RESPIRATORY EMERGENCIES

GENERAL CONSIDERATIONS

- A. There are a number of different treatments for respiratory distress depending on the cause. Some of these interventions can be dangerous if given to the wrong person. It is therefore important to try to determine the cause as accurately as possible.
- B. This protocol includes management of the following respiratory emergencies:
 - 1. Apneic patient
 - 2. Airway obstruction
 - 3. Wheezing (Asthma and COPD)
 - 4. Rales / pulmonary edema (CHF)
- C. General assessment and management of all patients in respiratory distress should include:
 - 1. Assess and manage airway:
 - a. Administer oxygen as needed to treat shock and/or respiratory distress
 - Apply oxygen directly to the face of dyspneic infants and children, using a non-rebreather mask, do not use blow-by oxygenation, as it is ineffective.
 Parents can help you administer the oxygen and/or nebulizers, as the child is more likely to tolerate the treatment if it comes from them. Only exception is in cases where agitation of the child can prove dangerous (e.g. rare cases of epiglottitis in unvaccinated children)
 - c. Apply pulse oximeter and treat per pulse oximeter procedure
 - d. Be prepared to assist ventilations
 - Evaluate patient's general appearance, relevant history of condition and determine
 OPQRSTI and SAMPLE. Especially ask about the severity of the patient's
 underlying disease. When was the last time they seen by a doctor or hospitalized for
 this? Ever intubated? Ask about medication compliance.
 - 3. Has the patient had any recent illnesses/infections that might've exacerbated an underlying respiratory condition (e.g. a cold that triggered a COPD flare?)
 - 4. Don't overlook other causes of dyspnea that aren't caused by chronic pulmonary problems (e.g. Acute MI, shock, pneumothorax, fever) keep your differential diagnosis broad!
 - 5. Try to obtain patient's resuscitation status (i.e., DNR Comfort Care or DNR Comfort Care Arrest). Intubation is an aggressive treatment and may be against the patient's wishes.
 - 6. Auscultate lung fields anteriorly, comparing side-to-side, and posteriorly when possible (if patient is able to sit up). Listen under the shirt, directly on the chest wall; clothing fabric can sound like crackles.
 - 7. Allow patient to assume position of comfort
 - 8. Contact Medical Control, advise of patient condition and TRANSPORT immediately unless an ALS unit is en route with an ETA < 5 minutes.

APNEIC PATIENT

Basic EMT

- A. Patient's airway is open, breathing absent, pulse present: Provide positive-pressure ventilations with 100% oxygen. Each breath is delivered over one second with enough volume to cause chest rise
 - 1. Pediatric rate: one breath every 3-5 seconds
 - 2. Adult rate: one breath every 5-6 seconds

Advanced EMT / Paramedic

- A. Secure airway. Refer to Advanced Airway Procedures.
- B. Place patient on cardiac monitor
- C. Obtain and transmit 12-lead EKG if situation permits
- D. Start IV normal saline, TKO
- E. Transport

OBSTRUCTED AIRWAY

Basic & Advanced EMT

- A. Foreign body obstruction; patient able to speak / cough:
 - 1. Reassure patient
 - 2. Allow patient to attempt clearing airway by self
- B. Foreign body obstruction; patient unable to cough / speak, airway obstructed:
 - Adult / Child > 1 year old: Deliver abdomen / chest thrusts. Repeat until effective or patient becomes unresponsive
 - 2. Infant (< 1 year of age): Deliver series of five backblows and five chest thrusts. Repeat until effective or patient becomes unresponsive
 - If patient becomes unresponsive, begin CPR per current AHA guidelines. CCR does
 not apply to respiratory arrests like these. Look in mouth when opening airway
 during CPR. Use finger sweeps ONLY to remove visible foreign body.
 - 4. If airway cannot be cleared in 60 seconds, transport immediately to nearest appropriate hospital
- C. Airway obstruction due to medical cause (epiglottitis, croup, whooping cough, anaphylaxis) treat underlying cause
 - Croup (barking cough, stridor, retractions, typically between 6 months and 4 years old, more prevalent in fall and winter). Keep patient upright, administer humidified oxygen if available
 - 2. Epiglottitis (sudden onset, drooling, sore throat, muffled voice, stridor): Transport upright immediately. Do NOT agitate the child This is one time when blow-by oxygenation (rather than placing the mask directly on the child's face) is recommended. Do NOT examine throat.
 - 3. Whooping Cough/Pertussis (Paroxysmal, spasmodic cough potentially dozens of times in a row, +/- classic "whoop" sound, children often cough until they vomit. Can affect all ages, worse in young children during the winter). Keep patient upright, administer oxygen. Be prepared to suction/manage airway, children are at risk for vomiting and airway obstruction/aspiration.
 - 4. RSV Bronchiolitis (URI symptoms of fever, cough, runny nose, but with severe, copious, nasal passage-blocking high-volume rhinorrhea, sometimes streaming down the patient's face. Worst in infants < 1 yo in Fall and Winter). Keep patient upright,

- suction those nasal secretions to keep airway clear (involve the parents). Administer oxygen. Oxygen is the only therapy proven to improve survival in RSV patients.
- 5. Anaphylaxis (massive facial, tongue and lip swelling, stridor): Transport upright immediately. If patient has an epinephrine pen, help them administer it IM in the lateral thigh.

Advanced EMT

- A. Croup:
 - -Administer 2.5 mg Albuterol nebulized +/- aero chamber/mask
- B. Whooping Cough/Pertussis:
 - 2.5 mg Albuterol nebulized +/- aero chamber/mask if wheezing
 - Remember to be prepared to suction/manage airway, children are at risk for vomiting and airway obstruction/aspiration.
- C. RSV Bronchiolitis:
 - 2.5 mg Albuterol nebulized +/- aero chamber/mask for symptomatic relief

Paramedic

- A. Foreign body airway obstruction not relieved by manual maneuvers: Try to visualize obstruction with laryngoscope and remove foreign body with Magill forceps if possible
- B. If airway cannot be cleared: Perform a cricothyroidotomy (must contact Medical Control for pediatric patients)
- C. Croup:
 - For patients with stridor/severe respiratory distress, Suspected croup: consider epinephrine 1:1000 0.5 mg/kg (max 5mg or 5ml) administered by nebulizer / aerosol. Methylprednisolone 2 mg/kg (max 125 mg) IV preferred, or IM/IO as early as possible
- D. RSV Bronchiolitis: Administer all of the above treatments. **Avoid** Methylprednisolone steroids, as these are not helpful in RSV Bronchiolitis. They will not harm the patient (e.g. if given in error on suspicion of an asthma attack) but they provide no benefit
- E. Anaphylaxis: Administer 125 mg IV Methylprednisolone (2mg/kg IV, max 125 mg in Peds), 0.3 mg IM 1:1000 Epinephrine in the lateral thigh (0.01 mg/kg 1:1000 IM lateral thigh, max 0.3 mg in Peds), Benadryl 25-50 mg IV (1-2 mg/kg IV, max 50 mg, in Peds), Duoneb nebulizer treatments as needed

WHEEZING (ASTHMA AND COPD)

Basic EMT

- A. If suspected allergic reaction / anaphylaxis, See Allergic Reaction / Anaphylactic Shock Protocol
- B. Apply supplemental oxygen. In asthmatics, use high-flow O2. In COPD patients, dial back the oxygen to maintain SaO2 of 92-99% as they have a hypoxic drive to breathe.

- C. Consider CPAP for both adults and children ≥ 2 vo. See CPAP Procedure
- D. May assist with prescribed metered-dose inhaler (MDI)
 - 1. Assure that medication is prescribed for patient
 - 2. Check medication dose, expiration date
 - 3. Administer MDI by having patient exhale, then activate device during inhalation and have patient hold breath so that medication can be absorbed. Consider using a spacer device with younger patients.

Advanced EMT

- A. Suspected asthma or COPD administer:
 - Duoneb (ipratropium bromide 0.5 mg and albuterol sulfate 3 mg in 3 ml) aerosol:
 - a. Adolescent and Adult Dose: 3 mL by nebulizer / aerosol
 - b. Child Dose: 1.5 mL by nebulizer / aerosol
 - 2. If additional treatments are required, optimal care is to administer a new Duoneb treatment every 5 minutes for a max of 3 Duoneb treatments. If you only have one Duoneb available, give that first, then follow it with Albuterol nebulizer instead.

Paramedic

- A. For asthma and COPD, administer methylprednisolone (Solu-Medrol), the earlier the better:
 - 1. Adult Dose: 125 mg Slow IVP preferred, or IM/IO, max 125 mg
 - 2. **Pediatric Dose:** 2 mg/kg Slow IVP preferred, or IM/IO, max 125 mg
- B. In addition to the Duoneb treatments, consider CPAP. Early use of CPAP can improve work of breathing and prevent the need for intubation. Employ this early if the patient does not look like they are improving with initial therapies.
- C. Magnesium sulfate can act as an adjunct bronchodilator, but is not the first treatment option. Administer 2g IV magnesium sulfate over 10 minutes in adults, 25-50 mg/kg IV (max 2g) over 10 mins in Peds.
- D. If patient condition continues to deteriorate, consider epinephrine, 1:1000 IM in lateral thigh
 - 1. Adult Dose: 0.3 mg IM
 - 2. Pediatric Dose: 0.01 mg/kg IM, max 0.3 mg

Do not administer if patient is pregnant or has history of heart disease.

E. Intubate as indicated. Consider administering Midazolam (Versed) or Ketamine prior to intubation. Note that Ketamine does not impair respiratory drive, which can be helpful in asthma/COPD patients. Intubation of these patients should be the option of LAST RESORT, as they desaturate very quickly and are hard to wean off of a ventilator. Recommend trial of CPAP first if possible. Have a backup supraglottic airway plan (I-Gel or King) or BVM ready BEFORE starting intubation. See Procedural Sedation Protocol

PEAK FLOW RATE (PFR)

In adults and children with chronic respiratory diseases such as asthma and COPD, measuring the patient's Peak Flow Rate (PFR) is a great way to determine the severity of an attack relative to their baseline respiratory status. Ask the patient what their baseline PFR is on a "good day" and record their current flow rate (in mL) in your note. Higher is better.

Minnesota Children's Hospital Average Peak Flow Rate for Healthy Children & Teenagers

Height in inches	Average peak flow	Yellow Zone 50-80% of average peak flow	Red Zone less than 50% of average peak flow
43	147	74 - 118	< 74
44	160	80 - 128	< 80
45	173	87 - 139	< 87
46	187	94 - 150	< 94
47	200	100 - 160	< 100
48	214	107 - 171	< 107
49	227	114 - 182	< 114
50	240	120 - 192	< 120
51	254	127 - 203	< 127
52	267	134 - 214	< 134
53	280	140 - 224	< 140
54	293	147 - 234	< 147
55	307	154 - 246	< 154
56	320	160 - 256	< 160
57	334	167 - 267	< 167
58	347	174 - 278	< 174
59	360	180 - 288	< 180
60	373	187 - 298	< 187
61	387	194 - 310	< 194
62	400	200 - 320	< 200
63	413	207 - 330	< 207
64	427	214 - 342	< 214
65	440	220 - 352	< 220
66	454	227 - 363	< 227

PEDIATRIC ASTHMA SEVERITY SCORE (PAS)

A very useful score that allows you to calculate the relative severity of a child's asthma attack. It focuses on their respiratory rate, oxygen requirement, presence of retractions, degree of dyspnea, and lung sounds to assign a point score that will help you determine the severity of an attack. The higher the score, the sicker the child, and the more aggressively you need to intervene.

	1	2	3
Respiratory Rate 1-3 years 4-5 years 6-12 years >12 years	≤34 ≤30 ≤26 ≤23	35 – 39 31 – 35 27 – 31 24 - 27	≥ 40 ≥ 36 ≥ 31 ≥ 28
Oxygen Requirement	>95% on room air	90 – 95% on room air	< 90% on room air or requiring any amount of O2
Retractions	None or intercostal	Intercostal and substernal OR nasal flaring(infants)	Intercostal, Substernal, and supraclavicular OR nasal flaring and head bobbing (infants)
Dyspnea 1-4 years	Normal feeding, vocalization, and play	Decreased appetite, coughing after play, hyperactivity	Stops eating or drinking, stops playing, OR drowsy and confused and and/or grunting
Dyspnea =>5 years	Counts to ≥10 in one breath OR speaks in complete sentences	Counts to 4-6 in one breath OR speaks in partial sentences	Counts to ≤3 in one breath OR speaks in single words OR grunts
Auscultation	Normal breath sounds, end expiratory wheezes only	Pan-Expiratory Wheezing	Inspiratory and expiratory wheezing to diminished breath sounds
Total PAS	Mild 5-7	Moderate 8-11	Severe <u>></u> 12

PULMOMARY EDEMA (CHF)

Pulmonary edema is most commonly associated with flare-ups of congestive heart failure and may be the result of an old (or new!) myocardial infarction, but it can also result from pulmonary infections, sepsis, inhaled toxins, narcotic overdose, too much naloxone, pulmonary embolism, and decreased atmospheric pressure. Acute pulmonary edema can develop rapidly in the elderly. Remember to ask about recent high salt intake or missing/changes in medications.

Pulmonary edema causes severe dyspnea associated with congestion. Other signs and symptoms include:

- · Rapid, labored breathing
- Cough with blood-stained sputum or pink, frothy sputum
- Cyanosis
- Moist crackles on auscultation of lung fields; severe cases may have rhonchi or wheezing – unless they have COPD as well, do NOT give them nebulizers as this will make things worse
- · Dyspnea when supine orthopnea
- Accessory muscle use

Basic EMT

- A. Sit patient upright
- B. Administer high-flow O2
- C. Obtain and transmit a 12-lead EKG
- D. Consider CPAP for adult patients. See CPAP Procedure.

Advanced EMT

- A. Obtain IV access Normal Saline, TKO only; fluid boluses are counterproductive
- B. Place on cardiac monitor, obtain and transmit a 12-lead EKG
- Administer Nitroglycerin 0.4-0.8 mg SL, every 5 minutes as needed.
 HOLD if SPB < 100 mmHg

Paramedic

- A. Sit upright, O2, EKG, Nitroglycerin and CPAP as above. There is no role for pre-hospital Lasix or Morphine in CHF patients.
- B. Intubate as indicated. Consider administering midazolam (Versed) prior to intubation. See Procedural Sedation Protocol.

RESPIRATORY EMERGENCIES APNEIC PATIENTS

KEY

BASIC EMT

ADVANCED EMT

PARAMEDIC

MED CONTROL

- ASSESS AIRWAY
- IF AIRWAY IS OPEN, BREATHING IS ABSENT AND A PULSE IS PRESENT: PROVIDE POSITIVE-PRESSURE VENTILATIONS WITH OXYGEN.
 DELIVER EACH BREATH OVER ONE SECOND WITH ENOUGH VOLUME TO CAUSE CHEST RISE
 - PEDIATRIC RATE: ONE BREATH EVERY 3-5 SECONDS
 - ADULT RATE: ONE BREATH EVERY 5-6 SECONDS
- MAINTAIN O2 SATS >95%
- EVALUATE PATIENT CONDITION
- OBTAIN MEDICAL HISTORY
 - SEVERITY OF UNDERLYING DISEASE?
 - EVER SEEN PHYSICIAN OR HOSPITALIZED FOR THIS?
 - O HAS THE PATIENT EVER BEEN INTUBATED?
 - o MEDICATION COMPLIANCE?
 - O DNR STATUS?
- MONITOR VITAL SIGNS
- REASSURE PATIENT
- TRANSPORT
- SECURE AIRWAY. REFER TO ADVANCED AIRWAY PROCEDURES.
- IV NS (BOLUS AS NEEDED TO MAINTAIN PERFUSION)
- ACQUIRE 12 LEAD ECG AND TRANSMIT IF SITUATION PERMITS
- MONITOR ECG

RESPIRATORY EMERGENCIES APNEIC PATIENTS

KEY

BASIC EMT

ADVANCED EMT

PARAMEDIC

MED CONTROL

- ASSESS AIRWAY
- IF AIRWAY IS OPEN, BREATHING IS ABSENT AND A PULSE IS PRESENT: PROVIDE POSITIVE-PRESSURE VENTILATIONS WITH OXYGEN. DELIVER EACH BREATH OVER ONE SECOND WITH ENOUGH VOLUME TO CAUSE CHEST RISE
 - O PEDIATRIC RATE: ONE BREATH EVERY 3-5 SECONDS
- MAINTAIN O2 SATS >95%
- EVALUATE PATIENT CONDITION
- OBTAIN MEDICAL HISTORY
 - SEVERITY OF UNDERLYING DISEASE?
 - EVER SEEN PHYSICIAN OR HOSPITALIZED FOR THIS?
 - O HAS THE PATIENT EVER BEEN INTUBATED?
 - o MEDICATION COMPLIANCE?
 - o DNR STATUS?
- MONITOR VITAL SIGNS
- REASSURE PATIENT
- TRANSPORT
- SECURE AIRWAY. REFER TO ADVANCED AIRWAY PROCEDURES.
- IV NS (BOLUS AS NEEDED TO MAINTAIN PERFUSION)
- MONITOR ECG

RESPIRATORY EMERGENCIES OBSTRUCTED AIRWAY

- ASSESS AIRWAY
- FOREIGN BODY OBSTRUCTION:
 - IF PATIENT ABLE TO SPEAK / COUGH ALLOW PATIENT TO ATTEMPT CLEARING AIRAWAY BY SELF
 - IF PATIENT UNABLE TO SPEAK / COUGH -
 - <u>ADULT</u>- DELIVER ABDOMINAL THRUSTS.
 REPEAT UNTILL EFFECTIVE OR PATIENT IS UNRESPONSIVE
 - IF PATIENT UNRESPONSIVE BEGIN CPR. FINGER SWEEP ONLY TO REMOVE VISIBLE FOREIGN BODY.
- TRANSPORT TO NEAREST APPROPRIATE HOSPITAL IF UNABLE TO CLEAR AIRWAY IN 60 SECONDS
- ATTEMPT TO VISUALIZE OBSTRUCTION WITH LARYNGOSCOPE AND REMOVE WITH MAGILL FORCEPS.
- IF AIRWAY CAN NOT BE CLEARED PERFORM CRICOTHYROTOMY

KEY

BASIC EMT

ADVANCED EMT

PARAMEDIC

MED CONTROL

IF ALLERGIC REACTION /
ANAPHYLAXIS SUSPECTED – SEE
ALLERGIC REACTION /
ANAPHYLAXIS PROTOCOL

RESPIRATORY EMERGENCIES OBSTRUCTED AIRWAY

ASSESS AIRWAY

FOREIGN BODY OBSTRUCTION:

 IF PATIENT ABLE TO SPEAK / COUGH – ALLOW PATIENT TO ATTEMPT CLEARING AIRAWAY BY SELF

IF PATIENT UNABLE TO SPEAK / COUGH -

- CHILD > 1 YEAR OLD DELIVER ABDOMINAL / CHEST THRUSTS. REPEAT UNTILL EFFECTIVE OR PATIENT IS UNRESPONSIVE
- INFANT < 1 YEAR OLD DELIVER SERIES OF FIVE BACKBLOWS AND FIVE CHEST THRUSTS. REPAT UNTILL EFFECTIVE OR PATIENT IS UNRESPONSIVE
- IF PATIENT UNRESPONSIVE BEGIN CPR. FINGER SWEEP ONLY TO REMOVE VISIBLE FOREIGN BODY.
- IF AIRWAY OBSTRUCTION DUE TO MEDICAL CAUSE- TREAT UNDERLYING CAUSE
 - <u>CROUP</u> KEEP PATIENT UPRIGHT, ADMINSTER HUMIDIFIED OXYGEN IF AVAILABLE
 - <u>EPIGLOTITIS</u> TRANSPORT UPRIGHT IMMEDIATELY. DO NOT AGITATE THE CHILD. DO NOT EXAM THE THROAT.
- TRANSPORT TO NEAREST APPROPRIATE HOSPITAL IF UNABLE TO CLEAR AIRWAY IN 60 SECONDS
- ATTEMPT TO VISUALIZE OBSTRUCTION WITH LARYNGOSCOPE AND REMOVE WITH MAGILL FORCEPS.
- FOR SUSPECTED CROUP, WHOOPING COUGH, OR RSV:

ADMINISTER **DUONEB - IPATROPIUM BROMIDE** (ATROVENT) ALBUTEROL SULFATE (PROVENTIL) - 2.5 MG IN NEBULIZER

FOR SEVERE STRIDOR

- ADMINISTER EPINEPHRINE 1:1000 0.5 MG/KG (MAX 5MG OR 5 ML) IN NEBULIZER / AEROSAL
- METHYLPREDNISOLONE (SOLU-MEDROL)
 PEDIATRIC DOSE: 2 MG/KG IV PUSH (MAX 125 MG)
 - IF PEDIATRIC AIRWAY CAN NOT BE CLEARED PERFORM CRICOTHYROIDOTOMY

KEY

BASIC EMT

ADVANCED EMT

PARAMEDIC

MED CONTROL

IF ALLERGIC REACTION / ANAPHYLAXIS SUSPECTED – SEE ALLERGIC REACTION / ANAPHYLAXIS PROTOCOL

RESPIRATORY EMERGENCIES WHEEZING

KEY

BASIC EMT

ADVANCED EMT

PARAMEDIC

MED CONTROL

- ASSESS AND MANAGE AIRWAY
- MAINTAIN O2 SATS >95%
- EVALUATE PATIENT CONDITION
- OBTAIN MEDICAL HISTORY
 - SEVERITY OF UNDERLYING DISEASE?
 - EVER SEEN PHYSICIAN OR HOSPITALIZED FOR THIS?
 - O HAS THE PATIENT EVER BEEN INTUBATED?
 - O MEDICATION COMPLIANCE?
 - o DNR STATUS?
- MONITOR VITAL SIGNS
- REASSURE PATIENT
- IF LUNG SOUNDS REVEAL WHEEZES:
 - CONSIDER CPAP FOR ADULT PATIENTS
 - ASSIST PATIENT WITH PRESCRIBED METERED-DOSE-INHALER IF AVAILABLE
 - IF ALLERGIC REACTION / ANAPHYLAXIS SUSPECTED – SEE ALLERGIC REACTION / ANAPHYLAXIS PROTOCOL
- CONSIDER CPAP
- TRANSPORT
- FOR SUSPECTED ASTHMA / BRONCHITIS:
 ADMINISTER DUONEB IPATROPIUM BROMIDE
 (ATROVENT) 0.5 MG AND ALBUTEROL SULFATE
 (PROVENTIL) 3MG IN 3ML. CAN REPEAT EVERY 5
 MINUTES TO A MAX OF 3 DOSES.
- ADMINISTER METHYLPREDNISOLONE (SOLU-MEDROL)

ADULT DOSE: 125 MG IV PUSH

- CONSIDER **MAGNESIUM SULFATE** 2G IV OVER 10 MINUTES
- IF PATIENT CONDITION CONTINUES TO DETERIORATE: ADMINISTER EPINEPHRINE 1:1000 0.3 MG IM
- INTUBATE AS INDICATED SEE PROCEDURAL SEDATION PROTOCOL.

RESPIRATORY EMERGENCIES WHEEZING

KEY

BASIC EMT

ADVANCED EMT

PARAMEDIC

MED CONTROL

- ASSESS AND MANAGE AIRWAY
- MAINTAIN O2 SATS >95%
- EVALUATE PATIENT CONDITION
- OBTAIN MEDICAL HISTORY
 - SEVERITY OF UNDERLYING DISEASE?
 - EVER SEEN PHYSICIAN OR HOSPITALIZED FOR THIS?
 - O HAS THE PATIENT EVER BEEN INTUBATED?
 - o MEDICATION COMPLIANCE?
 - o DNR STATUS?
- MONITOR VITAL SIGNS
- REASSURE PATIENT
- IF LUNG SOUNDS REVEAL WHEEZES:
 - ASSIST PATIENT WITH PRESCRIBED METERED-DOSE-INHALER IF AVAILABLE
 - IF ALLERGIC REACTION / ANAPHYLAXIS SUSPECTED – SEE ALLERGIC REACTION / ANAPHYLAXIS PROTOCOL
- TRANSPORT
- FOR SUSPECTED ASTHMA / BRONCHITIS:
 ADMINISTER DUONEB IPATROPIUM BROMIDE
 (ATROVENT) ALBUTEROL SULFATE
 (PROVENTIL) . 1.5 ML IN NEBULIZER CAN
 REPEAT X2
- FOR SUSPECTED BRONCHIOLITIS (CHILDREN < 2
 <u>YEARS OLD</u> ADMINISTER EPINEPHRINE 1:1000 0.5
 MG/KG (MAX 5MG OR 5 ML) IN NEBULIZER /
 AEROSAL.
- CONSIDER METHYLPREDNISOLONE (SOLU-MEDROL)

PEDIATRIC DOSE: 2 MG/KG IV PUSH (MAX 125 MG)

- CONSIDER MAGNESIUM SULFATE 25 -50 MG/KG (2 G MAX) IV OVER 10 MINUTES
- IF PATIENT CONDITION CONTINUES TO DETERIORATE: ADMINISTER EPINEPHRINE 1:1000 0.01 MG/KG (MAX 0.3 MG) IM
- INTUBATE AS INDICATED SEE PROCEDURAL SEDATION PROTOCOL.

RESPIRATORY EMERGENCIES PULMONARY EDEMA

- ASSESS AND MANAGE AIRWAY
- MAINTAIN O2 SATS >95%
- EVALUATE PATIENT CONDITION
- OBTAIN MEDICAL HISTORY
 - SEVERITY OF UNDERLYING DISEASE?
 - EVER SEEN PHYSICIAN OR HOSPITALIZED FOR THIS?
 - O HAS THE PATIENT EVER BEEN INTUBATED?
 - o MEDICATION COMPLIANCE?
 - O DNR STATUS?
- MONITOR VITAL SIGNS
- REASSURE PATIENT
- CONSIDER CPAP FOR ADULT PATIENTS
- TRANSPORT
- IV NS (RUN TO MAINTAIN PERFUSION)
- OBTAIN AND TRANSMIT 12 LEAD ECG
- MONITOR ECG
- ADMINISTER NITROGLYCERIN SL- 0.4 0.8 MG IF BP ABOVE 100 MMHG. MAY REPEAT TWICE IF BP REMAINS GREATER THAN 100 MMHG

 INTUBATE AS INDICATED – SEE PROCEDURAL SEDATION PROTOCOL.

KEY

BASIC EMT

ADVANCED EMT

PARAMEDIC

MED CONTROL