

# Swine Influenza

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Swine influenza viruses were first isolated in the United States in 1930. Since that time, they have become an economically important cause of respiratory disease in pigs throughout the world, as well as significant risks to human health. Swine influenza viruses are influenza A viruses that infect pigs, some strains of which can be transmitted to humans. Several viral subtypes are circulating in pigs throughout the world. In 2012-13, H1N1v, H3N2v and H1N2v viruses were detected in pigs and humans in the United States. Swine influenza viruses that infect humans are referred to as variant viruses (hence the names, H1N1v, H3N2v and H1N2v). In 2013 during the Washington County Fair in Fayetteville, Arkansas, a consignment of 4-H hogs was confirmed positive for H1N1v swine influenza. Two children in close association with those hogs concurrently displayed respiratory symptoms and were also confirmed positive for the H1N1v strain of swine influenza. No further spread of the disease was documented; therefore, no further action was taken.

## Swine Influenza in People

The symptoms of swine influenza in people are similar to those of regular (seasonal) human flu and include fever, cough, sore throat, body aches, headache, chills and fatigue. Some people have also reported diarrhea and vomiting associated with swine flu. In the past, severe illnesses including pneumonia, respiratory failure and even death have been reported with swine flu infection in

**Table 1. Case Count of Detected U.S. Infections With Variant Influenza Viruses by State Since December 2005.**

Reporting State	H3N2v	H1N1v	H1N2v
Arkansas		2	
Hawaii	1		
Illinois	5	1	
Indiana	154		
Iowa	6	3	
Kansas	1		
Maine	2		
Maryland	12		
Michigan	8		1
Minnesota	8	2	4
Missouri		2	
Ohio	108	2	
Pennsylvania	16		
South Dakota		1	
Texas		1	
Utah	1		
West Virginia	5		
Wisconsin	21	2	
<b>Total</b>	<b>348</b>	<b>16</b>	<b>5</b>
<b>TOTAL Detected Influenza Variant Virus Infections From All Reporting States = 369</b>			
<i>Courtesy of the CDC</i>			

humans. Like seasonal flu, swine flu may cause a worsening of underlying chronic medical conditions.

## Swine Influenza in Pigs

Influenza in pigs is an acute upper respiratory tract disease characterized by fever, lethargy, loss of appetite, weight loss and labored breathing. Sneezing, nasal discharge, conjunctivitis ("pink eye") and abortions are less common clinical signs. Coughing may also be seen in later stages of the disease. Some viral strains can circulate in pigs with

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little or no clinical evidence of infection. Severe, potentially fatal pneumonia is occasionally seen. Turkeys have also been known to become infected with swine influenza viruses and may develop respiratory disease resulting in decreased egg production and/or abnormally shaped eggs.

A swine herd typically becomes infected with influenza by introducing an infected animal into the herd or by being exposed to infected pig(s) at a fair or show and then returning home. Isolation of newly acquired animals, and pigs returning from a fair, can greatly reduce the risk of transmission to the rest of the herd. Good biosecurity is critical and will help prevent transmission from fomites and/or mechanical vectors.

Once a swine herd is infected, the infection may be self-limiting or the flu virus may persist in the herd and cause periodic outbreaks over a long period of time. Good management can greatly reduce the severity of disease. As with all viral diseases, there are no effective treatments available. Infected swine herds can be cleared of influenza viruses by depopulating (slaughtering) the herd and restocking with healthy pigs.

Transmission of influenza between pigs in a herd usually occurs by direct contact or via aerosol spread through coughing and sneezing. Pigs may begin excreting swine influenza viruses within 24 hours of infection and typically shed the viruses for 7 to 10 days. These viruses can survive in carrier animals for up to 3 months.

## Relationship Between Swine, Human and Avian (Bird) Influenza

Avian influenza viruses preferentially use receptors expressed on bird respiratory tract cells, and human influenza viruses preferentially use receptors expressed on human respiratory tract cells. Pigs, however, express both avian and human-type receptors and can be infected with avian, human and swine influenza viruses simultaneously. As such, they can serve as hosts in which avian influenza viruses adapt to replicate in mammals. Swine can also play a role as a source for a severe human epidemic strain (as in the Spanish Flu Pandemic in 1918 during which millions of people died).

## Prevent the Spread of Flu Viruses Between People and Pigs

The following actions can reduce the risk of influenza viruses spreading from pigs to people at fairs, or from pigs at shows:

- Don't take food or drink into pig areas; don't eat, drink or put anything in your mouth in pig areas.
- Don't take toys, pacifiers, cups, baby bottles, strollers or similar items into pig areas.
- Wash your hands often with soap and running water before and after exposure to pigs. If soap and water are not available, use an alcohol-based hand rub.
- Avoid close contact with pigs that look or act ill.
- Take protective measures if you must come in contact with pigs that are known or suspected to be sick. This includes minimizing contact with pigs and wearing personal protective equipment like protective clothing, gloves and masks that cover your mouth and nose when contact is required.
- Thoroughly wash your hands after being in contact with pigs (poultry and other animals).
- To further reduce the risk of infection, minimize contact with pigs in the pig barn and arenas.
- Watch your pig closely (if you have one) for signs of illness, and call a veterinarian if you suspect disease.
- Avoid contact with pigs if you have flu-like symptoms. Wait 7 days after your illness started or until you have been without fever for 24 hours without the use of fever-reducing medications, whichever is longer. If you must have contact with pigs while you are sick, take the protective actions listed above.

*(Recommendations courtesy of the CDC)*

## Summary

- Certain strains of influenza viruses can be transmitted from poultry and pigs to people.
- By following these previously stated biosecurity measures, you can greatly reduce your chances of contracting these harmful influenza viruses.



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