M4 CHRONIC RESPIRATORY DISEASES

There are numerous respiratory diseases that cause a patient to seek emergency medical assistance and transport. Most patients should be assessed and treated as per the Dyspnea and Respiratory Distress Guideline. Medical emergencies arising from chronic respiratory diseases may require aggressive intervention and early load and go.

The most common chronic respiratory diseases the EMS personnel will encounter include

- **Chronic Obstructive Pulmonary Disease** (COPD)
  - COPD refers to a group of chronic conditions associated with the persistent obstruction of bronchial airflow
    - this group of conditions includes chronic bronchitis and emphysema

- **Asthma**
  - asthma is characterized by increased airway hyper-reactivity, resulting in recurrent episodes of dyspnea, with wheezing due to spasmodic constriction of the bronchi and airway edema or hyperemia

- treatment for these patients focus on supplying sufficient oxygen to reduce hypoxia, cyanosis, and respiratory distress
  - do not withhold oxygen from a patient who requires it
  - without adequate oxygen, the patient will suffer from hypoxia

GENERAL

- personal protective equipment should be utilized as required

- body substance isolation techniques should be utilized as required

- primary survey

- let the patient assume their most comfortable position
  - loosen tight clothing
  - reassure the patient

- load and go should be initiated if the patient has any of the following
  - unstable vital signs
  - signs of hypoxia
  - a decreased level of consciousness
  - dyspnea or respiratory distress unrelieved by oxygen
  - respiratory arrest

- observe for warning signs of impending respiratory collapse
  - inability to speak
  - cyanosis
  - anxiety or confusion
  - altered level of consciousness
  - fatigue
  - accessory muscle use
  - prolonged expiratory phase
  - chest quiet on auscultation (if within scope of practice)

- obtain and record pertinent medical history and information on the respiratory distress regarding
  - onset
  - activity at onset
  - duration of symptoms
  - recent illness and infection
  - changes in respiratory secretions
  - pain
  - nausea or vomiting
  - exposure to irritants or allergens
  - medication use and its effects

- repeat and record vital signs at regular intervals (5-15 mins.) or when there is a change in the patient's status

- auscultate chest (if within scope of practice)

- prepare to deal with respiratory and cardiac arrest

- do not allow the patient to exert him/herself - e.g. walking, standing unassisted to transfer to the stretcher

- protect the patient's face from cold air

- if the patient exhibits any evidence of respiratory compromise, the patient should be provided with 100% oxygen
  - EMS personnel should be prepared to assist the patient's ventilations through the use of a bag-valve-mask

- load and go should be initiated as soon as possible, once indicated
  - on scene times should be kept to a minimum
  - treat other life-threatening conditions en route
- transport the patient to the nearest appropriate health care facility
  - notify the receiving health care facility of the patient's status as soon as possible
  - transport the patient in a position of comfort preferably in a low or high Fowler's position
  - monitor and treat the patient en route
  - additional surveys and treatments should be conducted en route
  - document all actions including the decision to initiate load and go
- report all findings to the receiving facility staff, and document on the patient care report

Bronchitis and Emphysema Patients

patients with minimal signs or symptoms of respiratory distress

- supplemental oxygen can be started at a low concentration via nasal cannula
  - supplemental oxygen can be increased based on the patient's response
- initiate transport

patients with marked signs of respiratory distress or hypoxia

- high flow oxygen should be administered via non-rebreathe mask
- load and go should be initiated

patients with severe respiratory distress or respiratory arrest

- assist ventilations with bag-valve-mask and high-flow oxygen
- advanced airway support (within scope of practice) should be initiated prior to transport
- load and go should be initiated immediately

Asthma Patients

- if the patient is in the area where there are irritants known to precipitate an asthma attack, the patient should be removed from the area

- administer oxygen
  - if signs of hypoxia are present or the patient is in respiratory distress, high flow oxygen should be administered via non-rebreathe mask
  - if the patient is in severe respiratory distress or has stopped breathing, assist ventilations using a bag-valve-mask (or advanced airway support if within scope of practice) prior to transport
    → load and go should be immediately initiated in this situation

Metered Dose Inhalers

- if the asthma patient has their own asthma medication in a metered dose inhaler and the patient is in respiratory distress, EMS personnel may assist the patient to use their metered dose inhaler

  - identify if the medication was used prior to EMS arrival and what, if any, effects the medication had

  → procedure for assisted use
  - ensure the patient is alert and can follow instructions for inhaler use
  - instruct the patient in the process for assisting in medication delivery using the metered dose inhaler
  - ensure the medication is the patient's and has not expired
  - drug is at room temperature or warmer
  - shake the drug canister for 10-15 seconds
  - remove any oxygen delivery device from the patient
  - instruct the patient to hold the inhaler and make sure the patient is holding the inhaler properly
  - instruct the patient to exhale fully
  - instruct the patient to place their lips around the mouth piece of the inhaler
  - instruct the patient to inhale slowly while depressing the medication canister
    - inhalation should be done over approximately 5 seconds

- remove the inhaler and advise the patient to hold their breath for 10 seconds or as long as comfortable
- instruct patient to exhale slowly through their mouth
- replace the oxygen delivery device and encourage the patient to take slow deep breaths

- reassess the patient's respiratory status and vital signs after medication delivery
  - document the medication's effect on relief of respiratory distress

- if the patient requires additional doses, the procedure is repeated
  - repeat doses of medication should be timed at least **two minutes apart**
  - reassess the patient after every dose of medication

- document all assessments, vital signs, medications taken (drug, doses, route, times), and complications on the patient care report

- if the patient's metered dose inhaler has a spacer attachment
  - instruct the patient in the process that will be followed in assisting the patient to take their medication using the metered dose inhaler with the spacer attachment
  - ensure the spacer is properly attached to the mouth piece of the inhaler
  - remove the protective cap from the spacer if not already removed
  - prepare the patient and medication as for a regular metered dose inhaler
  - have the patient exhale fully
  - instruct the patient to depress the medication canister to fill the spacer with the medication
  - as soon as the medication canister is depressed, have the patient place their lips around the spacer mouth piece of the inhaler
  - instruct the patient to slowly inhale while activating the medication canister
    - the inhalation should be done over approximately 5 seconds
    - if the inhalation is too fast, there may be a whistling sound from the spacer
      - if this whistling sound is heard, direct the patient to slow their inhalation further until the whistling sound stops
  - remove the inhaler and advise the patient to hold their breath for 10 seconds or as long as comfortable
  - instruct patient to exhale slowly through their mouth
  - replace the oxygen delivery device and encourage the patient to take slow deep breaths
  - repeat doses can be administered as above
  - document as above

NOTE

- EMS personnel must monitor the patient's respirations closely and modify treatment if and when the patient responds to the application of oxygen

- respiratory distress in an adult should be considered when
  - there are signs and symptoms of hypoxia

    AND

    - respiratory rate is greater than thirty (30) breaths per minute

      OR

    - respiratory rate is eight (8) breaths per minute or less

- the patient should be closely monitored for decreased respiratory effort or rate

- if indicated, respirations should be assisted with a bag-valve-mask using 100% oxygen or with advanced airway support (when indicated) and if trained and certified to do so

- many patients with chronic lung diseases have peripheral vascular disease and poor peripheral perfusion
  - readings on a pulse oximeter may be misleading or difficult to establish
    - pulse oximeters are not reliable in this setting and should not be used when making assessment of severity of illness or treatment decisions

- many patients with chronic lung disease depend on a hypoxic drive as a stimulus to breathe
  - a high oxygen saturation reading is not a reliable indicator of respiratory status
    - respiratory distress may still be present due to elevated blood concentration of carbon dioxide
    - pulse oximeters should not be relied upon when making assessment of severity of illness or treatment decisions

- EMS personnel trained and certified to treat bronchospasm may do so as outlined in the Bronchospasm Treatment Protocol

- when treating patients with chronic respiratory disease, EMS personnel must consider other causes of respiratory distress
  - upper airway obstruction
  - pulmonary embolism
  - anaphylaxis
  - airway foreign body
  - congestive heart failure

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