



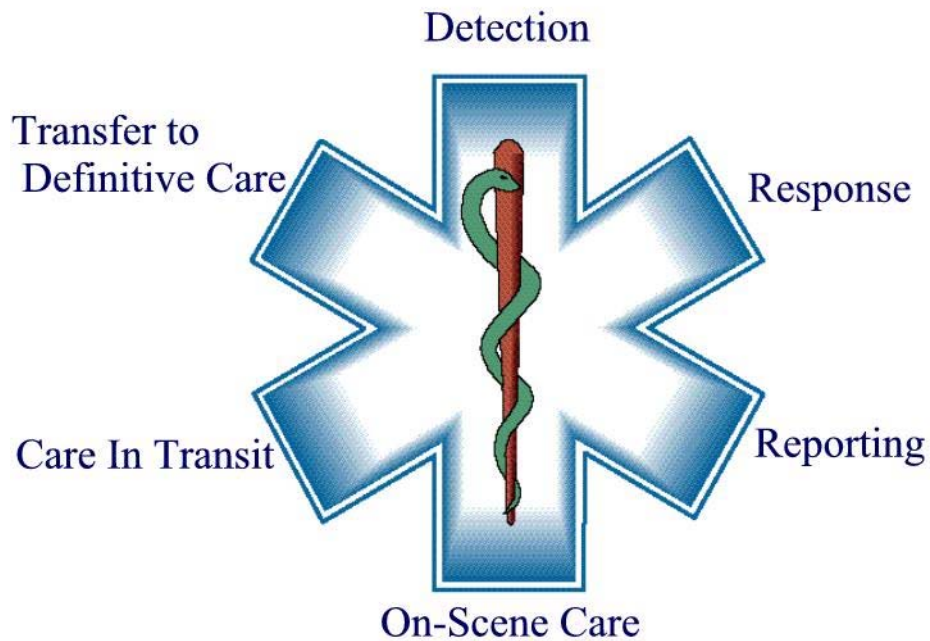
SOUTHWEST GENERAL HEALTH CENTER
Partnering with **University Hospitals Health System**

EMS Services

PRE-HOSPITAL CARE

MEDICAL CONTROL

PROTOCOLS AND PROCEDURES



AIRWAY / BREATHING

AIRWAY / BREATHING GUIDELINES

Guidelines of Airway Assessment

PARTIAL OBSTRUCTION

- May include coughing with some air movement. Give 100% Oxygen and encourage the patient to cough. Monitor for changes. Transport immediately.

FOREIGN BODY AIRWAY OBSTRUCTIONS (FBAO)

- Should be removed immediately if able. Visualize airway and either suction or sweep out liquids and other materials. Solids must be hooked with finger or instrument. A laryngoscope may be used for direct visualization of the airway. If unable to clear airway by these methods, use Heimlich maneuver and abdominal or chest thrusts as appropriate.

STRIDOR

- High pitched crowing sound caused by obstruction of the upper airway.

WHEEZING

- A whistling or sighing sound, usually lower airway and found upon expiration.

Guidelines of Breathing Assessment

RALES

- Fine to course crackle representing fluid in the lower airway.

RHONCHI

- Course upper airway sound representing various levels of upper airway obstruction.

COPD

- Pulmonary disease (as emphysema or chronic bronchitis) that is characterized by chronic typically irreversible airway obstruction resulting in a slowed rate of exhalation.

CROUP

- Inflammation, edema, and subsequent obstruction of the larynx, trachea, and bronchi especially of infants and young children that is typically caused by a virus and is marked by episodes of difficult breathing and hoarse metallic cough.

EPIGLOTTITIS

- Inflammation of the epiglottis usually caused by HIB microbes, now uncommon in children.

GENERAL CONSIDERATIONS:

Airway Assessment

- If you don't have an airway – you don't have anything!
- C-Spine precautions must be considered prior to the insertion of airway adjuncts. Provide manual stabilization prior to insertion.
- See PEDIATRIC section for pediatric airway management.

Breathing Assessment

- Be sure that the airway is open before assessing breathing.
- When assessing breathing, observe rate, quality, depth, and equality of chest movement.
- COPD patients maintain on low flow oxygen (usually less than 2 L which keeps their O₂ Sat in the 90's%), and some may stop breathing on high flow. However, if the COPD patient needs high flow oxygen it should be given. Be prepared to support breathing with ambu-bag if needed.
- Always record vital signs when treating breathing problems.

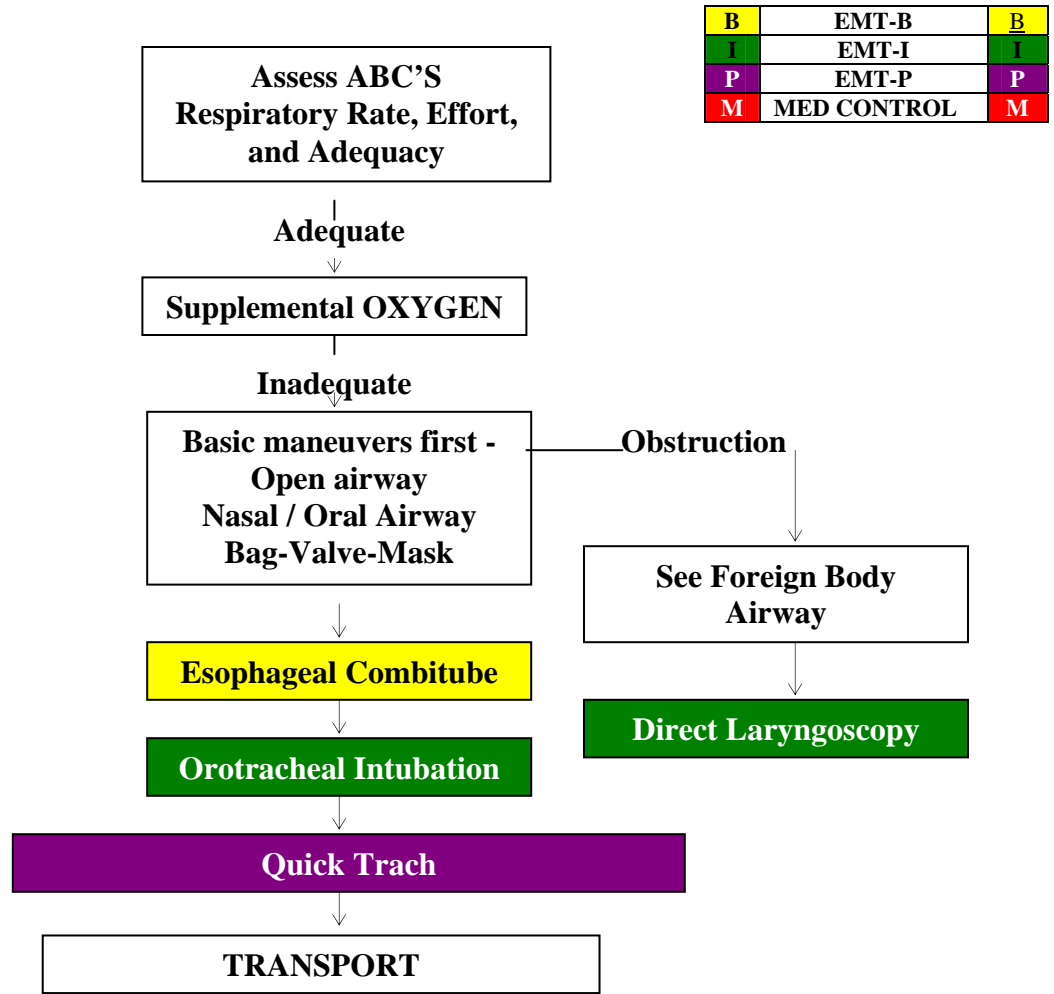
AIRWAY / BREATHING

2

AIRWAY ADJUNCTS

ADJUNCT	INDICATIONS	CONTRAINDICATIONS	COMMENTS
Suction	Indispensable for all patients with fluid or particulate debris in airway	NONE	No more than 15 seconds per attempt
Modified jaw thrust	Initial airway maneuver for all trauma patients	NONE	None of these adjuncts protects against aspiration in patient with depressed consciousness
Hyperextension of neck	Opening airway of non-trauma patient	Potential cervical spine injury	Same see above
Nasal airway	Obstruction by tongue with gag reflex present	Potential mid-face injury	Same see above
Oral airway	Obstruction due to tongue, etc.	Positive gag reflex	Same see above
Orotracheal intubation	Failure of above provides airway protection	NONE	Difficult in patients with severe maxillofacial injuries.
Combitube	Failure to place ETT successfully	Height over 4 ft to 5 ft 5 in., use the SA Height 5 ft. and up, use regular size	Remove dentures and use caution if trauma (broken teeth may tear balloon)
Needle Cricothyrotomy "Quick-Trach" or other tracheotomy device	High obstructed airway (unable to clear) Unable to establish any other airway	Must be able to identify cricoid ring. Not best for anterior neck trauma.	Must have training in procedure

AIRWAY (ADULT)



General Considerations

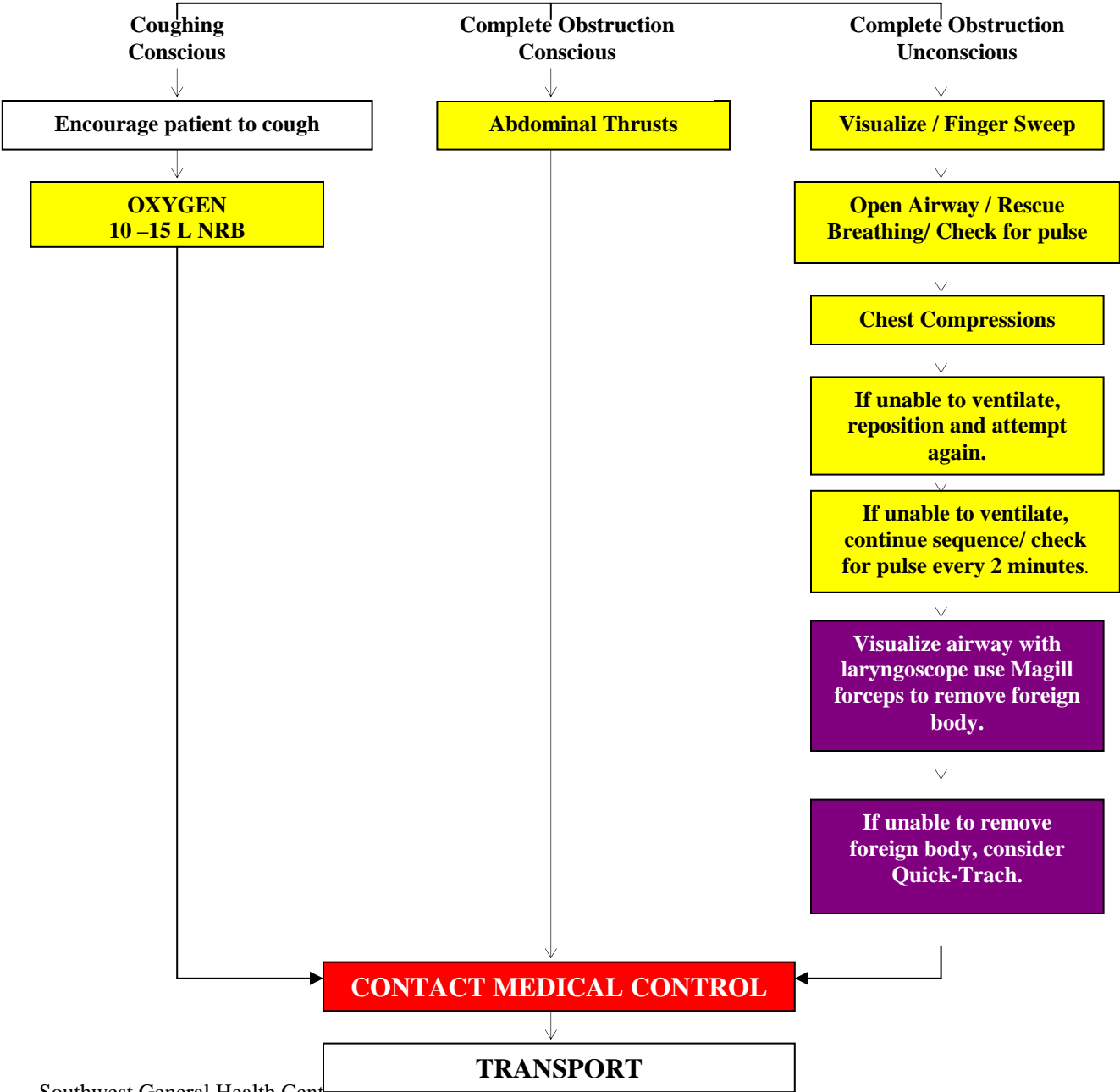
- For this protocol, adult is defined as 12 years old or greater.
- Capnometry is mandatory with all methods of intubation. Document results.
- Maintain C-spine immobilization for patients with suspected spinal injury.
- Do not assume hyperventilation is psychogenic – use oxygen, not a paper bag.
- Sellick’s maneuver should be used to assist with difficult intubations.
- Paramedics should consider using a CombiTube when they are unable to intubate a patient.
- Hyperventilation in head trauma should only be done to maintain pCO₂ of 30-35.

FOREIGN BODY AIRWAY OBSTRUCTION (FBAO) - ADULT

UNIVERSAL PATIENT CARE PROTOCOL

**Head Tilt / Chin Lift / Jaw Thrust
Airway Maneuvers**

B	EMT-B	B
I	EMT-I	I
P	EMT-P	P
M	MED CONTROL	M



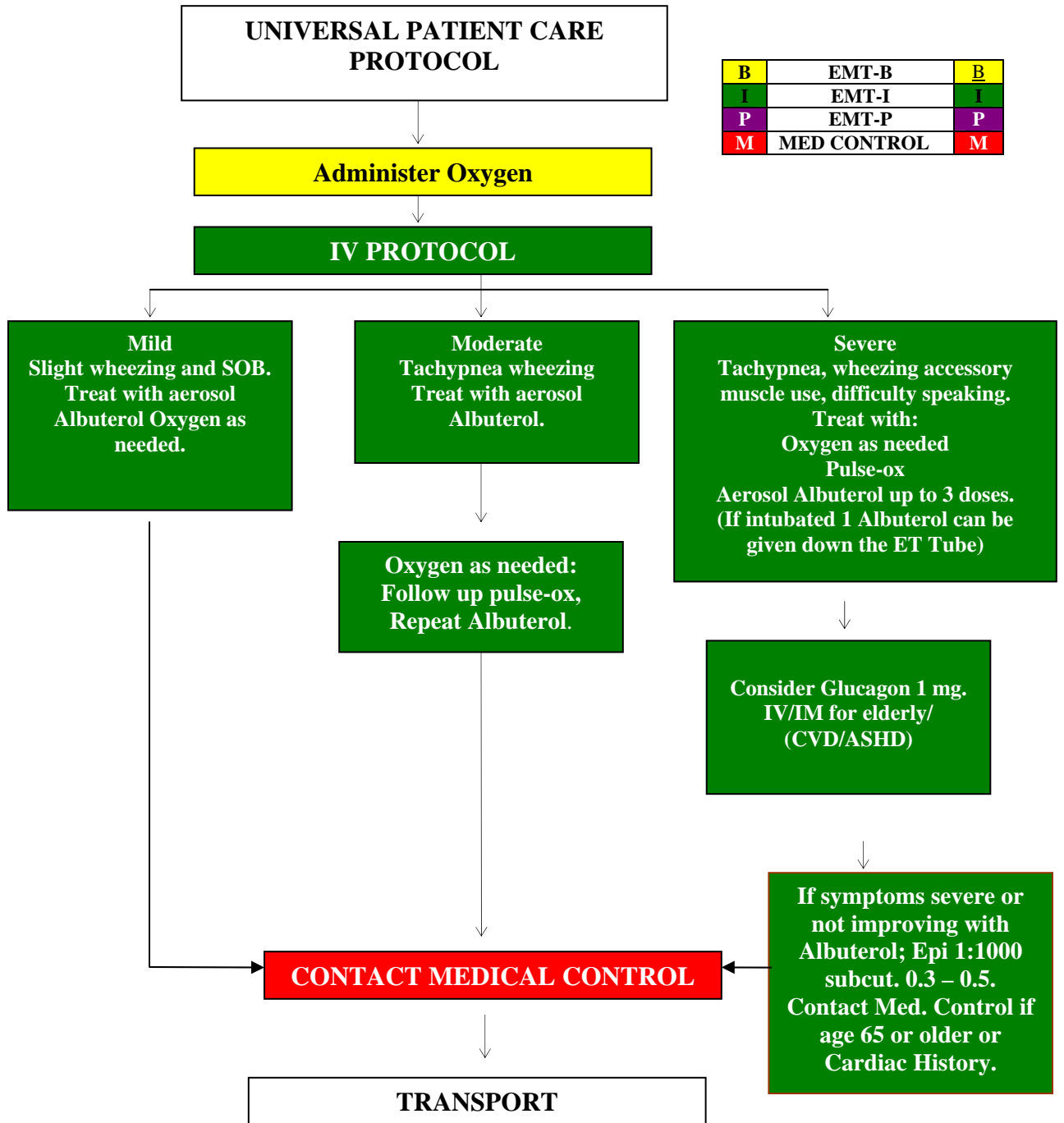
FOREIGN BODY AIRWAY OBSTRUCTION (FBAO) - ADULT

History	Signs and Symptoms	Differential Diagnosis
<ul style="list-style-type: none"> • Coughing • Choking • Inability to speak • Unresponsive 	<ul style="list-style-type: none"> • Witnessed Aspiration • Sudden Episode of Choking • Gagging • Audible Stridor • Change in Skin Color • Decreased LOC • Increased or Decreased Respiratory Rate • Labored Breathing • Unproductive Cough 	<ul style="list-style-type: none"> • Cardiac Arrest • Respiratory Arrest • Anaphylaxis

GENERAL CONSIDERATIONS:

- With complete obstruction, positive-pressure ventilation may be successful.

**RESPIRATORY DISTRESS
ASTHMA AND COPD**



B	EMT-B	B
I	EMT-I	I
P	EMT-P	P
M	MED CONTROL	M

**RESPIRATORY DISTRESS
ASTHMA AND COPD**

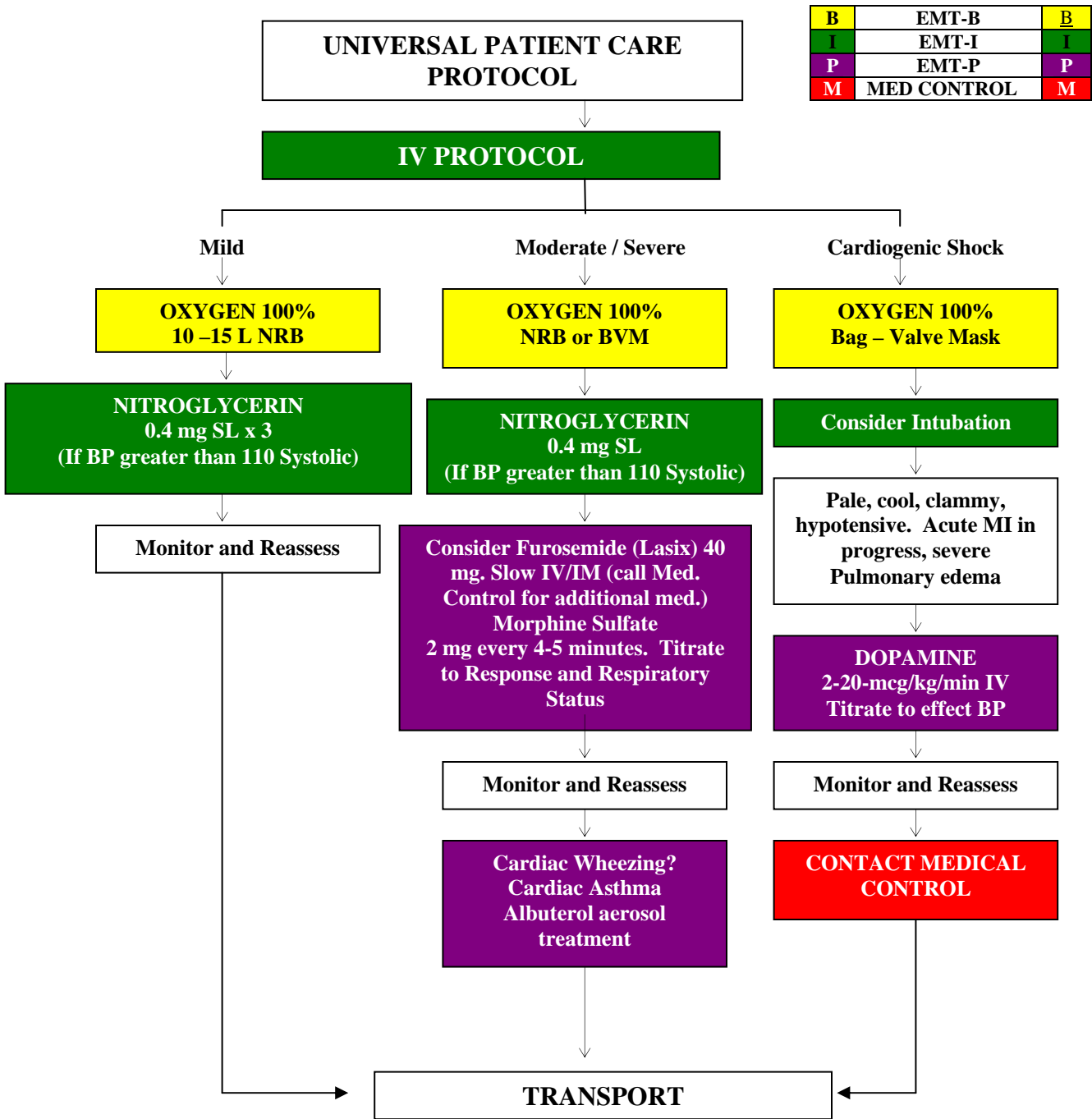
History	Signs and Symptoms	Differential Diagnosis
<ul style="list-style-type: none"> • Asthma; COPD – chronic bronchitis, emphysema, congestive heart failure • Home treatment (oxygen, nebulizer) • Medications (theophylline, steroids, inhalers) • Toxic exposure, smoke inhalation 	<ul style="list-style-type: none"> • Shortness of breath • Pursed lip breathing • Decreased ability to speak • Increased respiratory rate and effort • Wheezing, rhonchi • Use of accessory muscles • Fever, cough • Tachycardia 	<ul style="list-style-type: none"> • Asthma • Anaphylaxis • Aspiration • COPD (Emphysema, Bronchitis) • Pleural effusion • Pneumonia • Pulmonary embolus • Pneumothorax • Cardiac (MI or CHF) • Pericardial tamponade • Hyperventilation • Inhaled toxin (Carbon monoxide, etc.)

GENERAL CONSIDERATIONS:

- Exam: Mental Status, HEENT, Skin, Neck, Heart, Lungs, Abdomen, Extremities, Neuro
- Status asthmaticus - severe prolonged asthma attack unresponsive to therapy - life threatening!
- Contact Medical Control prior to administering epinephrine in patients who are:
 - greater than 65 years of age
 - have a history of cardiac disease
 - or if the patient's heart rate is greater than 150
 Epinephrine may precipitate cardiac ischemia.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- Be alert for respiratory depression in COPD patients on prolonged high flow oxygen administration. DO NOT withhold oxygen from hypoxic patients.
- If Albuterol is given, monitor the patient's cardiac rhythm and initiate IV.
- Glucagon 1 mg IV/IM can be considered for the elderly and those with cardiovascular compromises, as it is less stressful than Epi in those with CVD/ASHD.

AIRWAY / BREATHING

CONGESTIVE HEART FAILURE (CHF) / PULMONARY EDEMA



PULMONARY EDEMA / CONGESTIVE HEART FAILURE (CHF)

History	Signs and Symptoms	Differential Diagnosis
<ul style="list-style-type: none"> • Congestive heart failure • Past medical history • Medications (digoxin, lasix) • Viagra • Cardiac history –past myocardial infarction 	<ul style="list-style-type: none"> • Respiratory distress, bilateral rales • Apprehension, orthopnea • Jugular vein distention • Pink, frothy sputum • Peripheral edema, diaphoresis • Hypotension, shock • Chest pain • Positive Hepato-jugular reflex 	<ul style="list-style-type: none"> • Myocardial infarction • Congestive heart failure • Asthma • Anaphylaxis • Aspiration • COPD • Pleural effusion • Pneumonia • Pulmonary embolus • Pericardial tamponade
CONGESTIVE HEART FAILURE (CHF) / PULMONARY EDEMA		
I - Mild	II - Moderate	III - Severe
<p>Heart Rate: Normal Range</p> <p>Blood Pressure: Normal or slightly elevated</p> <p>Breath Sounds: Bilateral Rales Rhonchi Wheezing possible Some difficulty breathing</p>	<p>Heart Rate: Tachycardia</p> <p>Blood Pressure: Elevated HIGH</p> <p>Breath Sounds: Bilateral Diffuse Rales, Wheezing possible Diminished Working hard to breathe Frothy sputum</p>	<p>Heart Rate: Tachycardia then drops to Bradycardia</p> <p>Blood Pressure: Elevated HIGH then drops to Hypotension</p> <p>Breath Sounds: May be ominously quiet, fatigue from work of breathing</p>

GENERAL CONSIDERATIONS:

- Exam: Mental Status, Skin, Neck, Lung, Heart, Abdomen, Back, Extremities, Neuro
- Obtain 12-lead EKG to evaluate for MI. Be suspicious of “Silent MI” in the elderly, diabetic and women.
- DO NOT administer Nitroglycerin to any patient who has used erectile dysfunction medications (Viagra, Cialis, Levitra, etc.) in the past 48 hours due to possible severe hypotension.
- If patient has taken nitroglycerin without relief, consider potency of the medication.
- Nitroglycerin can be administered to a patient by EMS if the patient has already taken 3 of their own prior to your arrival. Document it if the patient had any changes in their symptoms or a headache after taking their own. Document the expiration date of the patients prescribed nitroglycerin.
- Monitor for hypotension after administration of Nitroglycerin and Morphine.
- Contraindications to Morphine include severe COPD and respiratory distress. Monitor the patient closely.
- Consider other causes of chest pain such as aortic aneurysms, pericarditis and pulmonary embolisms.
- Diabetics and geriatric patients often have atypical pain, or only generalized complaints.
- Careful monitoring of LOC, BP, and respiratory status with above interventions is essential.
- Allow the patient to be in their position of comfort to maximize their breathing effort.
- Not all “wet” lung sounds are pulmonary edema. Other causes of rales and rhonchi include: pneumonia, emphysema and bronchitis.
- Acute pulmonary edema may be a sign of acute cardiac ischemia, which may give rise to cardiovascular collapse and hypotension as well as malignant atrial and ventricular arrhythmias.
- If the patient is already on Nitroglycerin, then the paramedic can administer Nitroglycerin without and an IV.
- Be alert for respiratory depression in COPD patients on prolonged high flow oxygen administration. DO NOT withhold oxygen from hypoxic patients.
- The IV dose of Furosemide (Lasix) should be the same amount as their total daily dose, up to 80 mg. A patient taking a total dose of Furosemide of 40 mg PO daily, should receive a 40 mg IV dose.

TRAUMATIC BREATHING

UNIVERSAL PATIENT CARE PROTOCOL
 Evidence of Trauma – Blunt or Penetrating
 Abnormal breath sounds, Inadequate Respiratory rate,
 Unequal symmetry, Diminished chest excursion, Cyanosis

B	EMT-B	B
I	EMT-I	I
P	EMT-P	P
M	MED CONTROL	M

Jaw Thrust Airway Maneuver
 Give High Flow Oxygen

Suspect Sucking Chest Wound? Apply 3-sided
 occlusive dressing/valved chest seal

Suspect Flail Chest? Splint with bulky dressing
 Assist with ventilation – gentle positive pressure

Suspect Penetrating Object?
 Immobilize Object
 Apply sterile saline dressing

Suspect Tension Pneumothorax?
 Confirm and Decompress Chest

CONTACT MEDICAL CONTROL

TRANSPORT

General Considerations

- These injuries involve the airway and are life threatening.
- Do not become distracted by non life-threatening injuries that appear terrible.
- A **sucking chest wound** is when the thorax is open to the outside. The occlusive dressing may be anything such as petroleum gauze, plastic, defibrillator pad or a valved chest seal. Tape only 3 sides down so that excess intrathoracic pressure can escape, preventing a tension pneumothorax. May help respirations to place patient on the injured side, allowing unaffected lung to expand easier.
- A **flail chest** is when there are extensive rib fractures present, causing a loose segment of the chest wall resulting in paradoxical and ineffective air movement. This movement must be stopped by applying a bulky pad to inhibit the outward excursion of the segment. Positive pressure breathing via BVM will help push the segment and the normal chest wall out with inhalation and to move inward together with exhalation, getting them working together again. Do not use too much pressure to prevent additional damage or pneumothorax.
- A **penetrating object** must be immobilized by any means possible. If it is very large, cutting may be possible, with care taken to not move it about when making the cut. Place an occlusive and bulky dressing over the entry wound.
- A **tension Pneumothorax** is life threatening, look for unequal breath sounds, JVD, increasing respiratory distress, decreased mental status, and lastly, tracheal displacement. The pleura space must be decompressed with a needle to provide relief. Use the midclavicular (2nd or 3rd intercostal space), going in on the topside of the rib. Use the #18 non-retractable needle contained in the drug box. Once the catheter is placed, watch closely for reocclusion. Repeat if needed.