Health and Safety
Zoonoses: Risks and Prevention

Zoonotic Disease
- Zoonosis
  - Disease of animals
  - Transmitted to humans
  - Under natural conditions
- Awareness of routes of transmission
  - Develop strategy to minimize risk

Disease Transmission
- Direct
  - Contact
  - Ingestion
  - Aerosol
- Indirect
  - Fomites
    - Inanimate objects
  - Vectors
    - Living organism (e.g., insects)

Direct Transmission
- Direct contact
  - Body fluids
    - Urine, feces
    - Saliva, blood
    - Milk
  - Tissues
    - Lesions
    - Carcass
    - Parturition
- Aerosol
  - Droplets spread through the air
    - Close proximity
      - Enclosed barns
      - Coughing, sneezing
      - Contaminated soil
- Ingestion
  - Contaminated food or water
  - Contaminated meat from infected animal

Indirect Transmission
- Fomites
  - Contaminated inanimate object
    - Buckets, shovels
    - Vehicles, clothing
  - Vector
    - Living organism transfers disease between animals
    - Mosquitoes, ticks, biting midges, flies
  - Environment
    - Soil
    - Organic material

Points to Remember
- Animals may not exhibit obvious signs of disease
  - Reservoir
    - Harbors pathogen without illness
    - Can be source of infection for others
- Not all pathogens spread by all routes of transmission
Example Zoonoses

- Anthrax
- Avian influenza
- Brucellosis
- Cryptosporidiosis
- E. coli
- Leptospirosis
- Q Fever
- Rabies
- Ringworm
- Salmonellosis
- Tuberculosis
- Vesicular stomatitis

PREVENTING EXPOSURE

Zoonoses Prevention

- Hand washing
  - After animal contact
  - Before eating, drinking
- Limit contact with animals
- No food or drink in animal areas

Personal Protective Equipment

- Gloves
  - Creates a barrier between you and the disease
  - Especially for hands with cuts, abrasions, chapped
  - Wash hands after removing gloves
- Coveralls, boots
- Mask, goggles

Cleaning and Disinfection

- Manure properly handled and removed
  - Does not contaminate drinking water or equipment
- Clean, disinfect soiled equipment
- Clean and disinfect (or dispose of) PPE after response activity
  - Wash hands after removing any PPE

Aerosol

- Adequate ventilation
- Control dust
- Wear masks in certain situations
  - Handling infectious animals or their tissues
  - Assisting with calving
  - Power washing
Vector Control

- Source reduction
  - Habitat reduction/elimination
  - Parasitic or predatory insects
- Control adults
  - Insecticides
    - Knockdown and residual sprays
    - Baits, fly traps
- Minimize interaction with insects
  - Personal protection

Biosecurity for Zoonotic Diseases

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<th>Route of Transmission</th>
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