

Recommendations for Endotracheal Intubation of COVID-19 Patients

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Health care workers are committed to learning from each other to optimize the management of coronavirus disease 2019 (COVID-19) patients. The World Health Organization (WHO) and the International Committee on Taxonomy of Viruses recently called the disease, COVID-19, and the virus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The epidemic continues to escalate, and according to the data compiled by Johns Hopkins University & Medicine Coronavirus Research Center, on March 11, 2020, there have been 121,564 confirmed cases globally, including 4373 deaths.¹ Indeed, the WHO Director-General Tedros Adhanom Ghebreyesus recently declared “Countries have been planning for scenarios like this for decades.” “Now is the time to act on those plans.”²

During the 2003 epidemic of Severe Acute Respiratory Syndrome (SARS) in Toronto, Canada, it was apparent that health care workers were at risk of infection, particularly those involved in airway-related procedures such as endotracheal intubation.³ As a result, recommendations for intubation were prepared and disseminated. The goal of this Editorial is to share updated recommendations related to self-protection when intubating suspected or confirmed patients with COVID-19. The recommendations were prepared in consultation with infection protection and control experts at the University of Toronto. They should be adopted in the context of more comprehensive strategies to prevent disease transmission and may change as knowledge increases. Please consult with your local infection protection and control experts for updates.

For routine care, the experts in the province of Ontario, Canada, decided to use droplet and contact precautions. For nonroutine care, such as aerosol-generating medical procedures including intubation, the recommendations are as follows:

1. Remember that your personal protection is the priority. Plan ahead as it takes time to apply all the barrier precautions. Before intubation, review and practice donning and doffing the appropriate respiratory protection, gloves, face shield, and clothing. Pay close attention to avoid self-contamination.
2. Practice appropriate hand hygiene before and after all procedures.
3. Wear a fit-tested N95 respirator, face protector such as a shield, gown, and gloves.
4. Limit the number of health care providers in the room where the patient is to be intubated.
5. The most experienced anesthetist available should perform the intubation, if possible.
6. Standard monitoring, intravenous access, instruments, drugs, ventilator, and suction should be prechecked.
7. Avoid awake fiberoptic intubation unless specifically indicated. Atomized local anesthetic might aerosolize the virus. Consider using a glidescope or similar device.
8. Plan for rapid sequence induction (RSI) and ensure that a skilled assistant is able to perform cricoid pressure. RSI may need to be modified if the patient has very high alveolar–arterial gradient and is unable to tolerate 30 seconds of apnea or has a contraindication to a neuromuscular-blocking drug. If manual ventilation is required, small tidal volumes should be applied.
9. Use 5 minutes of preoxygenation with 100% oxygen and RSI techniques to avoid manual ventilation of patient’s lungs and the potential aerosolization of virus from airways.
10. Ensure that a high efficiency hydrophobic filter is interposed between facemask and breathing circuit or between facemask and a self-inflating ventilation bag such as a Laerdal bag.

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Accepted for publication March 9, 2020.

Funding: None.

The author declares no conflicts of interest.

Reprints will not be available from the authors.

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DOI: 10.1213/ANE.0000000000004803

11. Intubate and confirm correct position of the tracheal tube.
12. Institute mechanical ventilation and stabilize patient, as appropriate.
13. All airway equipment must be decontaminated and disinfected according to appropriate hospital policies.
14. After removing protective equipment, avoid touching hair or face before washing hands.
15. The use of head covers is not standardized; however, most anesthesiologists would consider wearing such a protective item.
16. It is important to develop a robust communication system so front-line health care providers can provide rapid feedback to policy makers and vice versa. A previous report from the SARS epidemic emphasized the importance of timely information in the 3 critical domains of health care workers, processes, and equipment.³

Additional helpful information^{4,5} and resources can be found as follows:

- CDC home site for COVID-19: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>.
- Anesthesia Patient Safety Foundation (apsf): <https://www.apsf.org/news-updates/perioperative-considerations-for-the-2019-novel-coronavirus-covid-19/>.

- Government of Ontario: <https://www.ontario.ca/page/2019-novel-coronavirus>.
- World Health Organization: <https://www.who.int/health-topics/coronavirus>.
- Public Health Agency of Canada: Coronavirus Infection: Symptoms and treatment.
- University of Toronto: <https://www.utoronto.ca/message-from-the-university-regarding-the-coronavirus/faqs>References. ■■

DISCLOSURES

Name: Beverley A. Orser, MD, PhD.

Contribution: This author helped to develop the guidelines and wrote the manuscript.

This manuscript was handled by: Jean-Francois Pittet, MD.

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