

Zoonotic Diseases are transmitted between farm animals and humans.

According to the World Health Organization, more than half of all human **pathogens** are **zoonotic** and have represented nearly all of all **emerging** pathogens during the past decade. Farmers and farm workers have higher levels of risk for contracting zoonotic diseases because of the frequency of their exposure to animals.

Prevention is the best defense. Understanding how the disease transmission process works, building a team and effectively communicating within that team are essential in preventing the spread of zoonotic disease.

PROTECT YOURSELF:

- ✓ **Choose and use appropriate personal protective equipment (PPE)**
 - respiratory protection
 - gloves
 - safety glasses/goggles
 - clothing: coveralls, aprons, etc.
 - foot gear
- ✓ **Designate specific clothes for farm and ranch work**
 - use laundry precautions - launder separate from other family clothing
 - clean washing machine between washes
- ✓ **Disinfect work spaces with appropriate and clearly labeled designated cleaning solutions**
- ✓ **Provide designated hand washing area for workers**
 - hot water is recommended
 - hand washing station should be designed hands free if possible
 - use paper towels to dry
- ✓ **While walking or working wear**
 - sturdy shoes
 - long pants
 - insect repellent
- ✓ **Inspect entire body, neck, face, and hair for cuts, scrapes or bites daily**
- ✓ **Thoroughly clean, treat, and cover any open area prior to contact with animals**
- ✓ **Check medical records for tetanus vaccine status**

TERMS TO KNOW:

PPE: personal protective equipment

Pathogen: an agent that causes disease, especially a virus, bacterium or fungus

Infectious disease: a disease caused by bacteria, viruses, fungi, or parasites that can be transferred to humans

Zoonotic disease: an infectious disease which can be passed between animals and humans

Emerging infectious disease: an infectious disease whose incidence in humans has increased in the past two decades or threatens to increase in the near future



FUNGAL ZOOZNOSES

| DISEASE | HOST/ CARRIER | CHARACTERISTICS & PRIMARY TRANSMISSION | INCUBATION | HUMAN SYMPTOMS | PRECAUTION/ CARE / TREATMENT |
|----------------|-------------------------------|--|-------------|--|---|
| RING WORM | infected farm animals pets | <ul style="list-style-type: none"> contact with animals contact with feed or secretion | 10 -14 days | <ul style="list-style-type: none"> itchy, red, raised patches on skin may have pustules may be ring shaped hair loss | <ul style="list-style-type: none"> keep skin dry antifungals protective clothing <p>**scratching may cause a secondary bacterial infection</p> |
| HISTOPLASMOSIS | bats birds | <ul style="list-style-type: none"> inhalation of fungal spores from droppings | 3 - 17 days | <ul style="list-style-type: none"> fever chills fatigue muscle aches headache chest pain | <ul style="list-style-type: none"> PPE rest fluids pain relievers anti fungal <p>**treatment may last 3 months to one year</p> |

PARASITIC AND PROTEIN PARTICLE ZOOZNOSES

| DISEASE | HOST/ CARRIER | CHARACTERISTICS & PRIMARY TRANSMISSION | INCUBATION | HUMAN SYMPTOMS | PRECAUTION/ CARE / TREATMENT |
|--|------------------|--|---|---|--|
| TAPE WORM & TRICHINOSIS - PARASITES | pigs cattle | <ul style="list-style-type: none"> ingestion of infected, undercooked meats | <ul style="list-style-type: none"> 1-2 days for acute phase 2-8 weeks for chronic phase | <ul style="list-style-type: none"> abdominal discomfort fever & flu symptoms with trichinosis | <ul style="list-style-type: none"> PPE antiparasitic drugs for tape worm usually no meds for trichinosis <p>*may require antiparasitics</p> |
| AMOEBIC DYSENTERY - A PROTOZOA PARASITE | dogs | <ul style="list-style-type: none"> ingesting contaminated food, water | 2 days - several months | <ul style="list-style-type: none"> vomiting acute or diarrhea | <ul style="list-style-type: none"> PPE antiamoebic drugs antibiotics if bacterial infection develops |

VIRAL ZOOZNOSES

| DISEASE | HOST/ CARRIER | CHARACTERISTICS & PRIMARY TRANSMISSION | INCUBATION | HUMAN SYMPTOMS | PRECAUTIONS/ CARE / TREATMENT |
|--------------------|---|---|--|---|--|
| RABIES | mammals bats wild animals pets | <ul style="list-style-type: none"> animal bites contact with infected tissue | 2 - 21 days (usually 5 - 12) may be up to 3 months | <ul style="list-style-type: none"> headache - malaise fever salivation difficult swallowing seizures | <ul style="list-style-type: none"> PPE immune globulin vaccine |
| HANTA VIRUS | infected rodents | <ul style="list-style-type: none"> inhalation of rodent feces or urine | 7 - 39 days | <ul style="list-style-type: none"> fever dizziness nausea - vomiting pulmonary edema | <ul style="list-style-type: none"> PPE intense medical treatment and support of cardiac and pulmonary symptoms |
| ENCEPHALITIS | various animals mosquito ticks rodents | <ul style="list-style-type: none"> bites | 4 - 14 days | <ul style="list-style-type: none"> headache flu-like symptoms restless agitation | <ul style="list-style-type: none"> PPE anti-inflammatories antivirals steroids rest |
| HEPATITIS E | hepatitis E swine | <ul style="list-style-type: none"> consumption of fecally contaminated drinking water from infected animals consumption of uncooked/under cooked pork or deer meat | 3 - 6 weeks | <ul style="list-style-type: none"> fever anorexia nausea abdominal pain jaundice | <ul style="list-style-type: none"> PPE treat symptoms immunoglobulin vaccine |
| NEW CASTLE DISEASE | poultry | <ul style="list-style-type: none"> contact with secretions of infected birds | 2 - 15 days | <ul style="list-style-type: none"> conjunctivitis rarely flu-like symptoms | <ul style="list-style-type: none"> PPE eye drops avoid sunlight |
| POXVIRUS | dairy cows cattle | <ul style="list-style-type: none"> direct animal contact - teats or muzzle | 5 - 14 days | <ul style="list-style-type: none"> reddened nodules wart like nodules swelling around affected area | <ul style="list-style-type: none"> PPE keep area dry topical antiviral ointments |
| ANIMAL INFLUENZA | Avian (bird) flu H5N1, H7N9 & H9N2 Swine H1N1 & H3N2 | <ul style="list-style-type: none"> direct or indirect exposure to infected live or dead animals or contaminated environments | Avian: 2 - 8 days Swine: 1 - 7 days | <ul style="list-style-type: none"> fever cough - sore throat chest pain abdominal pain - diarrhea vomiting bleeding from nose or gums | <ul style="list-style-type: none"> rest fluids prescribed anti-viral drugs in some instances |

BACTERIAL ZOOSES

| DISEASE | HOST/ CARRIER | CHARACTERISTICS & PRIMARY TRANSMISSION | INCUBATION | HUMAN SYMPTOMS | PRECAUTIONS/ CARE/ TREATMENT |
|---|---|---|--|---|---|
| BRUCELLOSIS | cattle swine sheep goats | <ul style="list-style-type: none"> contact with animal tissue, blood, fluids inhalation | 1 -15 weeks | <ul style="list-style-type: none"> fever malaise flu-like symptoms can affect heart, bone & other organs | <ul style="list-style-type: none"> rest fluids PPE antibiotics |
| LEPTOSPIROSIS | cattle swine sheep goats wildlife | <ul style="list-style-type: none"> contact with urine of infected animals | 7 - 12 days | <ul style="list-style-type: none"> fever malaise flu-like symptoms jaundice | <ul style="list-style-type: none"> rest fluids PPE antibiotics |
| ST. ANTHONY'S FIRE | swine chickens turkeys | <ul style="list-style-type: none"> usually caused by group A Streptococcus contact with animal tissue or waste contact with infected soil ingestion | 3 - 14 days | <ul style="list-style-type: none"> fever chills headache joint pain skin lesions | <ul style="list-style-type: none"> rest fluids PPE antibiotics treat cuts and abrasions immediately |
| CAMPYLOBACTER | cattle swine sheep | <ul style="list-style-type: none"> under cooked meat raw milk contaminated water | 2 - 4 days | <ul style="list-style-type: none"> abdominal pain diarrhea fever | <ul style="list-style-type: none"> rest fluids PPE antibiotics food prep - precautions |
| LYME DISEASE | diseased deer or rodents | <ul style="list-style-type: none"> infected tick bites | 3 days - several weeks | <ul style="list-style-type: none"> "bulls eye" reddened area fever fatigue joint pain swelling | <ul style="list-style-type: none"> PPE anti-inflammatory antibiotics rest fluids insect repellent |
| E.COLI | all livestock | <ul style="list-style-type: none"> direct or indirect contact with animal waste | 1 - 10 days | <ul style="list-style-type: none"> diarrhea cramps vomiting | <ul style="list-style-type: none"> fluids electrolytes rest PPE *see physician if symptoms last more than a few days |
| TETANUS | horses sheep | <ul style="list-style-type: none"> exposure to contaminated soil or agent such as rusty nail | 3 - 21 days (average is 10 days) | <ul style="list-style-type: none"> muscle spasms skeletal contractures seizures respiratory distress | <ul style="list-style-type: none"> PPE immediate care anti-toxins |
| ANTHRAX | cattle sheep horses swine goats dogs | <ul style="list-style-type: none"> animal carcasses inhaled spores water | 1 - 12 days 1 - 7 days (respiratory) | <ul style="list-style-type: none"> skin lesions itching bumps redness respiratory distress in severe cases | <ul style="list-style-type: none"> antibiotics PPE immediate care of skin abrasions |
| TULAREMIA | sheep rabbits skunks | <ul style="list-style-type: none"> sheep ticks mosquito water inhalation | 1 - 10 days | <ul style="list-style-type: none"> fever chills headache lymph node swelling ulceration | <ul style="list-style-type: none"> PPE food prep precautions antibiotics |
| Q FEVER | cattle goats sheep | <ul style="list-style-type: none"> inhalation of contaminated dust (dried placenta/birth fluids) tick bites raw milk | 3 - 30 days | <ul style="list-style-type: none"> high fever chills sweating headache 30% - 50% develop pneumonia | <ul style="list-style-type: none"> fluids rest PPE antibiotics pain meds |
| SALMONELLA | dairy animals sheep poultry | <ul style="list-style-type: none"> inhalation infected soil water raw milk under cooked food | 12 - 72 hours | <ul style="list-style-type: none"> fever diarrhea cramps vomiting | <ul style="list-style-type: none"> rest fluids antibiotics PPE |
| PSITTACOSIS (PARROT FEVER) (ORNITHOSIS) | wild birds poultry | <ul style="list-style-type: none"> infected tissue animal/bird feces inhalation of secretions | 5 - 19 days | <ul style="list-style-type: none"> fever headache dry cough pneumonia-like symptoms | <ul style="list-style-type: none"> rest fluids antibiotics PPE |

COMMUNICATE WITH YOUR HEALTH CARE PROVIDERS

Information to share with your health care provider:

- Occupational exposure
- Symptoms of illness and/or infections
- Suspicion of diseased livestock or pets
- Recent travel to other parts of U.S. or out of country

UNDERSTAND YOUR RISK:

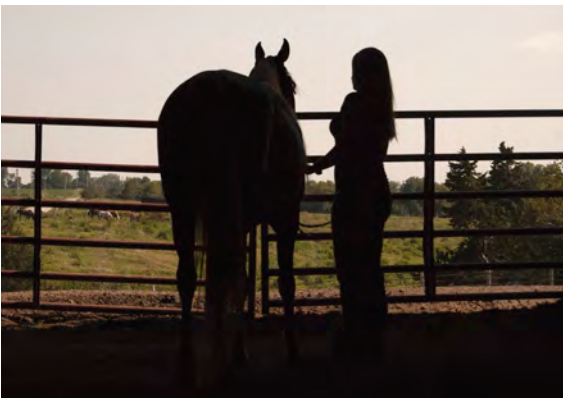
- ✓ Know your livestock & pets' potential for disease
- ✓ Discuss safe animal handling with family and workers
- ✓ Talk with your veterinarian
- ✓ Understand your risks when visiting petting zoos or agro tourism
 - check rules and policy for visitors
 - wash hands well with soap and warm water

SIGNS AND SYMPTOMS TO REPORT TO YOUR HEALTH CARE PROVIDER

- fever – short time or intermittent
- headache
- chills
- excessive fatigue
- joint pain/swelling
- redness over joints
- rashes/hives
- nausea/vomiting/diarrhea
- menstrual cycle changes or miscarriage
- orchyitis (scrotal swelling)

SPECIAL CONSIDERATIONS FOR CHILDREN

- Many young people spend their time interacting with pets or young livestock
- Children are at high risk of injury from animal bites, estimated 4.5 million in U.S. bitten by dogs annually
- Children are unaware of pet's temperament or health status
- Children do not understand animal maternal protective instincts



SPECIAL CONSIDERATIONS DURING PREGNANCY

- Pregnant women have compromised immune and respiratory symptoms
 - Increased vigilance in hand washing, PPE use, avoidance of animal body fluids & excrement
- Diseases that cause abortions in animals may have the same effect in humans
 - Avoid handling tissue from aborted animal fetuses
- Know risks related to toxoplasmosis, listeria, influenza, Q fever, and pharmaceuticals

REPORTABLE DISEASES:

Both the World Health Organization and the Center for Disease Control provide data on notifiable zoonotic diseases that must be reported. Reporting and management of these events are initiated at the state level and procedures vary from state to state. For more information visit www.cdc.gov/nndss