

Editorial

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How Should Emergency Medical Services Personnel Protect Themselves and the Patients During COVID-19 Pandemic?

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Emergency medical services (EMS) play a vital role in the management of public health emergencies such as epidemics of infectious diseases. Unique challenges, however, are expected under these circumstances beyond what occurs during normal conditions. EMS personnel often have limited information about their patients, work under uncontrolled conditions, and accompany their patients in enclosed spaces of the ambulance. They are at particular risk of contracting the infectious agent unless standard and transmission-based precautions are implemented ⁽¹⁾. Appropriate use of personal protective equipment (PPE) by responding personnel is, therefore, of paramount importance.

Since the report of the first cases of COVID-19 in late December 2019, the disease has spread beyond China. As of March 29th, a total of 634,835 confirmed cases have been reported globally and 29,975 people have died ⁽²⁾.

The Center for Diseases Control (CDC) and other authorities and advisory agencies have prepared guidelines regarding safety precautions for EMS personnel, including appropriate selection and use of PPE ⁽³⁾. Here is a brief summary of these recommendations:

General recommendations:

- If prior information about potential for COVID-19 is not present, EMS technicians should consider any patient with signs or symptoms of a respiratory infection as potentially infected.
- The number of providers involved should be limited to the minimum required for safe provision of care.
- Rapid and safe donning and doffing of PPE should be practiced in advance to avoid cross-contamination.
- All patients with acute infectious respiratory symptoms should be provided with a surgical mask for source control.

- All personnel should avoid touching their face while working.
- Drivers who provide direct patient care should wear recommended PPE. However, before entering the driver's compartment, they should remove PPE and perform hand hygiene.
- Any unprotected exposure should be reported to the authorities.
- EMS providers should be alert for fever or respiratory symptoms. Should symptoms develop, they should report to their chain of command and self-isolate.

Recommended PPE:

- EMS personnel who either care for a patient with possible COVID-19 directly or who are in the same compartment with the patient should wear an N-95 or higher-level respirator, goggles or a disposable face shield, disposable examination gloves, and an impermeable isolation gown.
- In case of shortage of PPE gowns may be reserved for aerosol-generating procedures (AGPs), where splashes and sprays are anticipated, and high-contact patient care such as moving patient onto a stretcher. N-95 respirators may also be prioritized for AGPs and surgical facemasks used in other situations.
- AGPs include bag valve mask ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, or cardiopulmonary resuscitation.

At the scene:

- If, based on the information provided by the dispatcher, the patient is suspected of having COVID-19, EMS personnel should put on appropriate PPE before entering the scene. Otherwise, they should maintain a distance of at least 2 meters from the patient and minimize patient contact as much as possible until a facemask is worn by the patient.
- Perform hand hygiene before beginning patient

care activities.

- The pass-through door/window between the driver and the patient compartment should be kept tightly closed before bringing the patient on board.

During transport:

- The minimum number of providers should be in the patient compartment.
- The patient's relatives and contacts should not ride in the ambulance, or if unavoidable, should wear a facemask.
- Turn on the exhaust fan of the patient compartment and switch the ventilation system in both compartments on non-recirculating

mode.

At the hospital:

- Leave the rear doors of the ambulance open while transferring the patient to the hospital.
- Remove and discard PPE after the patient is released to the receiving hospital and then discard them in compliance with routine procedures.
- Thoroughly clean and disinfect all potentially contaminated surfaces such as stretcher, control panels, floors, and walls as well as reusable medical equipment. Wear a disposable gown and gloves and keep the doors of the ambulance open while cleaning the vehicle.

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