



Coronavirus (2019-nCoV)

Information for Health Care Professionals

RECOMMENDATIONS

When caring for a patient with known or suspected COVID-19¹ infection:

- Place patients in an Airborne Infection Isolation Room²
- Health care professionals entering the room should use ***airborne and contact precautions, including eye protection.***
- Personal protective equipment³ (PPE) to be worn includes:
 - Either an N95 mask, for which one has been fit-tested, or a powered air-purifying respirator (PAPR)⁴;
 - A face shield or goggles;
 - A gown;
 - Gloves.
- Hand hygiene is essential before donning and after doffing PPE. Hand hygiene can be performed using alcohol-based hand rubs or hand washing with soap and water. Wash hands with soap and water if hands are visibly soiled.
- Use extreme caution when removing and disposing of PPE to minimize the risk of self-contamination. Strongly consider observing the correct procedures for donning and doffing PPE and then rehearsing these procedures prior to direct

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When considering a procedure for a patient with known or suspected COVID-19 infection:

- Postpone non-urgent surgical procedures until the patient is determined to be non-infectious or not infected.
- If respiratory support is indicated, then planning ahead may avoid the need for rescue interventions (e.g., crash intubations), which have greater potential for infectious transmission due to mishaps during the use of barrier protections.
- In patient with acute respiratory failure, it may be prudent to proceed directly to endotracheal intubation, because non-invasive ventilation (e.g. CPAP or biPAP) may increase the risk of infectious transmission⁵.
- When possible, perform procedures in an airborne infection isolation room rather than in an operating room. An airborne isolation room has a negative-pressure relative to the surrounding area. In contrast, a typical operating room is designed to provide positive-pressure relative to the surrounding area and incoming air is often flow-directed, filtered, and temperature and humidity controlled.
- If a procedure cannot be postponed or done at the bedside, then schedule the patient when a minimum number of healthcare workers and other patients are present in the surgical suite.
- Seek collaboration with local infection control expertise.

When patients with known or suspected COVID-19 infection need to be transported:

- Transport patients only for procedures and studies deemed essential for patient care.
- Consult local infection control expertise prior to transport.
- Intubated patients should have a HEPA filter inserted between the bag-valve-mask breathing device and the patient.

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anticipated during transport. In this case, one person should wear the appropriate PPE per CDC COVID-19 guidance, and, ideally, be accompanied by an additional member of the transport team who is not wearing a gown and gloves. The person without gloves and gown can interact with the environment. Prior to transport, the PPE clad person should perform hand hygiene and don a fresh gown and gloves to reduce potential contamination of environmental surfaces.

When performing procedures on patients with known or suspected COVID-19 infection:

- Do not bring the patient to the holding or PACU areas. A designated OR should be allocated and signs posted on the doors to minimize staff exposure.
- If general anesthesia is not required, the patient should continue to wear the surgical mask.
- If general anesthesia is used:
 - Place a HEPA filter between the Y-piece of the breathing circuit and the patient's mask, endotracheal tube or laryngeal mask airway.
 - Alternatively, for pediatric patients or other patients in whom the additional dead space or weight of the filter may be problematic, the HEPA filter should be placed on the expiratory end of the corrugated breathing circuit before expired gas enters the anesthesia machine.
 - The gas sampling tubing should also be protected by a HEPA filter, and gases exiting the gas analyzer should be scavenged and not allowed to return to the room air.
- During laryngoscopy and intubation:
 - Double gloves will enable one to shed the outer gloves after intubation and minimize subsequent environmental contamination.
 - Designate the most experienced anesthesia professional available to perform intubation, if possible.

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Aerosolization generates smaller liquid particles that may become suspended in air currents, traverse filtration barriers, and inspired.

- Consider a rapid sequence induction (RSI) in order to avoid manual ventilation of patient's lungs and potential aerosolization. If manual ventilation is required, apply small tidal volumes.
 - After removing protective equipment, avoid touching your hair or face and perform hand hygiene.
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- If available, use a closed suction system during airway suctioning. Closed suctioning systems may only be available in the critical care setting.
 - Consider disposable covers (e.g., plastic sheets for surfaces, long ultrasound probe sheath covers) to reduce droplet and contact contamination of equipment and other environmental surfaces.
 - The patient should be recovered in the operating room or transferred to an airborne infection isolation room.
 - After the patient has left the operating room, leave as much time as possible before subsequent patient care (for the removal of airborne infectious contamination). The length of time depends on the number of air exchanges per hour in the specific room or space. See this [CDC reference for more detailed guidance](#) .
 - After the case, clean and disinfect high-touch surfaces on the anesthesia machine and anesthesia work area with an EPA-approved hospital disinfectant.
 - If devices such as point-of-care ultrasound are used:
 - A long sheath cover of the ultrasound unit and cable should be used to minimize contamination of the equipment.
 - Non-essential parts of the ultrasound cart may best be covered with drapes to minimize droplet exposure.

References

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coronavirus outbreak. Co and Vi are derived from “coronavirus,” D stands for disease, and 19 is for 2019, the year the first cases were seen. The pathogen causing the disease is termed “Severe Acute Respiratory Syndrome Coronavirus 2,” abbreviated as SARS-CoV-2.

2. An Airborne Infection Isolation Room (AIIR) has a negative-pressure relative to the surrounding area. A minimum of 6 air changes per hour (12 air changes per hour are recommended for new construction or renovation). Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter before recirculation. Room doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized. Facilities should monitor and document the proper negative-pressure function of these rooms. If an AIIR is not available, patients who require hospitalization should be transferred as soon as is feasible to a facility where an AIIR is available.
3. Personal protective equipment (PPE) is specialized clothing (e.g., gowns, gloves) or equipment (e.g., face shields, masks) worn by a health care worker for protection against a hazard. Hazards may include physical, chemical, and biologic hazards; however, the PPE’s specified in these recommendations are designed to protect the wearer from infectious hazards transmitted by direct or indirect contact, droplets, and airborne particles.
4. The Anesthesia Patient Safety Foundation (see link below) states that a PAPR may be warranted for airway procedures on these patients given prior cases of infection transmission of SARS-CoV when N95 masks were used.

NOTE: The ASA Committee on Occupational Health gratefully acknowledges the Society for Healthcare Epidemiology of America (SHEA) for their expert review of these recommendations and the Anesthesia Patient Safety Society (APSF), whose excellent perioperative recommendations for patients known or suspected of COVID-19 infection were a valuable resource for revising these recommendations.

Additional Resources

The [APSF Perioperative Considerations for the 2019 Novel Coronavirus \(COVID-](#)

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The Centers for Disease Control and Prevention (CDC) “ [Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 \(COVID-19\) or Persons Under Investigation for COVID-19 in Healthcare Settings](#) .

Disclaimer: *These recommendations are based upon information available as of 2/23/2020. COVID-19 is an emerging disease. New knowledge is added daily and guidance may change as the situation evolves. Please consult the CDC website regularly for the most up-to-date information.*