Animal Decontamination
Perceptions and Methodologies

Chris Mabry
• Natural or man-made disasters are increasingly common occurrences
  • Hurricanes
  • Tornadoes
How?

- Agricultural & Industrial
  - West, Texas Explosion
How?

- Terrorism
  - World Trade Center terrorist attack
How?

- Flooding

Wastewater Outflow Sites TCEQ
How?

• Radiation exposure

• Agency of Toxic Substances and Disease Registry
  – More than 15,000 chemical incidents occurred in 2012 in the United States

<table>
<thead>
<tr>
<th>Physical Form</th>
<th>Type of Exposures</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solids &amp;</td>
<td>Ingestion, Inhalation,</td>
<td>Hydrocarbons, Polychlorinated</td>
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<tr>
<td>Liquids</td>
<td>Dermal, Ocular</td>
<td>Biphenyls, toxic metals, Acids, Alkalis, Glycols, Phenols, Alcohols</td>
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<tr>
<td>Particulates</td>
<td>Inhalation, Dermal,</td>
<td>Fiberglass, Asbestos particles, Mold Spores, Hydrocarbons, Glycols,</td>
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<tr>
<td></td>
<td>Ocular</td>
<td>Nontoxic Dust</td>
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<tr>
<td>Gases</td>
<td>Inhalation</td>
<td>Hydrogen Cyanide, Nitrogen Dioxide, Hydrogen Chloride, Hydrogen Fluoride,</td>
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</tbody>
</table>
The Result

- Animals become contaminated and require decontamination
The Result

- Animals Potentially Affected:
  - Companion Animals
  - Livestock
  - Wildlife
  - Service/Working Animals
Human – Animal Bond

- Pets Evacuation & Transportation Standards (PETS) Act 2006
  - Requires state and local emergency preparedness operational plans take into account the needs of individuals with household pets and service animals before, during and after a disaster.
The Inextricable Link

- **First Priority**
  - Human Health
- **Secondary Priority**
  - Animals
Animal Decontamination

- The removal of hazardous materials from animals
  - Can involve external and/or internal
  - Goal is to prevent further damage from exposure
  - Prevent secondary exposures
Veterinary Support

• Most important asset to be involved with animal decontamination!

• Why?
  – Triage and treatment if needed
  – Provide animal handling expertise
  – Animal sedation (if needed)
  – Animal welfare
Decontamination Process
Decontamination Process

• Assessment & Preparation
  – Identify contaminant type (if possible)
  – Determine initial health of animal
  – Determine need for treatment
  – Assess any behavioral issues and need for sedation
  – Consider animal welfare in making determination of need for sedation or other mechanisms for preventing injury to animal or handler
1. **Assessment & Preparation**

   − Assess Animal Temperament
     
     • Physical Restraint
     • Medical Intervention (Sedation)

   − Remove any apparel from animal
     
     • Leashes, Collars, Halters, Vests, Etc.
Decontamination Process

2. Flush Eyes
   – Flush Eyes & Apply Eye Lube (sterile petrolatum)
     • Saline Flush
Decontamination Process

3. Wet Decontamination

– Rinse the Animal
  • Rinse From Head to Tail
  • Rinse From Top to Bottom
3. Wash/Rinse
   - Apply Soap (Liquid Dish Soap)
     - Foaming Action as a Result of scrubbing
     - Long Haired Animals
       - Soft brush to assist
3. Wash/Rinse

- Rinse the animal
4. Decontamination Evaluation

– Evaluate the animal for additional signs of contamination

– If contamination is present, the animal will have to repeat the decontamination process
Decontamination Process

5. Drying Station (optional)
   – Dependent on Ambient Temperature and Animal Body Temperature
     • Towed dry
     • Blower systems
Decontamination Process

6. Veterinary Evaluation
   – Monitor animals for side effects or health complications
   – 24-72 hours
Decontamination Process

• Dry Decontamination
  – Use in situations where an animal has a dry particulate on hair coat
  – HEPA Filter Vacuum
    • Soft brush attachment
Decontamination Process

- **Dry Decontamination Considerations**
  - Be mindful of vacuum suction
  - Potential to frighten animals
    - Requires veterinarian support
  - Might require wet decontamination to remove all contaminants
Key Point

• Animal Decontamination is not just about “washing pets” – there are a lot of things to consider
Challenges
• Supplies/Equipment
  – Containment/Restraint System
    • Maintain Safety for Animal
  – Water Requirements
    • Can range between 10-25 gallons of water per wash for a single animal
      – Dependent on size of the animal, hair coat, and contaminant
      – Results in large volumes of waste water
• Collocate with Human Decontamination Operations.
• Admissions
  – Scanning & Holding
• Decontamination Area
• Drying & Post-Decon Scan
Personnel

- Trained in Animal Handling

1. Assessment, Preparation, Flush Eyes
   - 1-2 People
   - 1 Veterinarian

2. Wash/Rinse Process
   - 2 People

3. Drying Station
   - 2 People

4. Post Evaluations
   - 1-2 Person
   - 1 Veterinarian

**Total:**
2 Veterinarians
6-8 Support Staff
Continuity of Information

1. Admit the animal (with or without Owner)
2. Record Scan Results
3. Medical Record
4. Discharge
5. Owner and Animal Reunification
• Animal Safety:
  – Disoriented or Frightened
  • Result in Potential Injury During Decontamination
Safety

• Responder Safety:
  – Prone to Bites, Kicks, Scratches
  – Secondary Contamination
• Safety Zones
Assumptions

- Not all animal will react the same to the decontamination process.
  - Differences within species and breeds
Animals you know....
Animal Coat Considerations
Temperament Considerations
Animal Size Considerations
Triage Considerations
Assumptions

• Owners will perform decontamination on their pets
  – Risk of secondary exposures
  – Decrease speed of human decontamination operations
Special Considerations

• Working/Service Animal
  – Animal Bond/Separation
Current Animal Decontamination Resources
Decontamination Units

- HAZMAT Units
Decontamination Units

- HAZMAT Units
Decontamination Units

- HAZMAT Units
Decontamination Units

- HAZMAT Units
Decontamination Units

• Homemade Units
Decontamination Units

- Homemade Units
Decontamination Units

- Commercial Units
Decontamination Units

• TAMU-VET Units
Decontamination Units

- TAMU-VET Units
Decontamination Units

• TAMU-VET Units
Scenario

• 200 Small animals needing to be Decontaminated
• Requirements:
  – 6 Decontamination Stations
  – 15 minutes/animal to perform decontamination
Summary

• Summary and Recommendations
  – Need Local, State, Federal Plans
  – Need proper equipment
  – Need training with animal handling
  – Need veterinary support
Veterinary Emergency Team
TEXAS A&M UNIVERSITY

Questions?