

## Pediatric Tracheostomy Management: Management of Pediatric Patients with Tracheostomy in the Acute Care Setting (2021)

### About the Guideline

This guideline addresses the gaps in current guidelines and was established from a review of questions centered on the management of pediatric patients hospitalized with a surgical airway.

### Key Clinical Considerations

Become familiar with the recommendations in this guideline to improve patient care and outcomes.

#### **Type of Tracheostomy Tube**

Tracheostomy tubes come in two types: cuffed or uncuffed.

- Cuffed tracheostomy tubes use a seal within the airway to allow for appropriate ventilator support and to help prevent aspiration.
  - Ensure that the proper amount of air or distilled water is instilled in the cuff to secure seal and avoid micro-aspiration (20 to 30 cm H<sub>2</sub>O is typically sufficient pressure to provide an adequate seal).
  - Excessive pressure (greater than 30cm H<sub>2</sub>O) can lead to tracheal necrosis, rupture, or tracheomegaly.
  - Cuff-related injuries can be avoided by assessing cuff pressure with alterations in tidal volume delivery and patient position changes.
  - The manufacturer's guidelines for cuff management should be followed.
- Cuffless tracheostomy tubes should be used in pediatric patients who do not require ventilator support.

#### **Communication Devices**

- Speaking valve
  - Allows gas to enter during inspiration and redirects exhaled gas.
  - Requires either a cuffless tube or a deflated cuff to allow air to pass around the tube and create sound.
  - No suggestions are available related to using or not using a speaking valve to reduce tracheostomy-related complications.

#### **Use of a Daily Care Bundle**

- Daily care bundles help standardize tracheostomy care.
  - Components of care may include:
    - Assessing cuff pressures
    - Changing dressings
    - Maintaining patency of the inner cannula or tracheostomy tube
    - Equipment safety checks
- Daily care bundles can help prevent skin breakdown and reduce pressure ulcers around the tracheostomy site.

#### **Timing of the First Tracheostomy Change**

- The surgical team usually manages timing of the first tracheostomy change, which generally occurs postoperatively between days 3 and 7.

- Early tracheostomy tube changes (before day 5) have not been shown to reduce hospital length of stay.

### **Type of Humidification**

Humidification is classified as passive or active.

- Passive humidification is used primarily in pediatric patients who are nonventilated and who are mobile.
- Active humidification is used in pediatric patients who are ventilated as well as in those who are nonventilated.
- Passive and active humidification devices provide heat and humidification to the upper airway.
- Adequate humidification is important for infants and children who require a long-term tracheostomy tube to help reduce mucosal malfunction.
- Recommended inspired gas temperature is 32° to 34° C (89.6° to 93.2° F), and recommended humidification is 36 to 40 mg H<sub>2</sub>O/L.

### **Routine Cleaning and Tube Change**

- Follow guidelines related to cleaning according to the tracheostomy tube manufacturer's recommendations.
- Care of the stoma and surrounding skin is essential to maintaining an intact barrier.
- Adequate cleaning of the stoma and surrounding skin is necessary to prevent pressure ulcers and reduce moisture.
- Tracheostomy tubes should be changed every 1 to 2 weeks or as needed to prevent obstruction and mucosal malfunction.

### **Care Coordination**

- Coordinating care focuses on reducing infections, hospital length of stay, and readmissions.
- Prevention bundles are used to help reduce the risk of complications associated with a tracheostomy.
  - Bundles consist of elevating the head of the bed, routine oral care, routine stoma site care, and circuit changes when soiled.

### **Early vs. Late Initiation of Feeding**

- Preoperative assessment of swallowing function is key to predicting postoperative feeding status.
- Postoperative feeding difficulties can prolong hospital length of stay.
- Currently there are no suggestions for early or late initiation of oral feeding in children with tracheostomy tubes.

### **Reference**

Volsko, T. A., Parker, S. W., Deakins, K., Walsh, B. K., Fedor, K. L., Valika, T., Ginier, E., & Strickland, S. L. (2021). AARC Clinical Practice Guideline: Management of Pediatric Patients With Tracheostomy in the Acute Care Setting. *Respiratory care*, 66(1), 144–155.  
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