Airway Management
Our New Standard of Care?

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“Fill your hands you son of a bitch!”
From all accounts, Adam Seymour was in shape and impressing his coaches. But on the last lap of a mile and a half run, Seymour collapsed. Trainer ________________ was one of the first people to respond, giving Seymour CPR until rescue crews arrived. "We are trained to do this type of activity but you never picture in your head that you are actually going to use those skills," said ________________.
Are you fully prepared?
EVANSTON, Ill. -- The mother of Northwestern football player Rashidi Wheeler plans to file a lawsuit against the university later this week seeking "substantial" damages over his death in a preseason conditioning drill.
Are you fully prepared?
Airway Management

Accessing the airway

- Equipment issues
  - Helmets
  - Facemasks
Opening the airway

- Non-trauma: head-tilt-chin-lift
- Trauma: jaw thrust or modified jaw thrust

- A patient without an airway is a dead patient
Airway Management

Airway Adjuncts

- **Oropharyngeal Airway (OPA)**
  - Assist in maintaining an open airway on unresponsive patients without a gag reflex
  - Patients with a gag reflex will vomit
  - Size: measure from the corner of the lips to the bottom of the earlobe or angle of mandible
Airway Management

Airway Adjuncts

- Oropharyngeal Airway

  - Insert airway with the tip facing toward the roof of the patient's mouth
  - Advance the airway gently until resistance is encountered then turn it 180° so that it comes to rest with the flange on the patient's teeth
Airway Management

- **Airway Adjuncts**

  - **Oropharyngeal Airway Contraindications**
    - Patient is conscious.
    - Patient has a gag reflex.
    - There is some foreign body that is blocking the airway, such as food, dentures, etc that should be removed first if possible.
Airway Management

Airway Adjuncts

- Nasopharyngeal Airway (NPA)
  - Used when patient’s have an intact gag reflex
  - An NPA is less likely to stimulate vomiting than an oral airway and may also be used on patients who are responsive, but still need assistance in keeping the tongue from obstructing the airway
Airway Management

Airway Adjuncts

- Nasopharyngeal Airway (NPA)

The nasal airway is a pliable tube that is inserted through the nose that when fully inserted, the tip is located in the posterior pharynx.

To appropriately select the size, measure from the tip of the nose to the tip of the patient’s ear.

One thing to keep in mind is the diameter of the airway in relation to the patient’s nostril.
Airway Management

Airway Adjuncts

- Nasopharyngeal Airway (NPA)

Once the appropriately sized device has been chosen, lubricate the airway with a water soluble lubricant.

The airway will then be inserted into the nostril with the bevel pointed toward the septum.
Airway Adjuncts

- Nasopharyngeal Airway (NPA)

  Gently insert the device until the flange is resting atop the patient’s nostril

  If the airway does not insert fully into the nostril then attempt the same procedure in the opposite nostril
Airway Management

Airway Adjuncts

- Nasopharyngeal Airway Contraindications
  - Patient with significant head trauma.
  - Patient with nasal fractures.
  (inserting a NPA in a patient with either of these problems could result with the NPA being inserted into the brain)
Airway Management

Suctioning

1. Attach a catheter
   - Be sure to use the rigid catheter for mouths and a bulb suction or French catheter for nasal passages

2. Insert the catheter into the oral cavity without suction (begin at the base of the tongue and work anterior)
Airway Management

Suctioning

3. Apply suction for no more than 15 seconds
   - For children, try to shorten suction time
   - When the pt. has emesis, sputum, or saliva, that cannot be removed quickly, the pt. should be log rolled and the oropharynx should be cleared manually

4. Artificially ventilate, and then suction for another 15 seconds. Continue this operation as needed.
Airway Management

Artificial Ventilation

- Mouth to mask (can have $O_2$ connected)
- Bag valve mask (BVM)
Airway Management

Oxygen Delivery
- Non-rebreather mask
- Nasal cannula
Airway Management

Supralaryngeal airways
- Combitube
- King
- Laryngeal mask airway (LMA)
Esophageal–Tracheal Combitube™ (dual-lumen tube)

- Patient is unconscious and no apparent gag reflex
- Adult combitube - for patients above 5' tall (41 French)
- Small adult combitube - for patients between 4' and 6' tall (37 French or combitube SA)
Airway Management

Combitube contraindications

- Responsive patients with an intact gag reflex
- Patients with known esophageal disease
- Patients who have ingested caustic substances
- Known or suspected foreign body obstruction of the larynx or trachea
- Presence of a tracheotomy
Airway Management

**Combitube insertion**

- Patent airway and ventilation should already have been established by other basic methods
- Hyperventilate
- Lubricate the tube
- Insert the thumb of a gloved hand into the patient's mouth, grasping the tongue and mandible between the thumb and index finger, and lift upward
Airway Management

**Combitube insertion**

- With the other hand, hold the Combitube with the curve in the same direction as the curve of the pharynx and insert the tip into the mouth.
- Advance carefully until the printed ring is aligned with the teeth.
Airway Management

Combitube insertion

- **DO NOT FORCE THE COMBITUBE!** If the tube does not advance easily, redirect it or withdraw and reinsert

- If the Combitube is not successfully placed within 30 seconds, remove the device and hyperventilate the patient for 30 seconds before re-attempting insertion
**Combitube insertion**

- Inflate line 1, blue pilot balloon leading the pharyngeal cuff, with 100ml of air using the 140ml (cc) syringe. (This may cause the Combitube to move slightly from the patient's mouth)

- Inflate line 2, white pilot balloon leading to the distal cuff, with approximately 15ml of air using the 20ml (cc) syringe
Combitube insertion

- Begin ventilation through the longer blue (distal) tube and watch for chest rise
- If auscultation of breath sounds is positive and auscultation of gastric air sounds is negative, continue ventilation.
- If no chest rise, negative lung sounds, and/or positive gastric air sounds with ventilation through the distal tube, begin ventilation through the shorter clear (proximal) tube.
Combitube insertion

- Confirm ventilation with chest rise, presence of auscultated lung sounds, and absence of gastric air sounds
- If there is no chest rise or positive lung sounds through either tube, remove the device, hyperventilate the patient for 20-30 seconds and repeat the insertion/inflation/ventilation procedures
- If two consecutive attempts fail to result in a proper placement and ventilation, do not attempt placement again
**Airway Management**

**Combitube insertion**

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King LT-D
- Sized 3 (yellow) = 4–5’, 4 (red) = 5–6’ and 5 (purple) = >6’ tall
King LT-D

- Hold the KLTD/KLTSD at the connector with dominant hand
- With non-dominant hand, hold mouth open and apply chin lift
- Using a lateral approach, introduce tip into mouth
King LT-D

- Advance the tip behind the base of the tongue while rotating tube back to midline so that the blue orientation line faces the chin of the patient
King LT-D

- Without exerting excessive force, advance tube until base of connector is aligned with teeth or gums
King LT-D

- Inflate the KLTD/KLTSD with the appropriate volume:
  
  Size 3 = 50ml
  Size 4 = 70ml
  Size 5 = 80ml
Airway Management

Laryngeal Mask Airway (LMA) ™
Airway Management

- Asthma management
  - Nebulizer
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