Animal Decontamination:
Natural Disasters/Chemical Events

During some animal health emergencies, animals may be exposed to toxic materials in the environment. Efforts to decontaminate animals may be necessary to prevent adverse health effects.

Risks of Contamination of Animals

- Natural disasters: floods, hurricanes, tornadoes, earthquakes
- Agricultural or industrial: chemical spill, gas leak
- Terrorism/criminal event: chemical toxins, microbial pathogens

Decontamination

- The process of neutralizing and removing harmful materials that animals (or people) have been exposed to
- Goals of decontamination
  - Confine to specified area
  - Limit exposure time
  - Limit tissue damage and absorption
  - Prevent systemic poisoning
  - Prevent secondary contamination to responders and other animals
- A wide variety of contaminants may be present
  - Hazardous substances may be in the form of solids, liquids, particulates, or gases;
  - Many are flammable, reactive with water, toxic.
- It is very important to know the specific toxicant or contaminants involved.
  - Determines the level of risk and specific decontamination measures needed, and any short-term or long-term impacts

Animal Exposure

- Contact with skin
- Ingestion
  - Eating, drinking
  - Licking fur or contaminated surface
- Inhalation
- Ocular (eyes)
  - Fumes, dust, particulates, splashing liquid
- Indirect cross contamination

Affects To Animals

- Similar to humans
- Immediate (acute) damage
  - Skin irritation, redness
  - Chemical burns, hair loss
  - Respiratory distress
  - Systemic shock, death
- Chronic injury
  - Respiratory damage, scarring
- Carcinogenesis

Considerations

- Human safety
  - Animal welfare and health
- Response needs
  - Personnel and resources required
  - Personnel safety
- Specific toxic substance
- Number and variety of species
  - Time constraints
- Environmental issues
  - Large volumes of wastewater
  - Contaminated objects (e.g., leashes, collars, halters, hair)
  - Legal or jurisdictional issues/regulations - consult with officials before and after regarding appropriate disposal measures
  - Weather conditions

Decontamination Setup

- Site Control Zones
  - All areas should be clearly demarked
  - Monitor access
  - Prevent unauthorized access
  - Contain the contaminant

Site Setup
- Locate upwind and uphill from hot zone at a close but safe distance from the incident
- The area should be flat and level and of ample size for animals and responders
- Water supply
- Runoff must be contained to avoid environmental impact

Decontamination Procedure

Warm Zone: Station 1
- Medical assessment
- Photograph and record owner and location information
- Remove and discard contaminated items (e.g., collars, halters)
- Place clean restraining device
- Preliminary rinse
- Some contaminants may be reactive (and more dangerous) when mixed with water
- Move to Station 2

Warm Zone: Station 2
- Flush animal’s eyes with saline solution. **DO NOT USE eye ointment** until there is confirmation there is no contamination or ocular damage (e.g., corneal ulcers). Petroleum based ointments can absorb chemical agents and worsen the damage
- Wash with mild liquid detergent and lukewarm water
- Wipe head area with moist towelette/gauze
- Pay careful attention to skin folds and creases
- Provide non-slip surface for the animal
- Rinse thoroughly with lukewarm water
- Repeat as needed; 3 times for maximum benefit
- The animal's temperament may require use of muzzle or other restraint; head gate or chute for large animals. Use chemical sedation only on limited basis.
- Move to Station 3

Warm Zone: Station 3
- Kill microbial contaminants through the use of antimicrobial solutions
- Minimum contact time is essential
- Set up like Station 2 with a wash basin/shower and a rinse station
- Re-examine the animal.
- If contaminant found, re-decontamination
- If no residual contaminant, move to the Cold Zone for drying and veterinary care

Responder Safety

- HAZMAT training
- Personal Protective Equipment: Eye protection, gloves, waterproof clothing, respirator
- Experienced animal handlers: Not animal owner – Exception for working dogs
- Injury from animals: Bites, scratches, crushing, kicks; Contaminant exposure
- Heavy lifting: Back injuries, muscle strain
- Biological hazards: Zoonoses
- PPE safety issues: Slip, trips and falls

Additional Resources


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