



Swine Influenza Backgrounder

(April 27, 2009)

New strain of H1N1 swine flu virus

of a new strain or variant. Pigs are distinct from other species in that their cells possess receptors that can bind to swine, human, and avian influenza viruses; therefore, two or more types of viruses may co-infect swine cells and combine to produce a novel virus. For this reason, swine have been considered “mixing vessels” that facilitate the formation of new viruses.

Clinical Signs

Infection with swine influenza virus results in acute upper respiratory disease, and signs include:

- fever
- sneezing
- eye inflammation
- anorexia
- discharge from nose
- abortion
- coughing
- labored breathing

Most affected pigs will recover within five to seven days in the absence of complications. Severe bronchopneumonia may develop as a secondary complication, and is a high risk factor for mortality. Other complications may include secondary bacterial or viral infections.

Turkeys infected with the swine influenza virus may exhibit decreased egg production, production of abnormal eggs, or respiratory disease.

Clinical signs in humans mimic those of human influenza infection, and the incidence of swine influenza virus infection in humans may be underestimated. Self-limiting flu-like symptoms and diarrhea have been reported in infected humans.

Diagnosis

Swine influenza virus infection is confirmed by virus isolation, viral antigen or nucleic acid detection (with reverse transcriptase polymerase chain reaction), immunofluorescence, immunohistochemistry, ELISA, and hemagglutination serologic tests. Lung tissue or nasopharyngeal swabs from acutely infected pigs yield optimal results. The virus is best detected in febrile animals 24 to 48 hours after onset of clinical signs.

Treatment

As for all viral disease, treatment is largely supportive. Good husbandry and nutrition may assist pigs in mounting an effective immune response. Secondary bacterial pneumonia in more severely affected pigs responds best to a combination of broad-spectrum bactericidal antimicrobials and maintenance of hydration via intravenous administration of fluids.

Morbidity and Mortality

Morbidity associated with swine influenza can reach 100%; mortality in confirmed cases to date has ranged from 1 to 3% in the absence of complications. Secondary infection with the bacteria *Hemophilus suis* increases the severity and mortality of swine influenza virus infection.

Prevention and Control

Once introduced, the swine influenza virus may become endemic in herds. Annual outbreaks may be observed, primarily during the colder months of the year. Young, naïve pigs are at increased risk of infection. Recovery from infection usually confers limited immunity.

The swine influenza virus is an enveloped virus that appears to be easily killed by disinfectants in common use in veterinary and swine facilities, such as quaternary ammonium compounds and 10% bleach solutions. Isolation protocols should be rigorously applied for pigs showing signs of respiratory disease. Clothing, equipment, surfaces and hands should be cleaned and disinfected after exposure to pigs suspected to be infected.

Links to More Information on Swine Influenza

Centers for Disease Control and Prevention (CDC)

[CDC Swine Flu](#)

World Health Organization (WHO)

[WHO Swine Influenza](#)

American Association of Swine Veterinarians (AASV)

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[AASV Human Cases of Swine Influenza](#)