



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




Dorland's Illustrated Medical Dictionary, 28th Edition

Just-In-Time Training Zoonoses Risk and Prevention

Disease Transmission

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



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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

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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



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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



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Example Zoonoses

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



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PREVENTING EXPOSURE

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Zoonoses Prevention




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

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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

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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



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Aerosol

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

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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

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Biosecurity for Zoonotic Diseases

Route of Transmission	Possible Biosecurity Measures
Direct Contact	Limit contact with infected animals Hand washing Personal protective equipment
Fomites	Cleaning and disinfection procedures Hand washing Personal protective equipment
Aerosol	Personal protective equipment
Ingestion	Cleaning and disinfection procedures
Vectors (e.g., insects)	Pest management procedures

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