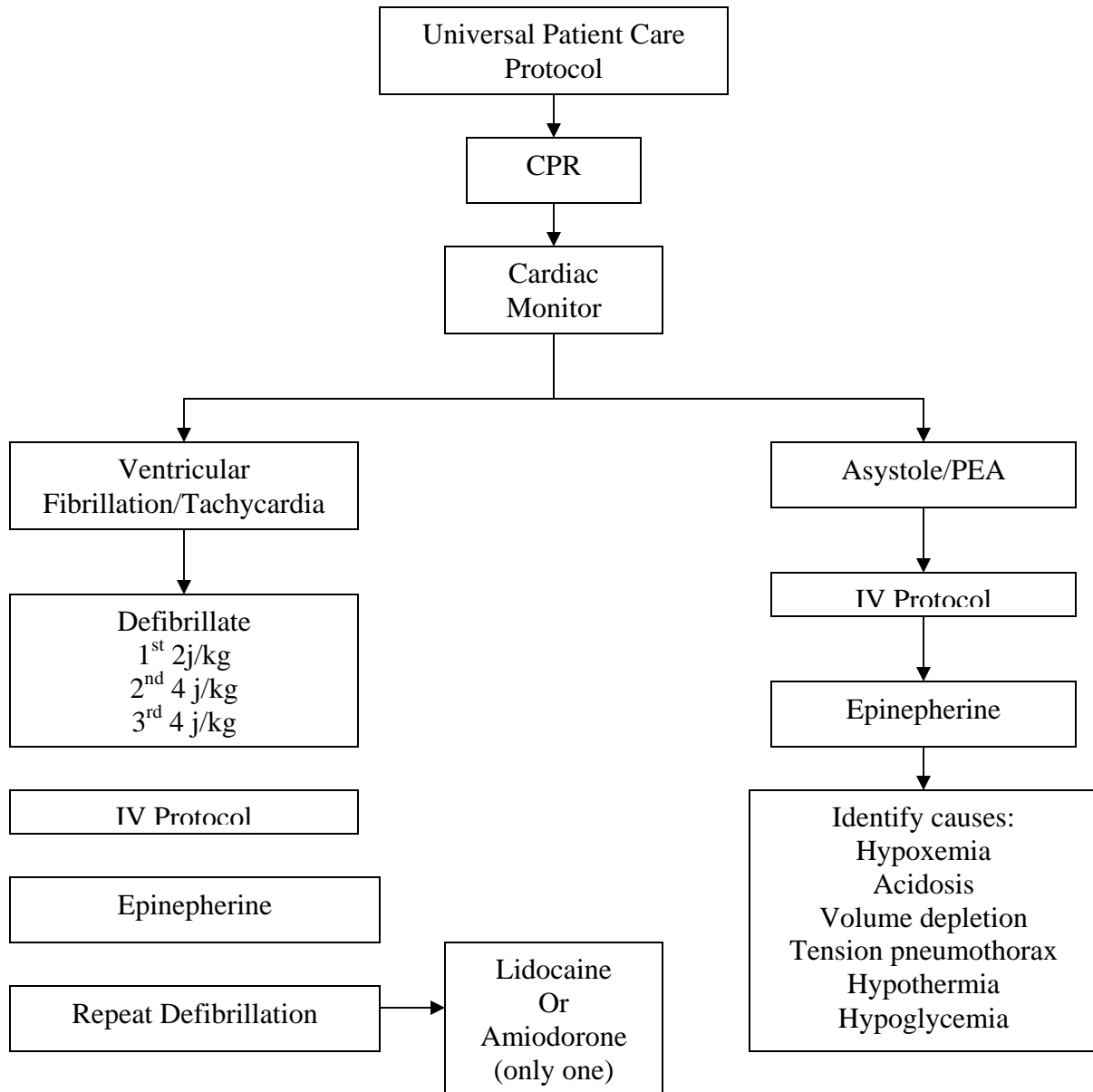
Pediatric Multiple Trauma

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Time & mechanism of injury 2. Damage to structure or vehicle 3. Location in structure or vehicle 4. Others injured or dead 5. Speed & details of MVC 6. Restraints/Protective equipment: carseat, helmet, pads 7. Ejection 8. Past medical history 9. Medications 	<ol style="list-style-type: none"> 1. Pain, swelling 2. Deformity, lesions, bleeding 3. Altered mental status 4. Unconscious 5. Hypotension or shock 6. Arrest 	<ol style="list-style-type: none"> 1. Chest, Tension pneumothorax, flail chest, pericardial tamponade, open chest wound, hemothorax. 2. Intra-abdominal bleeding 3. Pelvis/Femur fracture 4. Spinal fracture/Cord injury 5. Head injury 6. Extremity fracture/dislocation 7. HEENY 8. Hypothermia



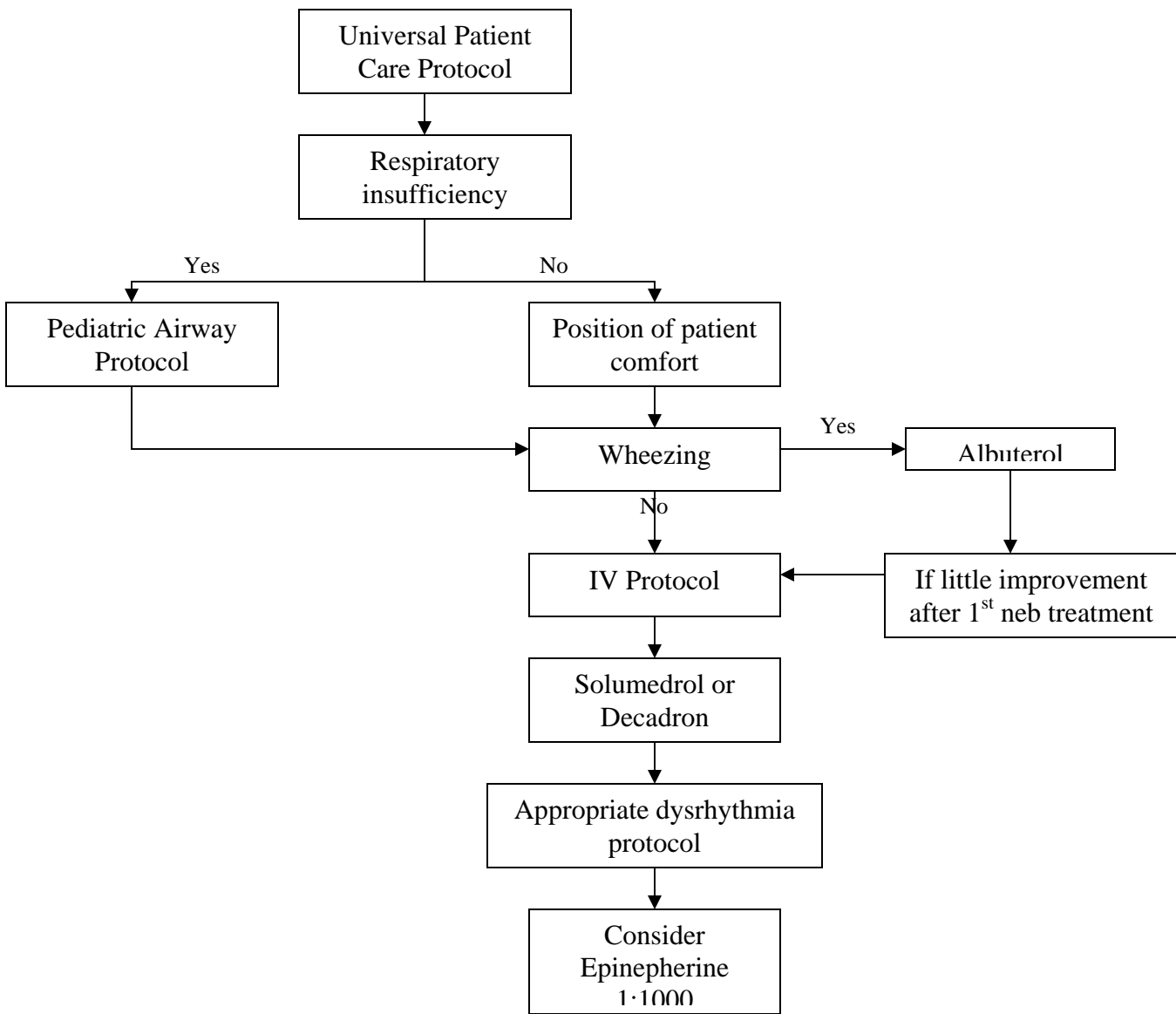
Pediatric Pulseless Arrest

History: <ol style="list-style-type: none"> 1. Time of arrest 2. Medical History 3. Medications 4. Possibility of foreign body 5. Hypothermia 	Signs & Symptoms: <ol style="list-style-type: none"> 1. Unresponsive 2. Cardiac arrest 	Differential: <ol style="list-style-type: none"> 1. Respiratory failure Foreign body, secretions, infection (croup, epiglottitis) 2. Hypovolemia 3. Congenital heart disease 4. Trauma 5. Tension pneumothorax 6. Toxin or medication 7. Hypoglycemia 8. Acidosis
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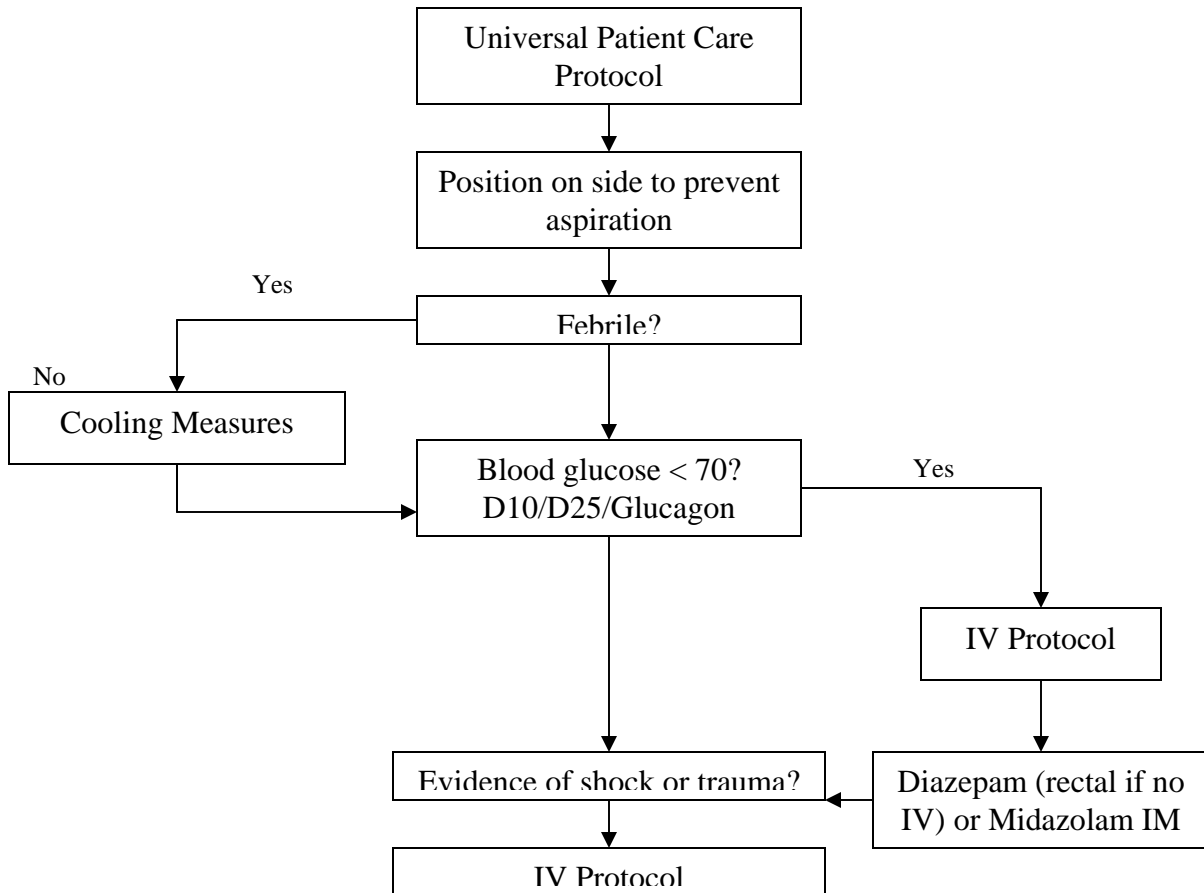
Pediatric Respiratory Distress

History:	Sings & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Time of onset 2. Possibility of foreign body 3. Medical history 4. Medications 5. Fever or respiratory infection 6. Other sick siblings 7. History of trauma 	<ol style="list-style-type: none"> 1. Wheezing or stridor 2. Respiratory retractions 3. Increased heart rate 4. Altered level of consciousness 5. Anxious appearance 	<ol style="list-style-type: none"> 1. Asthma 2. Aspiration 3. Foreign body 4. Infection Pneumonia Croup Epiglottitis 5. Congenital heart disease 6. Medication or toxin 7. Trauma



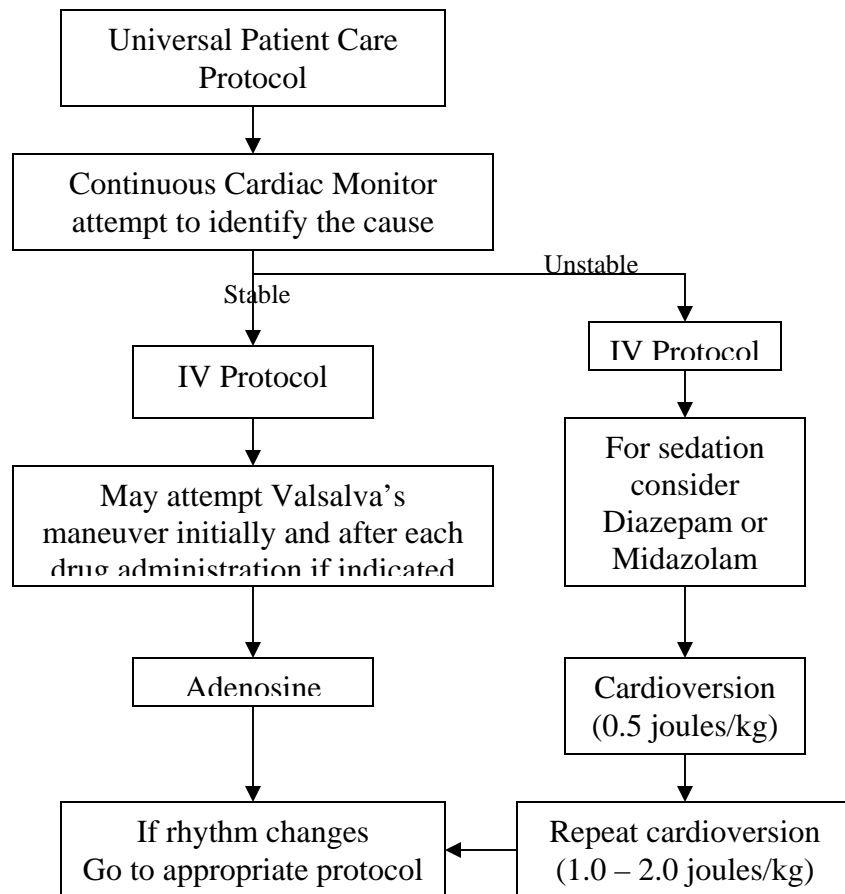
Pediatric Seizures

History: <ol style="list-style-type: none"> 1. Fever 2. Prior history of seizures 3. Reported seizure activity 4. History of recent head trauma 5. Congenital abnormality 	Signs & Symptoms: <ol style="list-style-type: none"> 1. Observed seizure activity Altered mental status Hot, dry skin and elevated body temperature 	Differential: <ol style="list-style-type: none"> 1. Fever 2. Infection 3. Head trauma 4. Medication or toxin 5. Hypoxia or Respiratory failure 6. Hypoglycemia 7. Metabolic abnormality/acidosis 8. Tumor
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Pediatric Supraventricular Tachycardia

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Past medical history 2. Medications or Toxic ingestion 3. Drugs 4. Congenital Heart Disease 5. Respiratory Distress 6. Syncope or Near Syncope 	<ol style="list-style-type: none"> 1. Heart Rate: Child > 180/bpm Infant > 220/bpm 2. Pale or cyanosis 3. Diaphoresis 4. Tachypnea 5. Vomiting 6. Hypotension 7. Altered level of consciousness 8. Pulmonary congestion 9. Syncope 	<ol style="list-style-type: none"> 1. Heart disease 2. Hypo/Hyperthermia 3. Hypovolemia or Anemia 4. Electrolyte imbalance 5. Anxiety/Pain/Emotional stress 6. Fever/infection/sepsis 7. Hypoxia 8. Hypoglycemia 9. Medication/Toxin/Drugs 10. Pulmonary embolus 11. Trauma 12. Tension pneumothorax

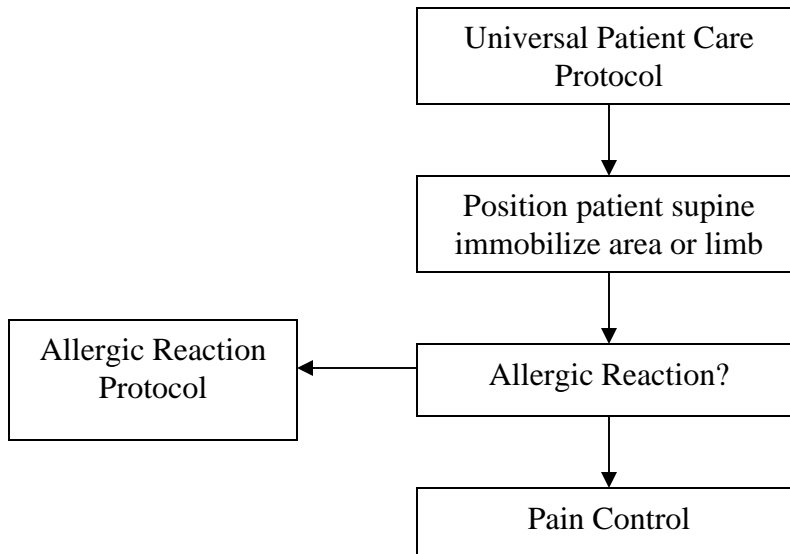


Trauma



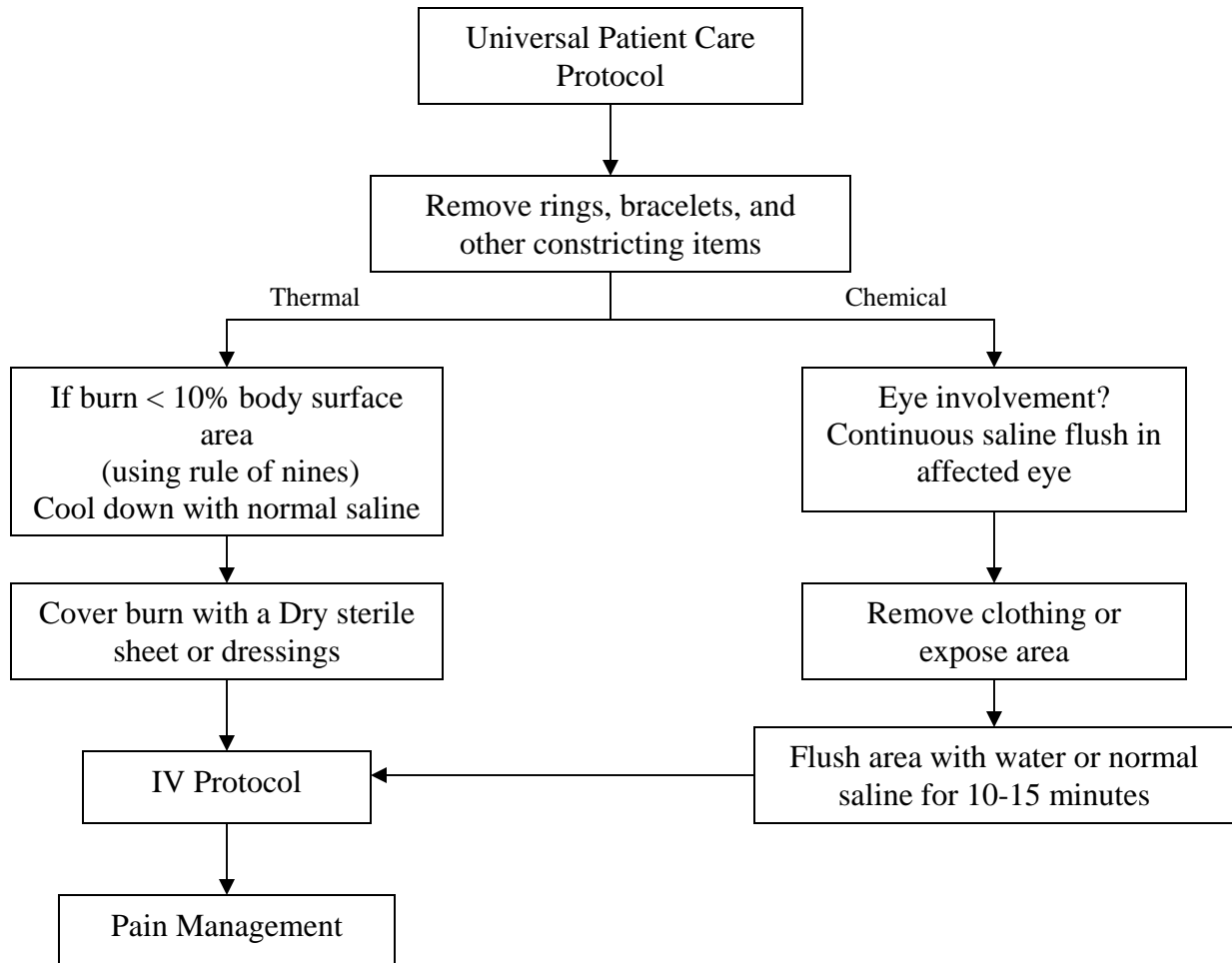
Bites and Envenomations

History:	Sings & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Type of bite/sting 2. Description or bring creature/photo with patient for identification 3. Time, location, size of bite/sting 4. Previous reaction to bite/sting 5. Domestic vs. wild 6. Tetanus and Rabies at risk 7. Uncompromised patient 	<ol style="list-style-type: none"> 1. Rash, skin break, wound 2. Pain, soft tissue swelling, redness 3. Blood oozing from the bite wound 4. Evidence of infection 5. Shortness of breath, wheezing 6. Allergic reaction, hives, itching 7. Hypotension or shock 	<ol style="list-style-type: none"> 1. Animal bite 2. Human bite 3. Snake bite (poisonous) 4. Spider bite (poisonous) 5. Insect sting/bite (bee, wasp, ant, itching) 6. Infection risk 7. Rabies risk 8. Tetanus risk



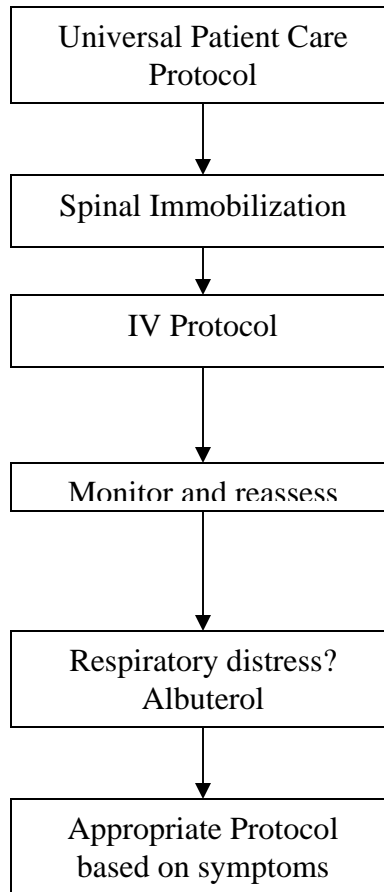
Burns

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Type of exposure (heat, gas, chemical) 2. Inhalation injury 3. Time of injury 4. Past medical history 5. Medications 6. Other trauma 7. Loss of consciousness 8. Tetanus/Immunization status 	<ol style="list-style-type: none"> 1. Burns, pain, swelling 2. Dizziness 3. Loss of consciousness 4. Hypotension/shock 5. Airway compromise/distress 6. Singed facial or nasal hair 7. Hoarseness/wheezing 	<ol style="list-style-type: none"> 1. Superficial 1st degree red and painful 2. Partial thickness 2nd degree blistering 3. Full thickness 3rd degree painless and charred or leathery skin 4. Chemical 5. Thermal 6. Electrical 7. Radiation



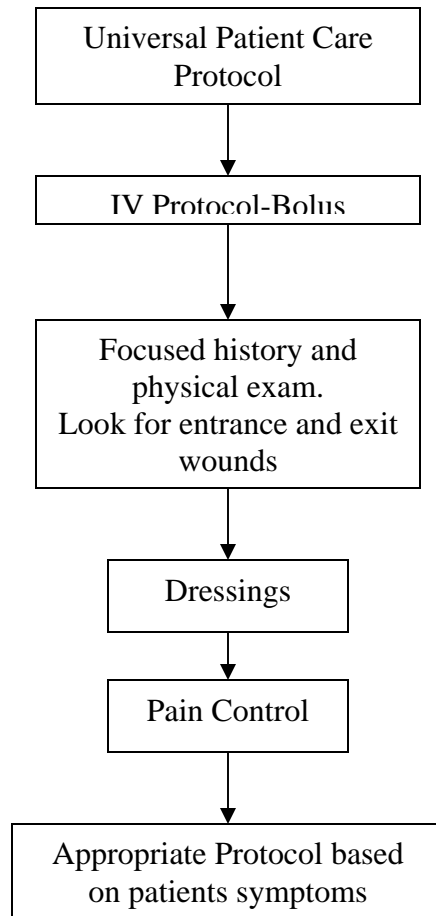
Drowning/Near Drowning

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Submersion in water regardless of depth 2. Possible history of trauma ie: diving board 3. Duration of immersion 4. Temperature of water 	<ol style="list-style-type: none"> 1. Unresponsive 2. Mental status changes 3. Decreased or absent vital signs 4. Vomiting 5. Coughing 	<ol style="list-style-type: none"> 1. Trauma 2. Pre-existing medical condition 3. Pressure injury (diving) Barotrauma Decompression sickness



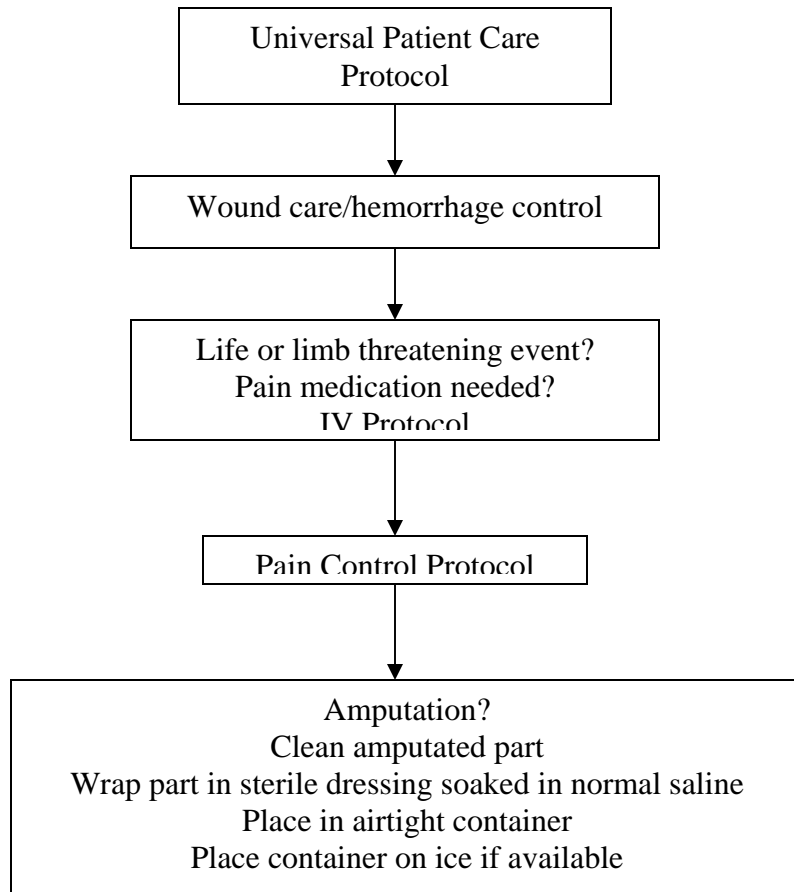
Electrical Injuries

<p>History:</p> <ol style="list-style-type: none"> 1. Lightning or electrical exposure 2. Single or multiple victims 3. Trauma secondary to a fall from high wire or MVC into line 4. Duration of exposure 5. Voltage and current (AC/DC) 	<p>Signs & Symptoms:</p> <ol style="list-style-type: none"> 1. Burns 2. Pain 3. Entry and exit wounds 4. Hypotension or shock 5. Arrest 	<p>Differential:</p> <ol style="list-style-type: none"> 1. Cardiac arrest 2. Seizure 3. Burns (see burn protocol) 4. Multiple trauma
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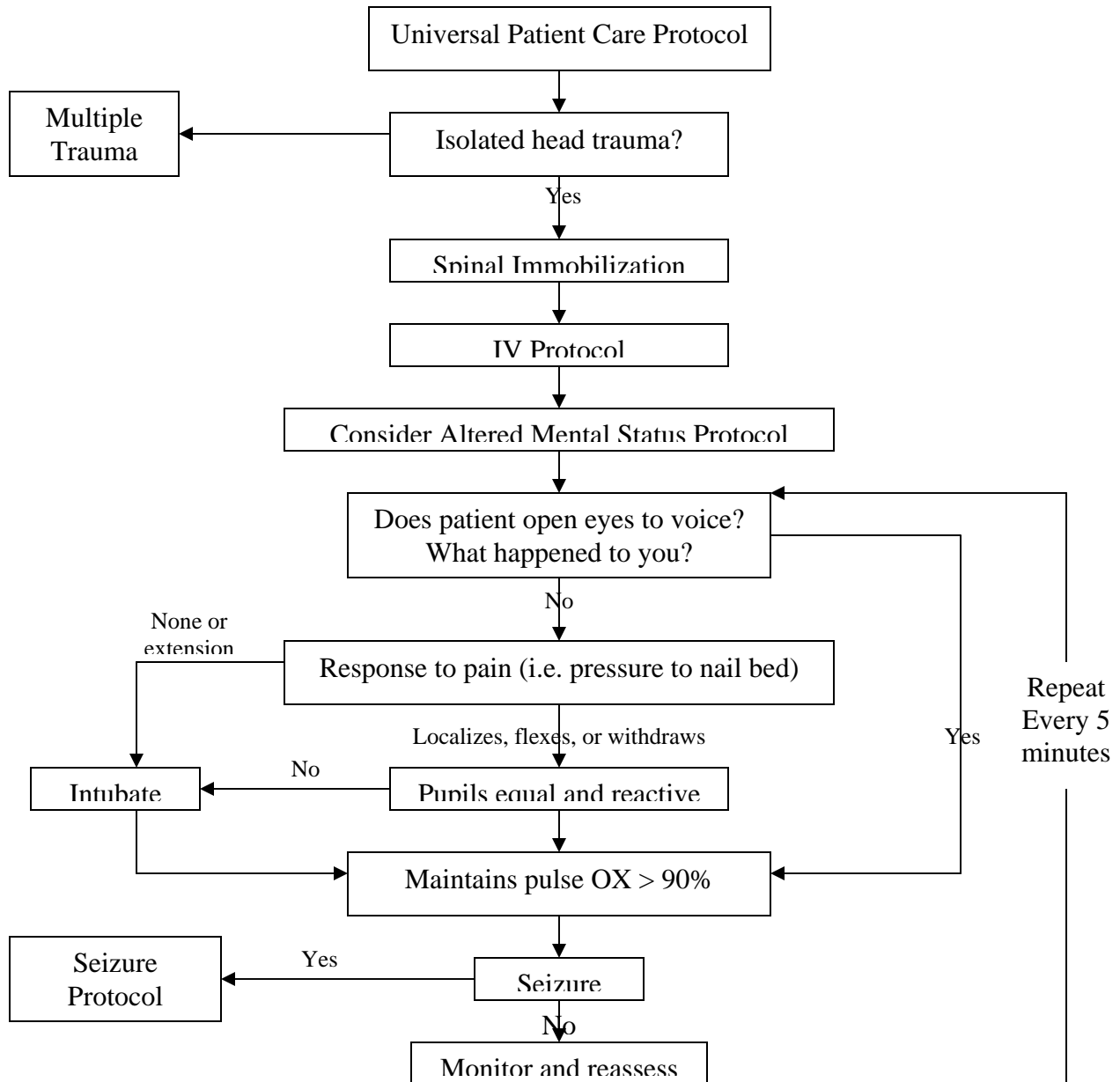
Extremity Trauma

History:	Sings & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Type of injury 2. Mechanism: crush/penetrating/ amputation 3. Time of injury 4. Open vs. closed wound/fracture 5. Wound contamination 6. Medical history 7. Medications 	<ol style="list-style-type: none"> 1. Pain, swelling 2. Deformity 3. Altered sensation/motor function 4. Diminished pulse/capillary refill 5. Decreased extremity temperature 	<ol style="list-style-type: none"> 1. Abrasion 2. Contusion 3. Laceration 4. Sprain 5. Dislocation 6. Fracture 7. Amputation



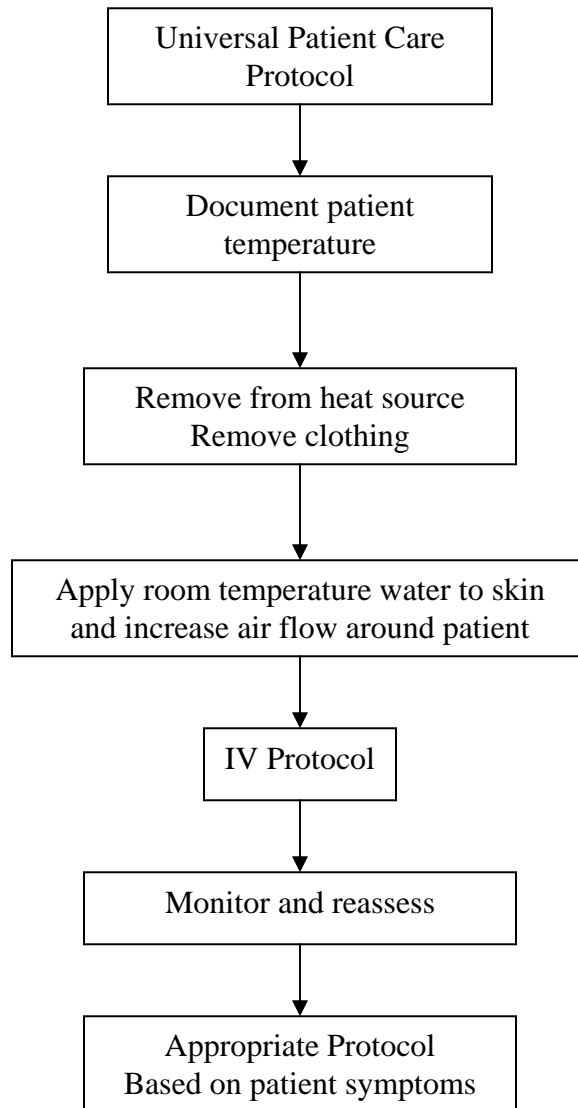
Head Trauma

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Time of injury 2. Mechanism: blunt/penetrating 3. Loss of consciousness 4. Bleeding 5. Medical history 6. Medications 7. Evidence of multi-trauma 8. Helmet use or damage to helmet 	<ol style="list-style-type: none"> 1. Pain, swelling, bleeding 2. Altered mental status 3. Unconscious 4. Respiratory distress/failure 5. Vomiting 6. Significant mechanism of injury 	<ol style="list-style-type: none"> 1. Skull fracture 2. Brain injury (concussion, contusion, hemorrhage, or laceration) 3. Epidural hematoma 4. Subdural hematoma 5. Subarachnoid hemorrhage 6. Spinal injury 7. Abuse



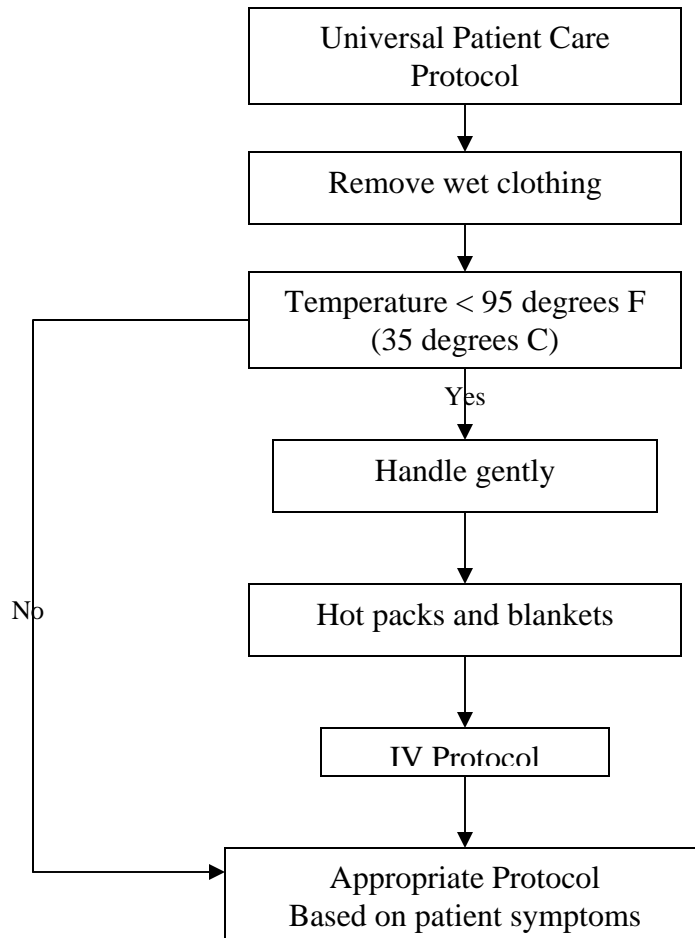
Hyperthermia

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Age 2. Exposure to increased temperatures and/or humidity 3. Past medical history/medications 4. Extreme exertion 5. Time and length of exposure 6. Poor PO intake 7. Fatigue and/or muscle cramping 	<ol style="list-style-type: none"> 1. Altered mental status or unconsciousness 2. Hot, dry or sweaty skin 3. Hypotension or shock 4. Seizures 5. Nausea 	<ol style="list-style-type: none"> 1. Fever (infection) 2. Dehydration 3. Medications 4. Hyperthyroidism 5. Delirium tremors 6. Heat cramps 7. Heat exhaustion 8. Heat stroke 9. CNS lesions or tumors



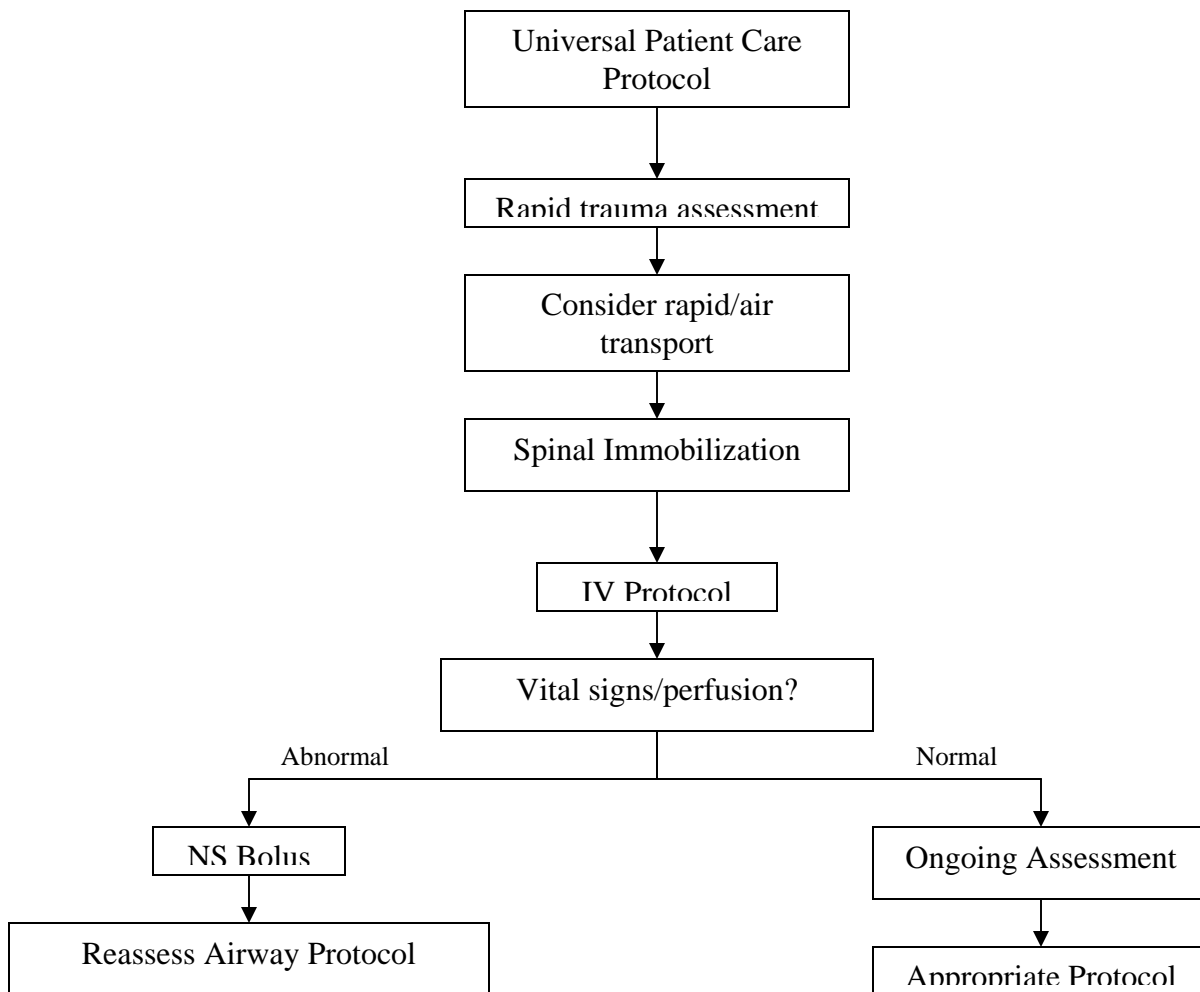
Hypothermia

History:	Signs & Symptoms:	Differential:
<ol style="list-style-type: none"> 1. Past medical history 2. Medications 3. Exposure to environment even in normal temperatures 4. Exposure to extreme cold 5. Extremes of age 6. Drug use/Alcohol, barbiturates 7. Infections/Sepsis 8. Length of exposure/Wetness 	<ol style="list-style-type: none"> 1. Cold, clammy 2. Shivering 3. Mental status changes 4. Extremity pain or sensory abnormality 5. Bradycardia 6. Hypotension or shock 	<ol style="list-style-type: none"> 1. Sepsis 2. Environmental exposure 3. Hypoglycemia 4. CNS dysfunction Stroke, Head injury, Spinal cord injury



Multiple Trauma

<p>History:</p> <ol style="list-style-type: none"> 1. Time & mechanism of injury 2. Damage to structure or vehicle 3. Location in structure or vehicle 4. Others injured or dead 5. Speed & details of MVC 6. Restraints/protective equipment 7. Past medical history 8. Medications 	<p>Signs & Symptoms:</p> <ol style="list-style-type: none"> 1. Pain, swelling 2. Deformity, lesions, bleeding 3. Altered mental status or unconscious 4. Hypotension or shock 5. Arrest 	<p>Differential:</p> <ol style="list-style-type: none"> 1. HEENT (airway obstruction) 2. Chest- tension pneumothorax, flail hest, pericardial tamponade, open chest wound, homothorax 3. Intra-abdominal bleed 4. Pelvis/Femur fracture 5. Spine fracture/cord injury 6. Head injury (see head trauma) 7. Extremity (fx/dislocation) 8. Hypothermia
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Appendix



APGAR

Test	0 Points	1 Point	2 Points
A ctivity (Muscle Tone)	Absent	Arms & legs extended	Active movement with flexed arms & legs
P ulse (Heart Rate)	Absent	Below 100 bpm	Above 100 bpm
G rimace (Response Stimulation or Reflex Irritability)	No Response	Facial grimace	Sneeze, cough, pulls away
A pppearance (Skin Color)	Blue-gray, pale all over	Pink body and blue extremities	Normal over entire body – Completely pink
R espiration (Breathing)	Absent	Slow, irregular	Good, crying

Glasgow Coma Score (GCS)

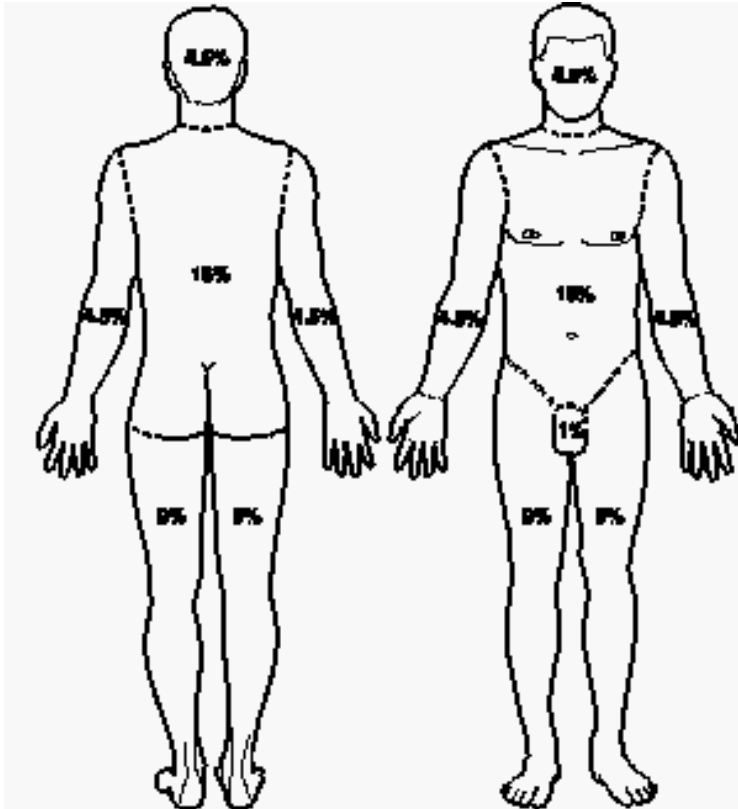
Eye Opening	Verbal Response	Motor Response
<ul style="list-style-type: none"> • Spontaneous = 4 • To Voice = 3 • To Pain = 2 • None = 1 	<ul style="list-style-type: none"> • Oriented = 5 • Confused = 4 • Inappropriate words = 3 • Incomprehensible words = 2 • None = 1 	<ul style="list-style-type: none"> • Obeys commands = 6 • Localizes pain = 5 • Withdraws from pain = 4 • Decerebrate (Flexion) to pain = 3 • Decorticate (Extension) to pain = 2 • None = 1

Pediatric Trauma Score

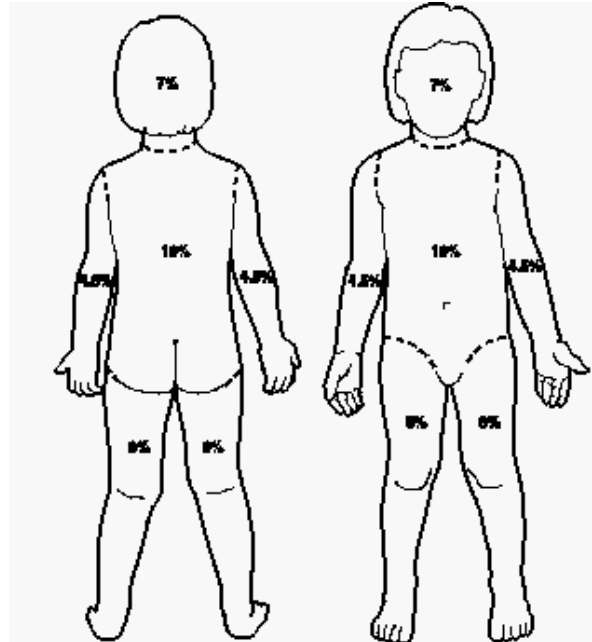
	+2	+1	-1
PT size	>20kg	10-20kg	<10kg
Airway	Normal	Maintainable without invasive procedures	Not maintainable: Needs invasive procedures
CNS	Awake	Obtunded	Comatose
Systolic BP (or Pulse)	>90 (radial)	50-90 (femoral)	<50 mmHg (no pulse)
Open Wounds	None	Minor	Major or penetrating
Skeletal	None	Closed Fx	Open/Multiple Fx

Rule of Nine

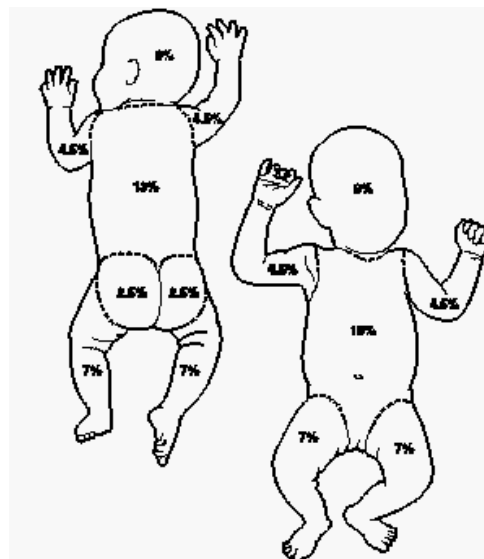
Adult



Child



Infant



Trauma Alert Criteria

Adult

Any 1 in this category	Any 2 in this category
<ul style="list-style-type: none"> • Active airway assistance more than oxygen • Glasgow Coma Score (GCS) = 12 or less • Best motor response = 4 or less (withdraws from pain) • Lack of radial pulse with sustained heart rate = 120 or more • Systolic BP < 90mmHg • Paralysis • Suspected spinal cord injury or loss of sensation • Amputation proximal to wrist or ankle • 2nd or 3rd degree burns = 14% or more TBSA • Penetrating injuries to the head, neck, torso (excluding superficial wounds where the depth of the wound can be determined) • 2 or more long bone fractures 	<ul style="list-style-type: none"> • Sustained respiratory rate = 30 or greater • Sustained heart rate = 120 or greater • Best motor response = 5 or less (localizes to pain) • Major degloving injury • Injury flap avulsion = 5 inches or more • Gunshot wounds to extremities • Single long bone fracture as a result of MVC • Single long bone fracture as a result of a fall 10 feet or greater • Age = 55 or greater • Ejection from inside enclosed vehicle (excluding motorcycles, ATV's bicycles or the open beds of pick up trucks) • Steering wheel deformed by driver

Pediatric

Any 1 in this category	Any 2 in this category
<ul style="list-style-type: none"> • Assisted or intubated airway • Multiple time suctioning • Altered mental status • Paralysis • Suspected spinal cord injury or loss of sensation • Weak or no palpable radial or femoral pulses • Systolic BP < 50 mmHg • Open long bone Fracture • Multiple fractures or dislocations • Major degloving injury • Major flap avulsion • Major soft tissue disruption • Amputation proximal to wrist or ankle • 2nd or 3rd degree burns = 10% or more TBSA • Penetrating injuries to the head, neck, torso (excluding superficial wounds where the depth of the wound can be determined) 	<ul style="list-style-type: none"> • Weight 11kg or less • Length 33 inches or less • Amnesia or LOC • Carotid and femoral pulse present with no radial or pedal pulse • Systolic BP < 90mmHg • Single closed longbone fracture

Drug List



Drug List

Drug	Adult	Pediatric
<p><u>Adenosine</u> Protocol: SVT</p> <p>Specifically for treatment or diagnosis of SVT</p>	<p>6mg IVP over 1-3 seconds. If no effect after 1-2 minutes,</p> <p>12mg IVP over 1-3 seconds. May repeat dose once.</p>	<p>0.1mg/kg rapid IVP with 20cc fluid bolus. If no effect 1-2 minutes,</p> <p>0.2mg/kg rapid IVP with 20cc fluid bolus.</p>
<p><u>Albuterol</u> Protocol: Drowning Resp. Distress Ped Resp Distress</p> <p>B-Agonist nebulized treatment for use in respiratory distress with bronchospasm</p>	<p>2.5mg (3cc) in nebulizer continuously x 3 doses, if no history of cardiac disease and heart rate \leq 150.</p>	<p>See length based measuring tape.</p> <p>2.5mg (3cc) in nebulizer continuously x 3 doses, if no history of cardiac disease and heart rate \leq 200.</p>
<p><u>Antiemetic:</u> (promethazine/phenergan) Protocol: Abdominal pain Vomiting & Diarrhea</p>	<p>25mg IM or 12.5 mg IV</p> <p>(If \geq 60 yrs. Old dose 12.5 mg IM or 6.25mg IV)</p>	<p>Not used</p>
<p><u>Asprin</u> Protocol: Chest pain</p> <p>An antiplatelet drug for use in cardiac chest pain</p>	<p>81mg chewable (baby) aspirin. Give 4 tablets to equal usual adult dose.</p>	<p>Not Used</p>
<p><u>Atropine</u> Protocol: Asystole Bradycardia PEA Overdose Ped. Bradycardia</p> <p>Anticholinergic drug used in bradycardias or asystole</p> <p>(For Endotracheal tube use of this drug, double the dose)</p> <p>In organophosphate toxicity, large dose may be required (>10mg)</p>	<p><u>Asystole:</u> 1mg/IV Repeat in 3-5 min up to 0.04mg/kg</p> <p><u>Bradycardia:</u> 0.5-1.0mg/IV every 3-5 minutes up to 0.04mg/kg</p> <p><u>Organophosphate:</u> 0.5mg/IVP</p> <p>No response 2mg IVP</p> <p>Double dose every 10 minutes PRN.</p>	<p>See length based measuring tape.</p> <p><u>Asystole:</u> 0.02mg/kg IV, IO (Min 0.1mg) per dose (Max 0.5 mg) per dose May repeat in 3-5 min.</p> <p><u>Bradycardia:</u> See asystole</p> <p><u>Organophosphate:</u> 0.02mg/kg IVP. Min dose 0.1mg/kg IVP May double dose every 10 minutes PRN</p>

Drug	Adult	Pediatric
<p><u>Calcium Channel Blocker</u> (Diltiazem) Protocol: SVT</p> <p>Calcium channel blocker used to treat narrow complex SVT</p>	<p>0.25mg/kg IVP over 2 min. (15-20mg usual adult dose)</p>	<p>Call medical control</p>
<p><u>Calcium Chloride</u> Protocol: PEA Vent Fibrillation (Calcium Channel Blocker Overdose)</p> <p>Indicated for severe hyperkalemia</p>	<p>One amp (10ml) or 1gm IVP</p> <p>Avoid use pt is taking digoxin</p>	<p>See length based measuring tape</p> <p>20mg/kg IV or IO slowly</p>
<p><u>Crystalloid Solutions</u> (Normal Saline) (Lactated Ringers) Protocol: Fever PEA Heat Emergencies Abdominal pain Altered Mental Status Epistaxis Hypotension Vomiting & Diarrhea Neonatal Ob Emergencies Ped Bradycardia Ped Hypotension Ped Multi trauma Burns Electrical Injuries Multiple trauma</p> <p>Iv fluid of choice for access or volume infusion</p>	<p>KVO for IV access</p> <p>Bolus 250ml for cardiac</p> <p>Bolus for all other 20cc/kg</p>	<p>See length based measuring tape.</p> <p>Bolus 20cc/kg</p>
<p><u>Dexamethasone</u> (Decadron) Protocols: Allergic reaction Respiratory distress</p>	<p>20mg IVP</p>	<p>See length based measuring tape</p>

Drug	Adult	Pediatric
<p><u>Diphenhydramine</u> (Benadryl) Protocol: Allergic reaction Overdose</p> <p>Antihistamine for control of allergic reactions</p> <p>Dystonic reaction</p>	<p>50mg IV</p> <p>25mg IV for Dystonic Reaction</p>	<p>See length based measuring tape</p> <p>1mg/kg IV/IO/IM</p> <p>Do not give to infants < 3months</p> <p>(Max dose 50mg)</p>
<p><u>Dopamine</u> Protocol: Bradycardia PEA Post Resuscitation Hypotension Ped Hypotension</p> <p>A vasopressor used in shock or hypotensive states.</p>	<p>5mcg/kg/min titrate to BP systolic of 90 mmHg</p> <p>Mix 400mg in 250cc D5W</p>	<p>5mcg/kg/min titrate minimum for age per length based measuring tape.</p> <p>Mix 400mg in 250cc of D5W</p>
<p><u>Epinephrine 1:1000</u> Protocol: Allergic reaction Resp. Distress Ped. Resp.</p> <p>Distress</p> <p>Vasopressor used in allergic reactions or anaphylaxis.</p>	<p>0.3mg to 0.5mg Sq. If < 60 and no cardiac or HTN history.</p> <p>2mg ET</p>	<p>See length based measuring tape.</p> <p>0.01mg/kg Sq</p> <p>(Max dose 0.3mg)</p>
<p><u>Epinephrine 1:10,000</u> Protocol: Asystole PEA V-Fib/Tach Allergic reaction Ped Bradycardia Ped pulseless</p> <p>arrest</p> <p>Vasopressor used in cardiac arrest</p>	<p>1.0mg IV</p> <p>Repeat every 3-5 min until observed response.</p> <p>(May be given ET in double the dose)</p> <p>Severe anaphylaxis 2-3cc IV every 3 min</p>	<p>See length based measuring tape.</p> <p>0.01mg/kg IV/IO</p> <p>Max dose 0.5mg)</p> <p>Repeat every 3-5 min until observed response</p>
<p><u>Etomidate</u> Protocol: RSI</p> <p>Hypnotic</p>	<p>0.3mg/kg IV</p> <p>Usual adult dose 20mg</p>	<p>0.3mg/kg IV</p>

Drug	Adult	Pediatric
<u>Furosemide</u> Protocol: Pulmonary Edema Diuretic for pulmonary edema or CHF	40mg IV or double the dose equal to patient's normal single home PO dose.	Not Used
<u>Glucagon</u> Protocol: Altered mental status CVA Seizure Syncope Ped Head Trauma Ped Hypotension Ped Pulseless Arrest Ped Seizure Use in unconscious or hypoglycemic state	1mg/IM	See length based measuring tape. 0.5mg/kg IM Follow blood glucose in 15 minutes, if < 60 repeat Age > 3 years
<u>Glucose Solutions (Dextrose 10%)</u> Protocol: Neonatal Ped Bradycardia Ped Head Trauma Ped Hypotension Ped Pulseless Arrest Ped Seizure Use in unconscious or hypoglycemic state	Not Used	See length based measuring tape. 5mg/kg IV or IO Repeat based on blood glucose results Use only if patient is < 1y/o
<u>Glucose Solutions (Dextrose 25%)</u> Protocol: : Neonatal Ped Bradycardia Ped Head Trauma Ped Hypotension Ped Pulseless Arrest Ped Seizure Use in unconscious or hypoglycemic state	Not Used	See length based measuring tape. 2mg/kg IV or IO Mix = amounts of D50 with NS to make D25 Use if patients are > 1y/o and fits length based measuring tape
<u>Glucose Solutions (Dextrose 50)</u> Protocol: Altered mental status CVA Seizure Syncope Use in unconscious or hypoglycemic state.	One amp 25gm IV bolus Repeat based on blood glucose results	Not Used

Drug	Adult	Pediatric
<p><u>Haldoperidol</u> (Haldol) Protocol: Behavioral</p> <p>Medication to assist with sedation of agitated patients.</p>	<p>5mg IV/IM</p> <p>May repeat as needed.</p>	Not Used
<p><u>Ipratropium</u> (Atrovent) Protocol: Respiratory distress</p> <p>Medication used in addition to albuterol to assist patients with the asthma and COPD.</p>	500mcg per nebulizer treatment	Not Used
<p><u>Lidocaine</u> Protocol: Post resuscitation Vent ectopy Vent fibrillation Vent Tachycardia Ped Pulseless Arrest</p>	<p>1-1.5mg/kg IV, ET dose 2 x IV dose.</p> <p>Max dose 3mg/kg</p> <p>Drip 2 mg/min</p>	<p>See length based measuring tape.</p> <p>1mg/kg IV/IO bolus</p> <p>3mg/kg ET</p> <p>Repeat same dose in 5 min.</p> <p>No drip</p>
<p><u>Magnesium Sulfate</u> Protocol: OB/GYN Emergency Torsades Severe Respiratory</p> <p>Elemental electrolyte</p>	<p>2gm slow IVP over 5 min for HTN only and respiratory.</p> <p>2gm IVP over 1-2 min for seizures with HTN</p> <p>2GM IVP over 1-2 min for torsades.</p>	Not Used
<p><u>Methylprednisolone</u> (Solu-Medrol) Protocol: Allergic reaction Respiratory distress</p> <p>Steroid used to reduce inflammation</p>	125mg IVP	<p>See length based measuring tape.</p> <p>2mg/kg IV</p>
<p><u>Midazolam</u> (Versed) Protocol: Behavioral SVT Vent. Tachycardia Seizure</p> <p>Quick acting benzodiazepine Preferred over valium for IM use Use with caution if BP < 100</p>	<p>2-5mg slow IVP</p> <p>5mg/IM</p> <p>May repeat the same dose in 2-3 minutes as needed.</p>	<p>See length based measuring tape.</p> <p>0.05mg/kg slow IVP</p> <p>0.1mg/kg IM dose</p>

Drug	Adult	Pediatric
<p><u>Narcotic Analgesic</u> (Morphine) Protocol: Pain control Chest pain</p> <p>Narcotic relief Antianxiety Possible beneficial effect in Pulmonary Edema Avoid use if BP<100</p>	2-5 mg IV	See length based measuring tape. 0.1mg/kg IV/IO
<p><u>Narcotic Antagonist</u> (Naloxone/Narcan) Protocol: Altered mental status Overdose Neonatal Ped bradycardia Ped head trauma Ped pulseless arrest</p>	0.4-2mg IV titrated to patient's respiratory response. May be given IM if unable to establish IV if a known narcotic overdose.	See length based measuring tape. 0.01mg/kg IV/IO
<p><u>Nitroglycerin</u> Protocol: Chest pain Pulmonary edema Hypertension</p> <p>Vasodilator used in anginal syndromes, CHF and hypertension</p>	<p><u>ChestPain</u> 1 spray/tablet SL q 5 minutes until painfree or 3 doses If SBP >90.</p> <p><u>Pulmonary Edema</u> 1 spray/tablet SL every 1-2 minutes if SBP>90, up to 3 doses.</p> <p><u>Hypertension</u> 1 spray/tablet SL every 1-2 minutes until DBP <110 or 3 doses.</p>	Not Used
<p><u>Oxygen</u> Protocol: Universal patient care</p> <p>Useful in airway, chest pain and respiratory distress. Required for pre-oxygenation whenever possible prior to intubation.</p>	1-4 lpm via nasal cannula 6-10 lpm via simple face mask 12-15 lpm via NRB	1-4 lpm via nasal cannula 6-10 lpm via simple face mask 12-15 lpm via NRB
<p><u>Paralytic Agents</u> (Succinylcholine) Protocol: RSI</p> <p>Paralytic Avoid in patients with burns > 24 hours old, chronic neuromuscular disease, or other situation in which hyperkalemia is likely.</p>	1.5mg/kg IV (100mg for average adult)	See length based measuring tape. 1.5mg/kg

Drug	Adult	Pediatric
<p><u>Paralytic Agent</u> (Vecuronium) Protocol: RSI</p> <p>Paralytic Long acting</p>	10mg IV push	<p>See length based measuring tape.</p> <p>0.1mg/kg IV/IO</p>
<p><u>Sodium Bicarbonate</u> Protocol: Asystole Overdose PEA Vent Fibrillation Electrical Injuries</p>	<p>1 amp(50mEq) IV initially, then ½ amp IV every 10 minutes as needed.</p> <p>In TCA (tricyclic), 1 amp (50mEq) bolus, then 2 amps in 1 liter of NS for infusion at 200 ml/hr.</p>	<p>See length based measuring tape.</p> <p>1mEq/kg IV?IO initially, then ½ mEq/kg IV every 10 minutes as needed.</p> <p>TCA (tricyclic) overdose.</p>
<p><u>Thiamine</u> Protocol: Altered mental status CVA Seizure Syncope</p> <p>Essential vitamin needed for glucose metabolism.</p>	100mg IV or IM	Not Used