

## Zoonotic Diseases of Swine

Our topics for this week are:

- Diseases of swine that can be transmitted to handlers
- Recommended sanitary practices when handling swine

Apparently healthy domestic hogs pose little risk of transmitting disease to healthy adult handlers who practice conventional personal hygiene. The risks of physical injury are greater than the risks of acquiring an infectious disease.

### Systemic Disease

Leptospirosis (*Leptospira* spp.) is a bacterial disease of hogs that is transmitted in infected hog urine or genital fluids. Common sources for hogs are stagnant water that wildlife have access to and rats. The organism can be transmitted by gaining entrance into a human's mouth, breaks in the skin, or eyes.

Brucellosis (*Brucella suis*) is a bacterial disease that can cause abortions in sows and inflammation of the testes in boars. It can be transmitted to humans by exposure to body secretions (saliva, urine, fetal fluids) or eating meat from infected hogs. The disease in humans is influenza-like and called undulant fever. The disease is now rare in hogs in the U.S. because of federal and state surveillance and eradication.

Listeriosis (*Listeria monocytogenes*) is a bacterium that can cause generalized disease in immunosuppressed humans that includes an atypical pneumonia. Transmission is primarily by contaminated food products.

Yersiniosis is bacterial disease that causes diarrhea and abdominal pain that can mimic appendicitis. It is acquired by eating rare or undercooked pork products, not by handling hogs.

*Streptococcus suis* is a bacterium that can cause serious illness in hogs and can be transmitted to handlers. One of the diseases produced in humans can be meningitis. The incidence is rare.

Trichinosis (*Trichinella spiralis*) is a rare, but serious, zoonosis from hogs that is not transmitted by handling hogs but rather by eating poorly cooked infected pork products.

### Respiratory Disease

Although rare, bovine or avian tuberculosis can occur in hogs. Infected hogs can transmit the disease to handlers through body secretions. Affected hogs do not appear healthy at the time they are able to transmit the disease.

*Bordetella bronchiseptica* is a cause for respiratory bacterial infection that can be acquired from hogs, but in humans, it usually requires an impaired immune response to become severe or prolonged infection.

Hogs are susceptible to both avian and human influenza. Concern exists, particularly when hogs are kept in close confinement and under stress, that influenza viruses can mutate through an antigen shift to a more virulent influenza that also affects humans. Should this happen an epidemic could result, but this is not a significant risk to handlers from apparently

healthy hogs that are not overcrowded and under stress.

### **Digestive Tract Disease**

Campylobacteriosis is one of the most common causes of bacterial diarrhea in humans. Contact with infected hogs can be a source if the bacteria gain access to a handler's mouth. Most human cases are from drinking unpasteurized milk or eating undercooked poultry.

Salmonellosis is a bacterial disease of the digestive system that can invade the blood stream and become systemic. Most cases are not from handling hogs but are acquired by eating undercooked eggs, poultry, pork, or beef or by handling reptiles or rodents and carrying the bacteria to the handler's mouth.

Yersiniosis (*Yersinia enterocolitis*) is a bacterial diarrhea that is usually acquired from handling raw pork, especially intestines. However, transmission can occur from sick or normal-appearing hog feces.

Trichinosis, caused by *Trichinella spiralis* and *T. nativa*, is a parasitic disease of muscle. It is not transmitted by handling hogs, only by ingestion of undercooked pork products. *Trichinella* spp. have been eliminated in confinement raised hogs because of the exclusion of rodents for hogs to eat.

Taeniasis (*Taenia solium*) is a tapeworm in humans acquired from eating raw or undercooked pork products. It is not transmitted by handling swine.

### **Skin Disease**

Vesicular stomatitis virus causes blisters in the mouth and on the snout, feet, and teats of hogs. Handlers of hogs with vesicular stomatitis blisters can become infected and develop blisters on infected skin.

Erysipeloid is caused by a bacterium (*Erysipelothrix rhusiopathiae*) that can be transmitted from infected hogs or pork (erysipelas in swine) to humans through cuts in humans' skin. In hogs, it causes arthritis and diamond-shaped skin patterns. In humans, it causes skin sores. The transmission is not from healthy appearing hogs.

### **Sanitary Practices**

A handler of hogs should wear appropriate dress to protect against skin contamination with hair and skin scales or saliva, urine, and other body secretions. Basic sanitary procedures should be practiced, such as keeping hands away from eyes, nose, and mouth when handling hogs and washing hands after handling them.

Special precautions are needed if sick hogs are handled, and sick hogs should be isolated from apparently normal hogs. New herd members should be quarantined for at least 2 weeks to reduce the risk of transmitting a disease that new animals could be incubating before introducing to the rest of the herd.

Influenza vaccinations should be maintained current in handlers and handlers sick with influenza should not handle hogs. Wild birds should not be in contact with hogs. Hogs should be vaccinated for leptospirosis, and wildlife, especially rodents, should be controlled in swine raising facilities.

Now let's recap the key points to remember from today's episode:

- 1. Hogs are susceptible to human influenza.**
- 2. Hogs should not be exposed to wild rodents or birds.**
- 3. Hog handlers should be vaccinated against influenza.**

More information on animal handling is available in my book, *Animal Handling and Physical Restraint*, published by CRC Press. It is also available on Amazon and from many other fine book supply sources.

Additional information is available at: [www.betteranimalhandling.com](http://www.betteranimalhandling.com)

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.