

Bulletin

OF THE AMERICAN COLLEGE OF SURGEONS

ACS COVID-19 Update

Bulletin: COVID-19 Surgery Information and Resources

Because many of you are experiencing the effects of the novel coronavirus and have questions about how to handle the anticipated onslaught of cases, the American College of Surgeons (ACS) has developed a twice-weekly newsletter from the *Bulletin* to keep you informed and updated on best practices. The information in the newsletter was conceived and compiled by members of the ACS Board of Regents and Officers and is published under the aegis of our Division of Integrated Communications. During this time, we will be pausing *My ACS NewsScope* and *ACS NewsScope*. We will resume publication of these newsletters when the demand for information regarding COVID-19 slows. In the meantime, we anticipate you will find this newsletter useful in providing optimal care to your patients.

In this first issue of COVID-19 Updates, we provide answers to frequently asked questions regarding management of COVID patients, links to journal articles addressing the topic, and federal and regulatory updates, and other updates on the issue.

Our goal is to keep you informed on how to address this ever-evolving pandemic using the best available information. The Regents and staff look forward to receiving your feedback.

Coronavirus: Frequently Asked Questions

How Do I Manage Surgery for COVID-19 PUI/Confirmed Patients?

It is important to be prepared for the potential need to operate on a Coronavirus Disease 2019 (COVID-19) person under investigation (PUI) or a COVID-19 patient. Preparation of a specific operating room (OR) and detailed education of the entire OR team who will be providing care for these patients during their procedure is imperative, without using stock protective equipment. The specific roles and responsibilities of all OR team members must be clear, with a common goal of minimizing the spread of infection to health care workers.

- Develop a dedicated COVID-19 OR to control the spread of the disease
 - Centers for Disease Control and Prevention (CDC) Guidelines for [droplet/aerosol room environments](#) with # air exchanges.
- Empty OR of all nonessential materials
- Consider a negative pressure anteroom with separate access if possible

- Anteroom is used for donning/doffing of personal protective equipment (PPE) and separate OR carts for the COVID-19 OR
- Separate OR airway cart; specific airway guidelines for COVID-19 PUI/confirmed patients
- Separate OR equipment cart
- Separate OR medication cart
- Runner outside OR for drugs, devices, equipment
- If intubation required for OR procedure, recommend intubation in negative pressure room prior to OR; avoid intubation in OR
- Use dedicated transport ventilator if being transported on mechanical ventilation (ambulatory bag with viral filter, if ventilator unavailable)
- Additional heat and moisture exchange (HME) filter and viral filter on expiratory limb of anesthesia machine circuit
- Consider additional viral filter on expiratory limb of anesthesia machine circuit
 - Anesthesia Patient Safety Foundation (APSF) recommendation, [Perioperative Considerations for the 2019 Novel Coronavirus \(COVID-19\)](#)
 - APSF recommendation, [FAQ on Anesthesia Machine Use, Protection, and Decontamination during the COVID-19 Pandemic](#)
- Minimize airway circuit disconnection, endotracheal tube (ETT) must be clamped if any circuit disconnection planned
- Special PPE for OR (N95 or OR powered air-purifying respirator (PAPR), goggles or face shield, gown, boot covers)
- Provide appropriate PPE education (CDC guidance copied below) and post in anteroom in OR
- Must use N95 or OR PAPR for all aerosol-generating procedures
- Extubation should occur in a negative pressure intensive care unit (ICU)/ward room if possible
- Recover patient in the negative pressure ICU/ward room or in the dedicated COVID-19 OR if negative pressure room not available
- Consider dedicated OR teams to manage COVID-19 patients in the OR with detailed education
- Consider performing procedures in negative pressure rooms with anesthesia team support if possible

Following are links to infographics from other sources that offer additional salient details:

- *Canadian Journal of Anesthesia* – [Management of COVID-19 Cases in OR](#)
- *Canadian Journal of Anesthesia* Twitter – [What we do when a COVID-10 patient needs and operation: Operating room preparation and guidance from a frontline Singapore Hospital](#)
- Anesthesia Patient Safety Foundation – [Recommendations for Airway Management in a Patient with Suspected Coronavirus \(2019-nCoV\) Infection](#)

- CDC – [Sequence for Putting On and Removing PPE](#)

What Is the Best Strategy for Protecting the Anesthesia Machine from Contamination by a Potentially Infected Patient?

Short answer: Place high-quality viral filters between the breathing circuit and the patient's airway and between the expiratory limb and the machine. The use of these filters is essential to prevent contamination of the machine. (See previous article for details on which filtration devices to use). Note: Even with filters, breathing circuits should be discarded after every patient.

The anesthesia machine needs to be protected from contamination by a potentially infected patient for two reasons. First, if pathogens can enter the internal parts of the machine, they could be passed on to a subsequent patient. Second, respiratory gases sampled for gas analysis can pass pathogens on to other patients or health care professionals after leaving the gas analyzer if improperly managed.

The good news is that the same precautions can be applied to all patients. The strategy is the same regardless of the patient's risk of infection. A high-quality filter placed between the breathing circuit and the patient's airway will protect the machine from contamination and also filter gas sampled for analysis. Heat and moisture exchange filters (HMEFs) are a good choice because they preserve airway humidity and are designed so that sampled gas is filtered before it enters the gas analyzer. It is possible to use a filter at the airway that is not also an HMEF. If a filter only is used, lower fresh gas flows (1-2 L/min or less) are desirable during maintenance of anesthesia to preserve humidity in the circuit.

It is also recommended to add an effective viral filter between the expiratory limb of the circle system and the machine. Not only is this second filter a reasonable backup to protect the machine from any particles that pass the primary filter, but it significantly amplifies the effectiveness of the first filter. Given the fact that the primary filter can become less effective if soiled, the backup filter is a good recommendation. Another filter between the machine and the inspiratory limb is added sometimes but is not necessary to protect the machine from the patient nor to protect the patient if the machine is kept clean. The main reason to add an inspiratory limb filter is to eliminate the chance of error by placing a single filtered limb on the inspiratory rather than expiratory port.