Sars-CoV-2 (COVID-19) Pandemic:
Practice Guidelines for Birth Workers

Updated 23 July 2020

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Note: The following guidelines are suggestions based on the best, current evidence. Please follow your local Ministry or Department of Health's recommendations if and when available. This is a working document and will be updated as new evidence and information becomes available.

Sars-CoV-2, also known as COVID-19 or Coronavirus, is a viral respiratory infection that is highly contagious and primarily transmitted person to person via respiratory droplets and contact routes. It is most commonly spread directly by being in close contact (within 6 feet) with an infected person when they cough or sneeze. Evidence suggests that it may be spread indirectly via airborne transmission in certain circumstances and settings, and/or via contact with a contaminated surface. Preliminary data indicates that the virus can survive on a variety of surfaces for 24-72 hours.

Although the virus has been identified in other body fluids it is unknown if the virus can be transmitted via those fluids. While viable, infectious SARS-CoV-2 has been isolated from respiratory, blood, urine, and stool specimens, it is not yet known whether the virus can be identified in other non-respiratory body fluids from an infected person including vomit, breast milk, vaginal secretions or semen. It remains unknown whether a pregnant woman with COVID-19 can transmit the virus to her fetus or baby during pregnancy and/or delivery. There is no evidence yet of the virus having been found in samples of amniotic fluid or breastmilk. Virus specific antibodies have been found in neonatal blood serum samples.

The symptoms associated with COVID-19 can range from mild to severe. There have been cases of asymptomatic COVID-19 but it is unknown whether an individual who is asymptomatic can transmit the virus. The role of pre-symptomatic transmission (infection detection during the incubation period prior to illness onset) is also unknown. However, it should be assumed that both asymptomatic and pre-symptomatic persons can transmit the virus and precautionary measures to reduce transmission should be taken. It is not yet known if a person can be infected more than once. It is currently unknown how long a person can remain infectious. The onset and duration of viral shedding and period of infectiousness for COVID-19 are not yet known.

The clinical spectrum of COVID-19 ranges from mild disease with non-specific signs and symptoms of acute respiratory illness, to severe pneumonia with respiratory failure and septic shock. Because there have been reports of asymptomatic infection with COVID-19, it is difficult to know for certain whether someone is a carrier and/or vector of the disease.

Because COVID-19 is a novel virus, there is a lot of information that is not yet known. The pandemic situation has progressed rapidly and information about the virus changes quickly. As a result, it is difficult to know what the best and safest practices are to protect ourselves and the women and families that midwives and other health care workers (HCWs) care for. It is important to be flexible during this time and to make the best decisions for the care of your community based on the most current information. We will continue to update these guidelines as more information becomes available.

Symptomatic Differences between Covid-19, Influenza, and the Common Cold

	Covid-19	Influenza	Common Cold
Incubation Period	2-14 days (median 5 days)	1-4 days	1-3 days
Length of Symptoms	7-25 days	7-14 days	7-10 days
Symptom Onset	Gradual or abrupt	Abrupt	Gradual
Fever (>100.4F or 38C)	**Common**	**Common**	Rare
Cough	**Common** **Usually dry**	**Common** **Usually dry**	**Common** **Mild**
Fatigue	**Common**	**Common**	Sometimes
Runny Nose/ Nasal Congestion	Sometimes	Sometimes	**Common**
Diarrhea	Sometimes	Sometimes	Rare
Body Aches	Sometimes	**Common**	Slight
Sore Throat	Sometimes	Sometimes	**Common**
Headache	Sometimes	**Common**	Rare
Loss of Appetite	Sometimes	**Common**	Sometimes
Shortness of Breath	**Common in severe illness**	Sometimes	Mild
Sneezing	Rare	Rare	**Common**
Loss of smell or taste	**Common**	Rare	Rare

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Health Care Personnel: Protecting Yourselves and Your Clients:

The following guidelines are standard measures and precautions that you should take to protect yourself and your clients from the risk of exposure and infection.

- Universal precautions should **always** be followed;
- Hand washing is the first line of defense:
    - Wash hands thoroughly with soap and water for a minimum of 20-30 seconds;
    - If soap and water are unavailable, use an alcohol-based sanitizer with at least 60% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry;
    - Wash hands before and after making physical contact a client.
- Avoid touching your eyes, nose, and mouth, especially with unwashed hands;
- Staff and Midwife Clothing/Uniform Recommendations:
    - All staff and midwives should wear clean scrubs provided by the birth center or clinic instead of clean street clothes.
    - Home birth midwives should have separate clothes and/or scrubs that can be removed prior to returning home;
    - Remove clothing with prior to leaving the clinic, birth center, and/or client's home;
        - Remove clothing in a room that can be isolated and cleaned thoroughly and place clothing in a designated bin or container for infectious laundry.
        - Treat all clothes as infectious and use universal precautions when handling them even when caring for asymptomatic clients.
- ALL staff, midwives, and clients should be screened for current and recent COVID-19 symptoms;
    - Temperature Check;
    - Ask person if they have, or have recently had fever, cough, diarrhea (or another digestive upset);
    - Ask person if they have been around anyone with symptoms or known COVID-19 + people
    - Ask about travel locations and determine area risk
- Adhere to strict social distance requirements;
    - Maintain a distance of 6 feet from clients;
    - Avoid shaking hands, hugging, or making any type of physical contact with clients except for what is essential for necessary procedures;
    - Minimize the amount of time spent in close contact;
    - Clients should not wait in waiting rooms. Clients need to wait outside and/or in their personal vehicles when possible and wait to be called into the clinic and/or birth center for an appointment;
- Personal Protective Equipment (PPE):
    - Wear all appropriate and necessary PPE when visiting and/or treating clients including as indicated for a procedure;
    - While there is an ongoing shortage of PPE, PPE should always be used when indicated and when available:
    - HCWs should wear a surgical mask and gloves when caring for asymptomatic clients during any and all contact. All clients should also wear masks during clinical visits – cloth masks are acceptable.
    - Full PPE including gown, gloves, N95 masks that is fitted properly, surgical cap, shoe covers, and eye protection is required for labor, delivery and immediate postpartum period. Double gloving will also assure safer doffing technique.

N95 masks are only recommended for aerosolizing procedures and are not necessary for all procedures for unknown COVID status. Standard surgical masks are considered adequate protection from airborne respiratory droplets. Refer to Appendix F on other considerations for masks and PPE.

- As the result of PPE shortages, the use of homemade masks has been recommended for certain circumstances and will offer some protection for HCWs and clients. There is no evidence to support the use of homemade masks in protecting against COVID-19 transmission but may reduce the likelihood of transmission and/or infection.
  - *"A protective mask may reduce the likelihood of infection, but it will not eliminate the risk, particularly when a disease has more than 1 route of transmission. Thus, any mask, no matter how efficient at filtration or how good the seal, will have minimal effect if it is not used in conjunction with other preventative measures, such as isolation of infected cases, immunization, good respiratory etiquette, and regular hand hygiene.* ***An improvised face mask should be viewed as the last possible alternative if a supply of commercial face masks is not available, irrespective of the disease against which it may be required for protection****" (Davies, 2013).*

- COVID-19 symptoms can present quickly and any patient that has presented with any symptom(s) or develops any symptom(s) during your visit or while in your care should immediately be given a mask and transferred to another facility or placed in a separate room to minimize risk of exposure and infection to other staff and clients.

Homemade Masks vs Surgical Mask:

Filtration Efficiency and Pressure Drop Across Materials Tested with Aerosols of *Bacillus atrophaeus* and Bacteriophage MS2 (30 L/min)[a]

Material	*B atrophaeus*		Bacteriophage MS2		Pressure Drop Across Fabric	
	Mean % Filtration Efficiency	SD	Mean % Filtration Efficiency	SD	Mean	SD
100% cotton T-shirt	69.42 (70.66)	10.53 (6.83)	50.85	16.81	4.29 (5.13)	0.07 (0.57)
Scarf	62.30	4.44	48.87	19.77	4.36	0.19
Tea towel	83.24 (96.71)	7.81 (8.73)	72.46	22.60	7.23 (12.10)	0.96 (0.17)
Pillowcase	61.28 (62.38)	4.91 (8.73)	57.13	10.55	3.88 (5.50)	0.03 (0.26)
Antimicrobial Pillowcase	65.62	7.64	68.90	7.44	6.11	0.35
Surgical mask	96.35	0.68	89.52	2.65	5.23	0.15
Vacuum cleaner bag	94.35	0.74	85.95	1.55	10.18	0.32
Cotton mix	74.60	11.17	70.24	0.08	6.18	0.48
Linen	60.00	11.18	61.67	2.41	4.50	0.19
Silk	58.00	2.75	54.32	29.49	4.57	0.31

[a] Numbers in parentheses refer to the results from 2 layers of fabric.

Cloth masks are recommended for all people when social distancing is not an option. In addition, during labor and birth, all labor support persons should be wearing masks and utilizing standard precautions for COVID-19 (frequent hand washing, mask wearing). Women in labor are NOT required to wear a mask, but it is vital that if her COVID-19 status is not known, proper PPE is worn by everyone who cares for her. It is recommended that COVID-19+ women receive specialized care and are not candidates for homebirth or care by homebirth midwives until they have 3 negative COVID-19 tests. Other considerations include the status of household members and adherence to quarantine policies.

Protecting Equipment and Supplies

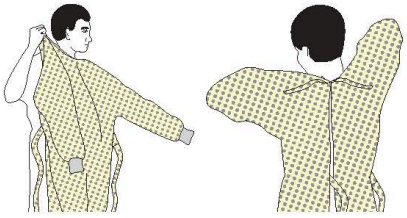
- Supplies designated for one birth, including all emergency supplies and kits, should be placed in a washable container such as a: plastic bin, hard-shell suitcase, or washable bag (duffel, reusable grocery, wet bags, etc.).
    - Only 1 receptacle containing all essential supplies should be present in the birth room.
    - Non-sterile gloves could be packaged into small Ziplock bags in smaller quantities for easy access.
- All kits should be packed individually (IV start kits including the IV bag, GBS prophylaxis kits, suture kits, postpartum hemorrhage kits, emergency medication kits, newborn exam kits, etc.) so that if they are not opened at a birth, they can remain organized and intact and the outside of the package can be sanitized. Ziplock bags are suggested for packaging kits in areas where plastic bags are accessible and legal.
- Extra supplies and birth bags that cannot be sanitized should remain accessible in another area of the clinic that is not exposed to human traffic (or for homebirths in the midwife's vehicle)
- If accessible, UV-C lights can be used following the proper guideline for decontaminating the entire surface of each surface that is exposed to any potential contamination. Otherwise, wiping each surface down following proper guidelines is required.

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

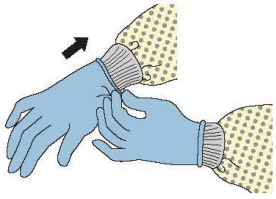
- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

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

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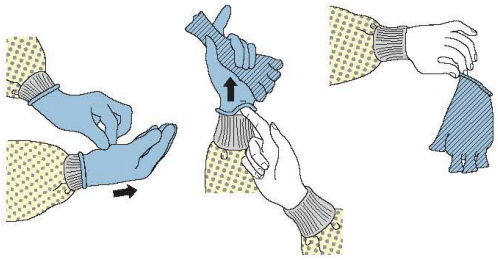
HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE)
EXAMPLE 1

There are a variety of ways to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Here is one example. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GLOVES

- Outside of gloves are contaminated!
- If your hands get contaminated during glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Using a gloved hand, grasp the palm area of the other gloved hand and peel off first glove
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist and peel off second glove over first glove
- Discard gloves in a waste container

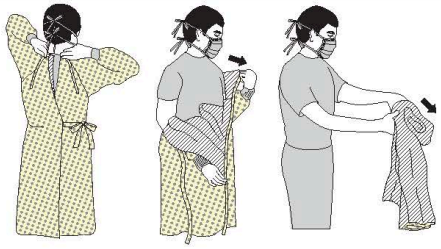


2. GOGGLES OR FACE SHIELD

- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band or ear pieces
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

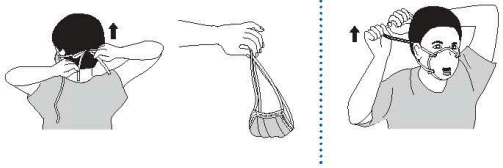
3. GOWN

- Gown front and sleeves are contaminated!
- If your hands get contaminated during gown removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Unfasten gown ties, taking care that sleeves don't contact your body when reaching for ties
- Pull gown away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard in a waste container

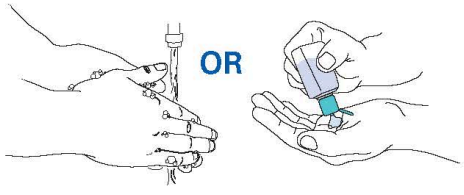


4. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



5. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

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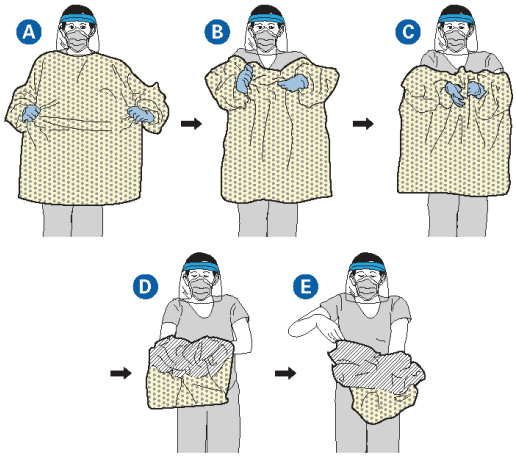
HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) EXAMPLE 2

Here is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. **Remove all PPE before exiting the patient room** except a respirator, if worn. Remove the respirator **after** leaving the patient room and closing the door. Remove PPE in the following sequence:

1. GOWN AND GLOVES

- Gown front and sleeves and the outside of gloves are contaminated!
- If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands
- While removing the gown, fold or roll the gown inside-out into a bundle
- As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container

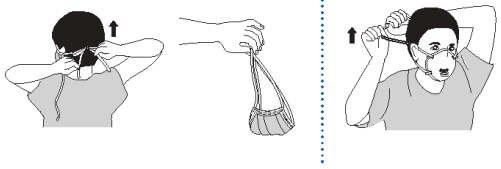


2. GOGGLES OR FACE SHIELD

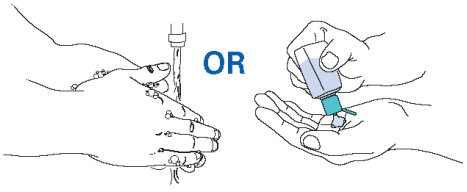
- Outside of goggles or face shield are contaminated!
- If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield
- If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container

3. MASK OR RESPIRATOR

- Front of mask/respirator is contaminated — DO NOT TOUCH!
- If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer
- Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front
- Discard in a waste container



4. WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE



PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE

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Clinical Visit Scheduling

All non-essential visits should be rescheduled until the pandemic is under control and social distancing requirements have been lifted;

- Well-woman visits;
  - Postpone all non-essential well-woman visits; or
  - Conduct a well-woman consultation via telehealth utilizing Zoom, or another secure video conferencing platform;
- Prenatal visits;
  - Extend the length of time between appointments and skip non-essential appointments;
  - Conduct check-ins for non-essential appointments via telehealth utilizing Zoom, or another secure video conferencing platform;
- New client intake visits;
  - Complete remotely via telehealth unless the patient presents with an urgent problem and requires an urgent in-person visit;

- All in-person visits should be focused only on physical assessments and the length of these visits should be minimized;
- Telehealth should be used for all non-essential visits and/or other consultations, questions, client education, etc.
- The client should be asked to attend the visit alone. Current recommendations to reduce the risk of exposure and infection include not allowing family members, including children, friends, or other support persons to accompany a client to an appointment;
- Individuals accompanying a client to the birth center and/or clinic and for home deliveries should be limited during labor, birth, and the immediate postpartum period. The current recommendations suggest 1 household member such as a spouse/partner and 1 support person such as a doula;
  - It is recommended that children not be allowed into the birth center or clinic for any reason;
  - All support people must wear a mask and adhere to COVID-19 precautions
- For home birth clients, it is important that children have a designated caregiver in another room or part of the home who is completely asymptomatic. It is advised that children are not to touch and/or be around any equipment or supplies that the midwife brings into the home.
- Cancel all scheduled in-person classes, groups, or other group gatherings;
  - Some classes, groups, and group gatherings may be organized remotely.

Suggested in-person Visit Schedule (AOM) based on WHO recommendations:

First Trimester	One visit				
Second Trimester	16-20 weeks	28 weeks			
Third trimester	31-32 weeks	34-36 weeks	38 weeks	40 weeks	41 wees
Postnatal	Within 48 hours of birth				

If your client's clinical circumstances require in-person assessment (e.g., weight or feeding concerns, unwell infant, concerning jaundice, secondary PPH, postpartum infections etc.) make arrangements to visit following appropriate health precautions. Offer additional visits, including the discharge visit virtually: by phone or videoconference.

ACOG Suggested Schedule of Prenatal and Postnatal Visits:

Gestational Age	In-person OB Visit	Ultrasound	Comments
<11 weeks*			Telephone OB intake
11-13 weeks**	X	X (Dating/NT)	Initial OB labs
20 weeks	X	X (Anatomy)	
28 weeks	X		Labs/vaccines
32 weeks	X	X (if indicated)	
36 weeks	X	X (if indicated)	GBS/HIV screen
37 weeks-Delivery	X		Weekly
Postpartum			Telehealth

* Earlier scan may be indicated if at risk for ectopic;

**If viability previously established consider skipping 11-13 week scan and offering cfDNA.

Notes:

Note: Research demonstrates there is no significant difference in outcomes for those who receive 8 contact visits for prenatal care versus those who receive more than 8 contact visits (WHO). Some of these contact visits should be conducted remotely when possible.

Home Visits

Home visits should be performed only as necessary and be conducted via telehealth when possible. If a contact visit needs to be made, request the client and/or her newborn visit the clinic **only** if asymptomatic. If a client presents with symptoms, a visit may be conducted in the individual's personal vehicle or an alternative visit may be arranged. Full PPE and precautions should be taken.

- The number of home visits should be minimized;
- Personnel conducting home visits should contact the client prior to the scheduled visit and inquire about any household members who have demonstrated any symptoms within a 2-week period of time, have been exposed to someone who tested positive for COVID-19, or are under any type of quarantine;
    - If anyone in the household, including the client, is symptomatic or has had symptoms within a 2-week period of time, then a home visit should not be conducted.
- If there is any concern related to care, clients should come to the clinic to be seen for an in-person visit and a home visit should be avoided;
- Personnel should employ universal precautions and use appropriate PPE for **ALL** home visits, even if the patient and their family are asymptomatic.
- Newborn visits should be maximized to ensure all physical assessments and testing are completed at the same time to minimize the need for additional visits;
- Newborn visits should be conducted in the clinic if an in-person visit is required.
- Visits should not be conducted in the home for COVID-19+ clients.

COVID-19 Specific Charting Recommendations

- Documentation should include assessment of COVID-19 signs and symptoms in the client, their household members, and support team.
    - VS and specific verbal responses to signs and symptoms should be recorded (ex. "Client denies fever, SOB, cough, digestive upset, respiratory symptoms, fatigue," etc.).
- Staff assessment of COVID-19 signs and symptoms should be recorded as well.
- Documentation regarding midwife recommendations and any client responses including recommendations for transfer (both COVID-19 and non-COVID-19 related) and client declining due to concern for increased risk of COVID-19 exposure in the hospital or due to new hospital guidelines for COVID-19.
    - It is vital that health care providers do not work outside their scope of practice or mange situations that require more thorough assessments than you can provide in the clinic, birth center or home setting.
    - Continuing care with a client who refuses transfer may or may not be required depending on the legal requirements where you practice as well as ethical considerations. It is not advised to stay with a client who refuses transfer if you are not obligated to.
    - For clients that decline transfer, consulting partners and backup facilities should be contacted, and the situation discussed including the client's reluctance and/or refusal to transfer. Transfer paperwork and protocols should still be completed. Documentation should also include why transfer of care was recommended and to whom care was transferred to.
    - It is advised that all "Consent to Care" documents include that if the midwife or health care provider recommends transfer and patient refuses, midwife or HCW will call emergency services and leave patient in their care.
- Unless you have proper PPE and a facility to assess and properly isolate COVID-19 presumptive or positive clients, transfer is required for all necessary care in clients exhibiting symptoms and asymptomatic but known positive clients.
- Unusual circumstances and deviations from the standard of practice could arise and should be charted thoroughly, including the midwife's rationale for significant variance from usual practice.

Staff Illness and Exposure

- All staff should be screened for the following symptoms upon arrival to the clinic, birth center, and/or home:
    - Fever
    - Cough
    - Digestive upset
    - Any respiratory symptoms
- Home birth midwives are required to self-assess daily for signs or symptoms of fever, any respiratory symptoms, and digestive upset;
- All personnel with **ANY** symptom of an upper respiratory infection (URI) or influenza should **NOT** come to work or participate in the care of clients. They should be required to self-isolate at home and check with their local, state, or country health department for any necessary testing and guidance on when it is safe to return to work;
- **All personnel exposed to a symptomatic and/or COVID-19 positive client need to refer to Appendix C for the CDC's recommendations or to your local health department or ministry of health for guidance;**
- Refer to Appendix D for the CDC's Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19 (Interim Guidance) or follow your local health department or ministry of health recommendations and mandates.

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Client Education and Protection

- Educate and instruct the client on current social distancing guidelines and recommendations;
- Educate and instruct the client on proper handwashing techniques and respiratory hygiene (i.e. how to properly cover a cough);
- Educate client on proper mask wearing and ensure clients wear a mask in all situations where social distancing is not an option or when out in public.
- Clients should be informed of the symptoms of COVID-19 and when to call their primary care provider and/or midwife;
- Instruct clients to call ahead if they have a scheduled appointment and are symptomatic;
- Instruct clients on the proper use of PPE such as masks and gloves and enforce the proper use of these items.

Screening for Signs/Symptoms of COVID-19

- All staff, midwives, personnel, clients, and client household/family members should be screened before all visits;
- Screen for the following:
    - Any signs and/or symptoms of respiratory infection:
        - Fever
        - Cough
        - Shortness of breath
        - Loss of taste or smell
        - Digestive issues including vomiting, nausea and diarrhea
        - Fatigute
    - Any known or suspected exposure to confirmed and/or suspected COVID-19 positive patient;
- If a midwife suspects COVID-19 and is transferring care to another facility, the appropriate department of that facility should be notified prior to the client's arrival to ensure the facility has time to take appropriate infection control steps;
- All symptomatic patients and associated persons should be assumed COVID-19 positive, even in the absence of confirmation via diagnostic testing;
    - All symptomatic persons should not be allowed into the birth center and/or clinic unless isolation rooms and all appropriate PPE and staff are available;
    - All in-person and in-home care for home birth clients should be suspended if the client and/or anyone in their household is symptomatic;
- **Providing care to a symptomatic client should be avoided unless you have appropriate PPE and have been trained in proper PPE techniques. Homebirth is not recommended for presumptive and COVID-19+ clients. Refer to Appendix B for World Health Organization (WHO) PPE Guidelines for Conserving PPE and Proper Protection.**

ACOG The American College of Obstetricians and Gynecologists

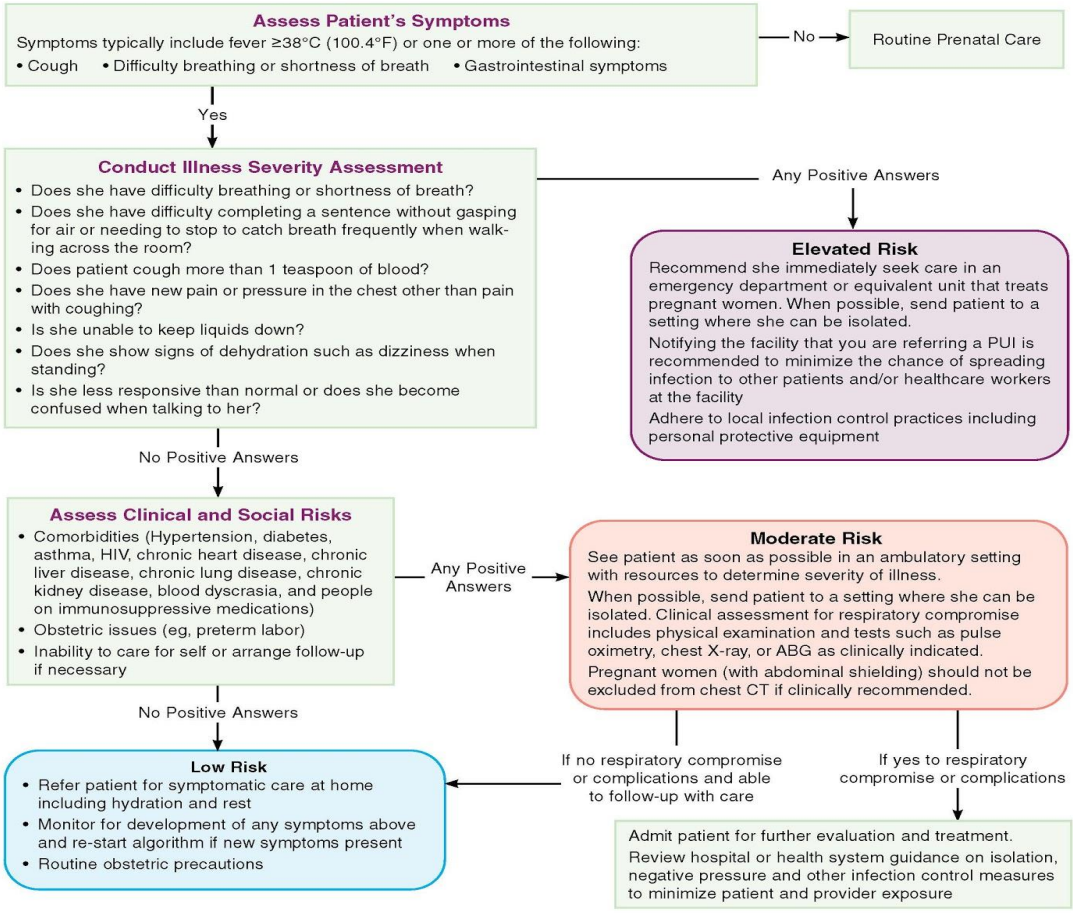
Society for Maternal•Fetal Medicine
High-risk pregnancy experts

Outpatient Assessment and Management for Pregnant Women With Suspected or Confirmed Novel Coronavirus (COVID-19)

Unlike influenza and other respiratory illnesses, based on a limited number of confirmed COVID-19 cases, pregnant women do not appear to be at increased risk for severe disease. However, given the lack of data and experience with other coronaviruses such as SARS-CoV and MERS-CoV, diligence in evaluating and treating pregnant women is warranted.

This algorithm is designed to aid practitioners in promptly evaluating and treating pregnant persons with known exposure and/or those with symptoms consistent with COVID-19 (persons under investigation [PUI]). If influenza viruses are still circulating, influenza may be a cause of respiratory symptoms and practitioners are encouraged to use the ACOG/SMFM influenza algorithm to assess need for influenza treatment or prophylaxis.

Please be advised that COVID-19 is a rapidly evolving situation and this guidance may become out-of-date as new information on COVID-19 in pregnant women becomes available from the Centers for Disease Control and Prevention (CDC). https://www.cdc.gov/coronavirus/2019-nCoV/index.html



Abbreviations: ABG, arterial blood gases; CDC, Centers for Disease Control and Prevention; HIV, human immunodeficiency virus.

Healthcare providers should immediately notify their local or state health department in the event of a PUI for COVID-19 and should contact and consult with their local and/or state health department for recommendations on testing PUIs for COVID-19.

Facility Controls

- Maintain social distancing of at least 6-feet from all other staff members and patients;
- Waiting rooms should not be utilized;
    - Clients presenting for scheduled appointments should wait in their personal vehicle or outside until called for their appointment;
        - Clients should be instructed to maintain proper social distancing (6-feet) from all other clients and staff while waiting for their appointment;
- A staff member should be placed at the entrance to the birth center and/or clinic in full PPE and screen every client and/or individual who visits the clinic;
    - Symptomatic persons should be asked to leave, and their appointment should be rescheduled;
- Masks should be available in client areas and provided to anyone with respiratory symptoms;
    - Clients with respiratory symptoms should be immediately given a mask and instructed on the proper use of the mask;
- If available, hand sanitizer should be placed in each exam room, waiting room, front desk, and in any other public area;
- Handwashing is preferable and recommended but hand sanitizer is an acceptable alternative as long as it has at least 60% alcohol;
- Designate a specific room for the screening of any symptomatic clients;
    - Avoid waiting and other common areas;
    - Use a separate entrance if possible;
    - Close the door;
    - Thoroughly clean the room and all spaces in which the client presented after the encounter.

Social Distancing during Staff Meeting at FreMo Medical and Birth Centre, Kawangware, Nairobi, Kenya

Special Considerations: Pregnancy

Current studies have shown increased risks of pregnancy and medical complication when a client is COVID-19 compared to non-pregnant populations. Pregnant persons in general are at an increased risk for contracting viral infection as the result of normal immunologic and physiologic changes that occur during pregnancy. Pregnancy can have systemic effects that increase the risk for complications from respiratory infections but there is not enough data that confirms this for COVID-19. Pregnant persons in general are considered a vulnerable and at-risk population. **Therefore, the WHO recommends that pregnant persons with symptoms of COVID-19 should be prioritized for testing and if they test positive, they may require specialized care. It should be assumed that pregnant persons are at an increased risk for contracting COVID-19 and developing serious and/or critical illness until proven otherwise.**

Pregnant persons with probable, suspected, and/or confirmed COVID-19 infection should have access to woman-centered, respectful, skilled care including obstetric, fetal medicine and neonatal care, and mental health/psychosocial support with readiness to care for maternal and neonatal complications.

All pregnant persons currently infected or recovering from COVID-19 should be provided with counseling and all necessary information related to the potential risk of adverse pregnancy outcomes. The individual's choices and rights to sexual and reproductive health care should be respected regardless of COVID-19 status, including access to contraception and safe abortion to the full extent of the law.

There is limited evidence that indicates COVID-19 infection places a pregnant person at an increased risk for pregnancy and/or birth complications. There are reports of increased miscarriage, premature rupture of membranes (PROM), preterm birth, intrauterine growth restriction (IUGR), and fetal distress during labor in cases where the pregnant person was positive for COVID-19. However, it is not known whether these outcomes were a direct result of the infection.

It is recently been shown that a pregnant person infected with COVID-19 can pass the virus to the fetus during pregnancy or to the baby during birth. There have been viral antibodies detected in the blood serum of infants born to a COVID-19 positive parent, but few documented cases of vertical transmission. While extremely rare, the possibility of vertical transmission cannot be ruled out. It is possible that the infant may contract the virus after the birth and all necessary precautions should be made to reduce exposure and prevent infection.

Special Considerations: Water Birth

There is controversy surrounding the safety of water birth during the pandemic. It is unknown whether normal practice guidelines and protocols are sufficient in ensuring safe and appropriate care is given and precautions are taken during this time. The following guidelines are based on a current and working understanding of the safety of water birth and COVID-19 outbreak. One of the biggest concerns is ensuring the proper use and efficacy of PPE during a water birth.

Hydrotherapy (referred to as the use of water in a tub and/or shower to manage the pain of labor) has demonstrated benefits. In addition to any guidelines your practice has, the general exclusion criteria for immersion in water for labor and/or delivery include the following:

- Afebrile (temperature > 38C or 100.4F) for greater than 4 hours;
- Untreated infection of any kind
    - Bloodborne, skin, upper respiratory, etc.
- **Positive or presumptive COVID-19 infection precludes immersion in the tub for labor and/or birth. *Note: <u>ANY</u> symptom of COVID-19 is considered presumptive and infection should be assumed.***

If a pregnant person does not present with any symptoms and has remained asymptomatic for at least 2-weeks, water birth (including labor and/or delivery in the tub) may be considered acceptable if the following criteria is met:

- **Full PPE must be worn by all healthcare providers and/or birth attendants during the delivery.** Required PPE for all deliveries include the following:
    - Gown, mask, surgical cap and/or other head protection, shoe covers, goggles/face shield, and gloves. In addition, long gloves that cover the arm should be utilized.
- Full PPE must be worn by all healthcare providers and/or birth attendants during the immediate postpartum period, including when draining and cleaning the tub following a birth.
- PPE should be properly donned/doffed and disposed of using universal precautions.
- ALL efforts must be taken to ensure that the risk of PPE getting wet is reduced in order to preserve a limited supply of PPE. To adjust for this, the following should be considered:
    - Have the birthing person leave the tub and/or shower for assessments including vital signs, fetal heart tones, and vaginal exams;
- **There must be an adequate supply of PPE to ensure that if a healthcare provider gets wet, they may change into new PPE.**
- A designated location in the birth center and/or home birth setting must be established to ensure that healthcare providers and birth attendants can doff PPE safely without the risk of contamination and/or cross exposure within or to the surrounding area. If this is not possible, then the use of water for labor and/or birth is precluded.
- The birthing person must have stable vital signs and no history of HIV, Hepatitis B or C, or active HSV;
- The fetus must remain stable throughout the labor and delivery;
- The birthing person and members of their household must by symptom free of COVID-19 with no history of exposure. ***Note: It may not be possible to accurately assess the birthing person as a COVID-19 infection can be asymptomatic*.**
- No one may enter into the birthing tub or pool with the birthing person;
- 30mL (2tbsp) of household bleach should be added to the birth tub or pool to ensure any virus present is inactivated;
- Gestational age of fetus must be >37weeks;
- Fetus must be in a cephalic position;

- Amniotic fluid must be clear upon rupture and remain clear throughout the delivery;
- Assume a hands-off approach for the delivery as safety for the birthing person and infant allows;
    - If there is an indication for hands-on delivery, the birthing person should be removed from the tub or pool in order to reduce exposure;
- Water must be drained immediately following the birth to assess maternal bleeding; if water cannot be immediately drained then the birthing person and her infant are to leave the tub within minutes of delivery (prior to the birth of the placenta) to limit exposure in the event of an emergency such as postpartum hemorrhage;
- The provider must feel comfortable with water birth and their ability to limit exposure of oneself **AND** ensure there is an adequate supply of PPE for all birth attendants.

In addition to the aforementioned guidelines, additional considerations should be made. ALL tubs, pools, and/or showers used for hydrotherapy during the labor and/or birth must be thoroughly cleaned per standard guidelines. In a home birth setting, a client's personal bathtub is preferable to a tub that is and/or has been used by other clients and should be thoroughly cleaned and disinfected prior to use. A rented birth pool may be used as long as a new, disposable liner is available and all standard cleaning protocols are followed.

Special Considerations: Postnatal Period

New parents should maintain all social distancing guidelines and recommendations in the postnatal period as they did during the pregnancy. This includes limiting the number of postnatal appointments and utilizing telehealth when possible. The number of persons accompanying a new parent and infant to an in-person appointment should continue to be limited to one immediate support person who is asymptomatic. For postnatal home visits, the individuals present should be limited to immediate household members.

New parents should be discharged from the birth center and/or clinic at the earliest possible time to reduce the risk of infection exposure as long as the new parent and infant are stable and well.

Any new parent with confirmed or suspected COVID-19 infection should wear a mask during feeding and while in the presence of the infant while respiratory systems are present. Proper handwashing should be conducted prior to and immediately after contact with the infant. Surfaces within the home should be routinely cleaned and disinfected, including all surfaces that the infected parent comes into contact with.

As the result of increased isolation due to the COVID-19 outbreak many new parents will not have the extended postnatal support they may have planned for. It is important to check in with clients remotely whenever possible. Conduct thorough screenings for signs/symptoms of postnatal depression with every remote and/or in person encounter. Find alternative ways of providing postnatal support including telehealth appointments with doulas, lactation consultants, and other support services when available. If available, offer vouchers for food and meal-delivery services.

Special considerations: Breastfeeding and COVID-19 positive women

In limited studies on women with COVID-19 and another coronavirus infection, SARS-CoV-2, the virus has not been detected in breast milk; however, data is limited and while it is presumed that breastmilk is not a source of SARS-CoV-2, it has not been confirmed.

Women who are negative for COVID-19 can breastfeed with no restrictions. Please note, however, that women who are asymptomatic should follow the same measures as those who are symptomatic or positive to ensure they minimize any risk to their infant via asymptomatic shedding of the virus.

According to the WHO: Women who are symptomatic or have tested positive for COVID-19 should ensure they maintain a healthy environment for their infants. In the absence of transmission of COVID-19 through breastmilk, there is still a risk that mothers can pass on infections to their infants via other means and must take appropriate measures to avoid this. This includes:

- Practice respiratory hygiene during feeding, wearing a mask where available;
- Wash hands before and after touching the baby;
- Routinely clean and disinfect surfaces they have touched.

If a mother is healthy and can care of her infant, mothers and infants should be enabled to remain together and practice skin-to-skin contact, kangaroo mother care and to remain together and to practice rooming-in throughout the day and night, especially immediately after birth during establishment of breastfeeding, whether they or their infants have suspected, probable or confirmed COVID-19 virus infection.

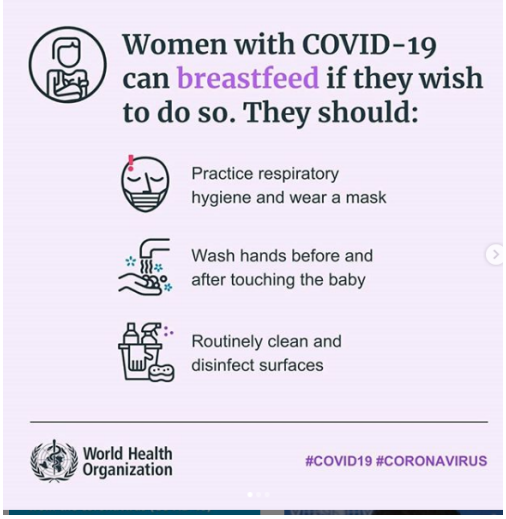
Please note, that even with the WHO guidelines, it is important to consider separating mother and baby if mother is symptomatic or known positive and there are barriers to performing hygiene measures. This includes lack of running water and soap or hand sanitizer and measures to lower risk of droplet transmission such as lack of masks are unavailable for example. Decisions should be made based on the best information at the time for the safety and health of both mother and baby.

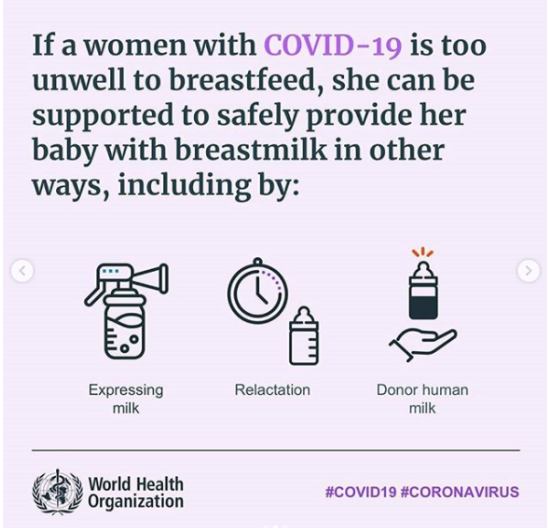
According to the CDC, however, separation of mother and infant may be beneficial to reduce the risk of transmission SARS-CoV-2 from the mother to the newborn via droplet exposure. The risks and benefits of temporary separation of the mother from her baby should be discussed with the mother (or her family if she is not medically stable) by the health care team, and decisions about temporary separation should be made in accordance with the mother's and/or families wishes as well as the healthcare status of the infant. The decision to initiate and discontinue separation should take into account disease severity, illness signs and symptoms, and results of laboratory testing for the SARS-CoV-2. Throughout the course of temporary separation, all feedings should be provided by a healthy caregiver wearing appropriate PPE (gown, gloves, face, mask and eye protection) if possible.

If a mother is too unwell to breastfeed her baby due to COVID-19 or other complications, she should be supported to safely provide her baby with breastmilk in a way that is possible, available, and acceptable to her and her family. This could include:

- Expressing milk (only if woman is healthy enough to support this)
- Relactation at a later time
- Donor human milk.

Per WHO guidelines there should be no promotion of breastmilk substitutes, feeding bottles and teats, pacifiers or dummies in any part of facilities providing maternity and newborn services, or by any of the staff. Health facilities and their staff should not give feeding bottles and teats or other products within the scope of the International Code of Marketing of Breast-milk Substitutes and its subsequent related WHA resolutions, to breastfeeding infants.





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Appendix A: Definitions and Acronyms:

CDC: Centers for Disease Control and Prevention. A US based health protection agency.

COVID-19: Short for Coronavirus Disease 2019. It's the official name of the disease caused by SARS-CoV-2. CO (Corona) VI (Virus) D (Disease) - 19 (2019)

HCP: Health care provider or Health care personnel

HCW: Health care worker

nCoV: novel coronavirus - a new coronavirus

PPD: Postpartum depression

PPE: Personal protective equipment including but not limited to masks, gloves, gowns, respirators

SARS-CoV-2: The official scientific name of the coronavirus causing the pandemic. It stands for severe acute respiratory syndrome coronavirus 2. It was previously known as 2019-nCoV.

URI: Upper respiratory infection which include symptoms of: coughing, discomfort in the nasal passages, mild fever, which is more common in children, excess mucus, nasal congestion, pain or pressure behind the face, a runny nose, a scratchy or sore throat, sneezing

WHO: World Health Organization - International public health agency whose core function is to direct and coordinate international health work through collaboration.

Epidemic: An outbreak that has spread to a wider area.

Isolation: When someone who is definitely sick stays away from others so that they don't infect anyone else. In the case of this coronavirus, isolation should continue until the risk of infecting someone else is thought to be low. The current guidelines for SARS-CoV-2 recommend isolation for at least 7 days from the first symptom and for 72 hours since the last symptom has passed.

Close contact: In the case of COVID-19, it's anyone who is within 6 feet of a person infected with SARS-CoV-2 for a prolonged period of time (CDC does not give a definitive definition but states that they consider a prolonged period of time anything more than a few minutes). This includes people who live with, care for or visit an infected person. It can also describe people who merely share a waiting room with an infected patient or who have direct contact with a patient's infectious secretions (such as by being coughed on).

Community spread: When an infectious disease is spreading in an area and the people who are contracting it don't know where or how they caught it. It's an indication that a virus is no longer contained to a limited number of people.

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Containment: A public health strategy in which officials aim to prevent the spread of an infectious disease beyond a small group of people to the broader community. Containment actions include restricting travel from affected regions, identifying infected people and tracking down everyone they live with or have spent time with (contact tracing), and asking those who have been exposed to the virus to stay at home for a period of time. Although it did not work for COVID-19, containment has been used to keep a measles outbreak from spreading out of control within communities with low immunization, for instance.

Mitigation: The public health goal once a virus has spread so widely that it's impossible to keep it away. Instead of mainly relying on public health authorities to do things like locate sick people and identify their contacts, health officials ask the public to help slow the spread of the virus. Useful actions can include reminding people to stay home when they're sick and disinfecting commonly touched surfaces in buildings daily. One of the main strategies is to practice "social distancing."

Outbreak: An increase, often sudden, in the number of cases of a disease above what is normally expected among the population in a limited area.

Pandemic: An epidemic that has spread over multiple countries or continents, usually affecting a large number of people. SARS-CoV-2 was declared a pandemic by the WHO on March 11, 2020.

Prolonged contact/exposure: According to the CDC, data are insufficient to precisely define the duration of time that constitutes a prolonged exposure. However, until more is known about transmission risks, it is reasonable to consider an exposure greater than a few minutes as a prolonged exposure. Any duration of exposure is considered prolonged if during an aerosolize-generating procedure

Quarantine: When someone who has been exposed to a disease but is not visibly sick stays away from others for a period of time in the event they are infected. By keeping their distance, they can avoid spreading the disease to others. A quarantine usually lasts a little longer than the incubation period for a disease, just to be safe. The current guidelines for SARS-CoV-2 recommend quarantine for a period of 14 days.

Social distancing: Measures designed to keep people away from crowded places where a virus could more easily spread. In the case of SARS-CoV-2, health officials are encouraging members of the public to work from home, cancel mass events and maintain about six feet of
space between themselves and others. A radical measure is to close most businesses and order the public to shelter at home except for essential activities, such as purchasing food and caring for relatives, while allowing people to go outside for a walk.

Appendix B: Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19) WHO (2020)

Table 1. Recommended personal PPE during the outbreak of COVID-19 outbreak, according to the setting, personnel, and type of activity[a]

Setting	Target personnel or patients	Activity	Type of PPE or procedure
Health care facilities			
Inpatient facilities			
Patient room	Health care workers	Providing direct care to COVID-19 patients	Medical mask Gown Gloves Eye protection (goggles or face shield)
		Aerosol-generating procedures performed on COVID-19 patients	Respirator N95 or FFP2 standard, or equivalent. Gown Gloves Eye protection Apron
	Cleaners	Entering the room of COVID-19 patients	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals) Boots or closed work shoes
	Visitors[b]	Entering the room of a COVID-19 patient	Medical mask Gown Gloves
Other areas of patient transit (e.g. wards, corridors).	All staff, including health care workers.	Any activity that does not involve contact with COVID-19 patients	No PPE required
Triage	Health care workers	Preliminary screening not involving direct contact[c]	Maintain spatial distance of at least 1 metre. No PPE required
	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre. Provide medical mask if tolerated by patient.
	Patients without respiratory symptoms	Any	No PPE required
Laboratory	Lab technician	Manipulation of respiratory samples	Medical mask Gown Gloves Eye protection (if risk of splash)
Administrative areas	All staff, including health care workers.	Administrative tasks that do not involve contact with COVID-19 patients.	No PPE required

Outpatient facilities			
Consultation room	Health care workers	Physical examination of patient with respiratory symptoms	Medical mask Gown Gloves Eye protection
	Health care workers	Physical examination of patients without respiratory symptoms	PPE according to standard precautions and risk assessment.
	Patients with respiratory symptoms	Any	Provide medical mask if tolerated.
	Patients without respiratory symptoms	Any	No PPE required
	Cleaners	After and between consultations with patients with respiratory symptoms.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
Waiting room	Patients with respiratory symptoms	Any	Provide medical mask if tolerated. Immediately move the patient to an isolation room or separate area away from others; if this is not feasible, ensure spatial distance of at least 1 metre from other patients.
	Patients without respiratory symptoms	Any	No PPE required
Administrative areas	All staff, including health care workers	Administrative tasks	No PPE required
Triage	Health care workers	Preliminary screening not involving direct contact[c]	Maintain spatial distance of at least 1 metre. No PPE required
	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre. Provide medical mask if tolerated.
	Patients without respiratory symptoms	Any	No PPE required
Community			
Home	Patients with respiratory symptoms	Any	Maintain spatial distance of at least 1 metre. Provide medical mask if tolerated, except when sleeping.
	Caregiver	Entering the patient's room, but not providing direct care or assistance	Medical mask
	Caregiver	Providing direct care or when handling stool, urine, or waste from COVID-19 patient being cared for at home	Gloves Medical mask Apron (if risk of splash)
	Health care workers	Providing direct care or assistance to a COVID-19 patient at home	Medical mask Gown Gloves Eye protection
Public areas (e.g. schools, shopping malls, train stations).	Individuals without respiratory symptoms	Any	No PPE required

Special considerations for rapid-response teams assisting with public health investigations[d]			
Community			
Anywhere	Rapid-response team investigators	Interview suspected or confirmed COVID-19 patients or their contacts.	No PPE if done remotely (e.g. by telephone or video conference). Remote interview is the preferred method.
		In-person interview of suspected or confirmed COVID-19 patients without direct contact	Medical mask Maintain spatial distance of at least 1 metre. The interview should be conducted outside the house or outdoors, and confirmed or suspected COVID-19 patients should wear a medical mask if tolerated.
		In-person interview with asymptomatic contacts of COVID-19 patients	Maintain spatial distance of at least 1 metre. No PPE required The interview should be performed outside the house or outdoors. If it is necessary to enter the household environment, use a thermal imaging camera to confirm that the individual does not have a fever, maintain spatial distance of at least 1 metre and do not touch anything in the household environment.

[a] In addition to using the appropriate PPE, frequent hand hygiene and respiratory hygiene should always be performed. PPE should be discarded in an appropriate waste container after use, and hand hygiene should be performed before putting on and after taking off PPE.

[b] The number of visitors should be restricted. If visitors must enter a COVID-19 patient's room, they should be provided with clear instructions about how to put on and remove PPE and about performing hand hygiene before putting on and after removing PPE; this should be supervised by a health care worker.

[c] This category includes the use of no-touch thermometers, thermal imaging cameras, and limited observation and questioning, all while maintaining a spatial distance of at least 1 m.

[d] All rapid-response team members must be trained in performing hand hygiene and how to put on and remove PPE to avoid self-contamination.

For PPE specifications, refer to WHO's disease commodity package.

References

Appendix C: CDC Interim U.S. Guidance for Risk Assessment and Public Health Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting to Patients with Coronavirus Disease (COVID-19)

Self-monitoring: HCP should monitor themselves for fever by taking their temperature twice a day and remain alert for respiratory symptoms (e.g., cough, shortness of breath, sore throat).

Active monitoring*:* the state or local public health authority assumes responsibility for establishing regular communication with potentially exposed people to assess for the presence of fever or respiratory symptoms

Self-Monitoring with delegated supervision **in a healthcare setting**: HCP perform self-monitoring with oversight by their healthcare facility's occupational health or infection control program in coordination with the health department of jurisdiction, if both the health department and the facility are in agreement.

Close contact for healthcare exposures:

- being within approximately 6 feet (2 meters), of a person with COVID-19 for a prolonged period of time (such as caring for or visiting the patient; or sitting within 6 feet of the patient in a healthcare waiting area or room); OR
- having unprotected direct contact with infectious secretions or excretions of the patient (e.g., being coughed on, touching used tissues with a bare hand).

Prolonged exposure: Data are insufficient to precisely define the duration of time that constitutes a prolonged exposure. However, until more is known about transmission risks, it is reasonable to consider an exposure greater than a few minutes as a prolonged exposure. Any exposure to an aerosolizing-generating procedure is considered prolonged.

Brief interactions: briefly entering the patient room without having direct contact with the patient or their secretions/excretions, brief conversation at a triage desk with a patient who was not wearing a facemask.

Healthcare Personnel**:** HCP refers to all paid and unpaid persons serving in healthcare settings who have the potential for direct or indirect exposure to patients or infectious materials. For this document, HCP does not include clinical laboratory personnel.

Defining Exposure Risk Category:

High-risk **exposures:** Prolonged close contact with patients with COVID-19 who were not wearing a facemask while HCP nose and mouth were exposed to material potentially infectious with the virus causing COVID-19. Being present in the room for procedures that generate aerosols or during which respiratory secretions are likely to be poorly controlled (e.g., cardiopulmonary resuscitation, intubation, extubation, bronchoscopy, nebulizer therapy, sputum induction) on patients with COVID-19 when the healthcare providers' eyes, nose, or mouth were not protected, is also considered *high-risk*.

Medium-risk **exposures:** Prolonged close contact with patients with COVID-19 who were wearing a facemask while HCP nose and mouth were exposed to material potentially infectious with the virus causing COVID-19.

Low-risk **exposures:** brief interactions with patients with COVID-19 or prolonged close contact with patients who were wearing a facemask for source control while HCP were wearing a face mask or respirator. Use of eye protection, in addition to a face mask or respirator would further lower the risk of exposure.

No identifiable risk: No direct patient contact and no entry into active patient management areas who adhere to routine safety precautions do not have a risk of exposure to COVID-19.

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 face mask or respirator	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing eye protection	Low	Self with delegated supervision	None
HCP PPE: Not wearing gown or gloves	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)	Low	Self with delegated supervision	None
Prolonged close contact with a COVID-19 patient who was not wearing a face mask (i.e., no source control)			
Epidemiologic risk factors	**Exposure category**	**Recommended Monitoring for COVID-19 *(until 14 days after last potential exposure)***	**Work Restrictions for Asymptomatic HCP**
HCP PPE: None	High	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a face mask or respirator	High	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing eye protection	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing gown or gloves	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)	Low	Self with delegated supervision	None

Additional Considerations and Recommendations:

Facilities should develop a plan for how they will screen for symptoms and evaluate ill HCP. This could include having HCP report absence of fever and symptoms prior to starting work each day.

Facilities could consider allowing asymptomatic HCP who have had an exposure to a COVID-19 patient to continue to work after options to improve staffing have been exhausted and in consultation with their occupational health program. These HCP should still report temperature and absence of symptoms each day prior to starting work. Facilities could have exposed HCP wear a facemask while at work for the 14 days after the exposure event if there is a sufficient supply of face masks. If HCP develops even mild symptoms consistent with COVID-19, they must cease patient care activities, don a facemask (if not already wearing), and notify their supervisor or occupational health services prior to leaving work.

Appendix D: Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19 (Interim Guidance)

This information is updated regularly. To ensure this document is accurate and up to date, please check https://www.cdc.gov/coronavirus/2019-ncov/hcp/return-to-work.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhealthcare-facilities%2Fhcp-return-work.html

Use one of the below strategies to determine when HCP may return to work in healthcare settings

1. ***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)

2. ***Non-test-based strategy***: Exclude from work until:

    HCP with mild to moderate illness who are not severely immunocompromised:

- At least 10 days have passed *since symptoms first appeared* **and**
- At least 24 hours have passed *since last* fever without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved

Note: HCP who are **not severely immunocompromised** and were **asymptomatic** throughout their infection may return to work when at least 10 days have passed since the date of their first positive viral diagnostic test.

HCP with severe to critical illness or who are severely immunocompromised[1]:

- At least 20 days have passed *since symptoms first appeared*
- At least 24 hours have passed *since last* fever without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved

Note: HCP who are **severely immunocompromised**[1] but who were **asymptomatic** throughout their infection may return to work when at least 20 days have passed since the date of their first positive viral diagnostic test.

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.

Return to Work Practices and Work Restrictions

After returning to work, HCP should:

- **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**

Crisis Strategies to Mitigate Staffing Shortages

Healthcare systems, healthcare facilities, and the appropriate state, local, territorial, and/or tribal health authorities might determine that the recommended approaches cannot be followed due to the need to mitigate HCP staffing shortages. In such scenarios:

- HCP should be evaluated by occupational health to determine appropriateness of earlier return to work than recommended above

- If HCP return to work earlier than recommended above, they should still adhere to the Return to Work Practices and Work Restrictions recommendations above.

Appendix F: Other considerations for masks and PPE - Reusing and Sterilization:

Table 3. Hot air (75 °C) disinfection

	Hot Air (30 min, 75 °C)	
Cycle	Efficiency (%)	Pressure Drop (Pa)
5	96.86	7
	96.02	6
	96.21	7
Average	96.36 ± 0.44	6.7 ± 0.6
10	96.85	7
	97.48	8
	97.41	9
Average	97.25 ± 0.34	8.0 ± 1.0
15	97.47	8
	97.94	11
	97.12	8
Average	97.51 ± 0.41	9.0 ± 1.7
20	95.74	8
	95.7	8
	96.44	9
Average	95.96 ± 0.42	8.3 ± 0.6

Table 4. UV disinfection

Cycle	UV light (30 min)	
10	96.01	10
	96.73	7
	97.60	10
Average	96.78 ± 0.80	9.0 ± 1.7

Samples	Meltblown		Static-charged cotton		E. Coli. disinfection (%)
	Filtration efficiency (%)	Pressure drop (Pa)	Filtration efficiency (%)	Pressure drop (Pa)	
Hot air (oven) 70 °C, 30 min	96.60	8.00	70.16	4.67	>99
UV (sterilizing cabinet) 30 min	95.50	7.00	77.72	6.00	>99
75% alcohol solution soaking and drying	56.33	7.67	29.24	5.33	>99
Chlorine-based solution 5 min	73.11	9.00	57.33	7.00	>99
Steam (hot water vapor) 10 min	94.74	8.00	77.65	7.00	>99
Initial samples before treatment	96.76	8.33	78.01	5.33	

Price and Chu (2020): Conclusion and Additional Notes From our results, there are two disinfection methods which do not reduce the filtration efficiency of the melt blown layer after an appreciable number of treatment cycles. We found: Method 1: 75 °C Hot air (30 min) for 20 cycles Method 2: UV (254 nm, 8 W, 30 min) for 10 cycles. **Regarding treatment with steam, we advise caution.** For 3 treatment cycles or less, we found the filtration efficiency can be maintained at >95%. However, after 5 cycles the efficiency drops to ~85%, and 10 cycles will drop the efficiency to ~80%