



Ask an IP

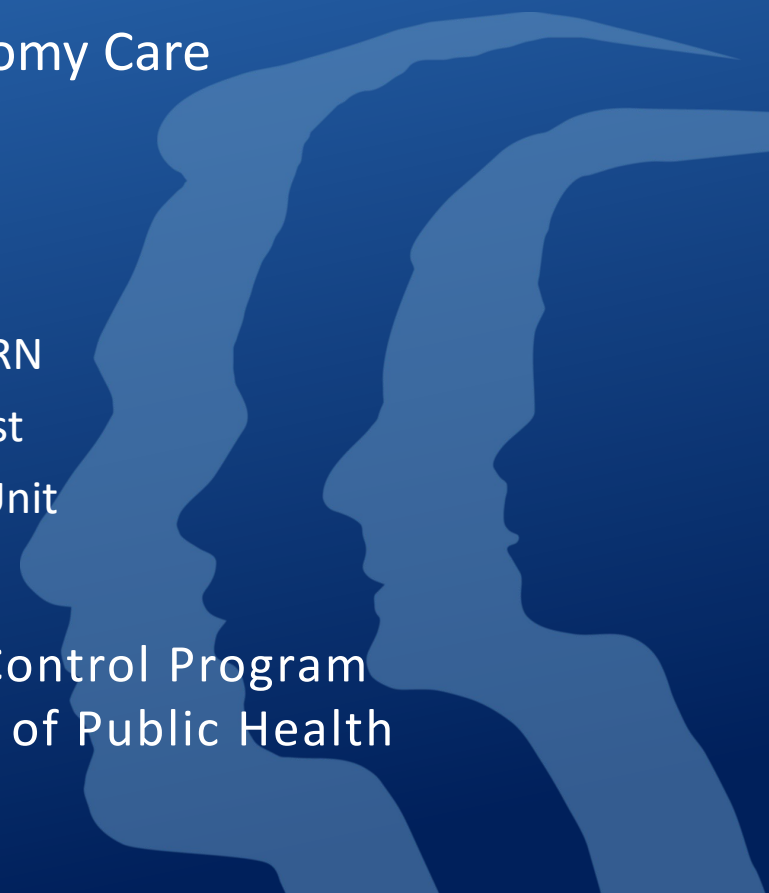
Learning and Communication Series

Ventilator and Tracheostomy Care

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Disclosures

There is no commercial support for today's call

Neither the speakers nor planners for today's call have disclosed any financial interests related to the content of the meeting

This call is meant for healthcare facilities and is off the record and reporters should log off now



Housekeeping

- **Microphones** are disabled. For questions, please use the chat.
- **Cameras:** please keep them turned off during the presentation.
- **Recording:** the presentation is being recorded and will be posted on the Ask an IP Website within a month following the webinar.
- We will not review COVID-19 guidelines during these sessions.



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Ask an IP Website:

<http://publichealth.lacounty.gov/acd/AskAnIPProgram/index.htm>



Objectives

- Define tracheostomy and tracheotomy
- Define ventilator and tracheostomy care
- Discuss essential practices to care for patients on ventilator
- Discuss appropriate IP measures for common respiratory care services



What is Tracheostomy?

- Is a surgically created hole (stoma) into the windpipe (trachea) to help air and oxygen reach the lungs.
- A tracheostomy tube is placed into the hole to keep it open for breathing.

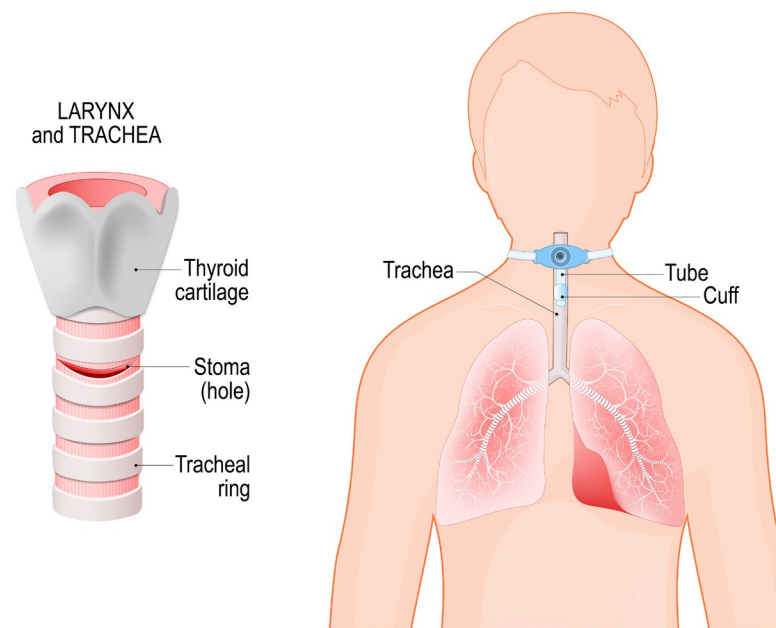
Why Perform a Tracheostomy?

Tracheostomy is done to:

- Relieve an airway obstruction
- Facilitate breathing
- Removal of secretions

TRACHEOSTOMY

surgical airway management procedure





What is a Tracheotomy?

- A surgical procedure to create an opening into the neck through which allows the patient to breathe.
- The external opening on the skin surface is called a stoma. Eventually it will heal and remain open. This is a direct passageway to the lungs.



Audience Question:

What are the indications for a tracheotomy?



Answers:

Indications for tracheotomy

- Upper airway obstruction
- Assistance with pulmonary hygiene
- Require prolonged mechanical ventilation (7 – 21 days)



Audience Question:

What is the difference between tracheotomy and tracheostomy?



Answer:

tracheotomy = procedure

tracheostomy = stoma



Tracheostomy Tubes

- The **cannula** is the indwelling tube that is inserted through the stoma to maintain patency
 - Outer cannula
 - Inner cannula
 - Obturator
- Maintain the tracheal opening/stoma after a tracheotomy



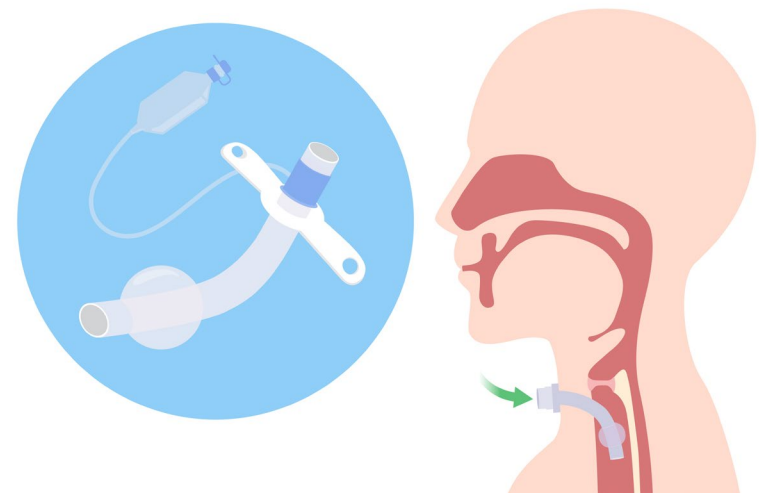
Tracheostomy Tubes

- Single cannula trach tubes have no inner cannula – they allow more air flow. This cannot be removed during emergency such as a mucous plug
- Double cannula (inner and outer) trach tube is used in most adult patients

What are the advantages of a tracheostomy tube?

- Decrease risk of decannulation
- Better secretion management
- Decreased risk of laryngeal trauma
- Easier to wean from ventilator

Tracheostomy Tube





Types of Trach Tubes:

Cuffed

- An inflated balloon seals the space between the trach tube and the trachea
- It is used for patients who need a ventilator to breathe for them or who are at high risk for aspiration



Types of Trach Tubes:

Uncuffed

- Air can move through the trach tube and through the trachea
- This trach tube is used for patients who are breathing without mechanical assistance and who are not at risk for aspiration
- The patient can begin to speak and cough normally



Types of Trach Tubes

Fenestrated

- Contains an opening in the outer cannula and small holes in the inner cannula
- These opening direct some air toward the nose and mouth instead of just through the tracheostomy opening in the neck
- This allows a patient to make noise or speak



What if the tracheostomy tube comes out?

Call the nurse or respiratory therapist, IMMEDIATELY!

- There should always be a spare trach tube (usually one size smaller) at the bedside to be used in an emergency



Respiratory Changes with Tracheostomy

- Tracheostomy bypasses the normal breathing structures
- Risk of aspirating a foreign particle is greatly increased



Tracheostomy Care

- **Suctioning**
 - Frequent suctioning and assessment
 - Position patient in Semi-Fowler's position
 - Suction machine pressure
 - Less than 200mm Hg for adult patients
 - Stimulates coughing
 - Face and eye protection may be necessary
 - Gown may be necessary as well



Tracheostomy Care

- When suctioning – assess, observe and report
 - Auscultate (listen to) breath sounds
 - Patient’s reaction to and tolerance to the procedure
 - Changes in vital signs
 - Changes in patient’s color
 - Changes in the pulse oximeter
 - Amount, color, and character of secretions



Tracheostomy Care

Cleaning a tracheostomy

- Keep the stomas and cannulas clean and free from obstruction
- Prevent water and foreign objects from entering the lungs
- Prevent skin irritation and breakdown
- Prevent infection



Tracheostomy Care

- Inner cannula cleaning/ changing per facility policies and procedures
- Cleaning of stoma opening and outer cannula
- Change trach dressing with a lint free 4x4 split gauze sponge
- Change/replace trach ties as needed
- Tracheostomies should be performed under sterile conditions



Tracheostomy Care continued

- Use aseptic technique when changing trach tube
- To apply antimicrobial agents at the tracheostoma as part of the routine care is NOT recommended
- Routine cuff deflation IS NOT RECOMMENDED
- Ensure proper cuff pressure with minimal leak or occluding pressure



Suctioning of Respiratory Tract Secretions

- Use either a multiuse closed system catheter or single-use open system catheter for pneumonia prevention
- If saline is installed prior to suctioning, it must be **sterile**
- No recommendation on the frequency of routine changing the in-line suction catheter in use on one patient
- If the open system suction is used, use a sterile single-use catheter each time



Ventilator Care Patients

- Ventilator Settings and Modes
 - Respiratory rate, the tidal volume, the fraction of inspired oxygen, and peak inspiratory pressure
- Review Communications
 - All Healthcare Providers (HCPs) involved in the care must review daily report on the patient
- Awareness of Pain and Sedation Needs
 - Respond to any indication of pain or agitation with medication



Ventilator Care Patients

- Patient and Family Education
 - Explain ideal outcome and potential positive impact
- Airway Management and Suctioning
 - Free of any obstruction
- Basic Nutritional Needs
 - Help prevent infection and aid in recovery
- Infection Prevention
- Common risk: Ventilator-Associated Events (VAE)



Prevention of Ventilator – Associated Events (VAE)

- Keep head of bed elevated 30-40 degrees unless medically contraindicated
- Daily “sedation vacation” and a readiness to wean assessment
- Peptic ulcer disease (PUD) and deep vein thrombosis (DVT) disease prophylaxis
- Oral care with chlorhexidine every 12 hours or as prescribed



Blood Sampling and the Transcutaneous Monitoring

To prevent transmission of infections, ensure the person performing the arterial stick:

- Uses sterile single patient syringes with safety needles
- Wears exam gloves and mask and goggles if indicated
- Prepares the site thoroughly with chlorhexidine gluconate CHG solution using a back and forth scrubbing motion; allows to dry at least one minute; if allergic to CHG, use betadine or isopropyl alcohol 70%
- Performs procedure using aseptic technique
- Covers the puncture site with sterile gauze when bleeding has ceased
- Discards sharps

Respiratory Care Device Considerations

Humidifier fluids

- Use **sterile water** to fill bubbling humidifiers
- Humidifiers do not need to be changed daily
- They can be **used for at least 48 hours and up to 1 week** in some patient populations

Oxygen humidifiers

- Follow instructions for use (IFU)
- Tubing, prongs and masks should be single patient use and changed if contaminated or malfunctioning

Respiratory Care Device Considerations

Small volume medication nebulizers, in-line & handheld

- Use sterile fluid and medication, dispense into the nebulizer aseptically
- Use single dose when possible
- Follow IFU for multidose vials; use no more than 28 days from the opening date OR until the expiration date (whichever is first)
- **Nebulizers should not be reused between patients without high level disinfection (HLD) or sterilization**

Ventilator Equipment

- Visual inspection for any visible signs of damage
- Sanitize the unit
- Ensure all oxygen filters are clean
- Verify all alarms are working
- Check air pressure and oxygen supply
- Check the expiratory valve to make sure there are no leaks



Resources

- **CDC Pneumonia Prevention**
<https://www.cdc.gov/infectioncontrol/guidelines/pneumonia/index.html>
- **CDC Guideline for Preventing Healthcare-Associated Pneumoniae (2003)**
<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm>
- **NIH Ventilator-Associated Pneumonia: Diagnosis, Treatment, and Prevention**
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1592694/#:~:text=Ventilator%2Dassociated%20pneumonia%20is%20defined,microbiologic%20analysis%20of%20respiratory%20secretions.>
- **NHSN Pneumonia (Ventilator-associated [VAP] and non-ventilator-associated Pneumonia [PNEU]) Event**
<https://www.cdc.gov/nhsn/pdfs/pscmanual/6pscwapcurrent.pdf>



Questions?

Disclaimer: Recording has now stopped. The Q&A will not be recorded.

Thank you!





Questions

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