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
   4. Rales / pulmonary edema

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
      b. Apply pulse oximeter and treat per pulse oximeter procedure
      c. Be prepared to assist ventilations
   2. 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. 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.
   4. Auscultate lung fields anteriorly, comparing side-to-side, and posteriorly when possible. (i.e., patient is able to sit up)
   5. Allow patient to assume position of comfort
   6. 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. Start IV normal saline, TKO

D. Transport
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:
   1. 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
   3. If patient becomes unresponsive, begin CPR per current AHA guidelines. 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, anaphylaxis) treat underlying cause
   1. 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. Do NOT examine throat.

A. Suspected croup: consider epinephrine 1:1000 0.5 mg/kg (max 5mg or 5ml) administered by nebulizer / aerosol.

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)
A. If suspected allergic reaction / anaphylaxis, See Allergic Reaction / Anaphylactic Shock Protocol

B. Consider CPAP for adult patients. See CPAP Procedure

C. 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 patient hold breath so that medication can be absorbed.

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A. Suspected asthma or bronchitis administer:
   1. Duoneb (ipratropium bromide 0.5 mg and albuterol sulfate 3 mg in 3 ml) aerosol:
      a. Adolescent and Adult Dose: 3ml by nebulizer / aerosol
      b. Child Dose: 1.5 ml by nebulizer / aerosol
   2. If additional treatments are required, administer albuterol aerosols prn

B. Suspected bronchiolitis (typically child < 2 years, history of RSV, nasal secretions, low-grade temperature, frequently occurs in winter months) – consider epinephrine 1:1000 0.5 mg/kg (max 5mg or 5ml) administered by nebulizer / aerosol.

---

A. Consider methylprednisolone (Solu-Medrol):
   1. Adult Dose: 125 mg Slow IVP
   2. Pediatric Dose: 2 mg/kg Slow IVP

B. If patient condition continues to deteriorate, consider epinephrine, 1:1000
   1. Adult Dose: 0.3 mg IM
   2. Pediatric Dose: 0.01 mg/kg IM

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

C. Intubate as indicated. Consider administering midazolam (Versed) prior to intubation. See Procedural Sedation Protocol
PULMONARY EDEMA

Pulmonary edema is most commonly associated with acute myocardial infarction but it can also result from pulmonary infections, inhaled toxins, narcotic overdose, pulmonary embolism, and decreased atmospheric pressure. Acute pulmonary edema can develop rapidly in the elderly.

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
- Accessory muscle use

**Basic EMT**

A. Consider CPAP for adult patients. See CPAP Procedure.

**Advanced EMT**

A. Obtain IV access – Normal Saline, TKO
B. Place on cardiac monitor
C. Administer Nitroglycerin 0.4 mg SL, one every 5 minutes as needed.
   **HOLD** if SPB < 100 mmHg

**Paramedic**

A. Consider administering 2-5 mg morphine slow IVP or fentanyl 50-100 mcg slow IVP if patient still in respiratory distress, anxious AND SBP remains > 100 mmHg
B. Intubate as indicated. Consider administering midazolam (Versed) prior to intubation. See **Procedural Sedation Protocol**.
- 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?
  - Has the patient ever been intubated?
  - Medication compliance?
  - 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
APNEIC PATIENTS

- 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
- Maintain O2 SATS >95%
- Evaluate patient condition
- Obtain medical history
  - Severity of underlying disease?
  - Ever seen physician or hospitalized for this?
  - Has the patient ever been intubated?
  - Medication compliance?
  - 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

KEY

<table>
<thead>
<tr>
<th>Basic EMT</th>
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<tbody>
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<td>Basic EMT</td>
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<tr>
<td>Advanced EMT</td>
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<tr>
<td>Paramedic</td>
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<td>Med Control</td>
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RESPIRATORY EMERGENCIES
OBSTRUCTED AIRWAY

- ASSESS AIRWAY
  - FOREIGN BODY OBSTRUCTION:
    - IF PATIENT ABLE TO SPEAK / COUGH – ALLOW PATIENT TO ATTEMPT CLEARING AIRWAY BY SELF
    - IF PATIENT UNABLE TO SPEAK / COUGH –
      - ADULT – DELIVER ABDOMINAL THRUSTS. REPEAT UNTIL 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 CRICOTHYROIDOTOMY

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<th>BASIC EMT</th>
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RESPIRATORY EMERGENCIES
OBSTRUCTED AIRWAY

- ASSESS AIRWAY
- FOREIGN BODY OBSTRUCTION:
  - IF PATIENT ABLE TO SPEAK / COUGH – ALLOW PATIENT TO ATTEMPT CLEARING AIRWAY BY SELF
  - IF PATIENT UNABLE TO SPEAK / COUGH –
    - CHILD > 1 YEAR OLD – DELIVER ABDOMINAL THRUSTS. REPEAT UNTILL EFFECTIVE OR PATIENT IS UNRESPONSIVE
    - INFANT < 1 YEAR OLD – DELIVER SERIES OF FIVE BACKBLOWS AND FIVE CHEST THRUSTS. REPEAT 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
    - CROUP – KEEP PATIENT UPRIGHT, ADMINISTER HUMIDIFIED OXYGEN IF AVAILABLE
    - EPIGLOTTITIS – 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
- ADMINISTER EPINEPHRINE 1:1000 0.5 MG/KG (MAX 5 MG OR 5 ML) IN NEBULIZER / AEROSOL FOR CROUP PATIENT.
- ATTEMPT TO VISUALIZE OBSTRUCTION WITH LARYNGOSCOPE AND REMOVE WITH MAGILL FORCEPS.
- IF PEDIATRIC AIRWAY CAN NOT BE CLEARED PERFORM CRICOTHYROIDOTOMY

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• ASSESS AND MANAGE AIRWAY
• MAINTAIN O2 SATS >95%
• EVALUATE PATIENT CONDITION
• OBTAIN MEDICAL HISTORY
  o SEVERITY OF UNDERLYING DISEASE?
  o 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
• GIVE NOTHING BY MOUTH
• TRANSPORT IN POSITION OF COMFORT
• ASSESS AND MANAGE AIRWAY
• MAINTAIN O2 SATS >95%
• EVALUATE PATIENT CONDITION
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  o HAS THE PATIENT EVER BEEN INTUBATED?
  o MEDICATION COMPLIANCE?
  o DNR STATUS?
• MONITOR VITAL SIGNS
• REASSURE PATIENT
• IF LUNG SOUNDS REVEAL WHEEZES:
  o CONSIDER CPAP FOR ADULT PATIENTS
  o ASSIST PATIENT WITH PRESCRIBED METERED-DOSE-INHALER IF AVAILABLE
  o IF ALLERGIC REACTION / ANAPHYLAXIS SUSPECTED – SEE ALLERGIC REACTION / ANAPHYLAXIS PROTOCOL
• TRANSPORT
• FOR SUSPECTED ASTHMA / BRONCHITIS:
  ADMINISTER IPATROPIUM BROMIDE (ATROVENT) 0.5 MG AND ALBUTEROL SULFATE (PROVENTIL) 3MG IN 3ML.
  ADULT DOSE: 3ML BY NEBULIZER / AEROSAL
  ABLUTEROL AEROSALS CAN BE ADMINISTERED PRN IF FURTHER TREATMENT NEEDED.
• CONSIDER METHYPREDNISOLONE (SOLU-MEDROL)
  ADULT DOSE: 125 MG SLOW IV PUSH
• IF PATIENT REMAINS IN DISTRESS: CONSIDER EPINEPHRINE 1:1000 0.3 MG IM (DO NOT ADMINISTER IF PATIENT IS PREGNANT OR HAS HISTORY OF HEART DISEASE)
• INTUBATE AS INDICATED – SEE PROCEDURAL SEDATION PROTOCOL.
- 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?
  - Has the patient ever been intubated?
  - Medication compliance?
  - 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 **ipatropium bromide (atrovent)** 0.5 mg and **albuterol sulfate (proventil)** 3 mg in 3 ml.
  - Pediatrics dose: 1.5 ml by nebulizer / aerosol
  - Albuterol aerosals can be administered PRN if further treatment needed.
  - For suspected bronchiolitis (children < 2 years old): administer **epinephrine 1:1000** 0.5 mg/kg (max 5 mg or 5 ml) in nebulizer / aerosol for croup patient.

- Consider **methylprednisolone (solu-medrol)** pediatric dose: 2 mg/kg slow IV push
- If patient remains in respiratory distress consider **epinephrine 1:1000**
  - Pediatric dose: 0.01 mg/kg IM
- Intubate as indicated – see procedural sedation protocol.
ASSESS AND MANAGE AIRWAY
MAINTAIN O2 SATS >95%
EVALUATE PATIENT CONDITION
OBTAIN MEDICAL HISTORY
o SEVERITY OF UNDERLYING DISEASE?
o 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)
MONITOR ECG
ADMINISTER NITROGLYCERIN SL– ONE TABLET OR SPRAY IF BP ABOVE 100 MMHG. MAY REPEAT AS NEEDED IF BP REMAINS GREATER THAN 100 MMHG

IF PATIENT REMAINS IN DISTRESS AND SPB > 100 MMHG, ADMINISTER MORPHINE OR FENTANYL (SUBLIMAZE)
INTUBATE AS INDICATED – SEE PROCEDURAL SEDATION PROTOCOL.

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