

For Exhibitors: Measures to Minimize Influenza Transmission at Swine Exhibitions, 2018

NOTE: The following information for exhibitors is from the *Measures to Minimize Influenza Transmission at Swine Exhibitions, 2018* released by the Swine Exhibitions Zoonotic Influenza Working Group in March, 2018 with the National Assembly of State Animal Health Officials (NASAHO) and National Association of State Public Health Veterinarians (NASPHV). Exhibition Organizers, Youth Organization Leaders, State Animal and Public Health Officials should refer to the complete document for additional measures to minimize influenza transmission at swine exhibitions.

Overview

Livestock shows are an important learning opportunity for thousands of 4-H and FFA youth across the United States. For these youth, exhibiting at their county or state fair represents the culmination of many months of work dedicated to the care and training of their animals. Agricultural exhibitions also provide meaningful opportunities for the public to learn about animal agriculture, observe animal behavior, and experience what it might be like to live on a farm. More than 150 million people visit agricultural fairs each year in North America.

Influenza can spread wherever animals or people congregate, and agricultural fairs are no exception. While rare, influenza A viruses can spread from people to pigs and from pigs to people. When a person is infected with a swine-origin influenza A virus, it is termed a variant virus infection, and denoted with a “v” after the subtype (e.g. H3N2v).¹ (Note that the same virus when found in pigs does not carry the “v” denotation.) In the past 7 years, human cases of influenza A H1N1v, H1N2v, and particularly, H3N2v have been associated with exposure to swine at exhibitions. Between 2011 and 2017, 426 human H3N2v cases were reported from 18 states.² The largest outbreak occurred in 2012 when a total of 309 human cases of H3N2v flu were identified, including 16 hospitalizations and one death.³ In 2017, a total of 67 variant virus infections (62 H3N2v, 1 H1N1v, and 4 H1N2v) were identified from 10 states (CDC, personal communication). The majority of these variant cases were exhibitors and others who reported close contact with pigs at agricultural fairs prior to their onset of illness.

The Swine Exhibitions Zoonotic Influenza Working Group first gathered in December 2012 to develop a set of measures to minimize influenza virus transmission at swine exhibitions. The group reviewed the document again in 2014 and 2015, and made minor updates. In 2016, because of important new data regarding the dynamics of influenza transmission between swine at exhibitions,⁴⁻⁷ the measures for prevention were strengthened and augmented. In particular, a 2015 study by Bowman et al. found that at swine shows, the prevalence of influenza A-positive pigs increases substantially at 72 hours.⁸ This finding further supported the recommendation that exhibition swine should be kept on the exhibition grounds no longer than 72 hours. With this 2018 edition, there is the addition of an easily accessible checklist for exhibition organizers and youth organization leaders: “Minimizing Influenza Transmission during Exhibitions – Checklist for Protecting Guests, Exhibitors, and Pigs.”

The suggested measures in this document are organized to address activities before, during, and after swine exhibitions. It may not be possible to prevent all transmission of influenza viruses at swine exhibitions. The measures described here are offered for careful consideration depending on the needs of the specific exhibition and can be implemented in part or in total. They are not intended to

supersede local, state, or federal regulations. These measures were formulated based on current evidence and the collective knowledge of the Swine Exhibitions Zoonotic Influenza Working Group. It is expected that this document will be updated as additional information becomes available.

The Centers for Disease Control and Prevention (CDC) recommends that everyone 6 months of age or older be vaccinated annually against seasonal influenza.⁹ This is particularly important for people who are involved with swine shows because swine are susceptible to human seasonal influenza viruses and people can get swine-origin influenza viruses. Vaccination helps to protect people and pigs. In addition, some people are more likely to experience complications from influenza that can result in hospitalization and sometimes death. People at high risk for developing severe complications include children younger than 5 years of age, people 65 years of age and older, pregnant women, and people with certain long-term health conditions (such as asthma, diabetes, heart disease, chronic respiratory disease, weakened immune systems, and neurological or neurodevelopmental conditions.)¹⁰ People in these high-risk groups should be made aware of their increased risk through signage and other educational efforts, and they should avoid contact with infected swine.

Measures for Exhibitors to Consider BEFORE the Exhibition

- Consult a veterinarian to help outline and implement applicable biosecurity and swine health practices at home.
- Discuss the use of swine influenza vaccines with a veterinarian and check the exhibition rules for any requirements. Vaccines are available commercially and may be used prior to an exhibition as long as slaughter withdrawal times are observed as appropriate. Swine vaccinated for influenza may be less likely to become ill, and if they become sick, they may be contagious for a shorter time-period.^{12, 13}
- Become familiar with the clinical signs of influenza and other illnesses in pigs (off feed, lethargic, fever, nasal discharge, and cough).
- Seek veterinary assistance if a pig becomes sick.
- Understand the risks to both humans and animals of taking a sick pig to a show. Sick pigs need to stay home so they do not risk infecting other pigs or people.
- Likewise, sick people can be infectious to pigs and other people. People with influenza-like illness should stay away from pigs and other people until they are fever-free for at least 24 hours without the use of fever-reducing medication.¹⁴
- Ask the exhibition organizer about any specific actions that may be required if a pig becomes sick at the show.
- Clean and disinfect all tack, feeders, waterers, and show supplies before bringing them to the fair.
- Allow at least 7 days of “down time” (i.e. on-farm quarantine) after returning from a previous exhibition before showing a pig or pen-mates, to reduce the risk of spreading influenza.

Measures for Exhibitors to Consider DURING the Exhibition

- Avoid sharing tack with other exhibitors, but if you must, clean and disinfect in-between uses.
- Observe swine regularly for signs of influenza-like illness (e.g. off feed, lethargic, fever, nasal discharge, and cough).
 - Report any influenza-like illness to the designated show veterinarian or the appropriate exhibition staff so the pig can be evaluated right away
 - Swine that are ill should be removed from the exhibition immediately or moved to a temporary isolation area on or near the exhibition or fairgrounds

- Use precautions when caring for sick pigs to minimize the opportunity for disease transmission to other swine or people; for example:
 - Limit the number of people caring for sick pigs
 - Use personal protective equipment
 - Wash hands thoroughly with soap and water after working with sick pigs
 - Avoid moving bedding and other materials from sick pig areas into areas where healthy pigs are kept
 - Clean and disinfect equipment

Measures for Exhibitors to Consider AFTER the Exhibition

- Isolate and observe animals daily for illness after returning home and before allowing contact with other animals.
 - The isolation/observation period for clinical signs of influenza should be no fewer than 7 days
 - Clean and disinfect tack, waterers, feeders, show equipment, clothing, shoes, and vehicles/trailers that were at the exhibition
 - Consult a veterinarian if pigs become ill
- Consult a health care provider and your state or local public health department if exhibitors or family members develop influenza-like illness.
 - Inform the health care provider of exposure to swine
 - Persons with influenza-like-illness should be tested for influenza virus with guidance from public health staff. Special testing is required to identify variant influenza infections
 - Ill people should avoid contact with swine and stay away from other people until they are fever-free for at least 24 hours without the use of fever-reducing medications

References:

1. World Health Organization webpage: Standardization of terminology for the influenza virus variants infecting humans: Update (2014). Retrieved January 22, 2018, from: http://www.who.int/influenza/gisrs_laboratory/terminology_variant/en/
2. Centers for Disease Control and Prevention webpage: Case Count: Detected U.S. Human Infections with H3N2v by State since August 2011 (2017). Retrieved January 22, 2018 from: <http://www.cdc.gov/flu/swineflu/h3n2v-case-count.htm>
3. Jhung MA, et al. "Outbreak of Variant Influenza A(H3N2) Virus in the United States." *Clinical Infectious Diseases* 2013; 57 (12): 1703-1712
4. Bowman AS, et al. "Subclinical Influenza Virus A Infections in Pigs Exhibited at Agricultural Fairs, Ohio, USA, 2009–2011." *Emerging Infectious Diseases* 2012; 18 (12): 1945–1950.
5. Bowman AS, et al. "Swine-to-Human Transmission of Influenza A(H3N2) Virus at Agricultural Fairs, Ohio, USA, 2012." *Emerging Infectious Diseases* 2014; 20 (9): 1472–1480.
6. Edwards JL, et al. "Utility of Snout Wipe Samples for Influenza A Virus Surveillance in Exhibition Swine Populations." *Influenza and Other Respiratory Viruses* 2014; 8 (5): 574–579.
7. Bliss N, et al. "Prevalence of Influenza A Virus in Exhibition Swine during Arrival at Agricultural Fairs." *Zoonoses Public Health* 2016; 63 (6): 477–485.
8. Bowman AS, et al. Abstract #o-101, page 73-74 in Proceedings of the Options IX for the Control of Influenza, August 2016, Chicago IL.
9. Centers for Disease Control and Prevention webpage: Get Vaccinated (2017). Retrieved January 23, 2018, from <https://www.cdc.gov/flu/consumer/vaccinations.htm>
10. Centers for Disease Control and Prevention webpage: People at High Risk of Developing Flu–Related Complications (2017). Retrieved January 22, 2018, from: http://www.cdc.gov/flu/about/disease/high_risk.htm
11. National Association of State Public Health Veterinarians website: The Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2017. Retrieved January 23, 2018, from <http://nasphv.org/documentsCompendiumAnimals.htm>
12. Center for Food Security and Public Health website: Influenza Vaccine Selection for Pigs. Retrieved March 11, 2018, from <http://www.cfsph.iastate.edu/pdf/influenza-vaccine-selection-for-pigs-producer-brochure>.
13. Sandbulte MR, et al. "Optimal Use of Vaccines for Control of Influenza A Virus in Swine." *Vaccines* 2015; 3(1): 22-73.
14. Centers for Disease Control and Prevention webpage: What People Who Raise Pigs Need to Know about Influenza (flu) (2014). Retrieved January 22, 2018, from <https://www.cdc.gov/flu/swineflu/people-raise-pigs-flu.htm>

Other Resources:

- National Pork Board Website: A Champion's Guide to Youth Swine Exhibition: Biosecurity and Your Pig Project, 2013. Retrieved January 29, 2018 from <http://porkcdn.s3.amazonaws.com/sites/all/files/documents/NPB%20A%20Champions%20Guide%20to%20Youth%20Swine%20Exhibition.pdf>