

Personal Protective Equipment:

Overview

During an animal health emergency, hazards from zoonotic diseases or chemical exposures may occur. The use of personal protective equipment (PPE), can protect you from these hazards and help prevent the further spread of pathogens to other animals, personnel or premises.

What is PPE?

Personal protective equipment is special clothing and equipment that places a barrier between responders and the hazards they encounter. It is especially important when the risk to human health and/or the difficulty of preventing the spread of disease is unknown. It includes respirators and protection for eyes, face, hands, body, feet, head, and hearing.

Functions of PPE

- **PPE serves two purposes:**
 - Protect the responder against potentially life-threatening hazards (e.g., zoonoses, chemicals).
 - Prevent the spread of pathogens between animals or locations.

In order for PPE to function the way it was meant to and protect the wearer fully, it must be donned and doffed properly. For more information, see the “Personal Protective Equipment: Donning” and “Personal Protective Equipment: Doffing” handouts.

Before Using PPE

Veterinary responders should only use PPE for which they have been medically cleared to use, fit tested for, and for which they have been thoroughly trained. Other things to be done before suiting up include:

- **Inspect PPE** – Responders should check to ensure all safety features and devices have been provided with their PPE, and they should also inspect PPE for damage before, during, and after each use.
- **Ensure PPE is appropriate** – Once they arrive at the premises, responders should establish whether additional zoonotic disease protection and biosecurity control is required.
- **Follow work zone protocols** – PPE should only be donned in the “cold zone” area established.

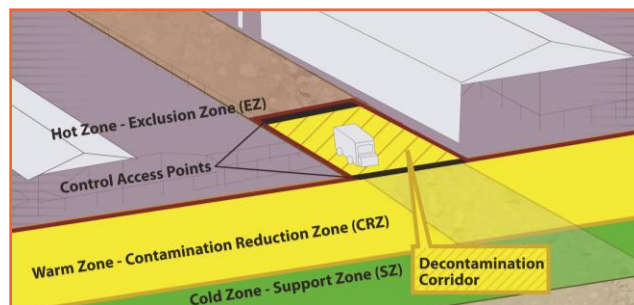
PPE Use in Work Zones

Hot Zone – Exclusion Zone (EZ): This is the high risk area where infected animals are or were housed. PPE must be worn in the Hot Zone/Exclusion Zone.

Warm Zone – Contamination Reduction Zone (CRZ): This is also a high risk area due to potential exposure to pathogens and chemical disinfectants. All personnel are required to wear full PPE.

Decontamination (Decon) Corridor: This area is between the Hot Zone and the Warm Zone. Entry and exit into the Hot Zone occurs through Control Access Points along this corridor. Decontamination of personnel and disinfection of equipment, including PPE also occurs here. Stations for depositing equipment and PPE are provided. Once responders have doffed, disinfected, and decontaminated in the Warm Zone, they should move to the Cold Zone/Support Zone (SZ) through the designated access points.

Cold Zone – Support Zone (SZ): This is the clean/uncontaminated area of the site, with low risk of exposure to pathogens. Personnel are not required to wear PPE, but facilities for donning PPE before entering other zones are provided.



PPE Safety

Wearing PPE can result in physical hazards (e.g., heat stress, slips, trips, and falls) as well as psychological stress, and impaired vision, movement, and communication. Time spent wearing PPE should be limited to maintain responders’ safety. It is the responders’ responsibility to be aware of their physical abilities and overall health.

Levels of PPE

The Occupational Safety and Health Administration (OSHA) classifies PPE into four levels of protection: A, B, C and D. Level D is the lowest level of protection, while Level A is the highest level of protection. This table shows the PPE levels and the equipment appropriate to provide that level of protection.

OSHA Levels for Hazardous Waste Operations and Emergency Response PPE				
To protect:	Level D	Level C	Level B	Level A
Skin (dermal)	Inner Barrier: Street clothes Outer barrier: Coveralls, scrubs or other protection	Inner Barrier: Environmental temperature dependent Street clothes/scrubs to insulated coveralls Outer barrier: Hooded chemical-resistant clothing		Inner Barrier: Totally-encapsulating chemical-protective suit Outer barrier: Disposable protective suit (if warranted)
Skin - specifically hands	Disposable gloves	Disposable gloves, Chemical-resistant outer & inner gloves		Chemical-resistant outer gloves over encapsulating suit
Respiratory		Air purifying respirator (APR) • Full-mask for unknown hazards & zoonoses • Half-mask for non-zoonotic	Self-contained breathing apparatus (SCBA)	
Eyes		See above	SCBA	
Footwear	Boots or shoes appropriate to perform duties		Chemical-resistant steel toe boots	Chemical-resistant steel toe boots over encapsulating suit
Known hazard No risk of skin contamination No risk of inhalation No risk of hazardous material contact			Unknown hazard Skin contamination imminent Respiratory exposure imminent Eye exposure imminent	

Additional Resources

- USDA Foreign Animal Disease Preparedness (FAD PReP): Personal Protective Equipment Guidelines http://www.aphis.usda.gov/animal_health/emergency_management/downloads/nahems_guidelines/fadprep_nahems_guidelines_ppe_final_april2011.pdf
- NIOSH Certified Filtering Facepiece Respirators http://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/
- NIOSH Certified Respirators http://www2a.cdc.gov/drds/cel/cel_form_code.asp
- Occupational Safety and Health Administration <http://www.osha.gov/SLTC/personalprotectiveequipment/>

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