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ANIMAL AND HUMAN HEALTH PREVENTION OPPORTUNITIES

Zoonotic Disease-The Veterinarian's Role

Veterinarians oversee cases involving zoonotic diseases on a frequent basis. Uniquely, a veterinarian's education prepares them to address aspects of zoonotic cases, beyond animal health. According to 2018 data from the American Veterinary Medical Association, 61% of veterinarians work in private clinical practice. When combined with the number of veterinarians holding regulatory positions, a majority of veterinarians in the U.S. interact directly with animal owners/caretakers. Cases involving zoonotic diseases present a critical opportunity to educate the animal owner of precautions to consider, to best assure safety for them and others in their household. In this issue of Montana One Health, we will provide specific guidance on your role when dealing with commonly reported zoonotic diseases. A complete list of zoonotic reportable diseases is also provided.

Rabies

Confirmed and suspected rabies cases are jointly overseen by the Department of Livestock (DOL) and the Department of Public Health and Human Services (DPHHS). When a client contacts a veterinarian with concerns about a wild or domestic animal, DOL and/or DPHHS should be notified. Case management will ultimately be determined by exposure, diagnostic testing, and vaccination status. The veterinarian's role includes vaccination, physical evaluation of animals under quarantine, and client education. It is always important to remind animal owners that rabies is spread only through contact with infected saliva. The most likely opportunity for exposure is from an animal bite or scratch. Veterinarians should also be prepared to educate clients of clinical signs to watch for following an exposure. Clinical signs include: fearfulness, aggression, excessive drooling, difficulty swallowing, staggering, paralysis and seizures. Remember, aggressive behavior is common, but rabid animals may also be uncharacteristically affectionate. Timely notification to DOL and/or DPHHS is critical for successful management of rabies cases.

Brucella canis

Individuals at highest risk for *Brucella canis* infection are dog breeders or others who assist whelping dogs. Most human infections are associated with contact with birthing fluids, canine abortion products, or vaginal discharges from an infected dog. *B. canis* can be transmitted if these infectious materials contact a person's mucous membranes or abraded skin. The organism can also be present in canine urine, feces, and nasal secretions, although typically in lower concentrations than in reproductive fluids. People who have a compromised immune system, young children, pregnant women, or persons with artificial heart valves are at higher risk of severe disease if they acquire the infection. Protective measures such as wearing latex or rubber gloves should be taken to prevent contact with infected reproductive secretions, urine and tissues such as the placenta and aborted fetuses. When disinfecting kennel areas and runs, face masks and eye protection should be worn to prevent any material from entering the mouth or eyes. Symptoms are often mild and nonspecific. The most common signs and symptoms of human infection include a continued, intermittent, or irregular fever accompanied by headache, weakness, generalized aching and lymph node enlargement. In more severe infections, joints, bones, or heart valves may be affected. On average, an individual's signs will begin within 3-4 weeks following infection.

Enzootic Abortion of Ewes (Chlamydia abortus)

Animals ill with chlamydiosis shed the bacteria in their feces, discharge from the nose or eyes, or birthing tissues or fluids (placentas, fetal fluids). Human exposure is most likely to occur by ingestion, aerosol or direct contact with mucous membranes. Though human infections are rare, pregnant women in particular are at risk for illness and loss of pregnancy if exposed to *Chlamydia abortus.* In most cases, individuals initially became ill with nonspecific, flu-like symptoms such as fever, malaise, headache, abdominal pain, dizziness, and/or vomiting. Veterinarians who diagnose an animals with chlamydiosis should educate owners, especially women of reproductive age, about the risks. Veterinarians should recommend pregnant women avoid contact with pregnant or aborting sheep and goats.

West Nile Virus

While direct transmission of West Nile virus between animals and people does not occur, a veterinarian's diagnosis of West Nile in an animal still warrants client education about the zoonotic potential of the virus. An infected mosquito is the route of transmission for both animals and humans. A positive case of West Nile virus in a horse, cat, dog, bird or rabbit, suggests that the animal owner may have been exposed to the same infected mosquito population. Most infected people (up to 80%) will not show any signs of illness or will only have mild symptoms such as fever, headache, body aches, nausea, and vomiting. These typically improve on their own without medical attention. Very few people, (less than 1%) develop severe disease. Signs and symptoms may include high fever, severe headaches, neck stiffness, confusion, tremors, coma, vision loss, or paralysis. Severe cases are more common among the elderly. Veterinarians should encourage owners of positive cases to seek medical attention if they suspect an infection.

Zoonotic Reportable Diseases	
Avian influenza (High Path and Low Path)	West Nile
Bovine Spongiform Encephalopathy	Anthrax
Brucellosis (abortus, melitenses, suis, canis)	Q-fever
Equine encephalomyelitis	Tularemia
Exotic Newcastle Disease	Melioidosis
Glanders (*Burkholderia mallei*)	Plague
Japanese encephalitis	Leishmaniasis
Mange (scabiei)	Echinococcosis
Nipah virus encephalitis	Salmonellosis
Rift Valley Fever	Trichinellosis
Tuberculosis	Porcine cysticercosis
Vesicular Stomatitis	Chlamydiosis (avian, ovine)
Rabies	

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1400 Broadway Helena, MT 59620-2951