SKILL STATION

Basic Airway Skills

Objective

- Demonstrate the manual technique of the trauma jaw thrust and trauma chin lift to open a trauma patient's airway while maintaining manual stabilization and neutral alignment of the patient's head and neck.
- Identify the indications and contraindications for the use of an oropharyngeal airway (OPA).
- Demonstrate an approved method of manually opening the airway of a trauma patient.
- Demonstrate proper placement of an OPA with use of the tongue-jaw-lift insertion method.
- Demonstrate proper placement of an OPA with use of the tongue-blade insertion method.
- Identify the indications and contraindications to the use of a nasopharyngeal airway (NPA).
- Demonstrate an approved method of inserting an NPA.
- Demonstrate the one-provider technique to ventilate a trauma patient with use of a bag valve mask.
- Demonstrate the two-provider technique to ventilate a trauma patient with use of a bag valve mask.

Reference

- *PHTLS: Prehospital Trauma Life Support, 9th ed.*

Evaluation

- The instructor will verify the student's ability to perform a trauma jaw thrust, trauma chin lift, OPA insertion with use of both the tongue-jaw-lift insertion method and the tongue-blade insertion method, NPA insertion, and bag mask device ventilation (one- and two-provider).
- **Equipment**
- Adult intubation manikin – 1 per every 3 to 4 students
- Bag-mask device with reservoir – 1
- Manikin lubricant – 1 per every 3 to 4 students
- Oxygen tank – 1
- Oxygen connecting tubing – 1
- Oropharyngeal airway – 3 (in multiple sizes)
- Nasopharyngeal airway – 3 (in multiple sizes)
- Personal protective equipment – 1 set per student

Trauma Jaw Thrust (Single-Responder Technique)

1. In both the trauma jaw thrust and the trauma chin lift, maintain manual neutral in-line stabilization of the head and neck while the mandible (jaw) is moved anteriorly (forward). This maneuver moves the tongue forward, away from the hypopharynx, and holds the mouth slightly open.
2. From a position above the patient's head, position your hands on either side of the patient's head, fingers pointing caudad (downward – toward the feet).
3. Depending on the size of your hands, the fingers are spread across the face and around the angle of the patient's mandible.
4. Gentle, equal pressure is applied with these digits to move the patient's mandible anteriorly and slightly downward.

Trauma Chin Lift (Two-Responder Technique)

1. From a position above the patient's head, the patient's head and neck are moved into a neutral in-line position, and manual stabilization is maintained by your partner.
2. You are positioned at the patient's side between the patient's shoulders and hips, facing the patient's head.
3. With the hand closest to the patient's feet, grasp the patient's teeth or the lower mandible between your thumb and first two fingers beneath the patient's chin.
4. Pull the patient's chin anteriorly and slightly caudad, elevating the mandible and opening the mouth.

Oropharyngeal Airway Insertion With Use of the Tongue-Jaw-Lift Insertion Method

1. Your partner brings the patient's head and neck into a neutral in-line position and maintains stabilization while opening the patient's airway with a trauma jaw thrust maneuver.

2. Select and measure for a properly sized OPA. The distance from the corner of the patient's mouth to the earlobe is a good estimate for proper size.
3. The patient's airway is opened with the chin lift maneuver. The OPA is turned so that the distal tip enters the mouth with the flanged end pointing towards the top of the patient's head and tilted toward the mouth opening.
4. Insert the OPA into the patient's mouth and rotate it to fit the contours of the patient's anatomy.
5. The OPA is rotated until the inside curve is resting against the tongue and holding it out of the posterior pharynx. The flanges of the OPA should be resting against the outside surface of the patient's teeth.

Oropharyngeal Airway Insertion With Use of the Tongue-Blade Insertion Method

1. Your partner brings the patient's head and neck into a neutral in-line position and maintains stabilization while opening the patient's airway with the trauma jaw thrust maneuver.
2. Select and measure for a properly sized OPA.
3. Pull the patient's mouth open by the chin and place a tongue blade into the patient's mouth to move the tongue forward in place and keep the airway open.
4. Insert the device with the flanged end pointing toward the patient's feet and the distal tip pointing into the patient's mouth, following the curvature of the airway.
5. The OPA is advanced until the flanged end of the OPA rests against the outside surface of the patient's teeth.

Nasopharyngeal Airway Insertion

1. Your partner brings the patient's head and neck into a neutral in-line position and maintains stabilization while opening the patient's airway with the trauma jaw thrust maneuver.
2. Examine the patient's nostrils with a light and select the one that is the larger and least deviated or obstructed (usually the right nostril).
3. Select the appropriately sized NPA for the patient's nostril, a size slightly smaller in diameter than the size of the nostril opening (frequently the diameter of the patient's little finger).
4. The length of the NPA is also important. The NPA needs to be long enough to supply an air passage between the patient's tongue and the posterior pharynx. The distance from the patient's nose to the earlobe is a good estimate for proper size. (*Note*: The NPA must not be stretched out when measuring this distance.)
5. The distal tip (nonflanged end) of the NPA is lubricated liberally with a water-soluble jelly.
6. The NPA is slowly inserted into the nostril of choice. Insertion should be in an anterior-to-posterior direction along the floor of the nasal cavity. If resistance is met at the posterior end of the nostril, a gentle back-and-forth rotation of the NPA between the fingers will usually aid in passing it beyond the turbinate bones of the nasal cavity without damage. Should the NPA continue to meet with resistance, the NPA should not be forced past the obstruction but rather withdrawn, and the distal tip should be relubricated and inserted into the other nostril.
7. Continue insertion until the flange end of the NPA is next to the anterior nares or until the patient gags. If the patient gags, the NPA is withdrawn slightly.

One-Responder Bag-Mask Device Ventilation Technique

1. Kneel above the patient's head, providing manual stabilization of the patient's head and neck in a neutral in-line position with your knees.
2. Insert an airway adjunct. Either an OPA or NPA may be used, depending on the patient's injuries.
3. Fit a face mask over the patient's nose and mouth.
4. Hold the face mask in place with firm downward pressure while keeping the patient's airway open. This can be accomplished by placing the third, fourth, and fifth fingers around the mandible and applying slight upward pressure. The thumb and first finger are wrapped around the face mask in the shape of a C near the attachment point where the bag and face mask meet.
5. Squeeze the bag either by hand or by pressing the bag against your body. This action squeezes the air or oxygen from the bag into the patient's lungs.
6. Observe the patient's chest to ensure adequate chest rise with each breath delivered.
7. Observe ventilations to avoid overinflation and ensure appropriate ventilation rate is maintained.
8. Ensure the patient's oxygen saturation is being monitored throughout.

Two-Responder Bag-Mask Device Ventilation Technique

1. Your partner kneels above the patient's head and maintains manual stabilization of the patient's head and neck in a neutral in-line position.
2. Insert an airway adjunct. Either an OPA or NPA may be used, depending on the patient's injuries.
3. Place the face mask over the patient's nose and mouth.
4. Your partner holds the mask in place with the thumbs on the lateral portion of the mask while pulling the mandible up into the mask. The other fingers provide the manual stabilization and maintain a patent airway.
5. Kneel at the side of the patient and squeeze the bag with both hands to inflate the lungs.