SYMPTOMS: Children and adults with signs of severe respiratory distress, respiratory failure or evidence of hypoxemia or hypoventilation. This may include asthma, upper airway obstruction, foreign body aspiration, croup, stridor, epiglottitis, tracheitis.

Assessment, Treatment and Interventions:

ALL LEVELS

1. History
    a. Time of onset of symptoms
    b. Associated symptoms
    c. History of asthma or other breathing disorders
    d. Choking or other evidence of upper airway obstruction
    e. History of trauma
2. Physical examination
    a. Shortness of breath
    b. Abnormal respiratory rate and/or effort
    c. Use of accessory muscles
    d. Quality of air exchange, including depth and equality of breath sounds
    e. Wheezing, rhonchi, rales, or stridor
    f. Cough
    g. Abnormal color (cyanosis or pallor)
    h. Abnormal mental status
    i. Evidence of hypoxemia (low oxygen in the blood)
    j. Signs of a difficult airway (short jaw or limited jaw thrust, small thyromental space, upper airway obstruction, large tongue, obesity, large tonsils, large neck, craniofacial abnormalities, excessive facial hair).
3. Obtain and monitor vital signs including pulse, respirations and blood pressure.
4. Maintain airway and administer oxygen as appropriate for dyspnea or distress.
5. Consider use of bag-valve mask (BVM) ventilation in the setting of respiratory failure or arrest.
    a. Mask should completely cover the nose and mouth.
    b. Two-person, two-thumbs-up BVM ventilation is more effective than one-person technique to maintain an effective seal around the cheeks and chin and should be used when additional providers are available.
    c. Ventilate with minimal volume to see chest rise.
    d. Over-inflation may be detrimental.
    e. Rate
        i. Adult: 10-12 breaths/minute (every 5-6 seconds)
        ii. Child: 20 breaths/minute (every 2-3 seconds)
        iii. Infant: 30 breaths/minute (every 2-3 seconds)
6. Consider addition of oropharyngeal (OPA) and nasopharyngeal (NPA) airways to make BVM ventilation more effective, especially in patients with altered mental status.
7. Consider gastric decompression when there is obvious gastric distention as it may improve oxygenation and ventilation.

EMR-O; EMT-R

8. Measure/Monitor vital signs including SpO_2.
9. Maintain airway and administer oxygen as appropriate for dyspnea or distress with a target of achieving greater than 93% saturation for most acutely ill patients.
10. Consider the use of a non-visualized airway if BVM not effective.

a. Insert appropriate OPA to assure no gag reflex.
b. Suction airway before non-visualized airway insertion.
c. Continuously secure tube manually until tube secured with tape, twill or commercial device.
d. Note measurement of tube at incisors or gum line and monitor frequency for movement for tube movement or displacement.
e. Confirm placement with $ETCO_2$ and by checking for bilateral breath and absent gastric sounds.
f. Secure non-visualized airway.
g. Be prepared to suction by placing applicable French catheter into appropriate suction port. Suction as needed.
h. Cervical collar placement or cervical immobilization may reduce neck movement and risk of tube displacement.

11. Transport to the closest appropriate hospital for airway stabilization when respiratory failure cannot be managed successfully in the prehospital setting.

EMT-R

12. Obtain $ETCO_2$.
13. For severe respiratory distress or impending respiratory failure use non-invasive positive pressure ventilation devices – CPAP or BiPAP. [Contraindications include intolerance of the device, severely impaired consciousness, increased secretions inhibiting a proper seal, or recent gastrointestinal and/or airway surgery.]

INT-O; PARA-R

14. When less-invasive airway methods are ineffective, use endotracheal intubation to maintain oxygenation and/or ventilation.
    a. Airway obstructions may include severe burns, multiple traumatic injuries, altered mental status or loss of normal protective airway reflexed.
    b. Inflate endotracheal tube cuff with minimum air to seal airway.
    c. Continuously secure tube manually until tube secured with tape, twill or commercial device.
    d. Confirm placement with waveform capnography.
    e. Continuously monitor placement.
15. Monitor clinical signs, cardiac rhythm, blood pressure and capnography.

INT-R

16. Confirm and continuously monitor $ETCO_2$
    a. Maintain $ETCO_2$ of 35-40 mmHg
    b. Head injury
        i. Signs of herniation (unilateral dilated pupil or decerebrate posturing)
        ii. Modestly hyperventilate to $ETCO_2$ of 30 mmHg

PARA-O

17. Consider cricothyroidotomy if the risk of death seems to outweigh the risk of a procedural complication.