Zoonosis Trivia

Test your knowledge of Zoonotic Disease Trivia by answering the following questions. The answers are listed below.

1. What animal species is responsible for the most human rabies deaths worldwide?
2. True or False. Approximately 75% of recently emerging infectious diseases affecting humans are diseases of animal origin, and about 60% of human pathogens are zoonotic.
3. What are the two most common causes of hospital acquired infections in U.S. hospitals?
4. True or False. Chikungunya and dengue viruses are transmitted by the same mosquitoes, Aedes aegypti and Aedes albopictus.
5. Are non-human primates (i.e. Marmosets, capuchins) and wolf-hybrids considered dangerous wild animals in unincorporated Harris County?
6. What is the name of the virus that is transmitted by mosquitoes and causes about 1 in 5 infected people to develop a fever, with 1% developing a serious neurologic illness?
7. What is the most commonly reported vector-borne disease in the U.S., and was the 7th most common Nationally Notifiable Disease in 2012?
8. What is the most common organism associated with cat bites and can cause cellulitis, a potentially serious skin infection?
9. True or False. In unincorporated Harris County, the sale of live animals is banned if it occurs on a public highway or road, in the right-of-way of a public highway or road, or in a parking lot.
10. What species of animals have tested positive for rabies in unincorporated Harris County since 2011?

Answers:

1. Dogs
2. True
3. MRSA (methicillin-resistant Staphylococcus aureus) and C. diff (Clostridium difficile)
4. True
5. Yes
6. West Nile Virus
7. Lyme Disease
8. Pasteurella
9. True
10. Bat, Skunk and Horses

Rabies in Harris County: 2003-2013

Rabies vaccination laws, effective post-exposure treatment and bite case reporting has contributed to the declining number of human rabies cases in the United States. Since 2003, there have been 31 cases of human rabies, with 3 survivors in the U.S. In Harris County, rabies was last documented in a dog in 1979, a cat in 1986 and a human in 2009. However, rabies continues to be enzootic in our bat and skunk population. In 2003, Harris County reached a peak of rabid bats with 11.6% of bats submitted for testing returned with positive results. This percentage continued to decrease until 2009 when 10.3% of bats submitted tested positive. Since 2009, the percentage of bats tested positive has further decreased to 5.8% last year. We have also seen fluctuations in positive cases of skunks throughout the last ten years. Skunk rabies hit a peak of 15.9% positive specimens in 2003, followed by a second peak in 2011 with 5.7% positive skunk specimens. Last year, one skunk out of 24 skunk specimens tested positive with a 4.2% prevalence. The continued incidence of rabies in Harris County serves as a reminder to keep pets and livestock current on rabies vaccinations. The high risk carriers of rabies in Texas are bats, coyotes, foxes, raccoons and skunks. Exposures to these species should be reported to the local rabies control authority (LRCA). When possible, high risk animals involved in potential rabies exposures should be tested to prevent unnecessary post-exposure prophylaxis.
Over the past 100 years, rabies in the United States has changed drastically. More than 90% of cases reported each year to the Centers for Disease Control and Prevention (CDC) in wildlife, with the primary reservoirs today being wild carnivores and bats. Prior to 1960, the majority of these cases occurred in domestic animals. The number of human rabies deaths has also declined from more than 100 annual cases prior to 1900 to one or two per year in the 1990’s. Animal control and vaccination programs, along with the oral vaccination programs have eliminated the domestic dog as a rabies reservoir in the U.S. Post-exposure prophylaxis treatment has also proven nearly 100% successful. The majority of cases reported to the Centers for Disease Control and Prevention (CDC) annually occur in wild animals like raccoons, skunks, bats, and foxes. All species of mammals are susceptible to rabies, but the primary reservoirs in Texas are bats, skunks, foxes, coyotes and raccoons. The primary mode of transmission is through a bite of an infected animal. Although rare, transmission can also occur through contamination of mucous membranes, aerosol transmission, and organ transplantation.

How does the disease affect people? The incubation period in humans can be a few days to several years; however, most cases are apparent within 90 days. The first signs of rabies are nonspecific and include general weakness or discomfort, fever or headache. These symptoms may last for days. There may also be discomfort or a pricking sensation at the site of the bite. These symptoms progress quickly to cerebral dysfunction, anxiety, confusion and agitation. A person may also experience hallucinations, insomnia and abnormal behavior. Survival is extremely rare in clinical cases. To date, only 5 documented cases of humans have survived from clinical rabies in the United States.

What are signs of rabies in animals? The incubation period varies with the virus strain, amount of virus transmitted, site of inoculation, nature of the wound and host immunity. In dogs, and cats, most cases become apparent between 2 weeks and 3 months. Rabies causes an acute encephalitis and the first signs may be nonspecific. These signs can include restlessness, dilation of the pupils, hyperreactivity to stimuli, anorexia and excessive salivation. Animals often have behavioral changes, and may become unusually aggressive or affectionate. Signs quickly progress within days to cerebral and cranial nerve dysfunction, ataxia, weakness, seizures, paralysis, difficulty breathing and/or swallowing and excessive salivation. Animals will also exhibit abnormal behavior, aggression and/or self-mutilation.

What happens to animals that have bitten someone? The rabies virus may be excreted in the saliva of infected dogs, cats and ferrets for up to 6 days before they show signs of rabies. This is the reason for the 240 hour (10 day) quarantine of dogs, cats and ferrets following a bite or scratch to a human. Any person with knowledge of a bite, should report the incident to the local rabies control authority. The rabies virus could survive on skin for up to 3 months. A history of the animal should be obtained and it should be quarantined for 10 days. This is the incubation period of the disease in animals.

How does the disease spread? Rabies is a viral infection that spreads from animal to animal through infectious saliva. The virus travels through the saliva from the bite wound and can enter the body through broken skin or mucous membranes. Once the virus enters the body, it travels through the nervous system to the brain. The incubation period of the disease is usually 1 to 3 months, but can be up to 1 year, although this is very rare.

Can rabies be treated? Unfortunately, rabies is a fatal disease with no cure. The only treatment available is post-exposure prophylaxis. This involves giving the exposed person antibody and antiviral medications to try to prevent the disease from developing. However, if the person is bitten by a rabid animal, they should receive post-exposure prophylaxis as soon as possible. If people are exposed to a rabid animal, they should be examined by a veterinarian and given prophylactic treatments including rabies immunoglobulin and vaccine. It is important to note that the rabies virus can also be transmitted to humans through bites from rabid animals. If a person is bitten by a rabid animal, they should receive post-exposure prophylaxis as soon as possible. If people are exposed to a rabid animal, they should be examined by a veterinarian and given prophylactic treatments including rabies immunoglobulin and vaccine. It is important to note that the rabies virus can also be transmitted to humans through bites from rabid animals. If a person is bitten by a rabid animal, they should receive post-exposure prophylaxis as soon as possible. If people are exposed to a rabid animal, they should be examined by a veterinarian and given prophylactic treatments including rabies immunoglobulin and vaccine. It is important to note that the rabies virus can also be transmitted to humans through bites from rabid animals. If a person is bitten by a rabid animal, they should receive post-exposure prophylaxis as soon as possible. If people are exposed to a rabid animal, they should be examined by a veterinarian and given prophylactic treatments including rabies immunoglobulin and vaccine. It is important to note that the rabies virus can also be transmitted to humans through bites from rabid animals. If a person is bitten by a rabid animal, they should receive post-exposure prophylaxis as soon as possible. If people are exposed to a rabid animal, they should be examined by a veterinarian and given prophylactic treatments including rabies immunoglobulin and vaccine. It is important to note that the rabies virus can also be transmitted to humans through bites from rabid animals. If a person is bitten by a rabid animal, they should receive post-exposure prophylaxis as soon as possible. If people are exposed to a rabid animal, they should be examined by a veterinarian and given prophylactic treatments including rabies immunoglobulin and vaccine. It is important to note that the rabies virus can also be transmitted to humans through bites from rabid animals.