

Critical Care COVID-19 Tracheostomy Guidelines

Background:

Due to the COVID-19 Pandemic, a dedicated Tracheostomy protocol is being implemented for the purposes of a standardized care pathway, maintenance of infection control, provider safety, and optimization of patient care outcomes.

Protocol Development:

Coordination and development of the protocol done after consultation with representatives from Otolaryngology, General Surgery, Critical Care, Anesthesia, Infection Control, OR Nursing, and Respiratory Therapy. Additional literature review of SARS experience conducted by team. Unpublished data from Wuhan hospitals reviewed.

Indications for Procedure/Surgery:

Currently there is no available evidence to support early tracheostomy for COVID-19 patients. In fact, early anecdotal evidence from China demonstrates a very low rate of tracheostomy overall in COVID-19 patients. Concerns about the procedure center around intraoperative and postoperative infection control, care provider safety, post-hospital care setting, Long Term Acute Care (LTAC) availability, patient safety related to prone positioning, and ultimate effect on mortality outcomes. Therefore, initial protocols will focus on limited consideration of tracheostomy after careful individual patient consideration.

- Mechanical ventilation >14-21d
- FiO₂ <50%
- PEEP <8-10
- PIP < 30
- Not requiring high-dose vasoactive agent, and/or more than 1 vasopressor
- Absence of uncontrolled dysrhythmia
- Absence of severe acidosis
- INR < 1.5
- Platelets > 100k
- No anatomic contraindications
- Availability of recommended PPE equipment
- Conference between surgical and medical team to discuss risks and benefits of surgery taking into account all medical, safety and infection control factors.

Setting/Technique

- Percutaneous Tracheostomy is preferred
- If contraindicated medically or due to other limitations, Open surgical Tracheostomy will be performed.
- Bedside vs. Operating Room to be determined based on medical staff and COVID-19 testing status.

Staff (Bedside) – Percutaneous tracheostomy

- Perform entire tracheotomy procedure under complete paralysis
- Enhanced PPE – surgical gowns, double gloves, PAPR hoods, shoe covers
- 2 physician operators (i.e. Intensivist, thoracic or general surgeon, ENT)
- Nurse available to administer medication
- RT ready for postop care

Staff (Bedside) – open tracheostomy

- 2 physician operators (i.e. Intensivist, thoracic or general surgeon, ENT)

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- Anesthesia to administer medication
- RT ready for postop care
- OR Scrub Nurse in room (as requested)

Staff (OR) – open tracheostomy

- Anesthesia
- Surgeon(s)
- OR Scrub Nurse in room
- Circulating RN in room

Preoperative preparation

- Per Facility Protocol
- Enhanced PPE – surgical gowns, double gloves, PAPR hoods, shoe covers
- Tracheostomy Tray, cold cautery device (avoid monopolar electrocautery) and equipment, OR pack
- Choose cuffed, non-fenestrated tracheostomy tube.

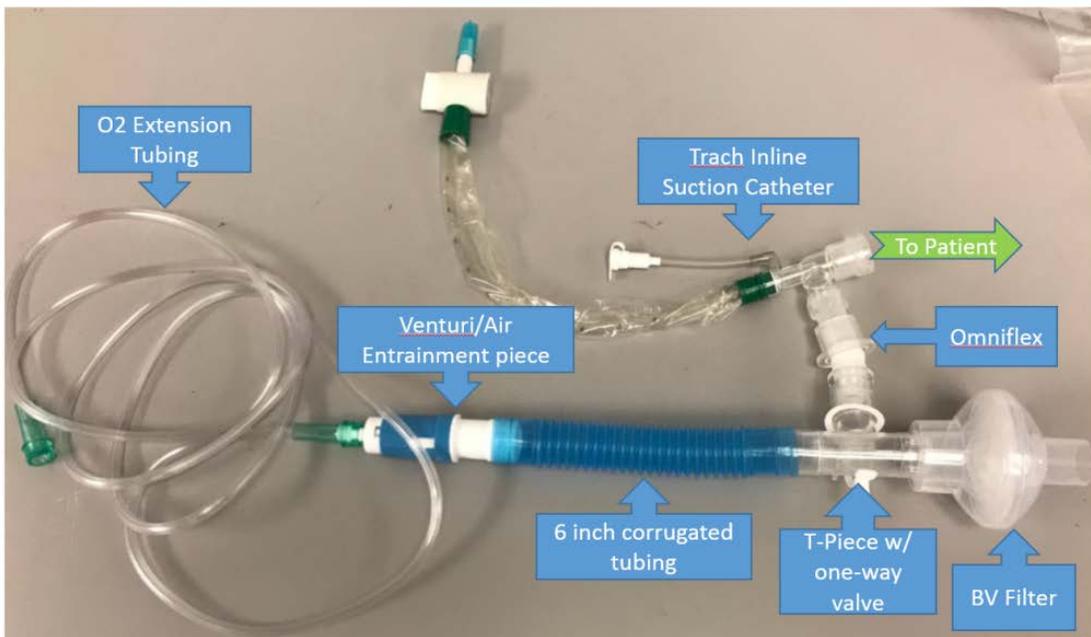
Intraoperative considerations

- Perform entire tracheotomy procedure under complete paralysis.
- Rely on cold instrumentation and avoid monopolar electrocautery.
- FiO₂ under 30% when incising trachea
- Ventilation held when cuff is deflated or when incising trachea
- Consider Sterile (1010) drape coverage when incising trachea

Postop respiratory care

- If COVID+ or PUI place filter on tracheostomy set up,

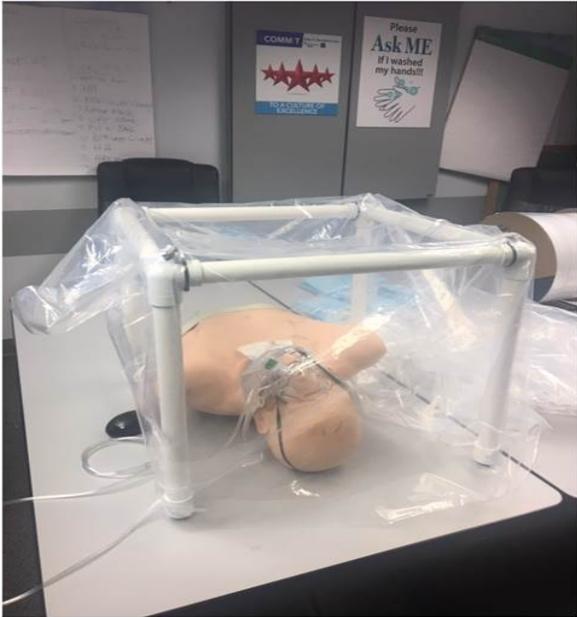
TRACH SET UP



- T-piece preferred over trach collar
- Inline suction only
- Maintain cuff pressure 25-30 cmH₂O
- Minimize bronchial hygiene – no hypersaline

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- No prone position
- Trach care can be performed under the aerosolized chamber if available.



An example of an aerosolized chamber. Aerosol Containment Unit (ACU) – from Baylor St. Luke’s Medical Center in Houston, TX).

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- Assess patient for increase work of breathing due to potential resistance created by the circuit.
- Wet filter will increase resistance.
- Assess the secureness of tracheostomy due to the potential of de-cannulation.
- Delay routine post-operative tracheostomy tube changes until COVID-19 testing is negative.

References:

Adapted from Baylor St. Luke’s Medical Center. Courtesy of John Sabo RN RRT

Tracheotomy Recommendations during the COVID-19 Pandemic - American Academy of Otolaryngology — Head and Neck Surgery. 2020. <https://www.entnet.org/content/tracheotomy-recommendations-during-covid-19-pandemic>

Tracheotomy in ventilated patients with COVID-19. Guidelines from the COVID-19 Tracheotomy Task Force, a Working Group of the Airway Safety Committee of the University of Pennsylvania Health System. 2020.

Surgical Considerations for Tracheostomy during the COVID-19 Pandemic. Lessons Learned From the Severe Acute Respiratory Syndrome Outbreak. JAMA Otolaryngology–Head & Neck Surgery Published online March 31, 2020