COVID-19 AIRWAY

APRIL 9, 2020

OVERVIEW

The CHEST APPROACH for airway management is designed to maximize safety and effectiveness in emergency endotracheal intubation in the critically ill, achieved through a consistent process utilizing effective team communication, crew resource management, and situational awareness. These principles remain the same when managing airways during the COVID-19 pandemic, however, there are particular areas of consideration and focus in order to achieve success while minimizing risks to patient and the airway team.

DISCLAIMER

This document provides expert opinion from the CHEST Difficult Airway Management Live Learning faculty members and is not intended as a clinical practice guideline. Many considerations listed are subject to the availability of local resources, however, the core considerations in difficult airway management remain the balance of safety, efficiency, and effectiveness in order to achieve the best outcomes for patients and the health care team. We feel this is accomplished through effective airway team preparation, planning, and communication, and these remain the focus of our educational efforts. Given the dynamic nature of medical knowledge related to COVID-19 it is expected this document will undergo updates.

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CHEST APPROACH	**A**ssess the airway, **A**ssign team roles	**P**reoxygenate with BVM+PEEP or NIV	**P**repare patient, meds, equipment	**R**eview primary, backup plans	**O**xygen cutoffs to abort attempt and move to backup.	**A**dminister medications only after above.	**C**onfirm tube placement with two indicators, at least one CO_2 check	**H**old tube until secured, sedation
APPROACH + COVID-19 Considerations	**A**ssess **early** for difficult airway, ie, prior to decompensation. Consider **early intubation** over NIV/HFNC if resources allow. **A**ssign roles to manage resources and safety.	**P**reoxygenate with supplemental oxygen (NC, NRB) if adequate SpO_2. If unable to adequately preoxygenate then **consider BVM with HEPA filter and tight mask seal.** ■ Two-person technique ■ VE-grip Avoid HFNC and NIV due to aerosolization risk. **Still unable to oxygenate? Consider early placement of EGA after RSI medications.*	Use standard airway equipment kit to bring into room: ■ ETT x 2 with stylet, syringe for cuff ■ Video laryngoscope - Hyperangulated blade and rigid stylet if available. - System with screen away from patient if available. ■ Oral/nasal airways ■ Bougie ■ EGA ■ FONA equipment – size 5/6 ETT, scalpel Use RSI medications – improved first-pass success. Have vasopressor in the room drawn up and available.	Most efficient team possible, consider: ■ Intubator, team leader – most experienced available ■ Respiratory therapist to assist, manage ventilator ■ Nurse for medications, monitoring ■ Additional runner outside of room Recommended technique – Videolaryngoscopy *(separate screen)* ****Rescue early with EGA if unable to oxygenate.*** ■ Preoxygenation may be suboptimal. ■ After achieving oxygenation, consider VL over FOB-guided intubation through EGA. Be prepared for FONA if can't oxygenate/can't intubate.	Clearly state to team to avoid increased risks with failed airway.	Use RSI medications – improved first-pass success. ■ Give sedative, immediately followed by paralytic, then flush. ■ Consider **vasopressor** prior to induction if blood pressure low or low normal.	**Connect ETT** ■ Directly to ventilator, or ■ To BVM with HEPA filter, and ■ Consider clamping ETT if disconnecting circuit. **Confirm placement with either** ■ Capnography if available, or ■ Colorimetric $ETCO_2$ **Second method of confirming placement:** ■ Consider ultrasound (especially in if the room for line placement) to confirm lung expansion over auscultation. ■ Chest rise, fog in tube ■ Avoid stethoscope auscultation (proximity/PPE risks). Consider other procedures such as line placement at this time in order to preserve PPE and reduce traffic in/out of room.	**H**EPA filter or other secure circuit to avoid aerosolization.

For more information on CHEST's Emergent airway management for suspected or confirmed COVID-19 patients, please read our **recommendations**.

ABBREVIATIONS

NIV (noninvasive ventilation, such as continuous or bilevel positive airway pressure), HFNC (high-flow nasal cannula), NC (nasal cannula), NRB (non-rebreather), BVM (bag-valve-mask), HEPA (high-efficiency particulate air), EGA (extraglottic airway), RSI (rapid-sequence intubation), ETT (endotracheal tube), FONA (front-of-neck access), FOB (fiberoptic bronchoscopy), ETCO (end-tidal carbon dioxide), PPE (personal protective equipment)

ADDITIONAL REFERENCES AND RESOURCES

Cook TM, et al. Consensus guidelines for managing the airway in patients with COVID-19: Guidelines from the Association of Anaesthetists, the Difficult Airway Society, the Intensive Care Society, the Faculty of Intensive Care Medicine and the Royal College of Anaesthetists. Anaesthesia. 2020 Mar 27. doi: 10.1111/anae.15054. [Epub ahead of print]

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