☑ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

Ambulance Cleaning and Disinfection

Purpose:
Proper cleaning and disinfection of an ambulance and equipment are necessary to reduce the bioburden of disease and prevent secondary transmission of a known or unknown highly contagious disease. The process describes the measures needed to clean and disinfect an ambulance prior to its return to service following the transport of a patient with a known or suspected Category A disease.

Note: *All disinfection should use a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus (norovirus, rotavirus, adenovirus, poliovirus) to disinfect environmental surfaces at appropriate concentration and contact time.*

1. This process is to be done after the Biocell or visquine (see procedure) has been removed.
2. Site Set Up
   A. Select an appropriate site for ambulance decontamination that protects the vehicle and the decontamination team from weather elements, preferably a well-ventilated large, enclosed structure.
   B. Establish a secure perimeter for safety of the public and decontamination personnel.
   C. Include considerations for waste management, security plan, public perception, and media visibility when selecting decontamination site.
   D. Depending on the location, the ability for climate control is beneficial.
   E. Define and mark hot, warm, and cold zones of contamination[1] around the ambulance that require PPE to enter.

[1] The hot zone is considered an area that is known or suspected to be contaminated and has a high risk of exposure. It should only be entered with full PPE. In ambulance decontamination, this would be the vehicle and an area about a meter beyond the ambulance.
The warm zone can be considered a transitional area between the hot and cold zones that has no known contamination but has a moderate risk of exposure. It should only be entered when wearing full PPE. This is also the area where one begins the initial portion of the doffing process (following a full suit wipe down within the hot zone) when leaving the hot zone. For ambulance decontamination, the warm zone can also be the place where waste barrels are pre-positioned so that the waste bags can be placed directly into the containers without entering the hot zone.

3. Prior to cleaning
   A. The patient care provider (while wearing "dirty PPE") will remove all equipment, supplies, linen, waste PRIOR to leaving the vehicle and before Biocell/Visquine liners are removed from inside the ambulance. Equipment will be placed in the warm zone.
   B. All waste, including PPE, drapes, and wipes, should be considered Category "A" infectious substance, and should be packaged appropriately for disposal.
   C. The driver or other personnel will be responsible for cleaning and disinfection of the transport unit. One to two people will clean and disinfect; a third in PPE will observe and be available to assist as necessary
   D. The cleaning teams will don CLEAN PPE per protocol.
   E. 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.
   F. Place biohazard bag in container close to exit for used cleaning cloths.

4. Cleaning and decontamination
   A. Cleaning will be done beginning at an entrance to the ambulance and moving towards the dirty area. This way, the clean personnel will remain clean as they enter the vehicle and stay in a "clean" area until they exit at the opposite end of the ambulance.
   B. Mix EPA registered cleaning disinfectant per manufacturers' guidelines. All products will have instructions for cleaning and disinfection. Note the manufacturers' "dwell time" or the amount of time a surface must stay wet AFTER cleaning to achieve disinfection.
   C. Using disposable cloths begin cleaning all surfaces as the vehicle is entered.
   D. Remove visible soiling of all surfaces.
   E. Allow surface to stay wet during dwell time. Reapply cleaner if necessary.
   F. Change cloths frequently during cleaning process. Place cloths in biohazard bag.
   G. 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.
   H. After ambulance is cleaned, clean re-usable medical equipment.
      a. Using the above process, clean then disinfect the outside of any prepositioned but unused medical equipment (still inside the protective bags they were placed in).

The cold zone is considered an area that has no contamination and no potential risk for exposure. The individuals in this area are not required to wear PPE, although the cold zone will often also serve as the PPE donning area.

b. If the equipment was removed from a protective bag in transit, assess the equipment to determine if it can be properly cleaned and disinfected, or disposed of.

I. Once cleaning and disinfection has been completed, collect and package all waste as Category "A" waste. Dispose of all waste according to organization protocols as well as local and federal regulations for Category "A" infectious substances.

J. Remove PPE per checklist. A third person who has been in the cold zone should supervise doffing, which should be performed according to organization doffing protocols.

5. Further options for decontamination

A. Additional cleaning methods can also be used. While not required, this may provide additional assurance to personnel and public prior returning the vehicle to service.

B. Ultraviolet germicidal irradiation, chlorine dioxide vapor, or hydrogen peroxide vapor can be used for an additional decontamination step. However, these should not replace the manual cleaning and disinfection, as their efficacy against organisms in body fluids has not been fully established and these methods may require specialized equipment and PPE.

C. The ambulance can then be returned to service.

Materials and equipment needed to decontaminate an ambulance (items listed are per person decontaminating)

	Fluid-resistant or impermeable coveralls (appropriate sized suits)	2
	Fluid-resistant or impermeable boot covers	2
	Powered air-purifying respirator (PAPR)	1
	PAPR batteries	2
	PAPR filters	1 set
	PAPR hoods	1
	PAPR hose and clamp	1

OR

	Full-face respirators with appropriate cartridges for protection	2

	Surgical Cap/Hair Cover	2
	N-95 Respirator	1
	Biohazard bags (Large)	30
	Biohazard Receptacles (1 small for sharps)	
	Nitrile gloves box (Small, Medium, Large, Extra-large)	1 EA
	Hand sanitizer (1 bottle)	10

	Absorbent rags (package)	
	Caution tape (yellow 200' roll)	
	Duct tape (roll)	
	Buckets	2
	Healthcare bleach (wipes) or other EPA-registered hospital disinfectant wipes	
	Trauma Shears (for Biocell/Visquine removal)	2
	Doffing Pad (Large Fluid Absorbent Fabric)	2

Protocol Source/References:

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