

Application of the Ultraviolet Germicidal Irradiation system can reduce microbial surface contamination in ambulance compartments

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Table 1. SOP for Decontamination of an Ambulance that has transported a person under Investigation or patient with confirmed Ebola (CDC, 2016)

Before Decontamination

- Limit the number of people exposed to potentially contaminated materials
- All waste, including PPE, drapes, and wipes, should be considered Category A infectious substance and should be packaged appropriately for disposal.
- PPE should be donned and doffed according to organizational protocols.
- PPE selection should consider worker protection for biological exposures and potential chemical exposures based on the disinfectant used.

During Decontamination

- Disinfect the outside of any prepositioned but unused medical equipment (still inside the protective bags they were placed in) and pass it to the warm zone. If the equipment was removed from a protective bag in transit, assess the equipment to determine if it can be properly decontaminated and disinfected, or disposed of.
- Any areas that are visibly contaminated with the patient's body fluids should be decontaminated first with an approved EPA-registered disinfectant for the appropriate contact time before soaking up the fluid with absorbent materials.
- If the interior of the ambulance was draped prior to transport, remove the draping by rolling the drapes down outside in, from the ceiling to the floor of the unit starting at the front of the compartment and moving to the rear.
- Roll flooring drapes from the front to rear of the compartment, rolling drapes outside in.
- To facilitate packaging and transport, drapes can be gently cut into segments. It is important that all drape materials are in sections that are small enough to facilitate the insertion of the biohazard bags into an autoclave or pre-determined Category A infectious substance packaging for disposal.
- Two people in PPE should manually disinfect the interior of the patient care compartment with particular detail for high-touch surfaces such as door handles and steps using care to limit mechanically generated aerosols and using the surface wipe method to disinfect.
- Disinfect the interior as a team so that the team members can talk to each other through the process and expedite the decontamination process.
- Once the manual interior wipes down has been completed, collect and package all waste as Category A waste.
- Manually wipe down the ambulance's exterior patient loading doors and handles, and any areas that may have been contaminated, with disinfectant. The exterior of the ambulance does not require a full disinfectant wipe down.
- Once the outside of all surfaces (including waste bags) have been wiped with disinfectant, then doffing can occur.

After Decontamination

- A third person who has been in the cold zone should supervise doffing, which should be performed according to organization doffing protocols.
- Dispose of all waste according to organization protocols as well as local and federal regulations for Category A infectious substances.

- Additional cleaning methods can also be used. While not required, this may provide additional assurance to personnel and public prior to returning the vehicle to service. Ultraviolet germicidal irradiation, chlorine dioxide gas, or hydrogen peroxide vapour can be used for an additional disinfection step. However, these should not replace the manual disinfection, as their efficacy against organisms in body fluids has not been fully established and these methods may require specialized equipment and PPE.
- The ambulance can then be returned to service.

Note: The following key assumptions are being made in the above SOP: All healthcare workers (hospital and out-of-hospital) who are involved will have received education and training and demonstrated the necessary competencies for management of patients with serious communicable diseases. Healthcare facilities and transporting ambulance agencies have procedures for the management of patients with serious communicable diseases. Facilities and transporting ambulance agencies are conducting tabletop and operational exercises that test and refine procedures for the transfer of patients. This guidance complements other CDC guidance for management of patients with serious communicable diseases. PPE = Personal Protective Equipment.