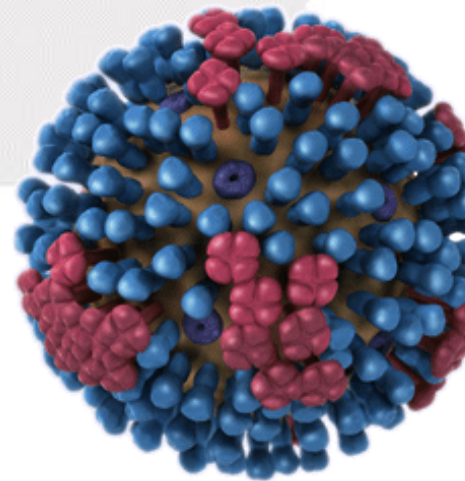


Swine Variant Influenza Tool Kit

MICHIGAN DEPARTMENT OF HEALTH AND HUMAN
SERVICES



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Swine Variant Influenza Background

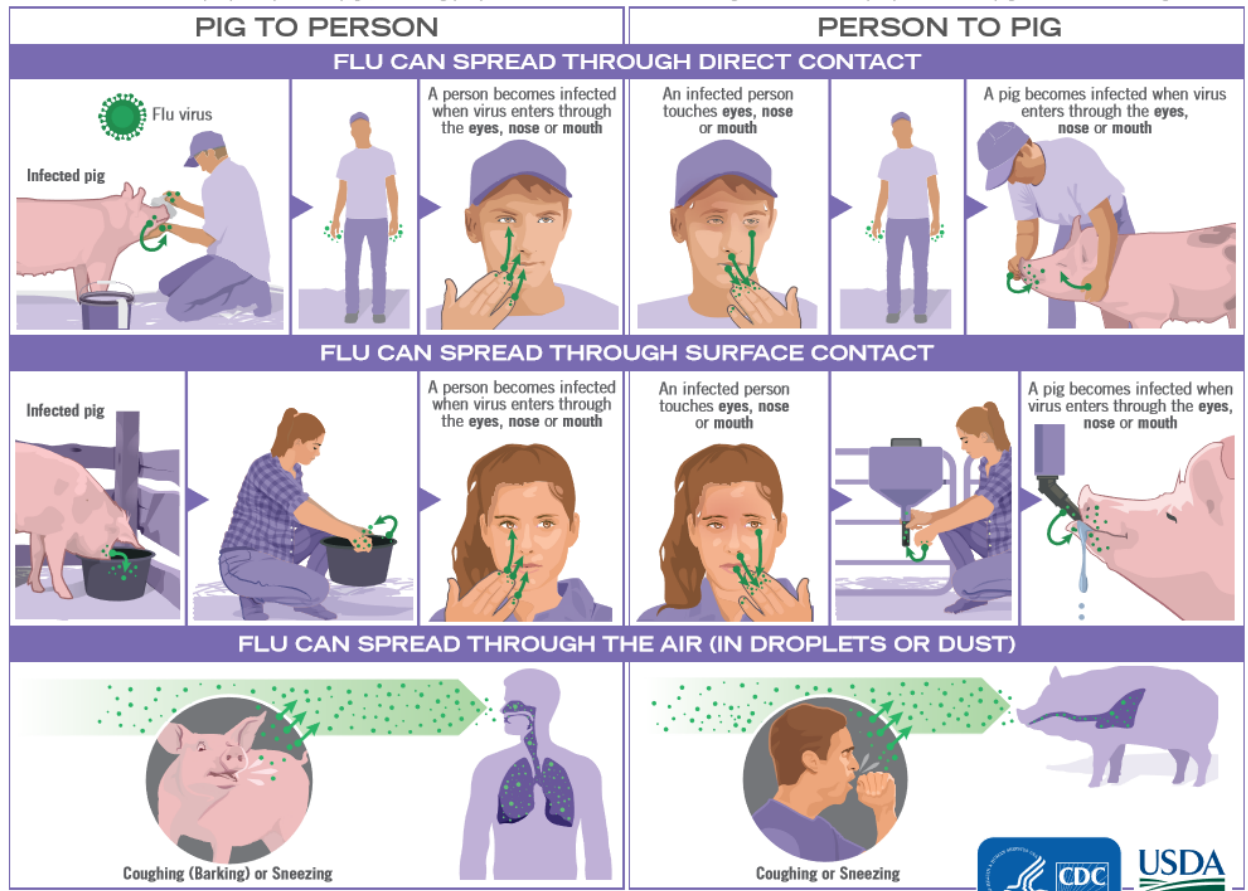
Swine influenza (swine flu) is a respiratory disease of pigs caused by type A influenza viruses. It is common for these viruses to cause outbreaks of influenza in pigs, resulting in high levels of illness in swine herds and, in some cases, swine death.

In addition to illness in pigs, it is possible for these viruses to sporadically cause illness in humans. When an influenza virus that normally circulates in pigs (but not people) is detected in a human, it is called a “variant influenza virus.” Variant viruses are named by their subtype, followed by the letter “v”, for example H3N2v. In most cases, swine variant influenza infections occur after people have been exposed to infected pigs. Examples of situations in which humans may be exposed to infected pigs include, but are not limited to, people exhibiting or visiting pigs at a fair or workers raising pigs on a farm.

Typically, these influenza viruses are transmitted from pigs to people as well as from people to pigs; however, there have been previous instances of human-to-human swine variant influenza transmission. Also, because of differences between the influenza viruses that infect pigs and the influenza viruses that infect humans, the seasonal influenza vaccine does not protect people from swine variant influenza infections.

FLU CAN SPREAD BETWEEN PIGS AND PEOPLE

Information for people exposed to pigs, including people who enter the swine barns at agricultural fairs or people who raise pigs for show or farming

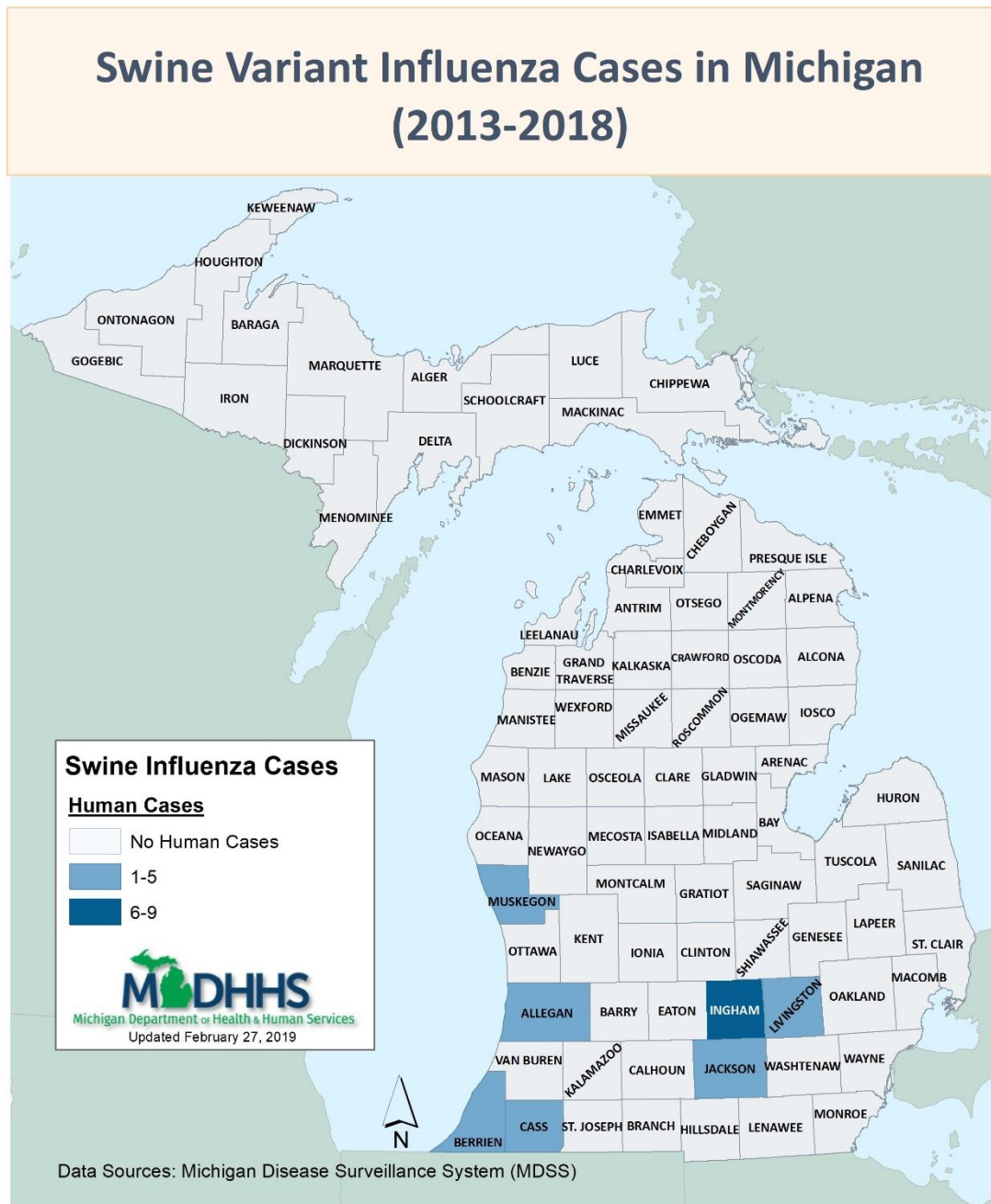


www.cdc.gov/flu/swineflu/index.htm



Swine Variant Influenza Cases in Michigan, 2013-2018

From 2013 to 2018, 19 humans have tested positive for swine variant influenza in Michigan. Counties reporting human cases of swine variant influenza include Allegan (2), Berrien (2), Cass (1), Ingham (9), Jackson (1), Livingston (2), and Muskegon (2). All of these cases either worked with pigs or visited fairs where pigs were exhibited. The human cases vary in symptom severity and type of variant influenza A, including H3N2v and H1N2v. Additionally, at least 6 of the counties reporting human cases also had sick pigs in exhibits at agricultural fairs that tested positive for swine influenza with strains that matched those of the human cases.



Swine Variant Influenza Frequently Asked Questions (FAQs) for the Public

What are the signs of influenza in pigs?

In pigs, signs of influenza infection include fever, depression, coughing (barking), discharge from the nose or eyes, sneezing, difficulty breathing, eye redness or inflammation, not eating. However, it is possible for pigs to be infected with influenza and show no signs of illness.

Can people be infected with swine influenza viruses?

Yes. Swine influenza viruses do not normally infect people; however, human infections have occurred. When a swine influenza virus infects a person, it is called a “variant virus”. Most often, human infections with variant viruses have occurred in people exposed to infected pigs. There have also been instances of multiple human illnesses associated with exposure to one or more sick pigs (commonly known as an “outbreak”). There has also been limited person-to-person spread of variant viruses.

What symptoms do people have when they are infected with variant influenza?

In humans, symptoms of swine variant influenza infection are often identical to symptoms of seasonal influenza infections and can include fever, cough, sore throat, a runny or congested nose, headache, body aches, and fatigue. In some cases, additional symptoms like vomiting, diarrhea, and pink eye have been reported.

Can I get swine variant influenza from eating pork or pork products?

No. Swine variant influenza has not been shown to be transmissible to people through eating properly cooked pork, pork products, or any other product derived from pigs. For information on how to properly handle and cook pork, please visit:

https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/meat-preparation/fresh-pork-from-farm-to-table/CT_Index

Why are human infections with variant viruses a concern?

Influenza viruses that infect pigs are different from human influenza viruses, but pigs are susceptible to human influenza viruses and can also be infected with influenza viruses that commonly infect birds. It is possible for pigs to be infected with more than one type of influenza virus at the same time. When that happens, the genes from the different influenza viruses can mix together, creating a new influenza virus. If this new virus is capable of easily infecting people or can be easily spread person-to-person, an influenza pandemic (world-wide outbreak) can occur. This last happened in 2009, when influenza A H1N1 emerged. This virus strain contained genes from swine, birds, and humans, and it was responsible for the first pandemic in 40 years. Additionally, since 2009, it has become established in the human population and is part of the current seasonal influenza vaccine.

What can I do to protect myself from swine variant influenza?

People at high risk for serious influenza complications should avoid pigs and swine barns at fairs. Do not take food or drink into pig areas and do not eat, drink, or put anything in your mouth in pig areas. Do not take toys, pacifiers, cups, baby bottles, strollers, or similar items into pig areas. Avoid close contact with pigs that look or act ill. Wash your hands with soap and water or alcohol-based hand rub when soap and water are not available, before and after being around pigs or their environment. If you must work around sick pigs, use appropriate personal protective equipment, such as gloves and a face mask or respirator.

If I received a seasonal influenza vaccine, can I still become infected with swine variant influenza?

Yes, even if a person has received a seasonal influenza vaccine, it is possible for them to become infected with a swine variant influenza virus. The influenza viruses that infect pigs are different from the influenza viruses that commonly infect humans each influenza season.

I attended a fair where there were pigs. Should I be concerned?

If you recently attended a fair where there were suspected or known influenza positive pigs, and you are **experiencing respiratory symptoms**, please seek medical care. Tell your doctor you attended an event with swine. It is important for your doctor to test you for influenza, as testing can inform treatment options. Antiviral medications may be prescribed in order to help prevent serious complications that can sometimes occur from infection with influenza.

If you recently attended a fair where there were suspected or known influenza positive pigs, and you are **not currently experiencing respiratory symptoms**, talk to your health department and monitor your health for 10 days after your last exposure to swine. It can take up to 10 days for symptoms to appear. If symptoms do appear, please seek medical care and tell you doctor you have had contact with swine.

Are there medications available to help treat swine variant influenza infections in humans?

Yes, the antiviral medications commonly prescribed to treat seasonal influenza infections can also treat swine variant influenza infections. Currently, there are four different antiviral drugs that are recommended for use in the United States: oseltamivir, peramivir, zanamivir, and baloxavir.

Swine Variant Influenza Frequently Asked Questions (FAQs) for Healthcare and Public Health Providers

What are the signs of influenza in pigs?

In pigs, signs of influenza infection include fever, depression, coughing (barking), discharge from the nose or eyes, sneezing, difficulty breathing, eye redness or inflammation, not eating. However, it is possible for pigs to be infected with influenza and show no signs of illness.

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https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/meat-preparation/fresh-pork-from-farm-to-table/CT_Index

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If a person attended a fair where there were pigs, should they be concerned?

If a person recently attended a fair where there were suspected or known influenza positive pigs, and they are **experiencing respiratory symptoms**, they should seek medical care. They should tell their doctor they have had contact with swine. It is important to test ill and exposed people for influenza, as testing can inform treatment options. Antiviral medications may be prescribed in order to help prevent serious complications that can sometimes occur from infection with influenza.

If a person recently attended a fair where there were suspected or known influenza positive pigs, and they are **not currently experiencing respiratory symptoms**, they should continue to monitor their health for 10 days after their last exposure to swine. It can take up to 10 days for symptoms to appear. If symptoms do appear, they should seek medical care and tell their doctor they have had contact with swine.

Who should be tested for variant influenza?

It is important that respiratory specimens be collected from: 1) anyone with signs of influenza who has been exposed to sick pigs suspected of being infected with influenza, 2) anyone with signs of influenza who has been exposed to an influenza positive pig, 3) anyone exhibiting symptoms of influenza, during the warm weather months when human seasonal influenza is not usually circulating. When variant influenza is suspected (ill person exposed to sick pigs or ill during the summer months) it is important that healthcare providers send respiratory specimens to the MDHHS BOL for influenza testing, as most commonly available rapid tests cannot detect variant influenza and may provide a false negative result. In addition to facilitating specimen collection, it is important for local health departments to perform contact tracing (identify other potentially exposed people) and to follow-up with **all ill persons** to make sure they are tested and treated if needed.

How can a person be tested?

For local health departments, there are several options for obtaining respiratory specimens from ill individuals for testing: 1) The local health department can directly obtain the respiratory specimen and send it to MDHHS BOL for influenza testing. 2) The local health department can refer the individual to their primary care provider, urgent care, or the emergency department at a local hospital to have a respiratory specimen collected and sent to MDHHS BOL for influenza testing. 3) The local health department can set up a standing order for respiratory specimen collection with a local laboratory to obtain and submit specimens to MDHHS BOL for influenza testing. A specimen submission protocol should be included in the Standing Order.

How can a person protect themselves from swine variant influenza?

People at high risk for serious influenza complications should avoid pigs and swine barns at fairs. Do not take food or drink into pig areas and do not eat, drink, or put anything in your mouth in pig areas. Do not take toys, pacifiers, cups, baby bottles, strollers, or similar items into pig areas. Avoid close contact with pigs that look or act ill. Wash your hands with soap and water or alcohol-based hand rub when soap and water are not available, before and after being around pigs or their environment. If you must work around sick pigs, use appropriate personal protective equipment, such as gloves and a face mask or respirator.

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Planning for the Upcoming Fair Season

Local Health Department Planning/Pre-Event Check-list

- Get to know the appropriate contacts at your fair (name, phone, email):
 1. Fair Manager:
 2. Fair Veterinarian:
 3. Swine Superintendent:
 4. MSU Extension 4-H Leader:
 5. Other:
 6. Other:

- Provide LHD contact information to fair managers with instructions to immediately report to the health department suspected influenza illness (human and/or pigs)

- Volunteer to be involved in the fair planning process:
http://msue.anr.msu.edu/resources/fair_and_exhibition_animal_health_planning_guide

- Consider having a health department booth at the fair.

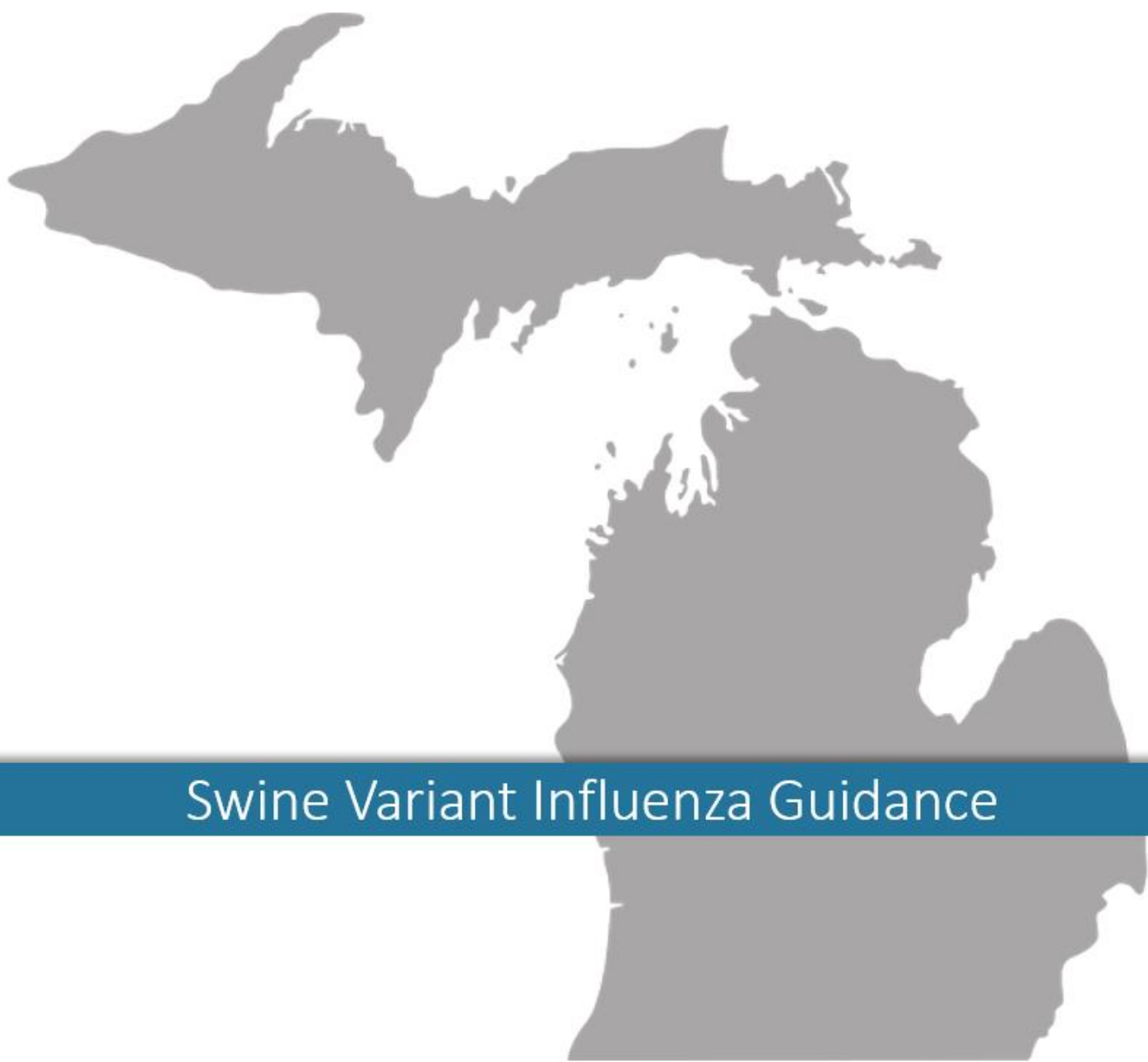
- Provide a copy of the CDC “Key Facts for People Exhibiting Pigs at Fairs” to the 4-H Coordinator and the Swine Barn Superintendent.
https://www.cdc.gov/flu/pdf/swineflu/fair_exhibitor_factsheet.pdf

- Prepare local health department-specific Variant Influenza Fact Sheet, draft press release, draft notification letters (See “Swine Variant Influenza Tool Kit Templates”)

- Create Template Swine Exhibitor Survey tool in Survey Monkey or other survey application (See “Swine Variant Influenza Tool Kit Templates”)

- Be prepared to collect respiratory specimens from exposed symptomatic exhibitors and other ill persons potentially exposed to swine.
 1. For specimens to be collected by the local health department:
 - Order Unit #45 Viral Isolation/PCR collection and shipping kits to have on hand ([- Establish Medical Director Standing Order for respiratory specimen collection of suspect patients at local laboratory](http://www.michigan.gov/mdhhs/0,4570,7-153_7-243_7-244_7-245_7-246_7-247_7-248_7-249_7-250_7-251_7-252_7-253_7-254_7-255_7-256_7-257_7-258_7-259_7-260_7-261_7-262_7-263_7-264_7-265_7-266_7-267_7-268_7-269_7-270_7-271_7-272_7-273_7-274_7-275_7-276_7-277_7-278_7-279_7-280_7-281_7-282_7-283_7-284_7-285_7-286_7-287_7-288_7-289_7-290_7-291_7-292_7-293_7-294_7-295_7-296_7-297_7-298_7-299_7-300_7-301_7-302_7-303_7-304_7-305_7-306_7-307_7-308_7-309_7-310_7-311_7-312_7-313_7-314_7-315_7-316_7-317_7-318_7-319_7-320_7-321_7-322_7-323_7-324_7-325_7-326_7-327_7-328_7-329_7-330_7-331_7-332_7-333_7-334_7-335_7-336_7-337_7-338_7-339_7-340_7-341_7-342_7-343_7-344_7-345_7-346_7-347_7-348_7-349_7-350_7-351_7-352_7-353_7-354_7-355_7-356_7-357_7-358_7-359_7-360_7-361_7-362_7-363_7-364_7-365_7-366_7-367_7-368_7-369_7-370_7-371_7-372_7-373_7-374_7-375_7-376_7-377_7-378_7-379_7-380_7-381_7-382_7-383_7-384_7-385_7-386_7-387_7-388_7-389_7-390_7-391_7-392_7-393_7-394_7-395_7-396_7-397_7-398_7-399_7-400_7-401_7-402_7-403_7-404_7-405_7-406_7-407_7-408_7-409_7-410_7-411_7-412_7-413_7-414_7-415_7-416_7-417_7-418_7-419_7-420_7-421_7-422_7-423_7-424_7-425_7-426_7-427_7-428_7-429_7-430_7-431_7-432_7-433_7-434_7-435_7-436_7-437_7-438_7-439_7-440_7-441_7-442_7-443_7-444_7-445_7-446_7-447_7-448_7-449_7-450_7-451_7-452_7-453_7-454_7-455_7-456_7-457_7-458_7-459_7-460_7-461_7-462_7-463_7-464_7-465_7-466_7-467_7-468_7-469_7-470_7-471_7-472_7-473_7-474_7-475_7-476_7-477_7-478_7-479_7-480_7-481_7-482_7-483_7-484_7-485_7-486_7-487_7-488_7-489_7-490_7-491_7-492_7-493_7-494_7-495_7-496_7-497_7-498_7-499_7-500_7-501_7-502_7-503_7-504_7-505_7-506_7-507_7-508_7-509_7-510_7-511_7-512_7-513_7-514_7-515_7-516_7-517_7-518_7-519_7-520_7-521_7-522_7-523_7-524_7-525_7-526_7-527_7-528_7-529_7-530_7-531_7-532_7-533_7-534_7-535_7-536_7-537_7-538_7-539_7-540_7-541_7-542_7-543_7-544_7-545_7-546_7-547_7-548_7-549_7-550_7-551_7-552_7-553_7-554_7-555_7-556_7-557_7-558_7-559_7-560_7-561_7-562_7-563_7-564_7-565_7-566_7-567_7-568_7-569_7-570_7-571_7-572_7-573_7-574_7-575_7-576_7-577_7-578_7-579_7-580_7-581_7-582_7-583_7-584_7-585_7-586_7-587_7-588_7-589_7-590_7-591_7-592_7-593_7-594_7-595_7-596_7-597_7-598_7-599_7-600_7-601_7-602_7-603_7-604_7-605_7-606_7-607_7-608_7-609_7-610_7-611_7-612_7-613_7-614_7-615_7-616_7-617_7-618_7-619_7-620_7-621_7-622_7-623_7-624_7-625_7-626_7-627_7-628_7-629_7-630_7-631_7-632_7-633_7-634_7-635_7-636_7-637_7-638_7-639_7-640_7-641_7-642_7-643_7-644_7-645_7-646_7-647_7-648_7-649_7-650_7-651_7-652_7-653_7-654_7-655_7-656_7-657_7-658_7-659_7-660_7-661_7-662_7-663_7-664_7-665_7-666_7-667_7-668_7-669_7-670_7-671_7-672_7-673_7-674_7-675_7-676_7-677_7-678_7-679_7-680_7-681_7-682_7-683_7-684_7-685_7-686_7-687_7-688_7-689_7-690_7-691_7-692_7-693_7-694_7-695_7-696_7-697_7-698_7-699_7-700_7-701_7-702_7-703_7-704_7-705_7-706_7-707_7-708_7-709_7-710_7-711_7-712_7-713_7-714_7-715_7-716_7-717_7-718_7-719_7-720_7-721_7-722_7-723_7-724_7-725_7-726_7-727_7-728_7-729_7-730_7-731_7-732_7-733_7-734_7-735_7-736_7-737_7-738_7-739_7-740_7-741_7-742_7-743_7-744_7-745_7-746_7-747_7-748_7-749_7-750_7-751_7-752_7-753_7-754_7-755_7-756_7-757_7-758_7-759_7-760_7-761_7-762_7-763_7-764_7-765_7-766_7-767_7-768_7-769_7-770_7-771_7-772_7-773_7-774_7-775_7-776_7-777_7-778_7-779_7-780_7-781_7-782_7-783_7-784_7-785_7-786_7-787_7-788_7-789_7-790_7-791_7-792_7-793_7-794_7-795_7-796_7-797_7-798_7-799_7-800_7-801_7-802_7-803_7-804_7-805_7-806_7-807_7-808_7-809_7-810_7-811_7-812_7-813_7-814_7-815_7-816_7-817_7-818_7-819_7-820_7-821_7-822_7-823_7-824_7-825_7-826_7-827_7-828_7-829_7-830_7-831_7-832_7-833_7-834_7-835_7-836_7-837_7-838_7-839_7-840_7-841_7-842_7-843_7-844_7-845_7-846_7-847_7-848_7-849_7-850_7-851_7-852_7-853_7-854_7-855_7-856_7-857_7-858_7-859_7-860_7-861_7-862_7-863_7-864_7-865_7-866_7-867_7-868_7-869_7-870_7-871_7-872_7-873_7-874_7-875_7-876_7-877_7-878_7-879_7-880_7-881_7-882_7-883_7-884_7-885_7-886_7-887_7-888_7-889_7-890_7-891_7-892_7-893_7-894_7-895_7-896_7-897_7-898_7-899_7-900_7-901_7-902_7-903_7-904_7-905_7-906_7-907_7-908_7-909_7-910_7-911_7-912_7-913_7-914_7-915_7-916_7-917_7-918_7-919_7-920_7-921_7-922_7-923_7-924_7-925_7-926_7-927_7-928_7-929_7-930_7-931_7-932_7-933_7-934_7-935_7-936_7-937_7-938_7-939_7-940_7-941_7-942_7-943_7-944_7-945_7-946_7-947_7-948_7-949_7-950_7-951_7-952_7-953_7-954_7-955_7-956_7-957_7-958_7-959_7-960_7-961_7-962_7-963_7-964_7-965_7-966_7-967_7-968_7-969_7-970_7-971_7-972_7-973_7-974_7-975_7-976_7-977_7-978_7-979_7-980_7-981_7-982_7-983_7-984_7-985_7-986_7-987_7-988_7-989_7-990_7-991_7-992_7-993_7-994_7-995_7-996_7-997_7-998_7-999_8000_8001_8002_8003_8004_8005_8006_8007_8008_8009_8010_8011_8012_8013_8014_8015_8016_8017_8018_8019_8020_8021_8022_8023_8024_8025_8026_8027_8028_8029_8030_8031_8032_8033_8034_8035_8036_8037_8038_8039_8040_8041_8042_8043_8044_8045_8046_8047_8048_8049_8050_8051_8052_8053_8054_8055_8056_8057_8058_8059_8060_8061_8062_8063_8064_8065_8066_8067_8068_8069_8070_8071_8072_8073_8074_8075_8076_8077_8078_8079_8080_8081_8082_8083_8084_8085_8086_8087_8088_8089_8090_8091_8092_8093_8094_8095_8096_8097_8098_8099_9000, Specimen Submission, Clinical Specimen Collection Units, DCH-0568)2. For specimens to be collected by a local laboratory<ul style=)

- Instruct to collect up to two specimens, one for PCR-based commercial test, if desired, and one for PCR-based MDHHS BOL assay. (Commercial PCR assays may not detect swine viruses in human respiratory specimens.)
 - Provide laboratory with MDHHS BOL Unit #45 Viral Isolation/PCR collection and shipping kits to have on hand
 - 3. For patients referred to local HCP/Urgent Care/Emergency Department
 - Prepare specimen collection instructions to provide to designated facility (See “Variant (Swine) Influenza Guidance for Healthcare and Public Health Providers” information sheet and “Template Swine Influenza Letter to Healthcare Providers”)
 - Provide HCP/facility with MDHHS BOL Unit #45 Viral Isolation/PCR collection and shipping kits
- Pre-identify shipping services to expedite specimen delivery to MDHHS BOL (i.e., same day or overnight delivery); visit www.michigan.gov/mdhhs/lab, Specimen Submission, Specimen Submission Guidelines.
- Review Variant Influenza Tracking Tool in the Outbreak Management System (OMS).
 - This tracking tool has been created as a questionnaire in the OMS, a module within MDSS to manage outbreaks and share data in real-time between Local Health Departments and MDHHS. The OMS may be accessed via MDSS by clicking on the OMS link on the top right. If you do not have access, please contact your Regional Epidemiologist. The OMS user guide is available at: https://www.michigan.gov/documents/mdhhs/OMS_Final_User_Guide_613196_7.pdf
 - Preview Questions
 1. How many individuals have responded to the survey?
 2. How many individuals have reported influenza-like symptoms?
 3. For the ill individuals, have you conducted contact tracing (Y/N)?
 4. How many survey respondents were individually contacted because of reported illness?
 5. How many total ills have been reported?
 6. How many new ills have been reported?
 7. How many total specimens have been collected?
 8. How many new specimens have been collected?
 9. What is the estimated symptom onset date range?
 10. Are there any additional updates you would like to report?



Swine Variant Influenza Guidance

Healthcare and Public Health Providers

Variant (Swine) Influenza Guidance for Healthcare and Public Health Providers Michigan Department of Health and Human Services

During recent summers, swine exhibitions at agricultural fairs have been associated with human infections caused by swine variant influenza A viruses, such as H3N2v, H1N2v and H1N1v. In total, 19 cases of swine variant influenza have occurred in Michigan from 2013 to 2018. See the map on [Page 2](#) for more information. Healthcare providers and public health professionals should consider variant influenza infection when evaluating persons with influenza-like illness (ILI) or investigating positive influenza results during the summer fair season. This guidance outlines the Michigan Department of Health and Human Services recommendations on variant influenza surveillance, reporting and testing for healthcare providers, laboratories, and local health departments.

Influenza Case Identification, Testing, and Treatment

1. Clinicians treating patients with an influenza-like illness (fever >100°F plus a cough and/or a sore throat) should ask about recent exposure to swine or attendance at agricultural fairs. Clinical characteristics of variant influenza infection are similar to signs and symptoms of uncomplicated seasonal influenza, including fever, cough, pharyngitis, rhinorrhea, myalgia, and headache. Vomiting, diarrhea and conjunctivitis have also been reported in some cases. Milder illness is possible, including lack of fever. Duration of illness in most cases is approximately 3-5 days, but may be a week or more. As with seasonal flu, those at higher risk for flu-related complications may develop more serious illness.

2. Collection of upper respiratory specimens is strongly advised for any influenza-like illness (e.g., outpatients, hospitalizations, deaths) among the following:

- Patients reporting direct or indirect swine exposure or attendance at an agricultural fair
- Patients reporting close contact (within 6 ft) to an ill person with recent swine exposure
- Children <18 years of age
- Unusual or severe presentations of influenza-like illness, including hospitalizations
- Outbreaks of influenza-like illness, especially among children

Please note the importance of specimen collection and testing at the State Laboratory as commercially available tests may not reliably detect variant influenza and cannot distinguish between seasonal human influenza viruses and swine variant viruses.

3. Respiratory specimens should be collected as soon as possible after illness onset.

Preferred respiratory specimens include: nasopharyngeal swab, nasal aspirate or wash or a combined nasopharyngeal swab with oropharyngeal swab. Nasal or oropharyngeal swabs are also acceptable but less preferred. If the patient is able to produce a sputum specimen, please collect in addition to the upper respiratory specimen(s) listed above.

- All specimens should be placed into sterile containers and immediately placed on refrigerant gel-packs at 4°C (refrigerator) for transport to the laboratory. For swabbed specimens, use sterile viral transport media.

4. Specimens from suspect variant influenza cases should be submitted to MDHHS:

- Commercially available rapid influenza diagnostic tests (RIDTs) and molecular-based testing **may not** detect variant influenza virus in respiratory specimens. In addition, a positive test result for influenza A cannot confirm variant influenza virus infection because these tests cannot distinguish between influenza A virus subtypes (does not differentiate between human seasonal influenza A viruses and swine variant viruses).
- For information on how to collect and submit specimens to the MDHHS Bureau of Laboratories, including the required Test Requisition form, refer to:
http://www.michigan.gov/mdch/0,4612,7-132-2945_5103-213906--,00.html
- Contact the MDHHS Division of Communicable Disease at (517) 335-8165 to coordinate specimen submission to the state public health laboratory.

5. The antiviral drug oseltamivir (Tamiflu) is effective in treating variant influenza infection.

Early initiation of antiviral treatment is most effective. Further information for clinicians regarding the treatment of variant influenza is available at: <https://www.cdc.gov/flu/swineflu/interim-guidance-variant-flu.htm>

6. Infection Control

Healthcare personnel who treat ill persons with suspected swine variant influenza infections should follow standard, contact, and droplet precautions as recommended for patient care. More detailed infection control recommendations are available here: <http://www.cdc.gov/flu/swineflu/prevention-strategies.htm>

How to Report Suspect Swine Variant Influenza Cases

Clinicians and Laboratorians:

To promptly report suspect cases and arrange testing, contact your local health department immediately (or contact MDHHS at (517) 335-8165 or after hours at (517) 335-9030).

Local Health Departments:

- Please report any confirmed, probable, or suspect variant influenza case to MDHHS at (517) 335-8165 and enter the case into MDSS using the “Novel Influenza” form. Complete the Case Details form.
- MDHHS will work with local health departments to complete CDC forms if cases are identified.
- Case definitions are available online at: <http://www.cdc.gov/flu/swineflu/case-definitions.htm>

Healthcare and public health providers should continue to report other influenza cases (seasonal, suspect novel influenza cases, pediatric deaths, facility outbreaks) as previously directed; guidance is available at: www.michigan.gov/cdinfo in the Communicable Diseases (A-Z) under Influenza.

For more information on swine variant influenza, please visit the CDC’s website at: <https://www.cdc.gov/flu/swineflu/variant-flu-in-humans.htm>

Please contact the MDHHS Division of Communicable Disease at (517) 335-8165 with any questions.

This guidance should be considered interim and may change as situations warrant.

Action Steps for Positive Pig

Michigan Local Health Departments: Action Steps when a Pig Tests Positive for Influenza at the Fair

Michigan local health departments will typically be notified by MDHHS of a pig that tests positive for swine influenza at your county fair. If you are notified by another agency, please call MDHHS immediately at (517) 335-8165 and ask to speak directly to an Epidemiologist about swine influenza. If after hours/weekend, call the MDHHS On-Call staff at (517) 335-9030.

The following are steps that local health departments should be prepared to take next:

- Notify the Fair Manager: _____
- Share with Fair Manager the NASPHV/NASAHO publication “Minimizing Influenza Transmission during Exhibitions-Checklist for Protecting Guests, Exhibitors, and Pigs” (<http://www.nasphv.org/Documents/ProtectingGuestsExhibitorsAndPigsAtSwineExhibitions2018.pdf>)
- Obtain contact information and establish a means of communication (cell phone, email, etc) with the Fair Veterinarian and Swine Superintendent/4-H/Future Farmers of America (FFA) Leader.

FAIR VETERINARIAN: _____

SWINE SUPERINTENDENT: _____

- Ask 4-H/FFA Adult Leaders to gather contact information for families/youth exhibiting swine to share with the health department. Establish means of regular communication (cell phone, email, etc).

4-H LEADER: _____

MSU EXTENSION STAFF: _____

- Provide a copy of the CDC “Key Facts for People Exhibiting Pigs at Fairs” to the 4-H Coordinator and the Swine Barn Superintendent. (https://www.cdc.gov/flu/pdf/swineflu/fair_exhibitor_factsheet.pdf)
- For families/youth exhibiting swine, develop health monitoring protocol. Work with your MDHHS Regional Epidemiologist to implement the survey and track responses.

- Immediately follow-up with any person reporting flu-like illness, including those reported via on-line survey, for case finding and testing as indicated.
- Provide daily reports to MDHHS on situational updates and survey responses through the MDSS Outbreak Management System (OMS).
(<https://miloginworker.michigan.gov/uisecure/selfservice>)
- Finalize swine influenza fact sheets to distribute to youth and adults.
- Prepare message for group email to swine exhibitors that will include fact sheet and health monitoring information including link to questionnaire.
- Prepare to facilitate the collection of respiratory specimens from any animal exhibitors or fair visitors reporting influenza-like illness (ILI) within 10 days of exposure to ill swine.
- Develop press release in coordination with MDHHS to notify the public.
- Notify healthcare providers that swine influenza has been detected in pigs on exhibit. Request that providers ask patients presenting with ILI about exposure to swine. Provide information about how to collect and submit respiratory specimens to MDHHS for testing.
- Be prepared to work with the Michigan Department of Agriculture and Rural Development (MDARD) Animal Industry Division staff, Fair Veterinarian, and Fair Officials responsible for quarantining ill and exposed swine, to provide guidance about protecting people caring for quarantined animals.
 - Persons at high risk for influenza complications should avoid exposure to swine.
 - If exposure to swine cannot be avoided, consider wearing appropriate personal protective equipment (<https://www.cdc.gov/flu/pdf/swineflu/prevent-spread-flu-pigs-at-fairs.pdf>).
- Prepare informational letter to transporter and/or processing plant receiving live, exposed pigs at the conclusion of the fair. (See “Swine Variant Influenza Tool Kit Templates” Word Document)
- After the outbreak, organize a meeting with animal health, public health, exhibition organizers, and youth 4-H/FFA leaders to discuss challenges and lessons learned.

This guidance should be considered interim and may change as situations warrant

Action Steps for Positive or Presumptive Positive Human

Michigan Local Health Departments: Action Steps when a Person Tests Positive or Presumptive Positive for a Swine-Variant Influenza Virus

Public Health Notifications

- Immediately call the Michigan Department of Health and Human Services (MDHHS) Communicable Disease Division at (517) 335-8165 and ask to speak directly with an Epidemiologist about swine influenza. If after hours/weekend, contact the MDHHS On-Call staff at (517) 335-9030.
- If associated with a local fair or swine exhibition in Michigan, notify the local health department where the event is/was located

Case Investigation and Reporting Forms

- Promptly enter information on confirmed, probable or suspect variant influenza cases into MDSS using the "Novel Influenza" form.
- If recent contact with swine or recent attendance at event with animals present, gather information about date(s) of contact and details/location of event.
- Complete CDC Novel Influenza Case Report Form as provided by MDHHS.

Contact Tracing

Conduct contact tracing of suspected and confirmed variant influenza cases to identify additional illnesses and collect information on the epidemiology of the virus. Contact tracing is essential to evaluate virus transmission patterns and potential person-to-person transmission.

If fair or event-associated:

- Obtain contact information and work with Fair/Exhibit Organizers and 4-H/Future Farmers of America (FFA) Adult Leaders to identify names and contact information of all swine exhibitors and others exposed to swine. Establish means of regular communication.

FAIR MANAGER: _____

SWINE SUPERINTENDENT: _____

4-H LEADER: _____

MSU EXTENSION STAFF: _____

- Develop health monitoring survey and protocol to collect information on illness status of swine exhibitors and household members. Work with your MDHHS Regional Epidemiologist to implement the survey and track responses.

- Immediately follow-up with any person reporting influenza-like illness, including those reported via on-line survey, for case finding and testing as indicated.
- Provide daily reports to MDHHS regarding any situational updates, as well as information on survey responses and status updates on ill individuals through the MDSS Outbreak Management System (OMS).

Influenza Testing Plan

It is very important that respiratory specimens be collected from any individual exhibiting symptoms. Prepare to facilitate testing of exposed and epi-linked persons reporting influenza-like illness (ILI) directly through the health department, through a standing order at a local laboratory, or through physicians/urgent care/local emergency department.

- Arrange for respiratory specimens to be collected as quickly as possible from:
 - All persons with ILI and acute respiratory infection who have had recent contact (within 10 days prior to illness onset) with swine or recent attendance at an agricultural event where swine are present.
 - All ill household members and persons reporting close contact (within 6 ft) to a person with suspected/confirmed variant influenza infection or to an ill person with recent swine exposure.
- Preferred specimens include a nasopharyngeal swab or aspirate, or a combined nasopharyngeal and oropharyngeal swab. If possible, collect sputum in addition.
- **Arrange for specimens to be submitted to MDHHS Bureau of Laboratories (BOL) for PCR testing.** Commercially available tests may not reliably detect variant influenza virus and cannot distinguish between seasonal human influenza viruses and swine variant viruses.

Infection Control Measures

Provide information and instructions on infection control steps for ill and non-ill persons and for healthcare personnel

- Advise healthcare personnel who treat ill persons with suspected swine variant influenza infection to follow standard, contact, and droplet precautions as recommended for patient care.
- Ill persons with suspected or confirmed variant virus infections who do not require hospitalization should be isolated at home away from other family members as much as possible. Household members who are at increased risk for influenza complications should avoid coming within 6 feet of ill persons.
- Persons at high risk for influenza complications should avoid exposure to swine. If exposure to swine cannot be avoided, consider wearing appropriate personal protective equipment (<https://www.cdc.gov/flu/pdf/swineflu/prevent-spread-flu-pigs-at-fairs.pdf>).

Public Messaging

- Develop press release in coordination with MDHHS Communications Office/Public Information Officer (PIO) to notify persons who attended the same event and had exposure to swine.
- Notify healthcare providers that a human case of variant influenza has been detected. Providers should look for cases of ILI and ask about exposure to swine. Provide information about how to collect and submit respiratory specimens to MDHHS for testing.

This guidance should be considered interim and may change as situations warrant.

KEY FACTS for People Exhibiting Pigs at Fairs

Who is at high risk of serious illness from variant virus infections?

- People who are at high risk for serious complications (http://www.cdc.gov/flu/about/disease/high_risk.htm) from flu, including variant flu viruses like H3N2v, include children younger than 5 years, people with certain long-term health conditions like asthma and other lung diseases, diabetes, heart disease, weakened immune systems, neurological or neurodevelopmental conditions, as well as pregnant women and people 65 years and older.
- Most of the people hospitalized because of variant virus infections have had one of these factors that put them at high risk.



Background

Pigs may be infected with swine influenza viruses that are different from human flu viruses. Swine flu viruses spread among pigs and – while rare – they can spread from pigs to people too. When that happens, these viruses are called variant viruses and are designated with the letter “v” after the virus subtype. Human infections with H1N1v, H3N2v and H1N2v viruses have been detected in the United States.

Spread of swine flu viruses from a pig to a person is thought to happen in the same way that human flu viruses spread; mainly through droplets when infected pigs cough or sneeze. This has happened in different settings, especially at fairs where pigs from many places come in close contact with each other and with people.

Exposure to pigs, especially close contact with pigs, is the main risk factor for infection with variant influenza viruses. While most illness with these viruses has been mild, serious illness, including illness resulting in hospitalization, has happened. To protect those most likely to get infected and develop serious illness, CDC and 4-H National Headquarters recommend exhibitors (and their friends or family) take the following actions to help prevent the spread of flu between pigs and people.

Recommendations for Fair Exhibitors with High Risk Factors:

- Anyone at high risk of serious flu complications planning to attend a fair where pigs will be present should avoid pigs and swine barns at the fair.
- This includes pig exhibitors and family members with high risk factors.
- This may mean that exhibitors with one or more high risk factors do not show their pig(s) this year.

Recommendations for Fair Exhibitors Not at High Risk:

- If you are responsible for the care of pigs, watch them for illness (like loss of appetite, cough or runny nose). Call a veterinarian if you suspect illness.
- Avoid close contact with pigs that look or act ill and notify the fair veterinarian and/or the fair manager that your pig may be ill.
- Take protective measures if you must come in contact with pigs that are known or suspected to be sick. This includes wearing protective clothing, gloves and masks that cover your mouth and nose. (This is called "personal protective equipment" or PPE.)
- To further reduce the risk of infection, minimize contact with pigs in the pig barn and arenas.

As always, take the following preventive actions:

- Don't eat or drink or put anything in your mouth in the pig barn and show arena.
- Don't take toys, pacifiers, cups, bottles, strollers, or similar items into the pig barn and show arenas.
- 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.
- If you are sick with flu-like illness, stay home to avoid spreading your illness.

What to do if you get sick:

- Flu symptoms usually include fever, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, fatigue, and sometimes vomiting or diarrhea.
- If you are at high risk and you get flu symptoms, call a health care provider. Tell them about your high risk factor and your symptoms. If you have had recent exposure to pigs, tell them about that too.
- If you are not at high risk and you get flu symptoms after exposure to pigs, seek medical care as you normally would.
- A health care provider can decide whether influenza testing or treatment is needed.
- Influenza antiviral drugs can treat variant virus infections as well as seasonal flu illness in people.
- These drugs work better the sooner you start them, so seek medical treatment promptly if you get symptoms and are at high risk.



For more information:

Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

Contact CDC Info: <http://www.cdc.gov/cdc-info/requestform.html>

Information on Influenza A (H3N2) Variant Viruses ("H3N2v")

<http://www.cdc.gov/flu/swineflu/h3n2v-cases.htm>



United States Department of Agriculture
National Institute of Food and Agriculture
4-H National Headquarters

Additional Swine Variant Influenza Resources



MDHHS Resources

Novel Influenza A Case Report Form:

[https://www.michigan.gov/documents/mdhhs/CDC Novel Flu CRF July 2018 627740 7.pdf](https://www.michigan.gov/documents/mdhhs/CDC_Novel_Flu_CRF_July_2018_627740_7.pdf)

Swine Exhibitor Survey Template:

[https://www.michigan.gov/documents/mdhhs/Swine Flu Survey Template 627786 7.doc](https://www.michigan.gov/documents/mdhhs/Swine_Flu_Survey_Template_627786_7.doc)

Swine Influenza Talking Points:

[https://www.michigan.gov/documents/mdhhs/Swine Flu Template - Talking Points 627583 7.docx](https://www.michigan.gov/documents/mdhhs/Swine_Flu_Template_-_Talking_Points_627583_7.docx)

Variant Influenza Tracking Tool in OMS:

MILogin: <https://miloginworker.michigan.gov/>

CDC Resources



Reported Infections with Variant Influenza in the United States:

<https://www.cdc.gov/flu/swineflu/variant-cases-us.htm#table-infections>

Interim Guidance for Clinicians on Human Infections with Variant Influenza Viruses:

<https://www.cdc.gov/flu/pdf/swineflu/clinician-guidance-variant-flu-human-infections.pdf>

Key Facts for People Exhibiting Pigs at Fairs:

<https://www.cdc.gov/flu/swineflu/exhibit-pigs-at-fairs.htm>

Take Action to Prevent the Spread of Flu Between Pigs and People:

<https://www.cdc.gov/flu/pdf/swineflu/prevent-spread-flu-pigs-at-fairs.pdf>

What People Who Raise Pigs Need to Know about Influenza:

<https://www.cdc.gov/flu/pdf/swineflu/pork-producer-fact-sheet.pdf>



Other Resources

Influenza in Workers and Pigs: Guidance for Commercial Swine Farmers and Pork Producers:

<https://www.osha.gov/Publications/influenza-workers-pigs-factsheet.pdf>

