

# COVID 19 Update

## AOCA Midyear Seminar 3/15/2020



Recommendation as of 3/15/2020 but recommendations change frequently

# Changing By the Moment: The Recommendations Today Are Different Tomorrow

**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

## Coronavirus Disease 2019 (COVID-19)

[中文](#) | [Español](#)

### From the White House Corona

- Keeping workplaces, homes, schools, [4 pages]
- CDC's framework for mitigation [1]
- Mitigation Strategies for Santa Clara, C  
New Rochelle, NY [5 Pages], Florid  
[5 Pages]



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## Coronavirus disease (COVID-19) outbreak

**Ohio** Department of Health

How You Can Respond

**Cleveland Clinic**

[Frequently Asked Questions](#) [Affected Services](#) [Prevention](#) [Visitor Restrictions](#) [Testing](#) [Travel Information](#) [More](#)

## Preparing for Coronavirus (COVID-19)

ARED

Parma, OH 44130  
Business/After Hours: 216-201-2000

WE WANT YOUR OPINION

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## COVID-19

Overview and links  
to coronavirus resources

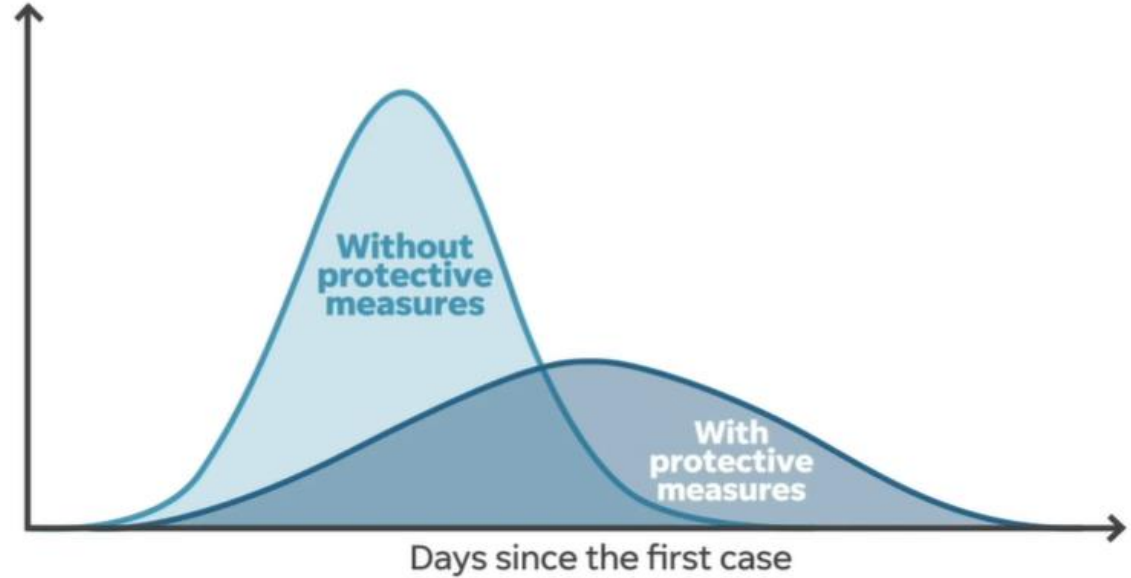


# Drastic Measures:

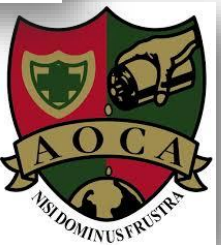


## Flattening the curve

Number of daily cases



SOURCE: CDC





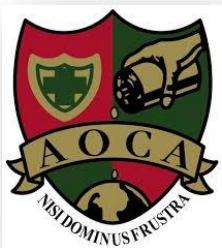
# COVID 19

**TABLE 2. Comparison of Clinical Symptoms and Public Health Characteristics of 3 Coronavirus Strains**

Characteristic	SARS-CoV (2002-2003)	MERS-CoV (2012-2013)	COVID-19 (2019-2020)
Clinical presentation	(1) Fever (2) Symptoms of lower respiratory tract infection (cough, dyspnea, difficulty breathing) (3) Radiologic evidence of pneumonia or ARDS (4) Diarrhea (5) Vomiting	(1) Pneumonia (2) Renal injury (3) ARDS	(1) Fever, cough, dyspnea (2) Radiologic evidence of pneumonia (3) ARDS
Incubation period	2-10 d	1-14 d	5-7 d (per initial reports)
Geographic location	China Hong Kong Canada  Singapore Vietnam	Arabian Peninsula United States (2 imported cases) South Korea (MERS-CoV outbreak in 2015)	Australia Belgium Cambodia  Canada China (including Hong Kong and Macau) Finland France Germany India Italy Japan Malaysia Nepal Nepal Singapore South Korea Spain Sri Lanka Sweden Taiwan Thailand United Arab Emirates United Kingdom United States Vietnam
Cases	8096	2468	37,592 <sup>a</sup>
Case fatality rate	14%-15% <sup>20</sup>	35% <sup>12</sup>	2.2% <sup>a</sup>

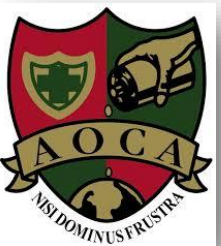
<sup>a</sup>As of February 9, 2020.

ARDS = acute respiratory distress syndrome; MERS-CoV = Middle East respiratory syndrome coronavirus; COVID-19 = 2019 novel coronavirus; SARS-CoV = severe acute respiratory syndrome coronavirus.



# **“Most Will Have Mild Symptoms,” So Why Are COVID19 Patients Dying?**

- **Respiratory Failure**
  - Severe hypoxemia
  - Bilateral interstitial pneumonitis
- **Cardiomyopathy**
  - History of cardiac disease
- **Organ Dysfunction**
  - Renal
- **Management of these patients**
  - Mechanical Ventilation
    - Proning
    - Protective lung ventilation
  - Mechanical Support
    - VV ECMO
    - AV ECMO



# Caring for COVID19 Patients:

## Coronavirus resources for anesthesiologists



MENU




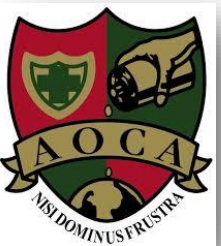
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### *When caring for a patient with known or suspected COVID-19<sup>1</sup> infection:*

- Place patients in an Airborne Infection Isolation Room<sup>2</sup>
- Health care professionals entering the room should use *airborne and contact precautions, including eye protection*.
- Personal protective equipment<sup>3</sup> (PPE) to be worn includes:
  - Either an N95 mask, for which one has been fit-tested, or a powered air-purifying respirator (PAPR)<sup>4</sup>;
  - 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 patient care.
- For further details, refer to the [CDC guidance](#) .



# Donning and Doffing: Be Comfortable With the Process

## Putting on (Donning) Personal Protective Equipment (PPE)

### 1 HAND HYGIENE



- A Using an alcohol-based hand rub is the preferred way to **clean** your hands.
- B If your hands look or feel dirty, soap and water **must** be used to wash your hands.

### 2 Gown



- A Make sure the gown covers from neck to knees to wrist.
- B Tie at the back of neck and waist.

### 3a Procedure/Surgical mask

- ◆ Secure the ties or elastic around your head so the mask stays in place.
- ◆ Fit the moldable band to the nose bridge. Fit snugly to your face and below chin.



### 3b N95 respirator

There are different styles of N95 respirators (pictured below). They include: a) molded cup, b) duckbill, c) flat-fold and d) v-fold



All styles have the same basic steps for donning; molded cup and duckbill are pictured below. Refer to the manufacturer for specific donning instructions.



- A Pre-stretch both top and bottom straps before placing the respirator on your face.
- B Cup the N95 respirator in your hand.
- C Position the N95 respirator under your chin with the nose piece up. Secure the elastic band around your head so the N95 respirator stays in place.
- D Use both hands to mold the metal band of the N95 respirator around the bridge of your nose.
- E Fit check the N95 respirator.

### 4 Eye protection or face shields



- ◆ Place over the eyes (or face).
- ◆ Adjust to fit.

### 5 Gloves



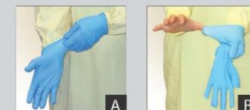
- ◆ Pull the cuffs of the gloves over the cuffs of the gown.



May 2014

## Taking off (Doffing) Personal Protective Equipment (PPE)

### 1 Gloves



- A Grasp the outside edge of the glove near the wrist and peel away from the hand, turning the glove inside-out.
- ◆ Hold the glove in the opposite gloved hand.
- B Slide an ungloved finger or thumb under the wrist of the remaining glove.
- C Peel the glove off and over the first glove, making a bag for both gloves.
- ◆ Put the gloves in the garbage.

### 2 HAND HYGIENE



- A Using an alcohol-based hand rub is the preferred way to **clean** your hands.
- B If your hands look or feel dirty, soap and water **must** be used to wash your hands.

### 3 Gown



- A Carefully unfasten ties.
- B Grasp the outside of the gown at the back of the shoulders and pull the gown down over the arms.
- C Turn the gown inside out during removal.
- ◆ Put in hamper or, if disposable, put in garbage.

### 4 HAND HYGIENE



- ◆ **Clean your hands.** (See No. 2)
- ◆ Exit the patient room, close the door and **clean your hands** again.

### 5 Eye protection or face shield



- ◆ Handle only by headband or ear pieces.
- ◆ Carefully pull away from face.
- ◆ Put reusable items in appropriate area for cleaning.
- ◆ Put disposable items into garbage.

### 6 Mask or N95 respirator



- ◆ Bend forward slightly and carefully remove the mask from your face by touching only the ties or elastic bands.
- ◆ Start with the bottom tie, then remove the top tie.
- ◆ Throw the mask in the garbage.

There are different styles of N95 respirators but all styles have the same basic steps for doffing.

### 7 HAND HYGIENE

- ◆ **Clean your hands.** (See No. 2)

# RECOMMENDATIONS FOR PERSONAL PROTECTIVE EQUIPMENT FOR PATIENTS WITH RESPIRATORY ILLNESS

Updated 3.13.2020 3:45p

	Face Mask (surgical or ear-loop mask)	N95 (fit-tested respirator)	Protective Eyewear (goggles or faceshield)	Gown & Gloves
If you are a <b>Patient or Visitor</b> who is asymptomatic, no risk factors	No personal protective equipment precautions required. Follow CDC guidelines, limit social interactions, practice hand hygiene. Follow visitation guidelines to limit exposure.			
If you are a <b>Patient</b> with respiratory symptoms <u>OR</u> confirmed or pending test results for respiratory virus or COVID-19	Wear Face Mask while being transported Mask not required while in hospital room			
<b>Caregivers Performing Screening at Hospital or Department Point of Entry</b>	Wear Face Mask		Wear Protective Eyewear	
For <b>Clinical Caregivers</b> , follow situation specific guidelines:				
<b>Clinical Caregivers Actively Seeing Patients</b> who have any signs or symptoms of any respiratory illness	Wear Face Mask		Wear Protective Eyewear	Wear Gown & Gloves
<b>Performing all Respiratory Viral Testing (including COVID)</b> *caregivers obtaining nasopharyngeal/oropharyngeal swab	Wear Face Mask		Wear Protective Eyewear	Wear Gown & Gloves
<b>Performing Procedures</b> *aerosolized risk: Bronchoscopy, nebulization, NIPPV, intubation/extubation, EGD, TEE, high flow O2		Wear N95	Wear Protective Eyewear	Wear Gown & Gloves
<b>Caregivers Caring for Patient with Confirmed COVID-19 Case</b>		Wear N95	Wear Protective Eyewear	Wear Gown & Gloves



# Caring for COVID19 Patients:

## Coronavirus resources for anesthesiologists



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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 transmission<sup>5</sup>.
- 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.



# Caring for COVID19 Patients:

## Coronavirus resources for anesthesiologists



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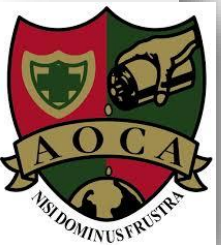
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### *When patients with known or suspected COVID-19 infection need to be transported:*

- 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.
- Patients who are not ventilated should wear a surgical mask.
- Health care professionals transporting the patient should not routinely wear gowns and gloves, unless direct contact with the patient or contaminated equipment is 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.



# Caring for COVID19 Patients:

## Coronavirus resources for anesthesiologists



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### *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.
  - Avoid awake fiberoptic intubation unless specifically indicated. Droplets containing viral pathogens may become aerosolized during this procedure. 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.
- 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.



# Knowing the Symptoms:

## Watch for symptoms

Reported illnesses have ranged from mild symptoms to severe illness and death for confirmed coronavirus disease 2019 (COVID-19) cases.

The following symptoms may appear **2-14 days after exposure**.\*

- Fever
- Cough
- Shortness of breath

\*This is based on what has been seen previously as the incubation period of [MERS](#)-CoV viruses.



If you develop **emergency warning signs** for COVID-19 get **medical attention immediately**. Emergency warning signs include\*:

- Difficulty breathing or shortness of breath
- Persistent pain or pressure in the chest
- New confusion or inability to arouse
- Bluish lips or face

\*This list is not all inclusive. Please consult your medical provider for any other



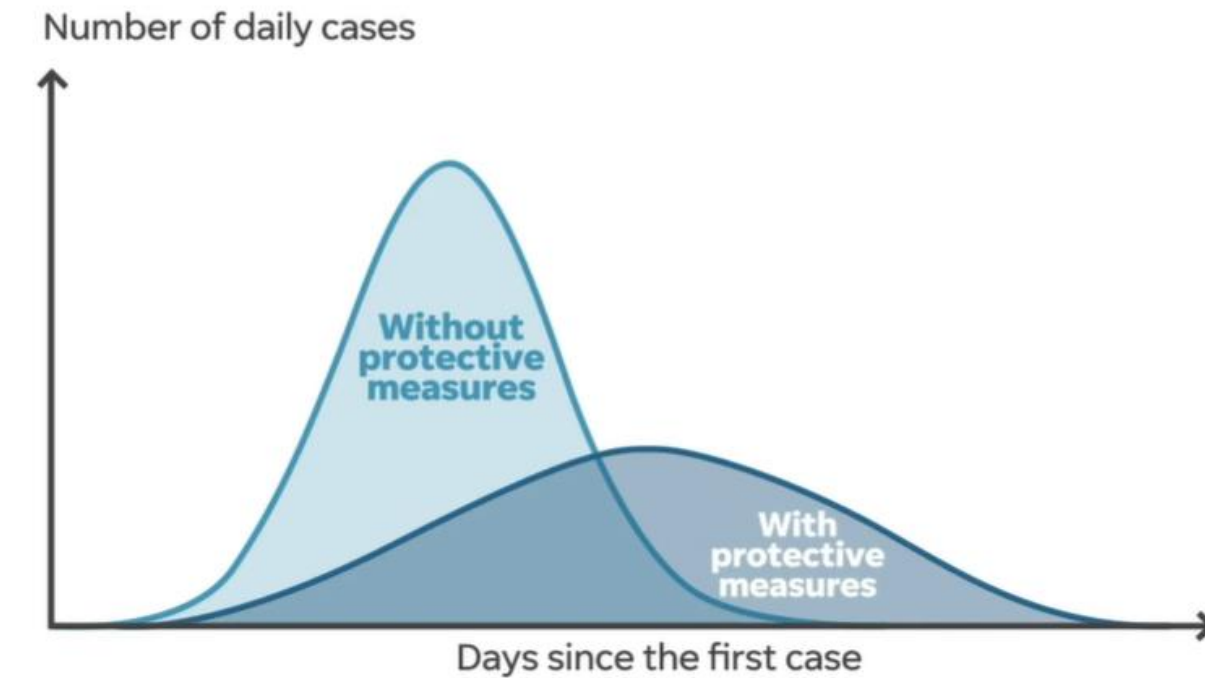
# Care For Yourself!

- Follow your institutional policy
- Follow your local health department's recommendations



# “Not Exceeding Healthcare Capacity: The Key to Survival”

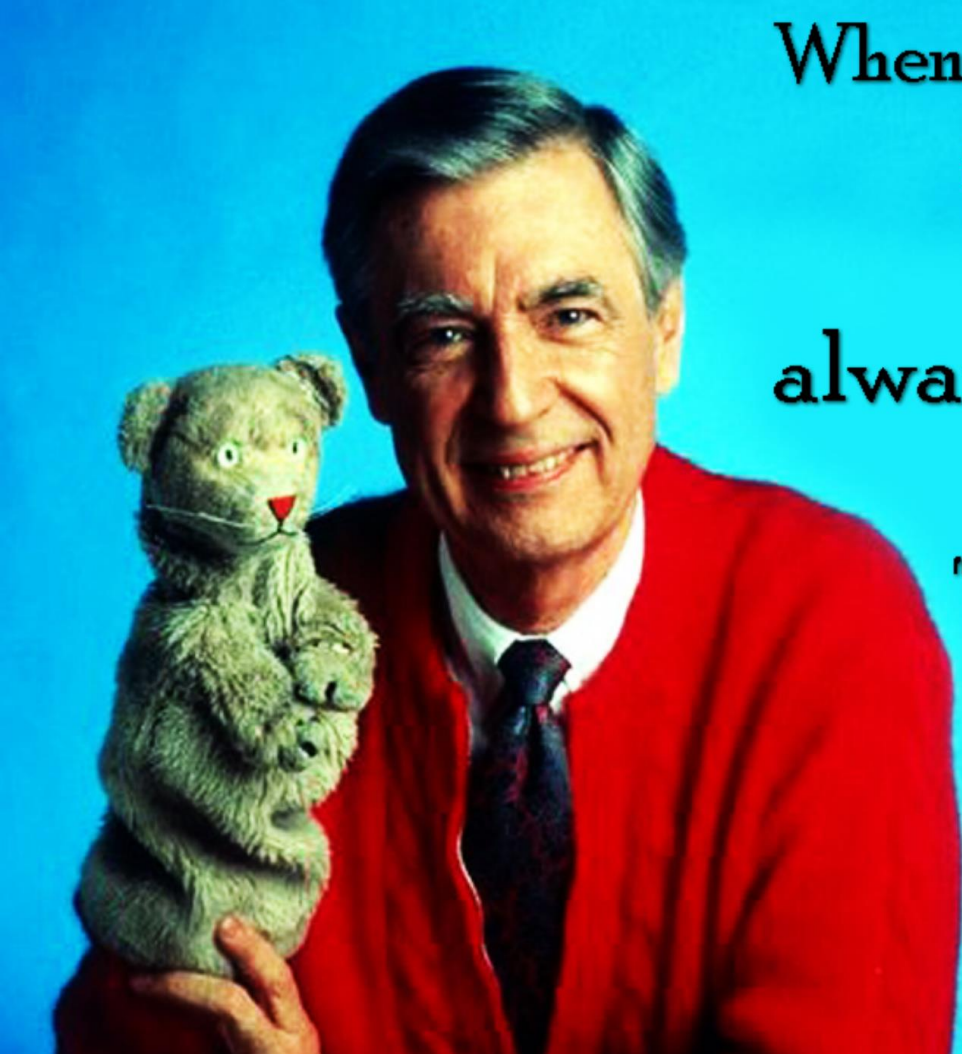
## Flattening the curve



SOURCE: CDC



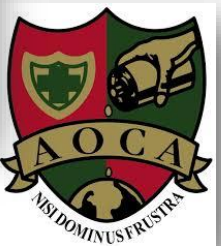
# Seek Opportunities to be a Helper:

A photograph of Fred Rogers, an older man with grey hair, smiling and holding a green teddy bear. He is wearing a red cardigan over a white shirt and a dark tie. The background is a solid blue color.

When I was a boy and I would see scary things  
in the news, my mother would say to me,  
"Look for the helpers. You will  
always find people who are helping."

To this day, especially in times of  
"disaster," I remember my mother's words  
and I am always comforted by realizing  
that there are still so many helpers –  
so many caring people in this world.

*~Fred Rogers*





# Recommended Resources:

- CDC COVID 19 Resource Page
  - <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
- ASA Coronavirus Resources
  - <https://www.asahq.org/about-asa/governance-and-committees/asa-committees/committee-on-occupational-health/coronavirus>
- Donning and Doffing
  - [https://ucalgary.ca/codeblue/files/codeblue/ppe-checklist\\_0.pdf](https://ucalgary.ca/codeblue/files/codeblue/ppe-checklist_0.pdf)
- JAMA Live Coronavirus Italy
  - <https://www.youtube.com/watch?v=TKS1pahoPRU>



# Recommended Resources:

Can J Anesth/J Can Anesth  
<https://doi.org/10.1007/s12630-020-01617-4>



## CORRESPONDENCE

### What we do when a COVID-19 patient needs an operation: operating room preparation and guidance

Lian Kah Ti, MBBS, MMed, FAMS • Lin Stella Ang, MBBS, MMed, FANZCA, EDIC •  
Theng Wai Foong, MBBS, MMed • Bryan Su Wei Ng, MBBS, FRCA

BJA

British Journal of Anaesthesia, xxx (xxx): xxx (xxxx)

doi: 10.1016/j.bja.2020.02.008

Advance Access Publication Date: xxx

Editorial

## EDITORIAL

### Outbreak of a new coronavirus: what anaesthetists should know

Philip W. H. Peng<sup>1,\*</sup>, Pak-Leung Ho<sup>2</sup> and Susy S. Hota<sup>3,4</sup>

<sup>1</sup>Department of Anesthesiology and Pain Medicine, University Health Network, University of Toronto, Toronto, ON, Canada, <sup>2</sup>Department of Microbiology and Carol Yu Centre for Infection, University of Hong Kong, Hong Kong, <sup>3</sup>Infection Prevention and Control Department, University Health Network, Toronto, ON, Canada and <sup>4</sup>Department of Medicine, University of Toronto, Toronto, ON, Canada

\*Corresponding author. E-mail: [Philip.peng@uhn.ca](mailto:Philip.peng@uhn.ca)

**Keywords:** airway management; coronavirus; COVID-19; infection prevention and control; MERS; 2019-nCoV; SARS

Supplementary Material [ESM]: Understanding the

avoid repeated instrumentation of the airway, including

using a video-laryngoscopy such as bispectral index be requested but need use.

The Figure details OR team member. F clearing the route from (ICU) to the OR, including ward to the OR with personal protective equipment fitting N95 mask, gown, and boot covers a dedicated transport aerosolization, the endotracheal tube clear



## Guide to Understanding the 2019 Novel Coronavirus

Aditya Shah, MBBS; Rahul Kashyap, MBBS, MBA; Prithvi Tosh, MD; Priya Sampathkumar, MD; and John C. O'Horo, MD, MPH

**Electronic supplementary material** The online version of this article (<https://doi.org/10.1007/s12630-020-01617-4>) contains supplementary material, which is available to authorized users.

L. K. Ti, MBBS, MMed, FAMS (✉)  
Department of Anaesthesia, National University Health System,  
Singapore, Singapore  
e-mail: [lian\\_kah\\_ti@nuhs.edu.sg](mailto:lian_kah_ti@nuhs.edu.sg)

Department of Anaesthesia, Yong Loo Lin School of Medicine,  
National University of Singapore, Singapore, Singapore

L. S. Ang, MBBS, MMed, FANZCA, EDIC  
T. W. Foong, MBBS, MMed • B. S. W. Ng, MBBS, FRCA  
Department of Anaesthesia, National University Health System,  
Singapore, Singapore

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Can J Anesth/J Can Anesth  
<https://doi.org/10.1007/s12630-020-01591-x>



## REVIEW ARTICLE/BRIEF REVIEW

### Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019-nCoV) patients Directives concrètes à l'intention des équipes de soins intensifs et d'anesthésiologie prenant soin de patients atteints du coronavirus 2019-nCoV

Randy S. Wax, MD, MEd, FRCPC, FCCM • Michael D. Christian, MD, MSc (Public Health),  
FRCPC, FCCM

## COMMENTARY

