Zoonotic Diseases – Swine

Individuals working with animals should be informed of potential zoonoses (diseases of animals transmissible to humans) and other potential hazards associated with animal exposure, as well as best practices for personal hygiene. This information sheet is for those who work with swine.

Potential Zoonotic Diseases

Physically, handling swine can be very demanding. Because it is so difficult to withstand their pushing and shoving, care should be taken when entering pens that hold a large number of animals. Swine should be guided for moving and sorting with solid, hand-held panels. Swine respond well to the use of a panel and it protects the handler from being bitten or gored.

The following is a list of some of the potential rodent zoonoses.

**Anthrax:** This is an acute bacterial infection of humans and animals which may be rapidly fatal. The disease occurs worldwide and is an occupational hazard of persons such as wool-sorters, farm workers and veterinarians in contact with infected animals or their by-products. All domestic, zoo and wild animals are potentially at risk of infection. Anthrax bacilli are released from infected carcasses and form resistant spores on exposure to air. These spores contaminate soil for many years. Humans are usually infected by direct contact with infected animals, carcasses, animal products or contaminated soil by inhalation or ingestion of spores. Animals are infected from contaminated feed, forage, water or carcasses. Cutaneous anthrax causes localized ulceration (sore), scab with fever and headache, and in rare circumstances is followed by more severe conditions such as septicemia and meningitis. Inhalation anthrax causes fulminating pneumonia. Intestinal anthrax is associated with acute gastroenteritis (nausea, vomiting and diarrhea).

**Brucellosis:** Is a bacterial infection of animals and humans. The disease in animals is caused by various species of brucella. It is generally limited to abortions and reproductive organ infections. In humans, the disease may mimic the flu with symptoms of headache, fever, fatigue, muscle and joint pain. Rare complications include crippling arthritis, endocarditis or meningitis. There is no cure for brucellosis in animals. Humans are treated with antibiotics for up to 4 to 6 weeks. Animals and humans are exposed to the brucella bacterium by contact with infected placentas, amniotic fluids, vaginal discharges, milk, semen, reproductive tissues, and exudates from infected animals usually just prior to and after an abortion.

**Leptospirosis:** Leptospirosis is found in many animals but is most commonly associated with livestock and dogs. The source of infection may be rats, mice, voles, hedgehogs, gerbils, squirrels, rabbits, hamsters, reptiles, dogs, sheep, goats, horses, pigs and standing water. Leptospires are in the urine of infected animals and are transmitted through direct contact with
urine or tissues via skin abrasions or contact with mucous membranes. Transmission can also occur through inhalation of infectious droplet aerosols and by ingestion. The disease in people is multi-systemic with chronic sequelae. An annular rash is often present with flu like symptoms, cardiac and neurological disorders may follow and arthritis is a common end result. Systemic with chronic sequelae. An annular rash often occurs with flu-like symptoms. Cardiac and neurological disorders may follow, and arthritis is a common result.

**Rabies:** Rabies virus (rhabdovirus) can infect almost any mammal. The source of infection to people is an infected animal. The virus is shed in saliva 1-14 days before clinical symptoms develop. Any random-source (animal with an unknown clinical history) or wild animal exhibiting central nervous system signs that are progressive should be considered suspect for rabies. Transmission is through direct contact with saliva, mucus membranes, or blood, e.g. a bite, or saliva on an open wound. The incubation period is from 2 to 8 weeks, possibly longer. Symptoms are pain at the site of the bite followed by numbness. The skin becomes quite sensitive to temperature changes and laryngeal spasms are present. Muscle spasms, extreme excitability, and convulsions occur. Rabies in unvaccinated people is almost invariably fatal. Rabies vaccine is available through the EHS Occupational Health Clinic.

**Other diseases:** Many other diseases can be spread through working with swine. *Crytosporidiosis, salmonellosis* and *yersinia enterocolitica* are some that can be transmitted via the fecal/oral route and manifest as acute gastrointestinal illness. *Ascaris suum* and *influenza* are examples that can be transmitted through inhalation. These diseases are produce respiratory difficulty as well as gastrointestinal illness.

**Allergic Reactions to Swine**

Swine are one of the least likely animals to cause human allergies. However, respiratory protection for those who have allergies may be necessary when working with feed and bedding.

**How to Protect Yourself**

- **Wash your hands.** Wash hands and arms after handling any animal. Never smoke, drink, or eat in the animal rooms or before washing your hands.
- **Wear gloves.** Wear appropriate gloves when handling swine, and wash hands after removal.
- **Wear respiratory protection.** For some activities, respiratory protection should be worn. Your supervisor should be your resource for this equipment. Respirator fit testing can be performed by appointment at EHS.
- **Wear other protective clothing.** Coveralls should be available and worn when working with swine. Avoid wearing street clothes while working with animals.
- **Seek medical attention promptly.** If injured on the job, promptly report the accident to your supervisor even if relatively minor. Immediately cleanse minor cuts and abrasions with antibacterial soap, then protect from exposure to rats and mice. Seek treatment at
the University of Colorado Hospital Emergency Department on the Anschutz Medical Campus for serious injuries.

- **Tell your physician you work with swine.** Whenever you are ill, even if you're not certain that the illness is work-related, always mention to your physician that you work with swine. Many zoonotic diseases have flu-like symptoms but would not normally be suspected. Your physician needs this information to make an accurate diagnosis. Questions regarding personal health should be answered by your physician.

**Resource**

Contact the EHS Occupational Health Clinic with any questions, 303-724-9145.