



ELSEVIER

Resources for Responding to COVID-19

For Healthcare Professionals in the
Inpatient Setting



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Introduction

This lesson will provide you with the most current resources for responding to COVID-19, including:

- An Overview
- Care of the Patient in the Inpatient Setting
 - Adult
 - Pediatric
 - Special Considerations—Maternal/Newborn
- Discontinuation of Isolation and Discharge
- Patient Educational Materials
- Additional Resources

To meet your informational needs during this evolving situation, much of the content will be delivered as links to international and national resources that are continually updated.

**This section provides an overview of
COVID-19, including:**

- Background**
- Symptoms**
- Diagnostic Testing**
- Epidemiology and Pathophysiology**

Background

COVID-19 is a novel coronavirus that is thought to have originated in animals, possibly bats, and was first identified on December 8, 2019, in Wuhan, Hubei Province, China. It has been detected worldwide and on March 11, 2020, the World Health Organization declared COVID-19 a pandemic.

Click below for more background information from the:

- [World Health Organization \(WHO\)](#)
- [Centers for Disease Control and Prevention \(CDC\)](#)

Click the hyperlink to view the latest [Situation Report](#) from the WHO.

Click the hyperlink to view the [Coronavirus Interactive Map](#) from Johns Hopkins University & Medicine.

Symptoms

Symptoms may appear up to 14 days after exposure and include:

- Fever
- Dry cough
- Shortness of breath

Click the hyperlinks for more information on symptoms of COVID-19 from the [WHO](#) and [CDC](#).

Click [here](#) to view the Clinical Characteristics of Coronavirus Disease 2019 in China.



Image courtesy of the Centers for Disease Control and Prevention

Diagnostic Testing

The criteria for testing and the availability of tests vary greatly throughout the affected areas. Please contact your local health department for guidance.

Click [here](#) to view the CDC's Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens from Persons for Coronavirus Disease 2019 (COVID-19).



Image courtesy of the Centers for Disease Control and Prevention

Diagnostic Testing–Skills

Click the links below to view Elsevier's Specimen Collection Skills:

- [Specimen Collection: Nose and Throat/Animation of Skill](#)
- Specimen Collection: Sputum
 - [Adult/Animation of Skill](#)
 - [Pediatric/Animation of Skill](#)



Image courtesy of the Centers for Disease Control and Prevention

Epidemiology and Pathophysiology

The latest research on the epidemiology and pathophysiology of COVID-19 may be found on [The Lancet's COVID-19 Resources Centre](#), including:

- [The epidemiology and pathogenesis of coronavirus disease \(COVID-19\) outbreak](#)
- [World Health Organization declares global emergency: A review of the 2019 novel coronavirus \(COVID-19\)](#)
- [Epidemiological characteristics of 2,143 pediatric patients with 2019 coronavirus disease in China](#)
- [Prediction of criticality in patients with severe COVID-19 infection using three clinical features: A machine learning-based prognostic model with clinical data in Wuhan](#)
- [Pathological findings of COVID-19 associated with acute respiratory distress syndrome](#)
- [Chest CT findings in coronavirus disease-19 \(COVID-19\): Relationship to duration of infection](#)
- [Medical countermeasures analysis of 2019-nCoV and vaccine risks for antibody-dependent enhancement \(ADE\)](#)



This section provides resources for care of the patient in the inpatient setting, including:

- Infection Prevention and Control**
- Personal Protective Equipment**
- Hand Hygiene**
- Inpatient Treatment/Medications**
- Discontinuation of Isolation and Discharge**

Infection Prevention and Control

Practice infection prevention and control recommendations to reduce the transmission of COVID-19:

- [WHO](#)
- [CDC](#)

[Frequently Asked Questions \(FAQ\) About Infection Prevention and Control](#)

Elsevier's Isolation Precautions Skills:

- [Isolation Precaution: Airborne](#)
- [Isolation Precautions: Droplet](#)
- [Isolation Precautions: Contact/Animation](#)

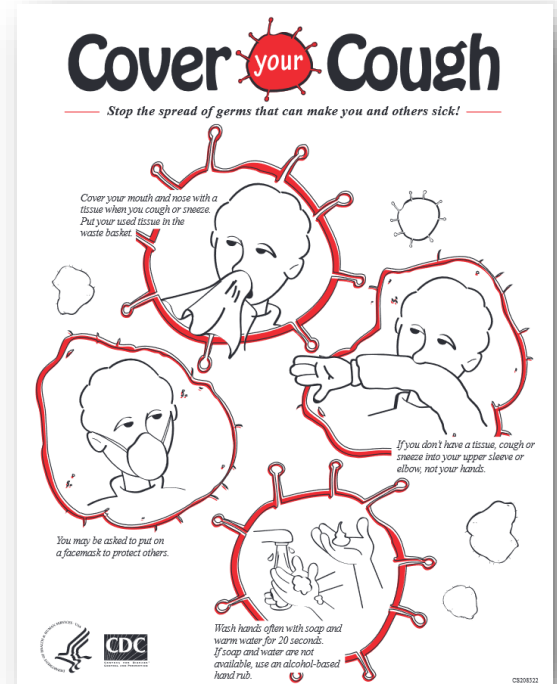


Image courtesy of the Centers for Disease Control and Prevention

Personal Protective Equipment

Healthcare professionals are the greatest resource in responding to COVID-19. It is imperative that personal protective equipment (PPE) be used as recommended.

Frequently Asked Questions About PPE

Elsevier's PPE Skill: [Isolation Precautions: Airborne](#)

**SEQUENCE FOR PUTTING ON
PERSONAL PROTECTIVE EQUIPMENT (PPE)**

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator



3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit



4. GLOVES

- Extend to cover wrist of isolation gown



**USE SAFE WORK PRACTICES TO PROTECT YOURSELF
AND LIMIT THE SPREAD OF CONTAMINATION**

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene



Image courtesy of the Centers for Disease Control and Prevention

PPE–Limited Supply

The CDC has developed [Strategies for Optimizing the Supply of N95 Respirators](#) in the event that PPE supplies are limited:

- [Conventional Capacity Strategies](#)
- [Contingency Capacity Strategies](#)
- [Crisis/Alternate Strategies](#)

In addition, the United States Food and Drug Administration (FDA) has outlined:

- [Emergency Use Authorizations for COVID-19](#)
- [Surgical Mask and Gown Conservation Strategies](#)

Hand Hygiene

Effective hand hygiene will reduce the transmission of COVID-19 to:

- Ourselves
- Our families
- Our coworkers
- Our patients
- Our communities



Media credit: Elsevier Clinical Skills. (2020). Hand hygiene (animation). Retrieved March 18, 2020, from www.elsevier.com/solutions/clinical-skills.

Hand Hygiene–Resources

Click [here](#) for the WHO's hand hygiene tools and resources, including:

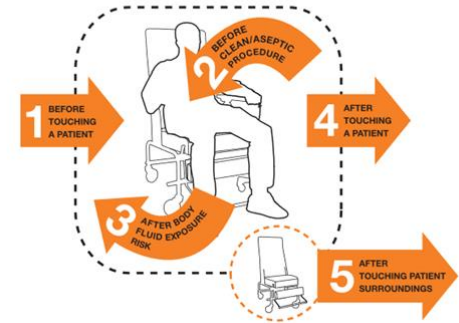
- [Hand Hygiene Self-Assessment Framework](#)
- [Guide to Hand Hygiene Improvement](#)
- [Hand Hygiene–Observation Tool](#)
- [Your 5 Moments for Hand Hygiene](#)
- [Sustaining Improvement](#)

Hand hygiene resources from the CDC:

- [Hand Hygiene in Healthcare Settings](#)
- [Hand Hygiene Interactive Education](#)

[Elsevier's Hand Hygiene Skill/Video](#)

Your 5 Moments for Hand Hygiene



1	BEFORE TOUCHING A PATIENT	WHEN?	Clean your hands before touching a patient when approaching her/him.
		WHY?	To protect the patient against harmful germs carried on your hands.
2	BEFORE CLEAN/ASEPTIC PROCEDURE	WHEN?	Clean your hands immediately before performing a clean/aseptic procedure.
		WHY?	To protect the patient against harmful germs, including the patient's skin, from entering her/his body.
3	AFTER BODY FLUID EXPOSURE RISK	WHEN?	Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
4	AFTER TOUCHING A PATIENT	WHEN?	Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.
5	AFTER TOUCHING PATIENT SURROUNDINGS	WHEN?	Clean your hands after touching any object or surface in the patient's immediate surroundings, when leaving – even if the patient has not been touched.
		WHY?	To protect yourself and the health-care environment from harmful patient germs.



World Health Organization
A World Without the Better Health Care

Patient Safety
A World Without the Better Health Care

SAVE LIVES
Clean Your Hands

Image courtesy of the World Health Organization

Inpatient Treatment–Adults

Click the links for the clinical management guidelines from the:

- [WHO](#)
- [CDC](#)

Elsevier's Adult Clinical Practice Guidelines:

- [Fever](#)
- [Anxiety](#)
- [Pneumonia](#)



Inpatient Treatment–Pediatrics

Click the links for the clinical management guidelines from the:

- [WHO](#)
- [CDC](#)

Elsevier's Pediatric Clinical Practice Guidelines:

- [Fever](#)
- [Anxiety](#)
- [Pneumonia](#)



Special Considerations—Maternal/Newborn

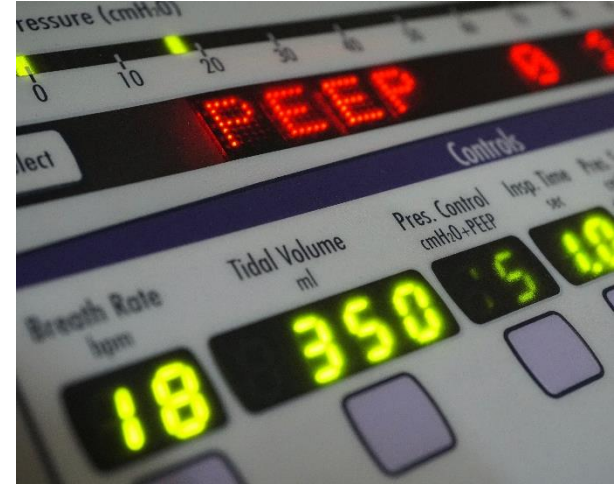
Click the links below for information when caring for maternal and newborn patients:

- [CDC: Interim Considerations for Infection Prevention and Control of Coronavirus Disease 2019 \(COVID-19\) in Inpatient Obstetric Healthcare Settings](#)
- [The American College of Obstetricians and Gynecologists: Practice Advisory: Novel Coronavirus 2019 \(COVID-19\)](#)
- [American Academy of Pediatrics: Experts discuss COVID-19 impact on children, pregnant women](#)



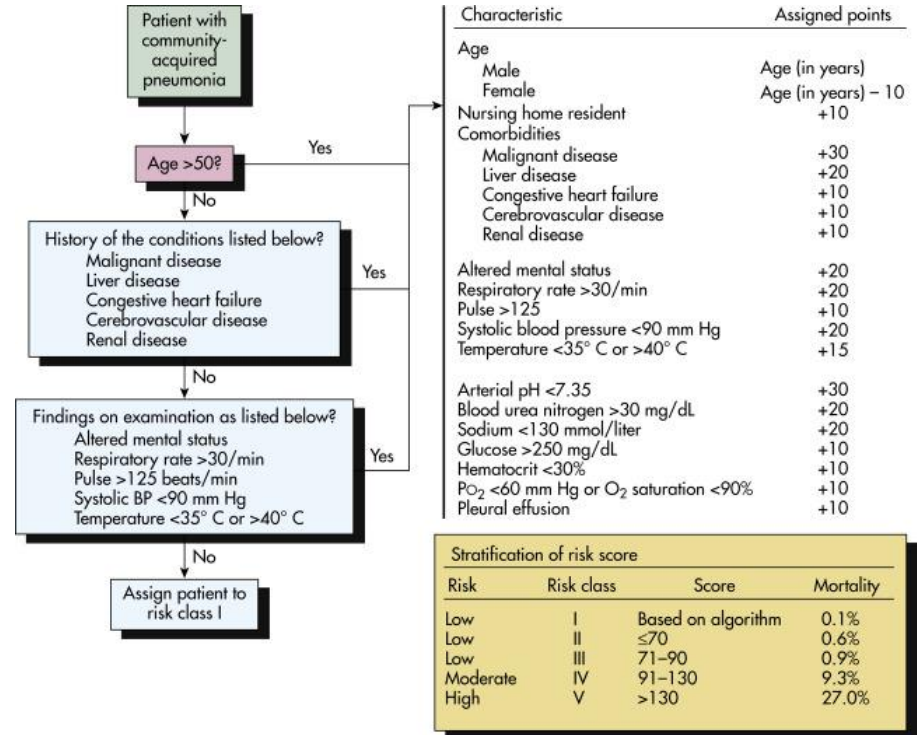
Inpatient Care Treatment–Limited Resources

Click the link to view the [United States Resource Availability for COVID-19](#) from the Society of Critical Care Medicine.



Signs of Deterioration

The Pneumonia Severity Index will help you assess patients for signs of deterioration.



Complications

Persons at risk for serious illness from COVID-19 include:

- Older adults
- Persons with serious chronic medical conditions, such as:
 - [Heart disease](#)
 - [Diabetes](#)
 - Lung disease

Click each link to learn more about the complications of COVID-19:

- [Pneumonia](#) and [Acute Respiratory Distress Syndrome](#) (ARDS)
- [Cardiovascular Disease](#)
- [Sepsis](#)



Investigational Medications

Medications that may be used in the treatment of COVID-19 include:

- [Hydroxychloroquine](#)
- [Lopinavir; Ritonavir](#)
- [Chloroquine](#)



Investigational Medications

Other investigational medications that may be considered for compassionate use include:

- [Fingolimod](#): Fingolimod in COVID-19
- [Remdesivir](#): Study to Evaluate the Safety and Antiviral Activity of Remdesivir (GS-5734™) in Participants with Severe Coronavirus Disease (COVID-19)
- Various interferon products
- Ribavirin

Click [here](#) for more information about investigational medications.



Discontinuation of Isolation and Discharge

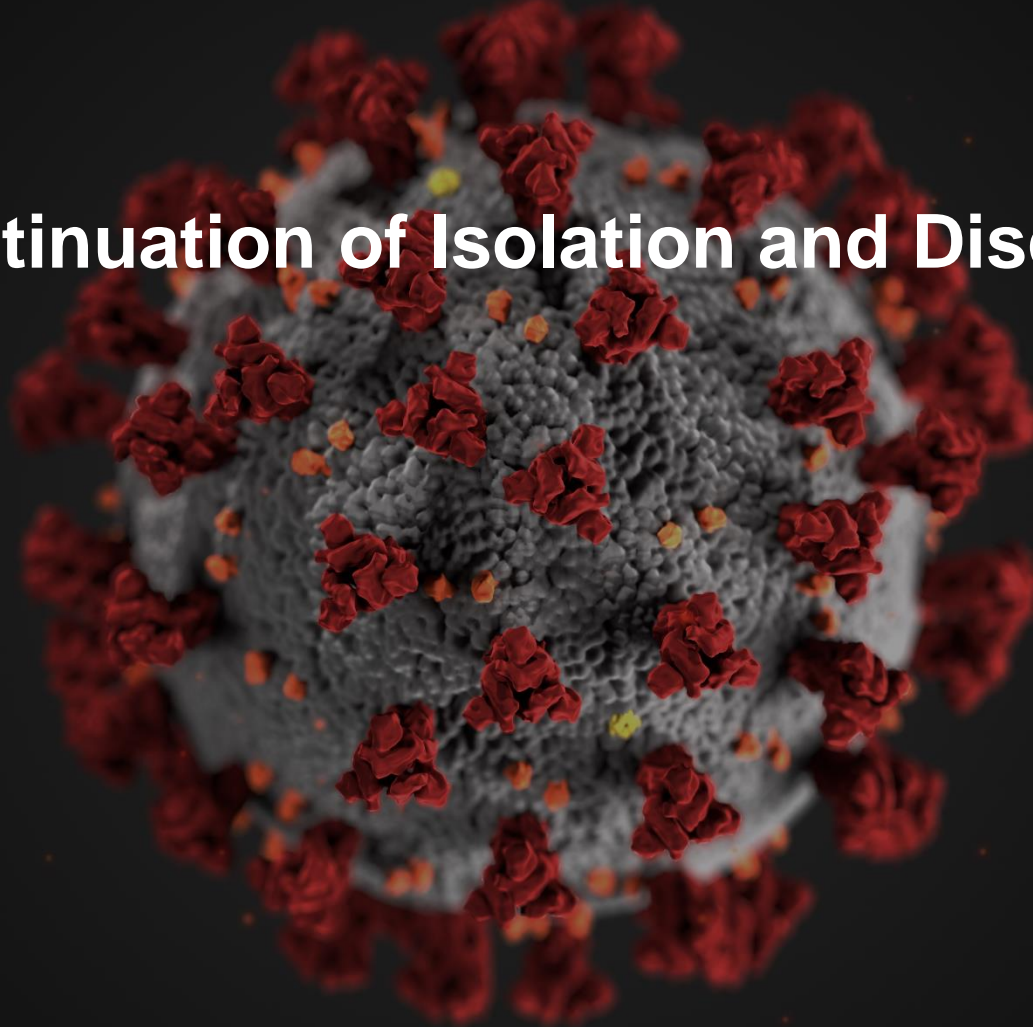


Image courtesy of the Centers for Disease Control and Prevention

Discontinuation of Isolation and Discharge

Click the links for guidance on discontinuing isolation and discharge of patients:

- CDC: [Interim Guidance for Discontinuation of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19](#)
- European Centre for Disease Prevention and Control: [Discharge criteria for confirmed COVID-19 cases—When is it safe to discharge COVID-19 cases from the hospital or end home isolation?](#)
- Infectious Disease Society of America: [De-isolating COVID-19 Suspect Cases: A Continuing Challenge](#)



Patient Educational Materials

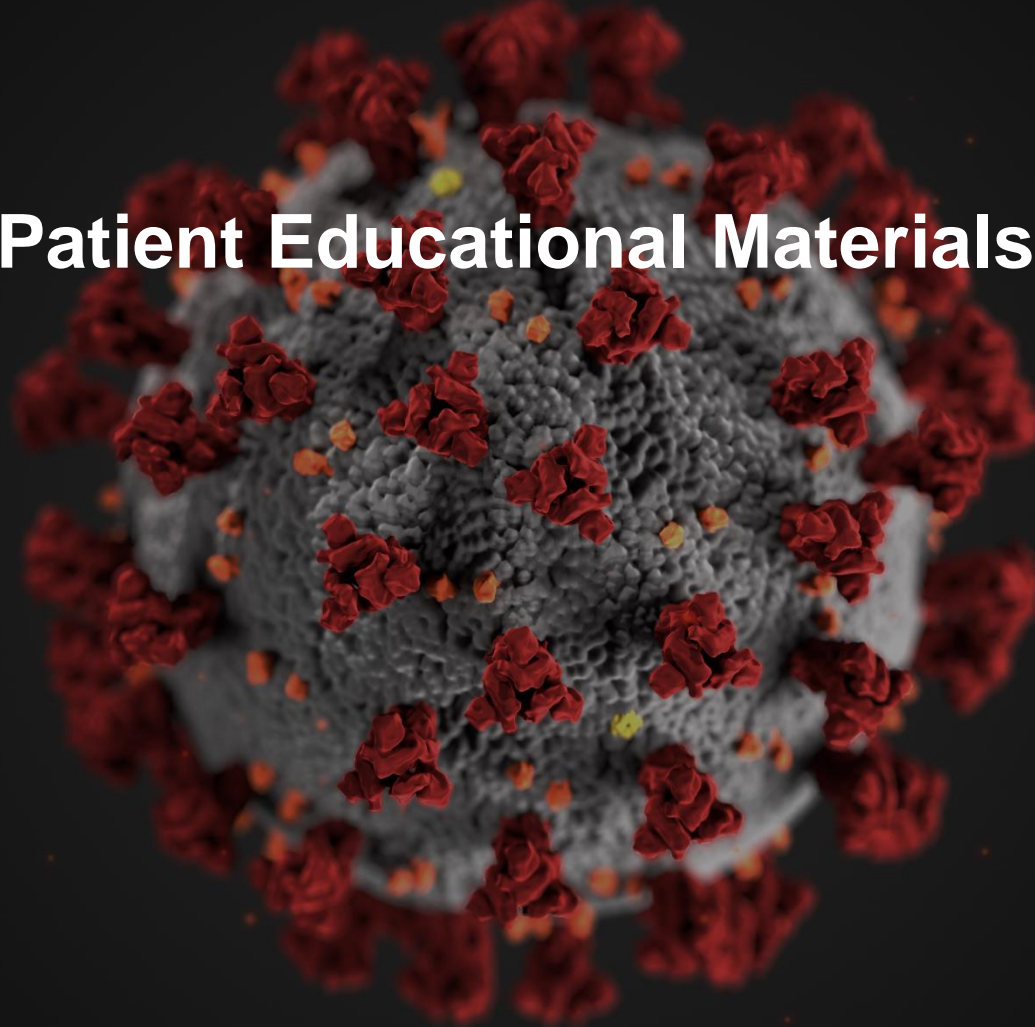


Image courtesy of the Centers for Disease Control and Prevention

Patient Educational Materials

- [COVID-19](#)
- [Infection Prevention in the Home](#)
- [Hand Washing](#)
- [Personal Hygiene](#)
- [Airborne Precautions](#)
- [Droplet Precautions](#)
- [Contact Precautions](#)
- [Body Fluid Exposure Information](#)
- [Preventing Body Fluid Exposure](#)

Additional Resources

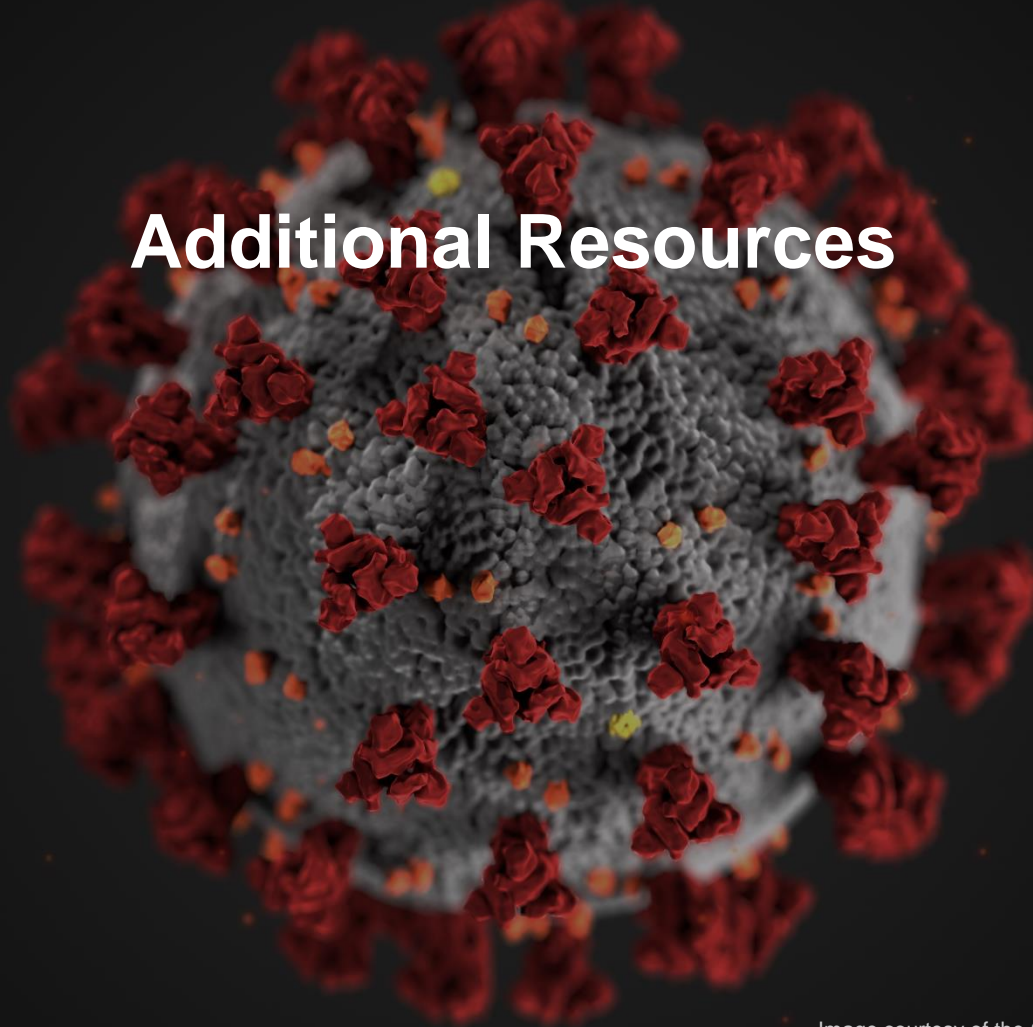


Image courtesy of the Centers for Disease Control and Prevention

Additional Resources

[World Health Organization: Coronavirus disease \(COVID-19\) outbreak](#)

[World Health Organization: Coronavirus Disease \(COVID-19\) R & D](#)

[World Health Organization: COVID-19 Courses](#)

[Centers for Disease Control and Prevention: Coronavirus Disease 2019 \(COVID-19\): Information for Healthcare Professionals](#)

[United States National Institutes of Health: Coronavirus Disease 2019 \(COVID-19\)](#)

[United States National Institutes of Health: LitCovid](#)

[United States National Institutes of Health: U.S. National Library of Medicine: ClinicalTrials.gov](#)

[United States Department of Labor: Occupational Safety and Health Administration: COVID-19](#)

[American Medical Association: COVID-19 \(2019 novel coronavirus\) Resource Center for Physicians](#)

[Infectious Disease Society of America: COVID-19: Resource Center](#)

Additional Resources (continued)

[International Association of STM: Publishers: Coronavirus \(COVID-2019\)](#)

Cochrane Library:

- [Coronavirus \(COVID-19\): Infection Control and Prevention Measures](#)
- [Coronavirus \(COVID-19\): Evidence Relevant to Critical Care](#)

[The Lancet: COVID-19 Resource Centre](#)

[Cell Press: Coronavirus Resource Hub](#)