

**CREATING A
RESPIRATORY
PROTECTION
PROGRAM**

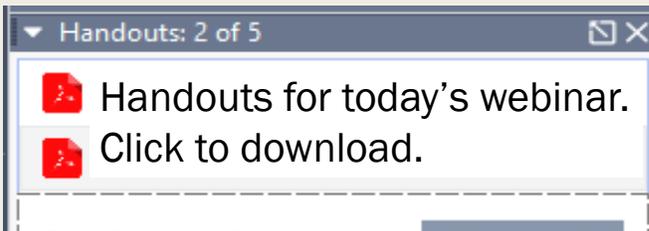
Updated Information

Image courtesy of the CDC

1

Good to Know

- Continuing education documents only for the live webinar will be provided by Monday April 20, 2020.
- The webinar is being recorded and will be on the [TMC COVID - 19 Resource Page](#)
- Handouts are located on the right side of your screen



- Q and A will be held during the last 15 minutes of the webinar

2

A portrait of Karen Gregory RN, a woman with short grey hair, wearing glasses and a dark top with a gold cross necklace.

Disclaimer

- Karen Gregory RN is an employee of Total Medical Compliance.
- She is a Hu-Friedy Key Opinion Leader, a consultant for SciCan and serves on the OSAP Board of Directors.
- This does not serve as legal or medical advice.

3

Objectives

- Discuss the difference between a ASTM level 2 and level 3 mask.
- Recognize different levels of respirators.
- Discuss the elements of a respiratory protection plan.
- Explain two types of fit testing processes.

4

CDC IC Update – April 13, 2020

- Source control for everyone entering a healthcare facility (e.g., healthcare personnel, patients, visitors), regardless of symptoms.
- Everyone entering the facility to wear a cloth face covering (if tolerated) while in the building, regardless of symptoms.
 - *Facemasks, if available, should be reserved for HCP.*
- Actively screen healthcare workers for fever and symptoms of COVID-19 before they enter the healthcare facility.
 - *As part of source control efforts, HCP should wear a facemask at all times while they are in the healthcare facility.*
 - *To avoid risking self-contamination, HCP should consider continuing to wear their respirator or facemask ([extended use](#)) instead of intermittently switching back to their cloth face covering.*

5

CDC Dental Update: April 7, 2020

- If a patient arrives at your facility and is suspected or confirmed to have COVID-19, take the following actions:
- Defer dental treatment
 - *Give the patient a mask to cover his or her nose and mouth.*
 - *If not acutely sick, send the patient home and instruct the patient to [call a medical provider](#).*
 - *If acutely sick (for example, has trouble breathing) refer the patient to a medical facility.*
- Emergency dental care is medically necessary for a patient who has, or is suspected of having COVID-19, [Airborne Precautions](#) (an isolation room with negative pressure relative to the surrounding area and use of an N95 filtering disposable respirator for persons entering the room) should be followed.
 - *Dental treatment should be provided in a hospital or other facility that can treat the patient using the appropriate precautions.*

6

CDC Dental Update: April 7, 2020

- Avoid aerosol generating procedures whenever possible. Avoid the use of dental handpieces and the air-water syringe. Use of ultrasonic scalers is not recommended during this time.
- Prioritize minimally invasive/atraumatic restorative techniques (hand instruments only).
- If aerosol generating procedures are necessary for emergency care, use four-handed dentistry, high evacuation suction and dental dams to minimize droplet spatter and aerosols.

7

CDC Dental Update: April 7, 2020

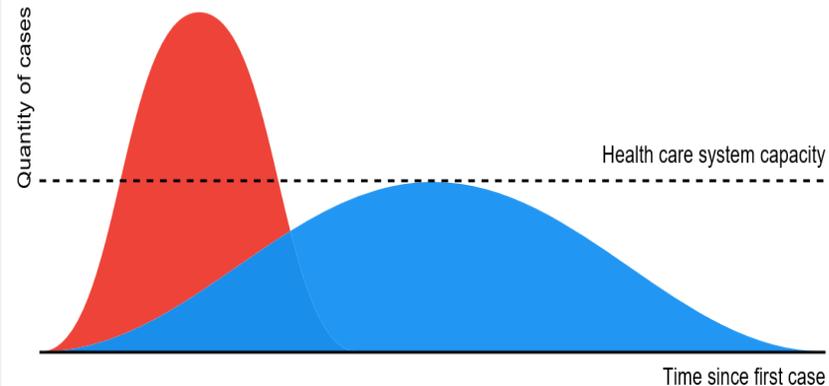
- If available, wear gloves, a gown, eye protection (i.e., goggles or a disposable/reusable face shield that covers the front and sides of the face), and an N95- or higher-level respirator during emergency dental care for patients without COVID-19.
 - *Disposable respirators should be removed and discarded after exiting the patient's room or care area.*
 - *Reusable eye protection must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use. Disposable eye protection should be discarded after use.*
 - *Change gown if it becomes soiled. Remove and discard the gown in a dedicated container for waste or linen before leaving the patient room or care area. Disposable gowns should be discarded after use. Cloth gowns should be [laundered](#) after each use.*
- **If the minimally acceptable combination of a surgical mask and a full-face shield is not available, do not perform any emergency dental care. Refer the patient to a clinician who has the appropriate PPE.**

8

Flatten the Curve

Global, Inclusive, Realtime

Updated with emerging information, and open sourced in as many languages as possible.



9

Clinical Presentation



- Incubation period ~5 day (2 – 14 days)
- Symptoms at onset
 - Fever (83–99%)
 - Cough (59–82%)
 - Fatigue (44–70%)
 - Anorexia (40–84%)
 - Shortness of breath (31–40%)
 - Sputum production (28–33%)
 - Myalgias (11–35%)

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html#Asymptomatic>

10

Clinical Course

- Mild to moderate (mild symptoms up to mild pneumonia): 81%
- Severe (dyspnea, hypoxia, or >50% lung involvement on imaging): 14%
- Critical (respiratory failure, shock, or multiorgan system dysfunction): 5%

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html#Asymptomatic>

11

CDC Director Interview Excerpts

- Dr. Robert Redfield
- One of the [pieces of] information that we have pretty much confirmed now is that a significant number of individuals that are infected actually remain asymptomatic. That may be as many as 25%.
- And finally, of those of us that get symptomatic, it appears that we're shedding significant virus in our oropharyngeal compartment, probably up to 48 hours before we show symptoms.

<https://www.npr.org/sections/health-shots/2020/03/31/824155179/cdc-director-on-models-for-the-months-to-come-this-virus-is-going-to-be-with-us>

12

Mode of Transmission

- Person-to-person transmission
- Primarily via respiratory droplets produced when the infected person coughs or sneezes.
 - Droplets can land in the mouths, noses, or eyes of people who are nearby or possibly be inhaled into the lungs of those who are close by.
- The contribution of small particles called aerosols or droplets to disease transmission is currently uncertain.

13

scientists in *The New England Journal of Medicine*. The scientists found that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was detectable in aerosols for up to three hours, up to four hours on copper, up to 24 hours on cardboard and up to two to three days on plastic and stainless steel. The results provide key information about the stability of SARS-CoV-2, which causes COVID-19 disease, and suggests that people may acquire the virus through the air and after touching contaminated objects. The study

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Turning Discovery Into Health

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COVID-19 is an emerging, rapidly evolving situation.

Get the latest public health information from CDC: <https://www.coronavirus.gov>
Get the latest research information from NIH: <https://www.nih.gov/coronavirus>

Home » News & Events » News Releases

NEWS RELEASES

Tuesday, March 17, 2020

New coronavirus stable for hours on surfaces

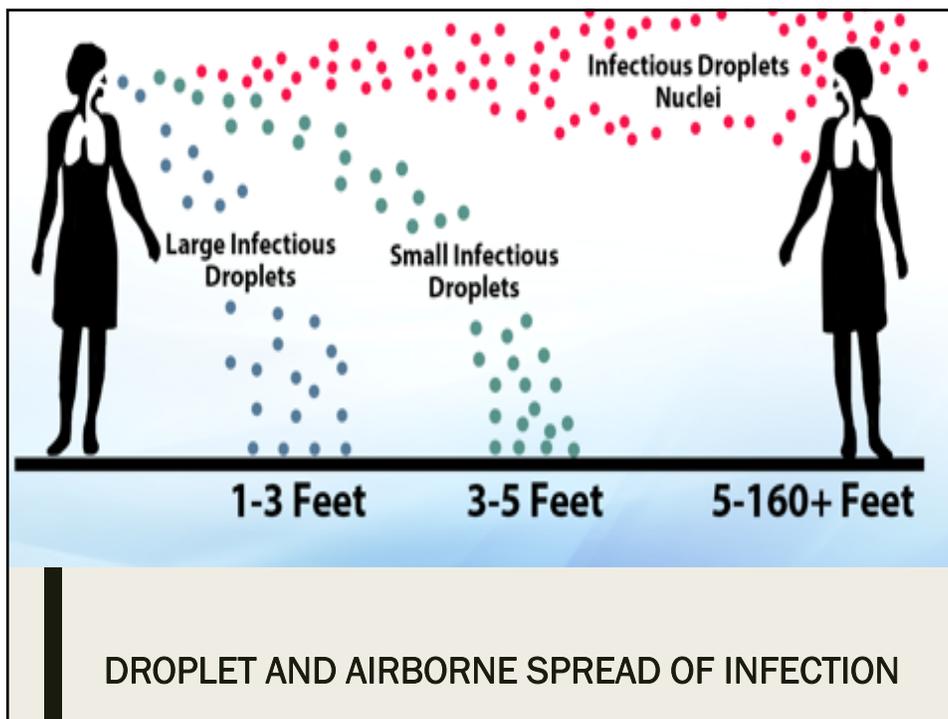
SARS-CoV-2 stability similar to original SARS virus.

Institute/Center
National Institute of Allergy and Infectious Diseases (NIAID)

Contact

<https://www.nih.gov/news-events/news-releases/new-coronavirus-stable-hours-surfaces>

14



15

OSHA Guidance on Preparing Workplaces for COVID -19

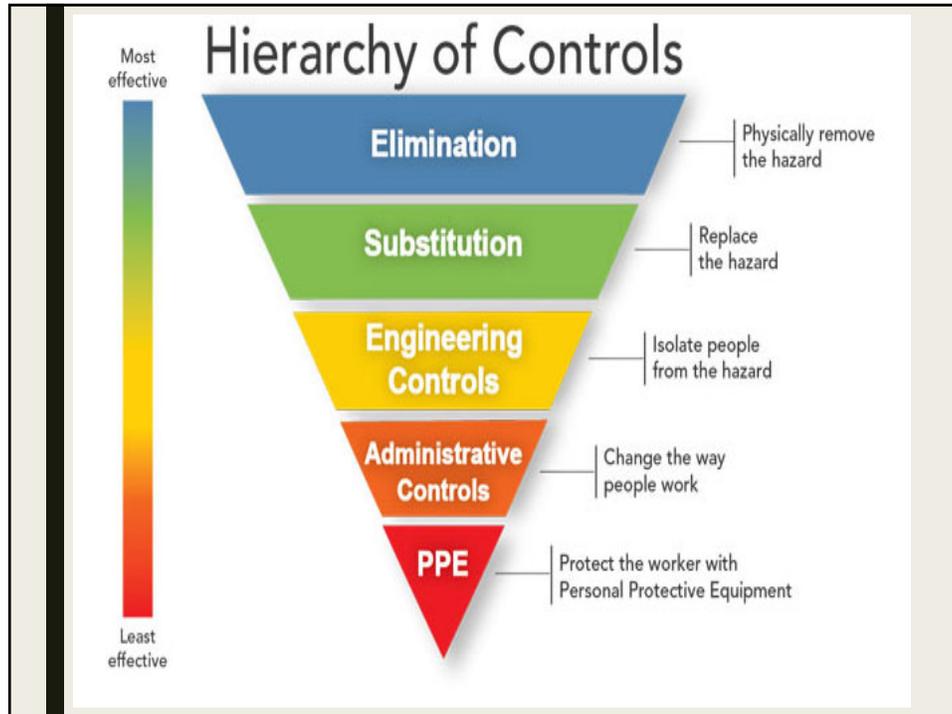
Very High Exposure Risk

Very high exposure risk jobs are those with high potential for exposure to known or suspected sources of COVID-19 during specific medical, postmortem, or laboratory procedures. Workers in this category include:

- Healthcare workers (e.g., doctors, nurses, dentists, paramedics, emergency medical technicians) performing aerosol-generating procedures (e.g., intubation, cough induction procedures, bronchoscopies, some dental procedures and exams, or invasive specimen collection) on known or suspected COVID-19 patients.

Workers, including those who work within 6 feet of patients known to be, or suspected of being, infected with SARS-CoV-2 and those performing aerosol-generating procedures, need to use respirators:

16



17

Workplace Protections - Workers

- Workers stay at home when showing signs of illness
- Only workers essential for patient care
- Stagger shifts to increase physical distance of workers
- Check temperatures of healthcare workers prior to entry to workplace
- Discourage workers from sharing equipment such as desk, phones or computers
- Do not require a healthcare provider's note for return to work

18

Workplace Protections - Patients

- Reduce number of patients being seen
- Have patients wait in the car if possible
- Allow only the patient to enter the practice
- Check temperatures PRIOR to patient entry in to practice
- Remove magazines/toys from Lobby
- Reducing face-to-face HCP encounters with patients
 - *Maximizing use of telemedicine*

19

Triage – Advance and Arrival

Emergent procedures only at this time

- Contact patients in advance for screening
- Consider rescheduling of patients with positive responses to screening criteria
- Consider notice on website encouraging sick patients to reschedule appointments OR to contact the office prior to arrival
- Place notification on entry to practice or facility

20

From the GDA

- Fever
- Currently has a cough or shortness of breath
- History of significant chronic illness or compromised immune system
- You or a family member are considered high-risk
- You or a family member have traveled to a location with a level 3 travel health notice
- Airline travel in the past 2 weeks
- Previously asked to self-isolate or self-quarantine
- Close contact to an individual diagnosed with COVID-19 infection

21



22

Contact your local or state health department
 Healthcare providers should **immediately** notify their [localexternal icon](#) or [stateexternal icon](#) health department in the event of the identification of a PUI for COVID-19. When working with your local or state health department check their available hours.

23

<p>STOP DROPLET PRECAUTIONS STOP</p> <p>EVERYONE MUST: Clean their hands, including before entering and when leaving the room.</p>  <p>Make sure their eyes, nose and mouth are fully covered before room entry.</p>  <p>or</p>  <p>Remove face protection before room exit.</p> 	<p>STOP AIRBORNE PRECAUTIONS STOP</p> <p>EVERYONE MUST:</p>  <p>Clean their hands, including before entering and when leaving the room.</p>  <p>Put on a fit-tested N-95 or higher level respirator before room entry.</p>  <p>Remove respirator after exiting the room and closing the door.</p>  <p>Door to room must remain closed.</p> 	<p>STOP CONTACT PRECAUTIONS STOP</p> <p>EVERYONE MUST:</p>  <p>Clean their hands, including before entering and when leaving the room.</p> <p>PROVIDERS AND STAFF MUST ALSO:</p>  <p>Put on gloves before room entry. Discard gloves before room exit.</p>  <p>Put on gown before room entry. Discard gown before room exit.</p> <p>Do not wear the same gown and gloves for the care of more than one person.</p>  <p>Use dedicated or disposable equipment. Clean and disinfect reusable equipment before use on another person.</p> 
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TRANSMISSION-BASED PRECAUTIONS

24



25

COVID-19 Personal Protective Equipment (PPE) for Healthcare Personnel

Preferred PPE – Use	N95 or Higher Respirator	Acceptable Alternative PPE – Use	Facemask
Face shield or gogglesN95 or higher respirator When respirators are not available, use the best available alternative, like a facemask.	Face shield or gogglesFacemask N95 or higher respirators are preferred but facemasks are an acceptable alternative.
One pair of clean, non-sterile gloves		One pair of clean, non-sterile gloves	
Isolation gown	Isolation gown



cdc.gov/COVID19

26

Face Masks
Active Aloe, Vitamin C & Vitamin E
50 earloop masks with exclusive 3D features

Non-Sterile - Single Use
ASTM-F2100 Mask Performance Level 2

like *3M* Strong, Soft.

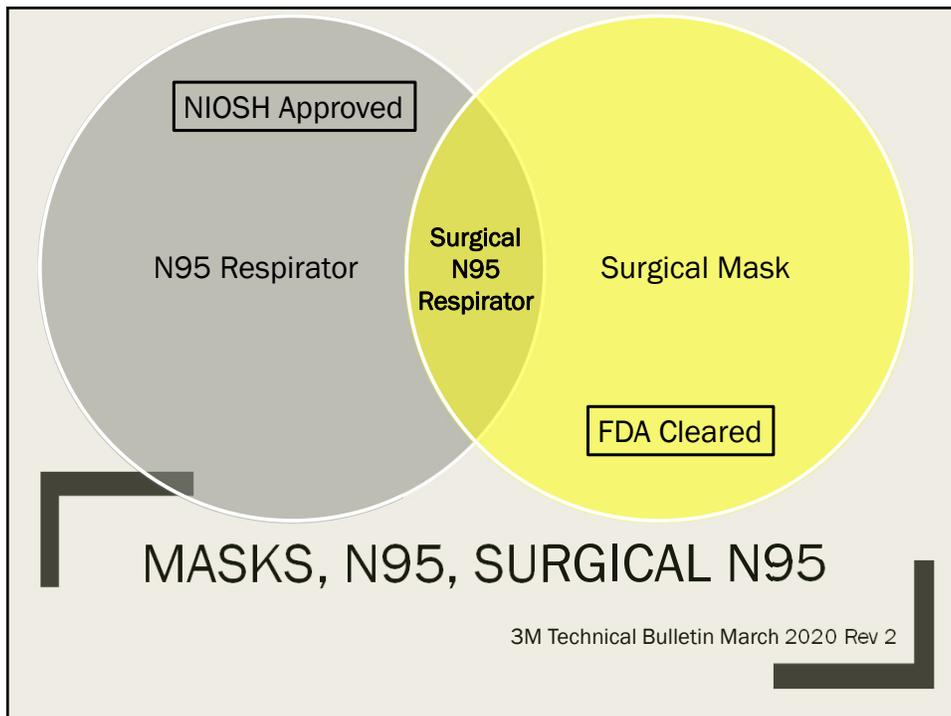
Soft Feeling
Revolutionary CoolGel™ gel-free inner layer provides a cool and long lasting soft feeling without bulky insulation.

Smooth Breathing
Breathable EZ™ filter delivers excellent breathing efficiency. Quad-Fold™ design provides 15% more breathing volume to prevent unpleasant moisture build-up.

Secure Protection
+99% Bacterial Filtration Efficiency (BFE)
+99% Particle Filtration Efficiency (PFE) @ 0.1 micron

- Gown
- Mask
 - Level II ASTM
 - N95 Respirator – aerosol generating procedures
- Eye protection
 - Goggles
 - Glasses with side shields
 - Face shield
- Gloves

27



28

Surgical Masks

- FDA reviews and clears; class II medical device.
- Different thicknesses and ability to protect from contact with liquids.
- Block large-particle droplets, splashes, sprays, or splatter.
 - *Protect the environment from the wearer*
- Reduce exposure of the worker's secretions.
- Do not provide complete protection because of the loose fit.

FDA: <https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/n95-respirators-and-surgical-masks-face-masks#s2>

29

ASTM - Standards Setting

Understanding ASTM Face Mask Performance Levels

FEATURE	EXPLANATION
Fluid Resistance	Mask resistance to penetration by synthetic blood under pressure (mmHg). Higher fluid resistance = Higher protection.
BFE - Bacterial Filtration Efficiency	Percentage of aerosol particles filtered at a size of 3 microns.
PFE - Submicron Particle Filtration Efficiency	Percentage of submicron particles filtered at 0.1 microns.
Delta P - Differential Pressure	Pressure drop across mask, or resistance to air flow in mmH ₂ O/cm ² . Greater resistance = better filtration but less breathability.
Flame Spread	Measures the flame spread of the mask material.

Crosstex

30

ASTM Mask Levels




ASTM LEVEL 3		LEVEL 3
High Fluid Resistance	160 mmHg	
Filtration Efficiency	BFE ≥ 98% PFE ≥ 98% @ 0.1 micron	
Breathability - Delta P	< 5.0 mm H ₂ O/cm ²	
Flame Spread	Class 1	
ASTM LEVEL 2		LEVEL 2
Moderate Fluid Resistance	120 mmHg	
Filtration Efficiency	BFE ≥ 98% PFE ≥ 98% @ 0.1 micron	
Breathability - Delta P	< 5.0 mm H ₂ O/cm ²	
Flame Spread	Class 1	
ASTM LEVEL 1		LEVEL 1
Low Fluid Resistance	80 mmHg	
Filtration Efficiency	BFE ≥ 95% PFE ≥ 95% @ 0.1 micron	
Breathability - Delta P	< 4.0 mm H ₂ O/cm ²	
Flame Spread	Class 1	
LOW PERFORMANCE		LEVEL 1
Surgical Molded Utility Mask		
Physical Barrier Only		
No LEVEL Performance Level **		
Filtration Efficiency	N/A	

**Unless mask manufacturer certifies mask meets ASTM performance Level 1

31

Examples of Mask Use - Dental

Level 1	Level 2	Level 3
<ul style="list-style-type: none"> Patient exams Op cleaning Impressions Lab work (trim/polish) Orthodontics 	<ul style="list-style-type: none"> Limited oral surgery Endodontics Prophy Restorative Sealants 	<ul style="list-style-type: none"> Complex oral surgery Crown prep Implant Periodontal surgery Ultrasonic scaling

Crosstex Secure Fit Mask Technology

32

NIOSH Approved Respirators

- N95: filter class that removes at least 95% of airborne particles during **“worst case”** testing using a “most-penetrating” sized particle during NIOSH testing
- 0.3 micron particle
- Respirator filter certification - 84 L/min, well above the typical 10 to 30 L/min breathing rates.

33

Levels/Types of Respirators

- Rated
 - *“N,” if they are Not resistant to oil*
 - *“R” if somewhat Resistant to oil*
 - *“P” if strongly resistant (oil Proof)*
- Filtering capacity
 - *N-95, N-99, and N-100*
 - *R-95, R-99, and R-100*
 - *P-95, P-99, and P-100*

34

N95 Respirator Healthcare

- Class II medical device
- NIOSH approved
- Tight seal over the mouth and nose
- Fit-testing
- Fluid resistant
- OSHA Respiratory Protection Standard, 29CFR 1910.134

FDA.gov

35

FDA Responds to CDC Request

- [Emergency Use Authorization](#) 3.28.20
- All disposable filtering facepiece respirators (FFRs) approved by the National Institute for Occupational Safety and Health (NIOSH)
- [Passed the manufacturers' recommended shelf-life, for use in healthcare settings by healthcare personnel](#)
- [Information on Respirator Use](#)

36

N95 Respirator - Industrial

- Tight seal over the mouth and nose
- Fit-testing required
- Not necessarily fluid resistant
- OSHA Respiratory Protection Standard, 29CFR 1910.134
- Regulated by:
 - *National Protective Technology Laboratory (NPPTL)*
 - *National Institute for Occupational Safety and Health (NIOSH)*

37

Low Supply N95 Respirators From Outside US

Respirators Approved Under Standards Used in Other Countries That Are Similar to NIOSH-Approved N95 Filtering Facepiece Respirators

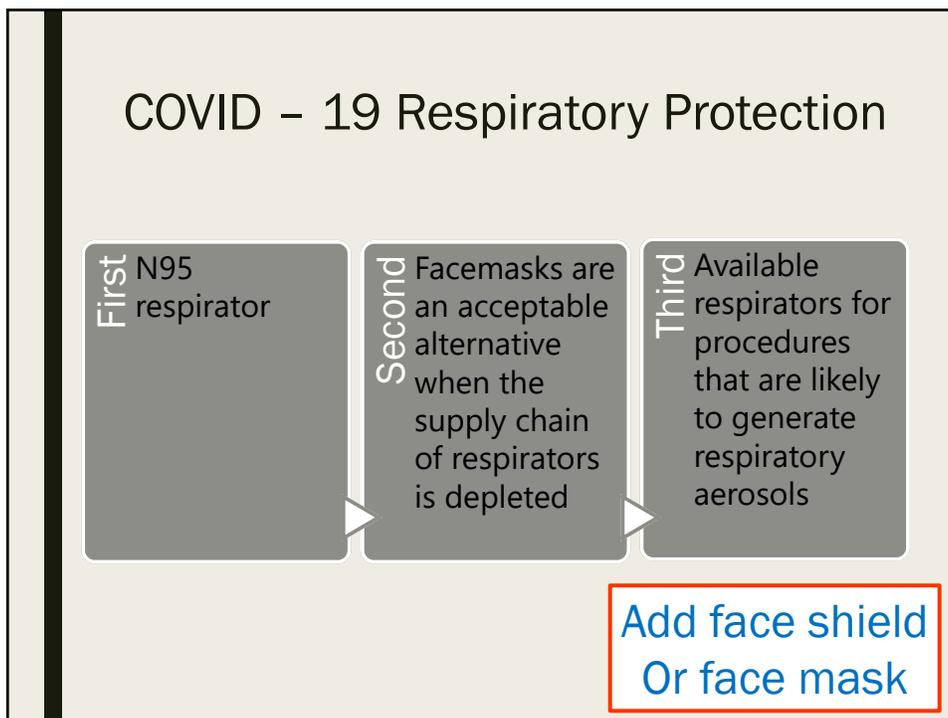
Country	Performance Standard	Acceptable Product Classification	May Be Used in Lieu of NIOSH-Certified Products Classified as
Australia	AS/NZS 1716:2012	P2	N95
		P3	N99 or lower
Brazil	ABNT/NBR 13698:2011	PFF2	N95
		PFF3	N99 or lower
People's Republic of China	GB 2626-2006 GB 2626-2019	KN/KP95	N95
		KN/KP100	N95
Europe	EN 149-2001	P2	N95

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html>

38

Surgical Mask	N95 Respirator	Surgical N95 Respirator
<ul style="list-style-type: none"> • Prevents release of contaminants into the air • Protects user from large droplets, sprays, splashes 	<ul style="list-style-type: none"> • Reduces wearer's exposure to particles including small particle aerosols and large droplets 	<ul style="list-style-type: none"> • Used in healthcare settings where sterile fields must be maintained • Barrier to splashes and sprays.

39



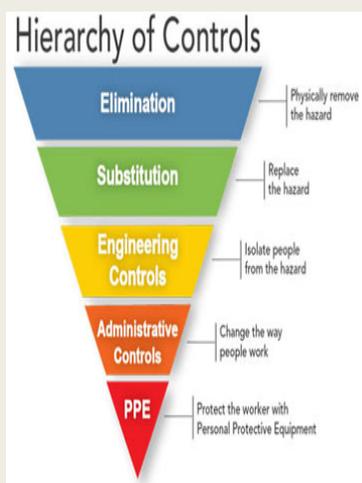
40

Respiratory Protection 1910. 134

- Applies:
 - *Exposed to a hazardous level of an airborne contaminant; or*
 - *Required by the employer to wear respirators; or*
 - *Permitted to wear respirators*
- Goal for our purposes is prevention of the transmission of aerosol transmissible diseases
 - *Measles, chicken pox, TB*
 - *? COVID - 19*
- Written Respiratory Protection Program (RPP)

41

Process



- Elimination/Substitution
 - *Patient identification*
- Engineering controls
 - *AIIR*
- Administrative
 - *Vaccination*
- Work Practice
 - *Resp Hygiene/Cough Etiquette*
- Respirators

42

Elements of the RPP

- Designation of a program administrator
- Policies and procedures
 - *Hazard evaluation and respirator selection*
 - *Medical evaluation of respirator wearers*
 - *Fit testing procedures for tight-fitting respirators*
 - *Procedures for proper use, storage, maintenance, repair, and disposal of respirators*
 - *Training*
 - *Program evaluation including consultation with employees*
 - *Recordkeeping*

43

Hazard Assessment

- Infectious agents – May not be able to quantify level of exposure OR know what level of exposure will cause infection to an individual
- Identify and evaluate potential exposures to infectious agents by task
- For novel or emerging infectious diseases guidance provided by CDC, OSHA and other agencies

44

Questions to Answer

- Who is exposed to suspected or confirmed COVID patients?
- Who will greet and triage patients
- Who will be involved in aerosol generating procedures?
- Who will be cleaning the room after the procedure?
- Will contracted workers be allowed in the facility to be involved in care?

45

Aerosol – Generating Procedures

- Some procedures performed on patient with known or suspected COVID-19 could generate infectious aerosols. In particular, procedures that are likely to induce coughing (e.g., sputum induction, open suctioning of airways) should be performed cautiously and avoided if possible.
- If performed, the following should occur:
 - HCP in the room should wear an N95 or higher-level respirator, eye protection, gloves, and a gown.
 - The number of HCP present during the procedure should be limited to only those essential for patient care and procedure support. Visitors should not be present for the procedure.
 - AGPs should ideally take place in an airborne infection isolation room (AIIR)
 - Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection control below.

<https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html>

46



Dental Guidance

- Caring for patients requiring [Transmission-Based Precautions](#) is not possible in most dental settings as they are not designed for or equipped to provide this standard of care.
- For example, most dental settings do not have airborne infection isolation rooms or single-patient rooms, do not have a respiratory protection program, and do not routinely stock N95 respirators.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html>

47




Photo Courtesy of Honeywell North



Respirator Selection

- Personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles
- Air purifying respirators filter out airborne particles
 - Disposable or filtering facepiece (FFP)
 - Reusable or elastomeric respirators
 - Powered air purifying respirators (PAPRs)

<https://www.cdc.gov/niosh/npptl/topics/respirators/factsheets/respsars.html>

48

Description

- **Particulate filtering facepiece respirators**
 - *Disposable*
 - *Commonly referred to as “N95s”*
 - *Filter out at least 95% of airborne particles during “worse case” testing using a “most-penetrating” sized particle*
- **Elastomeric respirators**
 - *Reusable respirators because the facepiece is cleaned and reused*
 - *Filter cartridges are discarded and replaced when they become unsuitable for further use*
- **Powered air-purifying respirators (PAPRs)**
 - *Battery-powered blower moves the airflow through the filters.*

49

Major Types of Respirators

Air-purifying respirators, which remove contaminants from the air.



Half mask/Dust mask
APF=10
Needs to be fit tested



Half mask (Elastomeric)
APF=10
Needs to be fit tested



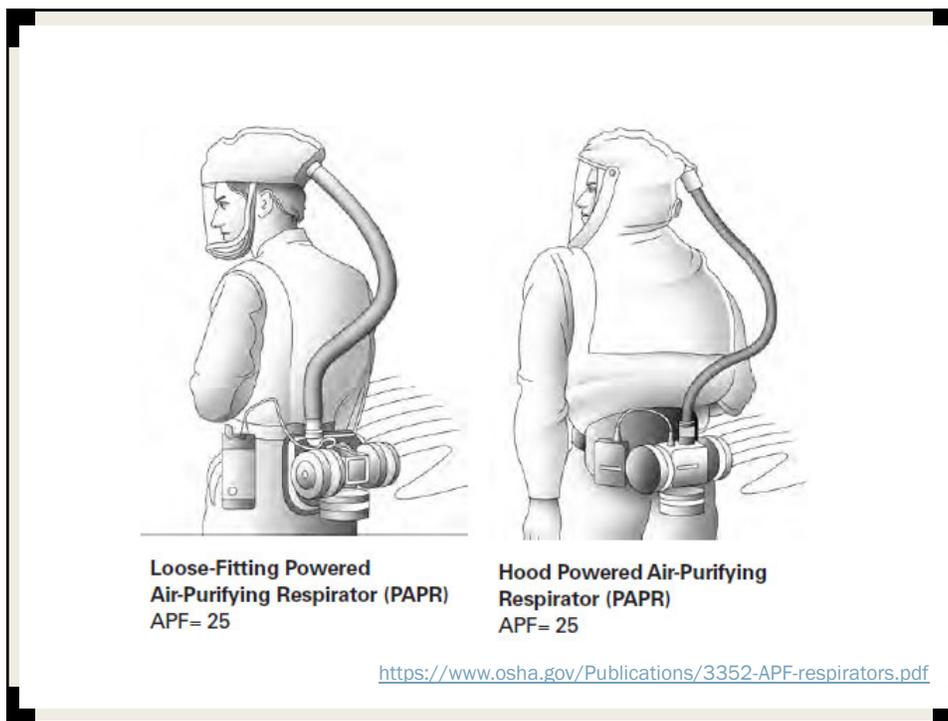
Full facepiece (Elastomeric)
APF=50
Needs to be fit tested

Original illustrations created by Attilis & Associates

Assigned protection factor

<https://www.osha.gov/Publications/3352-APF-respirators.pdf>

50



51

Counterfeit Respirators

Example of typical markings on filtering facepiece respirators.

Example of Exterior Markings:
Approval holder business name, a registered trademark manufacturer business name or an easily understood abbreviation. If privately labeled, the private label name or logo is here instead of the approval holder business name.

TC #XXXX-XXXX – TC-approval number

Model # XXXX – Model number

Lot # XXXX – Lot number (recommended)

NIOSH – NIOSH name in block letters or a NIOSH logo

Filter Designation – NIOSH filter series Alpha-numerical rating followed by filter efficiency level (ex. P100, N95)

EXTERIOR VIEW

52

Medical Evaluation

- Prior to fit testing, change in worker health status or job demand
- The medical evaluation
 - *physician or other licensed healthcare professional review responses to the questionnaire*
 - *"in-person" medical examination that obtains the same information*
- Confidential health information

OSHA INFOSHEET

Respirator Medical Evaluation Questionnaire

Respirators must be used in workplaces in which employees are exposed to hazardous airborne contaminants. When respiratory protection is required, employers must have a program as specified in OSHA's Respiratory Protection Standard (29 CFR 1910.134). Before fit testing, employers must conduct a medical evaluation. When using the mandatory medical questionnaire or an equivalent method. To facilitate these medical evaluations, this INFOSHEET includes the mandatory medical questionnaire to be used for these evaluations.

Medical Evaluation and Questionnaire Requirements

- The employer must ensure that a follow-up medical evaluation is provided by any employee who gives a positive response to any question among questions 1 through 8 in Part A Section 2, of Appendix C, or whose initial medical evaluation is not satisfactory. The employer must provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP. (See Paragraph (e)(3)(ii).)
- The employer must identify a physician or other licensed health care professional (PLHCP) to perform all medical evaluations using the medical questionnaire in Appendix C of the standard. The PLHCP must provide a medical evaluation that obtains the same information.

Statement on Respirator Use

1. Whether you are medically able to wear the respirator and if you have any medical limitations for using the respirator;
2. The need, if any, for you to have follow-up medical evaluations;
3. A statement that the doctor or licensed healthcare professional has provided you with a copy of their written recommendation.

https://www.osha.gov/video/respiratory_protection/medevaluations_transcript.html

OSHA INFOSHEET

Respirator Medical Evaluation Questionnaire

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Respiratory Protection Fit Testing Resource

- [Filtering Out Confusion](#)

The screenshot shows a NIOSH publication page. At the top left is the NIOSH logo with the tagline 'Promoting productive workplaces through safety and health research'. The main title is 'Filtering out Confusion: Frequently Asked Questions about Respiratory Protection, Fit Testing'. Below the title, it says 'DHHS (NIOSH) Publication Number 2018-129' and 'April 2018'. The main text begins with 'Over 3 million United States employees, in approximately 1.3 million workplaces, are required to wear respiratory protection. The Occupational Safety and Health Administration (OSHA) (29 CFR 1910.134) requires an annual respirator fit test to confirm the fit of any respirator that forms a tight seal on the wearer's face before it is used in the workplace. This ensures that users are receiving the expected level of protection by...'. On the right side, there is a small thumbnail image of a person wearing a respirator.

57

Training Required

- Why you need to use the respirator;
- What the respirator can and cannot do to protect you;
- How to properly inspect, put on and take off, and use your respirator;
- How to check the seal of your respirator (also called a "user seal check");
- How to use the respirator effectively in emergency situations, including situations in which the respirator doesn't work properly;
- How to recognize medical signs and symptoms that may limit or prevent you from using a respirator;
- How improper fit, usage, or maintenance can reduce your respirator's ability to protect you;
- What the procedures are for maintenance and storage of the respirator; and
- What the requirements are for federal OSHA's or your State OSHA's Respiratory Protection Standards.

58

Putting On The Respirator



Position the respirator in your hands with the nose piece at your fingertips.



Cup the respirator in your hand allowing the headbands to hang below your hand. Hold the respirator under your chin with the nosepiece up.



The top strap (on single or double strap respirators) goes over and rests at the top back of your head. The bottom strap is positioned around the neck and below the ears. Do not crisscross straps.



Place your fingertips from both hands at the top of the metal nose clip (if present). Slide fingertips down both sides of the metal strip to mold the nose area to the shape of your nose.

59

Checking Your Seal²



Place both hands over the respirator, take a quick breath in to check whether the respirator seals tightly to the face.



Place both hands completely over the respirator and exhale. If you feel leakage, there is not a proper seal.



If air leaks around the nose, readjust the nosepiece as described. If air leaks at the mask edges, re-adjust the straps along the sides of your head until a proper seal is achieved.



If you cannot achieve a proper seal due to air leakage, ask for help or try a different size or model.

60

Removing Your Respirator

DO NOT TOUCH the front of the respirator! It may be contaminated!

Remove by pulling the bottom strap over back of head, followed by the top strap, without touching the respirator.

Discard in waste container. WASH YOUR HANDS!

61

Isofluid FogFree®
fluid-resistant earloop face masks
White soft inner filter layer

OPTIMIZING SUPPLIES

MADE IN USA

Meets **ASTM F2100-11 Level 1**

40 Masks REF GICXB Blue

62

Surge Capacity

- [Conventional capacity](#): No change in the delivery of patient care.
- [Contingency capacity](#): May change daily practices but may not have any significant impact on the care delivered to the patient or the safety of healthcare personnel.
- [Crisis capacity](#): Are not commensurate with U.S. standards of care. These measures, or a combination of these measures, may need to be considered during periods of known facemask shortages.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/face-masks.html>

63

Assumptions

- Aware of facemask inventory and supply chain.
- Aware of facemask utilization rate.
- Facilities are in communication with local healthcare coalitions, federal, state, and local public health partners (e.g., public health emergency preparedness and response staff) regarding identification of additional supplies.
- Facilities have already implemented other [engineering and administrative control measures](#) including:
 - *Reduction in number of patients seen*
 - *Reducing face-to-face HCP encounters with patients*
 - *Maximizing use of telemedicine*
- Training for any changes to normal processes.

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/face-masks.html>

64

Personal Protective Equipment (PPE) Burn Rate Calculator

Use this excel sheet to calculate your PPE burn rate

BURN RATE

<https://www.cdc.gov/coronaviruses/2019-ncov/hcp/ppe-strategy/burn-calculator.html>

65

Contingency Capacity - Masks

- Selectively cancel elective and non-urgent procedures and appointments for which a facemask is typically used by HCP.
- Remove facemasks for visitors in public areas.
 - Available to provide to symptomatic patients upon check in at entry points. All facemasks should be placed in a secure and monitored site.
- Implement extended use of facemasks.
 - Wearing the same facemask for repeated close contact encounters with several different patients, without removing the facemask between patient encounters.
- Restrict facemasks to use by HCP, rather than patients for source control
 - *Patients cover nose/mouth with tissues.*

66

Crisis Capacity - Masks

- Cancel all elective and non-urgent procedures and appointments
- Use facemasks beyond the manufacturer-designated shelf life
- Implement limited re-use of facemasks - using the same facemask by one HCP for multiple encounters with different patients but removing it after each encounter.
 - *Carefully remove, not touching front of mask*
 - *Discard if soiled, damaged, hard to breath through*
 - *Masks with elastic loops better choice*

67

No Facemasks

- Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients.
- Designate convalescent HCP for provision of care to known or suspected COVID-19 patients.
- Use a face shield that covers the entire front (that extends to the chin or below) and sides of the face with no facemask.

68

infectious disease physicians, nurses and key leaders throughout our system, created a template for a sewn mask that meets CDC guidelines and can be used after all existing face mask options are used.

While we currently have a supply of regular face mask options, the Tree Top Needlecrafters are hard at work sewing hundreds of masks that will initially be used for patients with flu-like symptoms, to help reduce exposure. In the event of a supply shortage, the masks could be used for healthcare providers.

Hospital Masks – Instructions (1/5)



Materials:

- One piece of 100% cotton, tightly woven fabric. Cut to the size of 15" x 7.5" (38cm x 19cm) NO quilted or perforated fabric
- One piece of Cut Away Embroidery Stabilizer or Interface (14" x 6.5") *if available
- 2 heavier **plastic-coated wire**, (such as a twist tie) 4 - 6 inches in length (no paper twist ties – as these will not stand up to washing)

Video:

www.bit.ly/face-masks-tutorial



69

Prioritize N95 Use

- Minimize the need: Hierarchy Of Controls
- Use alternatives to N95 respirators (e.g., other classes of filtering facepiece respirators, elastomeric half-mask, powered air purifying respirators)
- Extended use and/or limited reuse of N95 respirators
- N95 respirators used by those at highest risk of contracting or experiencing complications of infection

<https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>

70

Extended Use: N95 Respirator

- Wearing the same N95 respirator for close contact encounters with several patients, without removing the respirator between patient encounters
- Involves less touching of the respirator and therefore less risk of contact transmission

71

Limited Reuse: N95 Respirators

- Using the same N95 respirator, for multiple encounters, different patients BUT removing it after each encounter.
- Consult with manufacturer regarding maximum uses.
 - *No guidance available: no more than 5 uses*
- Do NOT share N95 and other disposable respirators

https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Frespirators-strategy%2Fcrisis-alternate-strategies.html

72

Contamination is a Risk

- The surfaces will become contaminated with pathogens while filtering the air inhaled during aerosol exposures
- Cross-contamination to worker
 - *adjusting the respirator,*
 - *improper doffing of the respirator*
 - *when performing a user-seal check when redonnnng a previously worn respirator*
- Address how respirators will be stored

73

Contamination is a Risk

- Respirators grossly contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients should be discarded.
- HCP can consider using a face shield or facemask over the respirator to reduce/prevent contamination of the N95 respirator.
- HCP re-using an N95 respirators should use a clean pair of gloves when donning or adjusting a previously worn N95 respirator.
- It is important to discard gloves and perform hand hygiene after the N95 respirator is donned or adjusted.

74

Donning the Respirator

- Avoid touching the inside of the FFR.
- Visually inspect the FFR to determine if its integrity has been compromised.
- Check that components such as the straps, nose bridge, and nose foam material did not degrade, which can affect the quality of the fit, and seal.
- Clean hands with soap and water or an alcohol-based hand sanitizer before and after touching or adjusting the FFR.
- Use clean gloves when donning and performing a user seal check.
- If the integrity of any part of the FFR is compromised, or if seal check fails, discard the FFR and try another FFR.

75

Storage

- Manufacturers provide instructions for cleaning, sanitizing, repairing, inspecting, and storing their respirators.
- Packed or stored so that the respirators do not become damaged or deformed.
- Never store disposable respirators in pockets, plastic bags, or other confined areas.
- Remove the respirator and either hang it in a designated area or place it in a bag
 - *Label respirators with a user's name before use*

76

One Strategy

- Issue each HCP who may be exposed to COVID-19 patients five respirators
- Use one respirator on an assigned day
- Store in a breathable paper bag until the next week
- This amount of time in between uses should exceed the 72 hour expected survival time for SARS-CoV2 (the virus that caused COVID-19).³
- HCP should still treat the respirator as though it is still contaminated and follow the precautions outlined in [CDC's re-use recommendations](#).

77

Decontamination

- Guidance on potential methods

Decontamination and Reuse of Filtering Facepiece Respirators

Disposable filtering facepiece respirators (FFRs) are not approved for routine decontamination and reuse as standard of care. However, FFR decontamination and reuse may need to be considered as a crisis capacity strategy to ensure continued availability. Based on the limited research available, ultraviolet germicidal irradiation, vaporous hydrogen peroxide, and moist heat showed the most promise as potential methods to decontaminate FFRs. This document summarizes research about decontamination of FFRs before reuse.

Introduction

Reusing disposable filtering facepiece respirators (FFRs) has been suggested as a contingency capacity strategy to conserve available supplies for healthcare environments during a pandemic. Strategies for FFR extended use and reuse (without decontamination of the respirator) are currently available from [CDC's National Institute for Occupational Safety and Health \(NIOSH\)](#).

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html>

78

After Patient Discharge

- Disinfect surfaces with EPA registered hospital level disinfectant
- [EPA list of products](#)
- [American Chemistry](#)

VIRUCIDAL* In the presence of 5% serum 30 seconds contact time on hard, non-porous environmental surfaces.

- Human Coronavirus
- Influenza A Virus (Hong Kong Strain)
- Herpes Simplex Virus Type 1
- Herpes Simplex Virus Type 2
- Rotavirus (WA strain)
- Rhinovirus Type 37
- HIV Type 1 Strain HTLV III_B
- Hepatitis B Virus (HBV) (Duck Hepatitis B Virus as the surrogate)
- Hepatitis C Virus (HCV) (Bovine Viral Diarrhea Virus as the surrogate)
- Norovirus (Feline Calicivirus as the surrogate)
- Influenza B Virus
- Pandemic Influenza A Virus H1N1
- Parainfluenza Virus Type 3
- Respiratory Syncytial Virus (RSV)
- Cytomegalovirus
- Adenovirus Type 8

BACTERICIDAL In the presence of 5%

79

Table B.1. Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency *

ACH $\frac{1}{h}$	Time (mins.) required for removal 99% efficiency	Time (mins.) required for removal 99.9% efficiency
2	138	207
4	69	104
6*	46	69
8	35	52
10*	28	41

AFTER PATIENT DISCHARGE

SOURCE: www.cdc.gov/infectioncontrol/guidelines/environmental/appendix/air.html#b1

80

HCP Exposure

Epidemiologic risk factors	Exposure category	Recommended Monitoring for COVID-19 (until 14 days after last potential exposure)	Work Restrictions for Asymptomatic HCP
Prolonged close contact with a COVID-19 patient who was wearing a facemask (i.e., source control)			
HCP PPE: None	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a facemask or respirator	Medium	Active	Exclude from work for 14 days after last exposure

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assessment-hcp.html>

81

HCP Return to Work

- *Test-based strategy.* Exclude from work until
 - Resolution of fever without the use of fever-reducing medications **and**
 - Improvement in respiratory symptoms (e.g., cough, shortness of breath), **and**
 - Negative results of an FDA Emergency Use Authorized molecular assay for COVID-19 from at least two consecutive nasopharyngeal swab specimens collected ≥ 24 hours apart (total of two negative specimens)^[1]. See [Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for 2019 Novel Coronavirus \(2019-nCoV\)](#).
- *Non-test-based strategy.* Exclude from work until
 - At least 3 days (72 hours) have passed *since recovery* defined as resolution of fever without the use of fever-reducing medications **and** improvement in respiratory symptoms (e.g., cough, shortness of breath); **and**,
 - At least 7 days have passed *since symptoms first appeared*
- If HCP were never tested for COVID-19 but have an alternate diagnosis (e.g., tested positive for influenza), criteria for return to work should be based on that diagnosis.

<https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/hcp-return-work.html>

82

HCP Return to Work

- Wear a facemask at all times while in the healthcare facility until all symptoms are completely resolved or until 14 days after illness onset, whichever is longer
- Be restricted from contact with severely immunocompromised patients (e.g., transplant, hematology-oncology) until 14 days after illness onset
- Adhere to hand hygiene, respiratory hygiene, and cough etiquette in [CDC's interim infection control guidance](#) (e.g., cover nose and mouth when coughing or sneezing, dispose of tissues in waste receptacles)
- Self-monitor for symptoms, and seek re-evaluation from occupational health if respiratory symptoms recur or worsen

83

[TMC Resource Page](#)

TMC COVID – 19 Resource Page



84

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Coronavirus Disease (COVID-19) Toolkit
OVERVIEW | REGULATIONS & GUIDELINES | BEST PRACTICES | INSTRUCTIONAL RESOURCES | PATIENT RESOURCES

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Overview
Coronaviruses are a large family of viruses that are common in many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people and then spread between people such as with MERS, SARS, and now with COVID-19.
COVID-19 is a new disease and we are still learning how it spreads, the severity of illness it causes, and to what extent it may spread in the United States.
The virus is thought to spread mainly from person-to-person.

OSAP InfoBites
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85

Good to Know

- A copy of handouts will be emailed along with the CE document.
- Continuing education documents only for the live webinar will be provided by Monday April 20, 2020.
- The webinar is being recorded and will be on the [TMC COVID - 19 Resource Page](#)

86

Thank you!

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