



COVID-19 Interim Infection Control Guidance for Prehospital Emergency Medical Services (EMS)

In order to ensure the appropriate protection of healthcare workers, effective communication among clinicians requesting emergency transport, EMS personnel, and receiving facilities is necessary for a patient with possible or known 2019-Novel Coronavirus (COVID-19) disease. Prehospital personnel should follow CDC infection control guidance and use Standard, Contact, Droplet, and Airborne Precautions, including the use of eye protection (e.g. goggles or a face shield).

CDC Interim Guidance for Emergency Medical Services (EMS) Systems updates can be found here:

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

CDC guidance on infection control, PPE, and hygiene can be found here:

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

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

CDC guidance on isolation precautions can be found here:

<https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>

<https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html>

DOH Healthcare Provider Resources & Recommendations can be found here:

<https://www.doh.wa.gov/Emergencies/NovelCoronavirusOutbreak2020/HealthcareProviders>

When COVID-19 is suspected in a patient needing emergent or non-emergent transport, ***prehospital care providers and healthcare facilities should work closely with local Public Health and provide as much advance notice as possible that they may be transporting or receiving a patient who may have COVID-2019 disease.***

EMS clinicians should exercise appropriate precautions when responding to any patient with signs or symptoms of a respiratory infection and have community situational awareness regarding COVID-19.

Pay attention to the dispatch information for signs and symptoms indicative of COVID-19. Symptoms typically appear 2- 14 days after exposure but may be longer or not appear at all.

Initial assessment should begin from a distance of at least 6 feet from the patient, if possible. Do not rely solely on dispatch for alerts on donning PPE. Conduct "doorway triage" or "a rapid scene size-up and verbal patient assessment" ask "does anybody here have a fever, cough, shortness of breath, or respiratory distress?"

- If yes, don appropriate PPE for COVID-19
- Have the patient put on a facemask



Patient contact should be minimized to the extent possible until a facemask is on the patient.

- If COVID-19 is suspected, all PPE as described below should be used.
- If COVID-19 is not suspected, EMS clinicians should follow standard procedures and use appropriate PPE for evaluating a patient with a potential respiratory infection.

Assessment Criteria

Circumstance: A patient complains of respiratory illness with or without FEVER

Questions to be incorporated to patient assessment:

1. Did/Does the patient have a fever in conjunction with their current illness? (Fever may not be present in some patients.)
 - Fever onset date
 - Measured temperature
2. Does the patient have symptoms of lower respiratory illness (LRI) (e.g. cough, difficulty breathing)?
 - Symptom onset date
3. Then ask:
 - Have they had contact with a person confirmed or suspected to have COVID-19?
 - Nature of contact: family/household, coworker, healthcare worker, travel, other?
 - Have they traveled from affected geographic areas (China, Iran, Italy, Japan, South Korea) in the past 14 days?
 - Have they had contact with a person who recently traveled from an affected geographic areas who was sick?
4. Suspect COVID-19 if the patient answered YES to
 - Fever or respiratory symptoms, and contact with confirmed case; OR
 - Fever and respiratory symptoms, and travel to an affected geographic areas; OR
 - Fever with severe acute lower respiratory illness and no source of exposure has been identified

If the provider suspects COVID-19 then:

1. Ensure that the patient is masked;
2. Ensure that healthcare personnel use contact, droplet, AND airborne precautions, INCLUDING eye protection (e.g., goggles or face shield) Please note: Airborne precautions include use of NIOSH-approved fit-tested N95 mask or higher.
3. Follow the below interim infection control guidance for prehospital EMS for patient transport, personal protective equipment, safe work practices, clinical specimens, documentation, post-transport management of contaminated vehicles, and EMS personnel follow up.

B. Patient Transport

Objective: Safely transport patients with known or possible COVID-19 disease.

Activities:



- EMS clinicians should notify the receiving healthcare facility that the patient has an exposure history and signs and symptoms suggestive of COVID-19 so that appropriate infection control precautions may be taken prior to patient arrival.
- Involve the fewest EMS personnel required to minimize possible exposures. Try to limit to 1 provider in back of ambulance attending the patient, if patient condition allows.
- Family members and other contacts of COVID-19 patients should not ride in the ambulance if possible. If riding in the transport vehicle, they should wear a facemask.

Patient care specific:

- If possible, place a facemask on the patient to contain droplets expelled during coughing. If this is not possible (i.e., would further compromise respiratory status, difficult for the patient to wear), have the patient cover the mouth/nose with tissue when coughing.
- Oxygen delivery with a nasal cannula. If a nasal cannula is in place, a facemask should be worn over the nasal cannula.
- Oxygen delivery with a non-rebreather facemask may be used to provide oxygen support during transport.
- If possible, consult with medical control before performing aerosol-generating procedures for specific guidance.
- In addition to the PPE described within this document, EMS clinicians should exercise caution if an aerosol-generating procedure (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), bi-phasic positive airway pressure (biPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR) is necessary.
- If needed, positive-pressure ventilation should be performed using a resuscitation bag-valve mask, preferably one equipped to provide HEPA or equivalent filtration of expired air.
- EMS organizations should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
- If possible, the rear doors of the transport vehicle should be opened and the HVAC system should be activated during aerosol-generating procedures. This should be done away from pedestrian traffic.
- Cough-generating procedures (e.g., mechanical ventilation, nebulizer treatment) should be avoided during prehospital care if possible.
- Treat any acute symptoms (e.g. breathing problems, hypotension, etc.) in accordance with the appropriate local MPD and department approved County Patient Care Protocol.

C. Personal Protective Equipment

Objective: Ensure the safety of prehospital care providers who transport patients with known or possible COVID-19 disease.

Activities:



- Prehospital care providers who directly handle a patient with COVID-19 disease or who are in the compartment with the patient should wear PPE as recommended for Standard, Contact, Droplet and Airborne Precautions, and use eye protection (e.g., goggles or face shield). Recommended PPE includes:
 - A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated.
 - Disposable isolation gown
 - Respiratory protection (i.e., N-95 or higher-level respirator)
 - Eye protection (i.e., goggles¹ or face shield²)

Drivers specific:

- When possible, use vehicles that have separate driver and patient compartments that can provide separate ventilation to each area. Close the door/window between these compartments before bringing the patient on board. Set the vehicle's ventilation system to the non-recirculating mode to maximize the volume of outside air brought into the vehicle. If the vehicle has a rear exhaust fan, use it to draw air away from the cab, toward the patient-care area, and out the back end of the vehicle. Some vehicles are equipped with a supplemental recirculating ventilation unit that passes air through HEPA filters before returning it to the vehicle. Such a unit can be used to increase the number of air changes per hour (ACH) (<https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf>).
- After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.
- If a vehicle without separate compartments and ventilation must be used, open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting. This will create a negative pressure gradient in the patient area.
- If the transport vehicle does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A facemask should continue to be used during transport.
 - Instructions for a general approach to donning and doffing can be found here <https://www.cdc.gov/coronavirus/2019-nCoV/hcp/infection-control.html>.
 - An example doffing sequence can be found at <https://files.asprtracie.hhs.gov/documents/aspr-tracie-transport-playbook-508.pdf>.
- On arrival, after the patient is released to the facility, EMS clinicians should remove and discard PPE and perform hand hygiene. Used PPE should be discarded in accordance with routine procedures.

¹*Appropriately fitted, indirectly-vented goggles with a manufacturer's anti-fog coating provide the most reliable practical eye protection from splashes, sprays, and respiratory droplets. Directly-vented goggles may allow penetration by splashes or sprays; therefore, indirectly-vented or non-vented goggles are preferred for infection control. Newer styles of goggles may provide better indirect airflow properties to reduce fogging, as well as better peripheral vision and more size options for fitting goggles to different workers. Many styles of goggles fit adequately over prescription glasses with minimal gaps. However, to be efficacious, goggles must*



fit snugly, particularly from the corners of the eye across the brow. While highly effective as eye protection, goggles do not provide splash or spray protection to other parts of the face.

²Face shields are commonly used as an infection control alternative to goggles. As opposed to goggles, a face shield can also provide protection to other facial areas. To provide better face and eye protection from splashes and sprays, a face shield should have crown and chin protection and wrap around the face to the point of the ear, which reduces the likelihood that a splash could go around the edge of the shield and reach the eyes. Disposable face shields for medical personnel made of lightweight films that are attached to a facemask or fit loosely around the face should not be relied upon as optimal protection.

D. Safe Work Practices

Objective: Ensure safe work practices among EMS personnel to prevent transmission of COVID-2019.

Activities:

- Avoid touching one's face with contaminated gloves.
- Avoid unnecessary touching of surfaces in the ambulance vehicle.
- Arrange for the receiving facility staff to meet the patient at the ambulance door to limit the need for EMS personnel to enter the emergency department in contaminated PPE. (It may not be practical to change PPE before patient transfer into the facility.) Remove and discard PPE after transferring the patient at the receiving facility and perform hand hygiene. Treat used disposable PPE as medical waste.

E. Documentation

Documentation of patient care should be done after EMS clinicians have completed transport, removed their PPE, and performed hand hygiene.

Any written documentation should match the verbal communication given to the emergency department providers at the time patient care was transferred per local MPD protocol.

EMS documentation should include a listing of EMS clinicians and public safety providers involved in the response and level of contact with the patient (for example, no contact with patient, provided direct patient care). This documentation may need to be shared with local public health authorities

F. Post-Transport Management of the Contaminated Vehicle

Objective: Safely clean vehicles used for transport of COVID-19 patients or persons under investigation to prevent COVID-19 transmission.

Activities:

- Follow standard operating procedures for the containment and disposal of regulated medical waste.
- After transporting the patient, leave the rear doors of the transport vehicle open to allow for sufficient air changes to remove potentially infectious particles.



- The time to complete transfer of the patient to the receiving facility and complete all documentation should provide sufficient air changes
- Follow standard operating procedures for containing and reprocessing used linen. Wear appropriate PPE when removing soiled linen from the vehicle. Avoid shaking the linen.
- Clean and disinfect the vehicle in accordance with company/agency standard operating procedures. Personnel performing the cleaning should wear a disposable gown and gloves (a respirator should not be needed) during the clean-up process; the PPE should be discarded after use.
- All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces) should be thoroughly cleaned and disinfected using an EPA-registered hospital disinfectant in accordance with manufacturer's recommendations.
- Clean and disinfect reusable patient-care equipment according to manufacturer's instructions.

G. Follow-up of EMS Personnel

Objective: Ensure appropriate follow-up and care of EMS personnel who transport COVID-19 patients.

Activities:

- Manage EMS personnel who transport COVID-19 patients as recommended for hospital personnel identified in the latest CDC Guidance.
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html>
- 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 2019 (COVID-19).
<https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html>
- Planning and or conducting Active or Direct Active Monitoring of healthcare workers can be done through support by Local and State Public Health.
- What to do if you were potentially exposed to someone with confirmed coronavirus disease (COVID-19)
<https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/COVIDExposed.pdf>
- Healthcare provider Tracking Form
<https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/HealthcareProviderTrackingForm.pdf>
- Local Public Health needs be included for exposed health care workers. Contact information can be found here:
<https://www.doh.wa.gov/AboutUs/PublicHealthSystem/LocalHealthJurisdictions>