COVID-19 Infection Control Guidance for Prehospital Care and Emergency Medical Services

Please note that this guidance is based on the latest information available (as of 2/12/2020). EMS personnel should also consult the latest guidance from the CDC on the 2019 Novel Coronavirus (formerly 2019-nCoV, now known as COVID-19), available at https://www.cdc.gov/coronavirus/2019-ncov/hcp/index.html.

Effective communication among clinicians requesting medical transport of a patient with possible or known COVID-19 disease, EMS personnel, receiving facilities, and DHEC is necessary to ensure appropriate protection of healthcare workers. Prehospital personnel should follow CDC infection control guidance and use standard, contact, and airborne precautions, including the use of eye protection (e.g. goggles or a face shield). See guidance for Isolation Precautions at https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html.

When COVID-19 is suspected in a patient needing medical transport, prehospital care providers and healthcare facilities must work closely with DHEC staff and provide as much advance notice as possible that they may be transporting or receiving a patient who may have COVID-19 disease.

Identification of Potential Cases:

- If transporting a patient who has a fever and complains of symptoms of lower respiratory infection (e.g., cough, difficulty breathing), ask from a distance (ideally greater than six feet) if they have traveled to China within the last 14 days or if they have had close contact with a person diagnosed with COVID-19.
- If a symptomatic patient has been in China or in close contact with a person diagnosed with COVID-19 within the last 14 days, the recommendations below must be followed, including immediately donning appropriate PPE and placing a mask on the patient if possible. EMS personnel must notify the receiving facility of this information so that they may take appropriate steps for infection control.
- If the receiving facility is concerned about potential COVID-19 infection in the patient after evaluating them, they must immediately notify the DHEC Regional Epidemiology Office (contact information available at the end of this document) of the potential Person Under Investigation (PUI).

Patient Transport Recommendations:

- Involve the fewest EMS personnel required to minimize possible exposures.
- Family members and other contacts of COVID-19 patients should not ride in the ambulance if possible. If necessary, they must be evaluated for fever and lower respiratory symptoms and, if either is present, wear a surgical mask.
- 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

should be used to increase the number of air changes per hour (ACH) (https://www.cdc.gov/niosh/hhe/reports/pdfs/1995-0031-2601.pdf).

- 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 possible, place a surgical mask on the patient to contain droplets expelled during coughing. If a nasal cannula is in place, a facemask is worn over the nasal cannula.
- Oxygen delivery with a non-rebreather face mask may be used to provide oxygen support during transport as necessary.
- Prehospital care providers must use caution and only perform an aerosol-generating procedure if it is required (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]).
    - BVMs and other ventilatory equipment should be equipped with HEPA filtration to filter expired air.
- EMS organizations are responsible for consulting their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive-pressure ventilation.
- Cough-generating procedures (e.g., intubation, nebulizer treatment) should be avoided during prehospital care if possible. If they must be performed, open the rear doors of the transport vehicle and activate the HVAC system, away from pedestrian traffic.

Personal Protective Equipment (PPE) Recommendations:

- Prehospital care providers who directly handle a patient with COVID-19 disease or who are in the compartment with the patient must wear PPE as recommended for Standard, Contact, and Airborne Precautions, and use eye protection (e.g., googles or face shield). These include the following:
    - Disposable isolation gown,
    - Disposable patient examination gloves,
    - Eye protection (i.e., goggles or face shield), and
    - Respiratory protection (i.e., N-95 or higher-level respirator)
- Personnel in a separate driver's compartment who will have no direct patient contact do not need to wear PPE during transport. If the vehicle does not have a separate driver's compartment, the driver must wear an N-95 or higher-level respirator.
    - Drivers who also provide direct patient care (e.g., moving patients on stretchers) must wear the recommended PPE for patient contact. This PPE should be removed (except the mask should be left in place if there is not a separate driver's compartment) and hand hygiene performed after completing patient care and before entering driver's compartment to avoid contaminating the compartment.
- Instructions for a general approach to donning and doffing can be found here https://www.cdc.gov/coronavirus/mers/infection-prevention-control.html. An example doffing

sequence can be found at https://files.asprtracie.hhs.gov/documents/aspr-tracie-transport-playbook-508.pdf.

Safe Work Practices:

- 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 standard medical waste.

Post-Transport Management of the Contaminated Vehicle:

- Follow standard operating procedures for the containment and disposal of regulated medical waste.
- Follow standard operating procedures for containing and reprocessing used linen. Wear appropriate PPE when removing soiled linen from the vehicle. Avoid shaking the linen.
- 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 at the receiving facility and complete all documentation should provide sufficient air changes.
- Clean and disinfect the vehicle in accordance with standard operating procedures. Personnel performing the cleaning must wear at least a disposable gown and gloves (and a respirator and/or eye protection if indicated) during the clean-up process; the PPE is 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) must be thoroughly cleaned and disinfected using a product with an EPA-approved emerging viral pathogens claim in accordance with manufacturer's recommendations. See additional information about EPA-approved emerging viral pathogens claims.
- Clean and disinfect reusable patient-care equipment according to manufacturer's instructions.

Follow-up of EMS Personnel:

- EMS personnel who have been exposed to a patient with suspected or confirmed COVID-19 must notify their infection control officer to ensure appropriate follow-up.
- DHEC will assist in the risk assessment and management of EMS personnel who have transported COVID-19 patients as recommended in the most recent CDC guidance.
- Planning and/or conducting monitoring of healthcare workers must be coordinated with DHEC.
- Prehospital providers who have been exposed to the virus must be alert for fever or respiratory symptoms. If symptoms develop, they must self-isolate and notify DHEC and the appropriate staff at their EMS agency.
- EMS agencies should develop sick-leave policies for personnel that are nonpunitive and consistent with public health guidance. Ensure all personnel are aware of the sick-leave policies.

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EMS Employer Responsibilities:

- Have infection control policies and procedures in place, including a sequence for safely donning and doffing PPE.
- Provide all EMS providers with job- or task-specific education and training on preventing transmission of infectious agents, including refresher training.
- Ensure that EMS providers are trained on and have practiced appropriate use of PPE prior to caring for a patient.
- Ensure EMS personnel are medically cleared, trained, and fit tested for respiratory protection device use (e.g., N95 respirators), or medically cleared and trained in the use of an alternative respiratory protection device (e.g., Powered Air-Purifying Respirator, PAPR) whenever respirators are required. OSHA has respiratory training videos.
- Have an adequate supply of PPE and appropriate disinfectants for EMS transport vehicles and their contents.
- Ensure that EMS clinicians and biohazard cleaners contracted by the EMS employer tasked to the decontamination process are educated, trained, and have practiced the process according to the manufacturer's recommendations or the EMS agency's standard operating procedures.

Additional Resources:

- Interim Guidance for Emergency Medical Services (EMS) Systems and 911 Public Safety Answering Points (PSAPs) for 2019-nCoV in the United States. Centers for Disease Control and Prevention. Available at https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html.
- The EMS Infectious Disease Playbook. Assistant Secretary for Preparedness and Response's (ASPR's) Technical Resources, Assistance Center, Information Exchange (TRACIE). Available at https://www.ems.gov/pdf/ASPR-EMS-Infectious-Disease-Playbook-June-2017.pdf.

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How to Report a Suspect COVID-19 Case:

Report to the DHEC Regional Epidemiology office (listed below) in the region in which the patient resides.

Immediately Reportable (by telephone)

Lowcountry	**Midlands**	**Pee Dee**	**Upstate**
Allendale, Bamberg, Beaufort, Berkeley, Calhoun, Charleston, Colleton, Dorchester, Hampton, Jasper, Orangeburg 4050 Bridge View Drive, Suite 600 N. Charleston, SC 29405 Office: (843) 441-1091 Nights/Weekends: (843) 441-1091	Aiken, Barnwell, Chester, Edgefield, Fairfield, Lancaster, Lexington, Kershaw, Newberry, Richland, Saluda, York 2000 Hampton Street Columbia, SC 29204 Office: (888) 801-1046 Nights/Weekends: (888) 801-1046	Clarendon, Chesterfield, Darlington, Dillon, Florence, Georgetown, Horry, Lee, Marion, Marlboro, Sumter, Williamsburg 1931 Industrial Park Road Conway, SC 29526 Office: (843) 915-8886 Nights/Weekends: (843) 915-8845	Abbeville, Anderson, Cherokee, Greenville, Greenwood, Laurens, McCormick, Oconee, Pickens, Spartanburg, Union 200 University Ridge Greenville, SC 29602 Office: (864) 372-3133 Nights/Weekends: (864) 423-6648

What to Report:

- Patient's name
- Patient's complete address, phone, county, date of birth, race, sex
- Physician's name and phone number
- Name, institution, and phone number of person reporting
- Disease or condition ("suspect COVID-19")
- Symptoms
- Date of onset of symptoms
- Recent travel history (locales, arrival dates, departure dates, mode of transportation)
- Lab results, specimen site, collection date

HIPAA: Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512)