

# New Zoo Tools: Rabies Post-Exposure Prophylaxis Reporting & Swine Influenza Outbreak Investigation Tool Kit

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EMERGING AND  
ZOO NOTIC  
INFECTIOUS DISEASES  
SECTION

MICHIGAN  
DEPARTMENT OF  
HEALTH AND HUMAN  
SERVICES



# Reporting Potential Rabies Exposures & Rabies Post Exposure Prophylaxis in Michigan

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**CDC/CSTE APPLIED EPIDEMIOLOGY FELLOW**

# Objectives

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- Provide a summary of the 2018 RPEP Reporting Pilot and this evaluation's findings.
- Review the changes to the Michigan Reportable Diseases List for 2019 regarding potential rabies exposures & rabies post-exposure prophylaxis (RPEP) reporting.
- Examine the revisions made to the investigation form and the disease condition in the Michigan Disease Surveillance System (MDSS).
- Go over RPEP educational resources & reporting guidance documents that are currently available.



# Rabies PEP Reporting Pilot

**Rabies Post-Exposure Prophylaxis (PEP)**

**Before You Administer Rabies PEP Ask/Know:**

**If The Victim Was Bitten/Exposed To A Wild Animal (Except Rodents)\***

What to Ask	Action to Take
Is the animal available for rabies testing?	<div><div>✗ If "Yes" WAIT to Initiate PEP until test results are available</div><div>✓ If "No" Initiate PEP</div></div>

\*Small rodents are rarely infected with rabies (woodchucks are the exception).

**If The Victim Was Bitten By A Dog, Cat, or Ferret:**

What to Ask	Action to Take
Is the animal available for a 10-day observation period?	<div><div>✗ If "Yes," WAIT to Initiate PEP for animal to complete 10-day observation period</div><div>! If "No," Please refer to the Michigan Rabies Assessment Flowchart</div></div>

**i Reporting and Questions About Unusual Circumstances**

Report any animal bites or exposures where rabies is suspected to your local health department

For questions about an animal exposure, please consult with your local health department at or call **517-335-8165**

<http://www.michigan.gov/rabies>

Hospital fees to initiate RPEP can exceed **\$10,000!**

Waiting a few days to begin treatment can prevent unnecessary patient discomfort and expense!

In 2018, The Emerging and Zoonotic Infectious Diseases (EZID) Section at MDHHS was exploring the idea of making rabies PEP a reportable condition statewide.

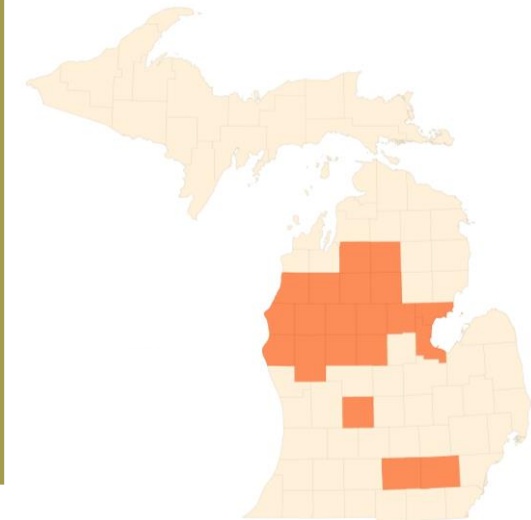
From **May 15-September 30**, we asked healthcare facilities within volunteering local health jurisdictions to report all doses of PEP to the local health department.

Participating health departments were provided guidelines for the project and a rabies PEP poster to distribute to their healthcare facilities.

MDHHS used the results of this project to make recommendations about statewide PEP.

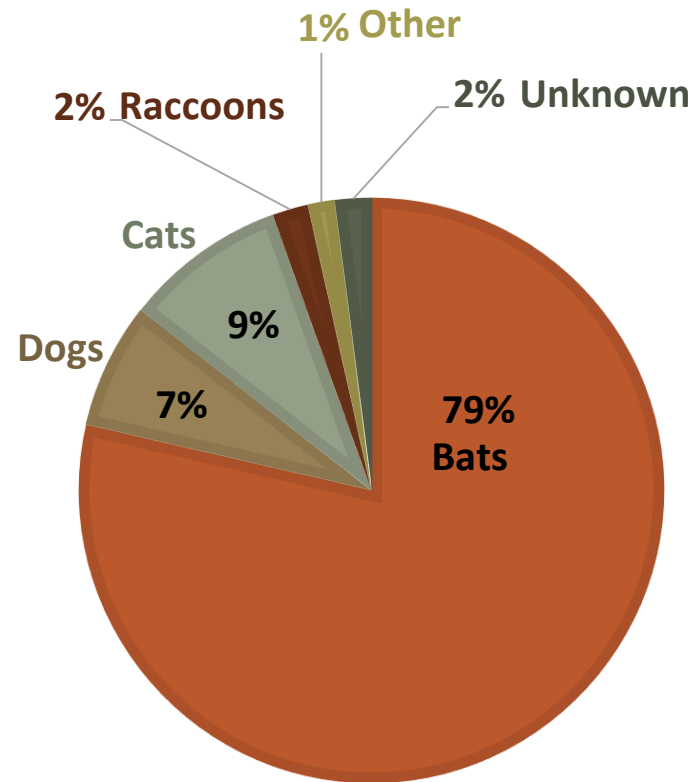
## Participating local health jurisdictions included:

- Bay County
- District Health Department #10
- Central Michigan DHD
- Ionia County
- Jackson County
- Washtenaw County



# Results: Rabies PEP Reporting Pilot

*Animal Species Indicated for RPEP Courses  
During the RPEP Reporting Pilot (n=201)*

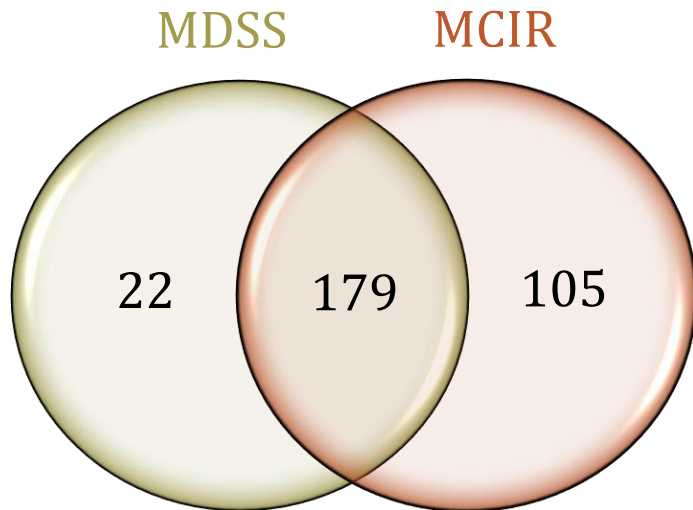


*Issues Detected with RPEP  
Initiations and Follow-up*

Conflicts with PEP	Total (n)
Patient did not receive last dose or were lost to follow-up	14
The human rabies immune globulin (HRIG) was not administered at first dose	4
Physician initiated PEP for a rodent bite	1
Physician initiated PEP when animal could have been observed for 10 days	5
Physician initiated PEP when animal could have been sent for rabies testing	9
Rabies vaccine dose was injected in wrong injection site, invalid dose	1
Animal tested positive, yet it was later determined that no human exposure occurred	1

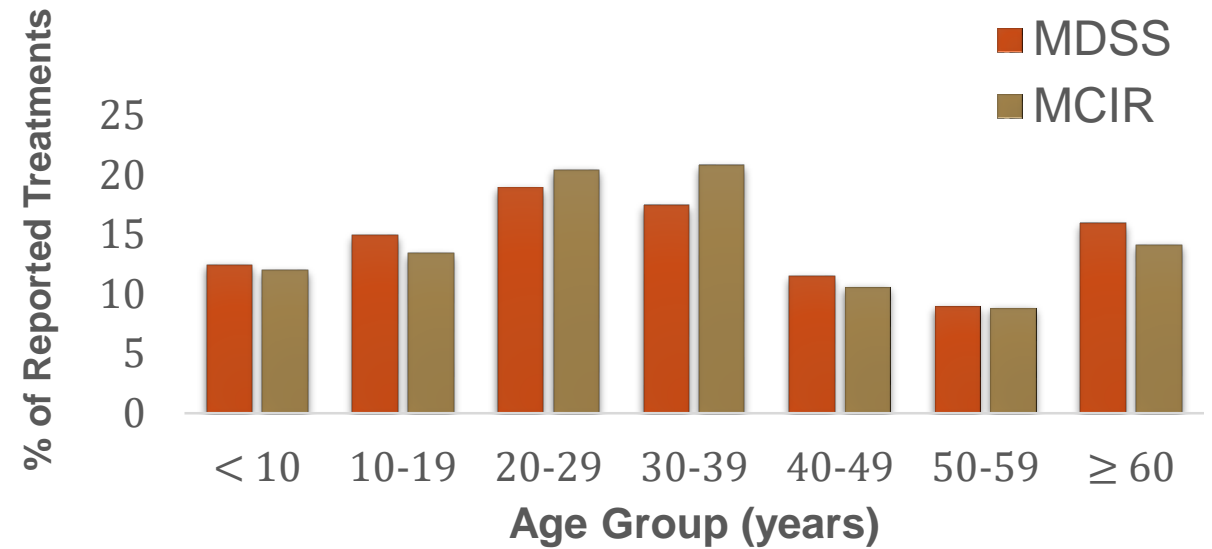
# Results: Rabies PEP Reporting Pilot

*RPEP Reporting in MDSS vs. MCIR, May-Sept 2018*



**Calculated Sensitivity = 63%\***

*Age Distribution of RPEP Treatments in MDSS & MCIR, May-September 2018*



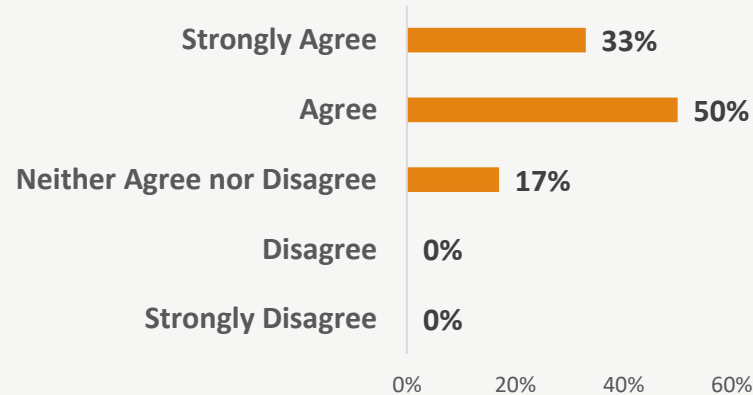
**Age Differences Between Treatments in MDSS and MCIR were not statistically significant.**

\* Sensitivity was calculated using capture-recapture formula used by Jansson, Arneborn & Ekdahl (2004).

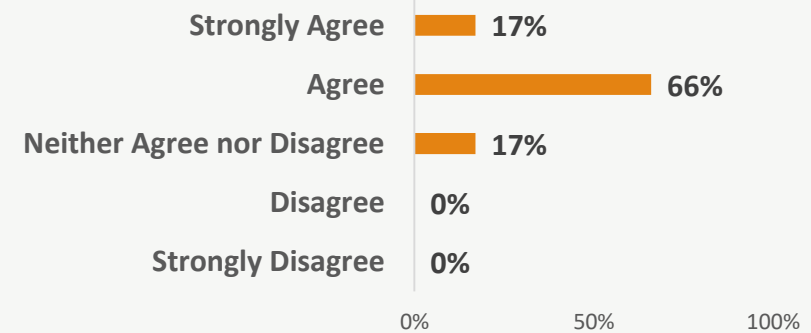
# Results: Rabies PEP Reporting Pilot

## *Select Question for the Post-Pilot Survey (n=6)*

How strongly do you agree/disagree with this statement,  
“Rabies PEP should be reportable in Michigan.”



How strongly do you agree/disagree with this statement,  
"Requiring healthcare facilities to report RPEP to the LHD  
was helpful and useful."



**LHDs were also asked to report any challenges that they experienced during the pilot. Participating LHDs reported:**

- Difficulties entering case information in a timely manner.
- Not all animal bites were being reported to the LHD.
- Healthcare providers need more education about RPEP.

# Conclusions: Rabies PEP Reporting Pilot

- ❑ Mistakes in RPEP treatments were identified including:
  - Failure to administer HRIG when indicated.
  - Initiating treatment when the animal was available for testing or observation.
  - A RPEP dose in the wrong injection site.
  - Starting treatment without relevant rabies exposure (i.e. bitten by a rodent).
- ❑ Challenges existed with patient follow-up & ensuring that exposed individuals complete the series.
- ❑ This pilot surveillance system's sensitivity was low. HCF staff may not have known to report to their LHD during the piloting period.
- ❑ The age range of cases receiving RPEP reported in MDSS were representative of patients reported in MCIR.
- ❑ LHDs experienced difficulties during the pilot due to challenges filing the reports in a timely manner along with lapses in communication between LHDs & healthcare facilities with receiving animal bite reports.
- ❑ 83% of piloting jurisdictions were supportive of making RPEP administration reportable
- ❑ Most RPEP treatments were initiated following an exposure to a bat emphasizing the continued need to enhance citizen awareness of bats and rabies risk.



# As of 2019,

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RPEP administrations following potential rabies exposures are reportable statewide.



# Modifications to the RD List:

## Potential Rabies Exposures & RPEP

- “**Animal Bites**” has been omitted on the Michigan Reportable Diseases List.
- “**Animal Bites**” has been replaced with “**Rabies: potential exposure and post exposure prophylaxis**”
- Healthcare providers are now required to report to LHDs **any initiation & subsequent does of RPEP** given to patients who were potentially exposed.
- Potential exposures to rabies may be through an animal bite or another type of exposure (i.e. deeply sleeping person wakes to a bat in the room).

2018 REPORTABLE DISEASES IN MICHIGAN – BY CONDITION	
A Guide for Physicians, Health Care Providers and Laboratories	
Report the following conditions to the Michigan Disease Surveillance System (MDSS) or local health department (see reverse) within 24 hours (unless otherwise noted) if the agent is identified by clinical or laboratory diagnosis.	
Report the unusual occurrence, outbreak or epidemic of any disease or condition, including healthcare-associated infections.	
Animal bites	Animal bites
Anthrax (Bacillus anthracis and B. cereus serovar anthracis) (4)	Anthrax (Bacillus anthracis and B. cereus serovar anthracis) (4)
Arboviral encephalitis, neuro- and non-neuroinvasive	Arboviral encephalitis, neuro- and non-neuroinvasive
Chikungunya, Eastern Equine, Jamestown Canyon, La Crosse, Powassan, St. Louis, West Nile, Western Equine, Zika (6)	Chikungunya, Eastern Equine, Jamestown Canyon, La Crosse, Powassan, St. Louis, West Nile, Western Equine, Zika (6)
Babesiosis (Babesia microti)	Babesiosis (Babesia microti)
Blastomycosis (Blastomyces dermatitidis)	Blastomycosis (Blastomyces dermatitidis)
Botulism (Clostridium botulinum) (4)	Botulism (Clostridium botulinum) (4)
Brucellosis (Brucella species) (4)	Brucellosis (Brucella species) (4)
Campylobacteriosis (Campylobacter species)	Campylobacteriosis (Campylobacter species)
Carbapenemase Producing – Carbapenem Resistant Enterobacteriaceae (CP-CRE): Klebsiella spp., Enterobacter spp., and Escherichia coli (5)	Carbapenemase Producing – Carbapenem Resistant Enterobacteriaceae (CP-CRE): Klebsiella spp., Enterobacter spp., and Escherichia coli (5)
Chancroid (Haemophilus ducreyi)	Chancroid (Haemophilus ducreyi)
Chickenpox / Varicella (Varicella virus) (6)	Chickenpox / Varicella (Varicella virus) (6)
Chlamydial infections (including trachoma, genital infections, LGV) (Chlamydia trachomatis) (3, 6)	Chlamydial infections (including trachoma, genital infections, LGV) (Chlamydia trachomatis) (3, 6)
Cholera (Vibrio cholera) (4)	Cholera (Vibrio cholera) (4)
Coccidioidomycosis (Coccidioides immitis)	Coccidioidomycosis (Coccidioides immitis)
Cryptosporidiosis (Cryptosporidium species)	Cryptosporidiosis (Cryptosporidium species)
Cyclosporiasis (Cyclospora species)	Cyclosporiasis (Cyclospora species)
Dengue Fever (Dengue virus)	Dengue Fever (Dengue virus)
Diphtheria (Corynebacterium diphtheriae) (5)	Diphtheria (Corynebacterium diphtheriae) (5)
Ehrlichiosis (Ehrlichia species)	Ehrlichiosis (Ehrlichia species)
Encephalitis, viral or unspecified	Encephalitis, viral or unspecified
Escherichia coli, O157:H7 and all other Shiga toxin positive serotypes (5)	Escherichia coli, O157:H7 and all other Shiga toxin positive serotypes (5)
Giardiasis (Giardia species)	Giardiasis (Giardia species)
Glanders (Burkholderia mallei) (4)	Glanders (Burkholderia mallei) (4)
Gonorrhea (Neisseria gonorrhoeae) (3, 6)	Gonorrhea (Neisseria gonorrhoeae) (3, 6)
Guillain-Barre Syndrome (1)	Guillain-Barre Syndrome (1)
Haemophilus influenzae, sterile sites only: submit isolates for serotyping for patients < 15 years of age (5)	Haemophilus influenzae, sterile sites only: submit isolates for serotyping for patients < 15 years of age (5)
Hantavirus	Hantavirus
Hemolytic Uremic Syndrome (HUS)	Hemolytic Uremic Syndrome (HUS)
Hemorrhagic Fever Viruses (4)	Hemorrhagic Fever Viruses (4)
Hepatitis, viral:	Hepatitis, viral:
Hepatitis A virus (Anti-HAV IgM, HAV genotype)	Hepatitis A virus (Anti-HAV IgM, HAV genotype)
Hepatitis B virus (HBsAg, HBeAg, anti-HBe IgM, HBV NAAT, HBV genotype; report all HBsAg and anti-HBs (positive, negative, indeterminate) for children ≤ 5 years of age) (6)	Hepatitis B virus (HBsAg, HBeAg, anti-HBe IgM, HBV NAAT, HBV genotype; report all HBsAg and anti-HBs (positive, negative, indeterminate) for children ≤ 5 years of age) (6)
Hepatitis C virus (Anti-HCV, HCV NAAT, HCV genotype, Antigen) (6)	Hepatitis C virus (Anti-HCV, HCV NAAT, HCV genotype, Antigen) (6)
Hepatitis D virus (HDVAg, anti-HDV IgM)	Hepatitis D virus (HDVAg, anti-HDV IgM)
Hepatitis E virus (Anti-HEV IgM)	Hepatitis E virus (Anti-HEV IgM)
Histoplasmosis (Histoplasma capsulatum)	Histoplasmosis (Histoplasma capsulatum)
HIV (tests including reactive immunoassays (e.g., Ab/Ag, TD1/TD2, WB, EIA, IA), detection tests (e.g., VL, NAAT, p24, genotypes), CD4 counts/percentages, and all tests related to perinatal exposures) (2,6)	HIV (tests including reactive immunoassays (e.g., Ab/Ag, TD1/TD2, WB, EIA, IA), detection tests (e.g., VL, NAAT, p24, genotypes), CD4 counts/percentages, and all tests related to perinatal exposures) (2,6)
Influenza virus (weekly aggregate counts)	Influenza virus (weekly aggregate counts)
Pediatric influenza mortality, report individual cases (5)	Pediatric influenza mortality, report individual cases (5)
Novel influenza viruses, report individual cases (5,6)	Novel influenza viruses, report individual cases (5,6)
Kawasaki Disease (1)	Kawasaki Disease (1)
Legionellosis (Legionella species) (5)	Legionellosis (Legionella species) (5)
Leprosy or Hansen's Disease (Mycobacterium leprae)	Leprosy or Hansen's Disease (Mycobacterium leprae)
Leptospirosis (Leptospira species)	Leptospirosis (Leptospira species)
Listeriosis (Listeria monocytogenes) (5,6)	Listeriosis (Listeria monocytogenes) (5,6)
Lyme Disease (Borrelia burgdorferi)	Lyme Disease (Borrelia burgdorferi)
Malaria (Plasmodium species)	Malaria (Plasmodium species)
Measles (Measles/Rubeola virus)	Measles (Measles/Rubeola virus)
Melioidosis (Burkholderia pseudomallei) (4)	Melioidosis (Burkholderia pseudomallei) (4)
Meningitis: bacterial, viral, fungal, parasitic and amebic	Meningitis: bacterial, viral, fungal, parasitic and amebic
Meningococcal Disease (Neisseria meningitidis, sterile sites) (5)	Meningococcal Disease (Neisseria meningitidis, sterile sites) (5)
Middle East Respiratory Syndrome (MERS-CoV) (5)	Middle East Respiratory Syndrome (MERS-CoV) (5)
Mumps (Mumps virus)	Mumps (Mumps virus)
Orthopox viruses, including Smallpox, Monkeypox (4)	Orthopox viruses, including Smallpox, Monkeypox (4)
Pertussis (Bordetella pertussis)	Pertussis (Bordetella pertussis)
Plague (Yersinia pestis) (4)	Plague (Yersinia pestis) (4)
Polio (Poliovirus)	Polio (Poliovirus)
Prion disease, including CJD	Prion disease, including CJD
Pittitosis (Chlamydia psittaci)	Pittitosis (Chlamydia psittaci)
Q Fever (Coxiella burnetii) (4)	Q Fever (Coxiella burnetii) (4)
Rabies (Rabies virus) (4)	Rabies (Rabies virus) (4)
Rubella (Rubella virus) (4)	Rubella (Rubella virus) (4)
Salmonellosis (Salmonella species) (5)	Salmonellosis (Salmonella species) (5)
Severe Acute Respiratory Syndrome (SARS) (5)	Severe Acute Respiratory Syndrome (SARS) (5)
Shigellosis (Shigella species) (5)	Shigellosis (Shigella species) (5)
Spotted Fever (Rickettsia species)	Spotted Fever (Rickettsia species)
Staphylococcus aureus, vancomycin intermediate/resistant (VISA) (5)/VISA (4)	Staphylococcus aureus, vancomycin intermediate/resistant (VISA) (5)/VISA (4)
Streptococcus pneumoniae, sterile sites	Streptococcus pneumoniae, sterile sites
Streptococcus pyogenes, group A, sterile sites, including Streptococcal Toxic Shock Syndrome (STSS)	Streptococcus pyogenes, group A, sterile sites, including Streptococcal Toxic Shock Syndrome (STSS)
Syphilis (Treponema pallidum) (6)	Syphilis (Treponema pallidum) (6)
Tetanus (Clostridium tetani)	Tetanus (Clostridium tetani)
Toxic Shock Syndrome (non-streptococcal) (1)	Toxic Shock Syndrome (non-streptococcal) (1)
Trichinellosis (Trichinella spiralis)	Trichinellosis (Trichinella spiralis)
Tuberculosis (Mycobacterium tuberculosis complex); report preliminary and final rapid test and culture results (4)	Tuberculosis (Mycobacterium tuberculosis complex); report preliminary and final rapid test and culture results (4)
Tularemia (Francisella tularensis) (4)	Tularemia (Francisella tularensis) (4)
Typhoid Fever (Salmonella typhi) (5)	Typhoid Fever (Salmonella typhi) (5)
Vibriosis (Non-cholera species) (5)	Vibriosis (Non-cholera species) (5)
Yellow Fever (Yellow Fever virus)	Yellow Fever (Yellow Fever virus)
Yersiniosis (Yersinia enterocolitica)	Yersiniosis (Yersinia enterocolitica)
LEGEND	
(1) Reporting within 3 days is required.	
(2) Reporting within 7 days is required.	
(3) Sexually transmitted infection for which expedited partner therapy is authorized. See www.michigan.gov/hivstd for details.	
(4) A laboratory shall immediately submit suspect or confirmed isolates, subcultures, or specimens from the patient being tested to the MDHHS Lansing laboratory.	
(5) Isolate requested. Enteric: If an isolate is not available from non-culture based testing, the positive broth and/or stool in transport medium must be submitted to the MDHHS Lansing laboratory.	
(6) Report pregnancy status, if available.	
Blue Bold Text = Category A bioterrorism or select agent, notify the MDHHS Laboratory immediately: (517) 335-0063	
This reporting is expressly allowed under HIPAA and required by Michigan Public Act 368 of 1978, 333.5111	
MDHHS maintains, reviews, and revises this list at least annually. For the most recent version please refer to: www.michigan.gov/cdinfo	
Michigan Department of Health and Human Services • Bureau of Laboratories • Bureau of Epidemiology and Population Health	
REV: 01/2018	
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Report the unusual occurrence, outbreak or epidemic of any disease or condition, including healthcare-associated infections.	
Acute flaccid myelitis (1)	Acute flaccid myelitis (1)
Anaplasmosis (Anaplasma phagocytophilum)	Anaplasmosis (Anaplasma phagocytophilum)
Anthrax (Bacillus anthracis and B. cereus serovar anthracis) (4)	Anthrax (Bacillus anthracis and B. cereus serovar anthracis) (4)
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Brucellosis (Brucella species) (4)	Brucellosis (Brucella species) (4)
Campylobacteriosis (Campylobacter species)	Campylobacteriosis (Campylobacter species)
Candidiasis (Candida auris) (4)	Candidiasis (Candida auris) (4)
Carbapenemase Producing – Carbapenem Resistant Enterobacteriaceae (CP-CRE): Klebsiella spp., Enterobacter spp., and Escherichia coli (5)	Carbapenemase Producing – Carbapenem Resistant Enterobacteriaceae (CP-CRE): Klebsiella spp., Enterobacter spp., and Escherichia coli (5)
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Hepatitis C virus (Anti-HCV test results including positive and negative antibody, RNA, and genotype tests) (6)	Hepatitis C virus (Anti-HCV test results including positive and negative antibody, RNA, and genotype tests) (6)
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Middle East Respiratory Syndrome (MERS-CoV) (5)	Middle East Respiratory Syndrome (MERS-CoV) (5)
Mumps (Mumps virus)	Mumps (Mumps virus)
Orthopox viruses, including Smallpox, Monkeypox (4)	Orthopox viruses, including Smallpox, Monkeypox (4)
Pertussis (Bordetella pertussis)	Pertussis (Bordetella pertussis)
Plague (Yersinia pestis) (4)	Plague (Yersinia pestis) (4)
Polio (Poliovirus)	Polio (Poliovirus)
Prion disease, including CJD	Prion disease, including CJD
Pittitosis (Chlamydia psittaci)	Pittitosis (Chlamydia psittaci)
Q Fever (Coxiella burnetii) (4)	Q Fever (Coxiella burnetii) (4)
Rabies (Rabies virus) (4)	Rabies (Rabies virus) (4)
Rubella (Rubella virus) (4)	Rubella (Rubella virus) (4)
Salmonellosis (Salmonella species) (5)	Salmonellosis (Salmonella species) (5)
Severe Acute Respiratory Syndrome (SARS) (5)	Severe Acute Respiratory Syndrome (SARS) (5)
Shigellosis (Shigella species) (5)	Shigellosis (Shigella species) (5)
Spotted Fever (Rickettsia species)	Spotted Fever (Rickettsia species)
Staphylococcus aureus, vancomycin intermediate/resistant (VISA) (5)/VISA (4)	Staphylococcus aureus, vancomycin intermediate/resistant (VISA) (5)/VISA (4)
Streptococcus pneumoniae, sterile sites	Streptococcus pneumoniae, sterile sites
Streptococcus pyogenes, group A, sterile sites, including Streptococcal Toxic Shock Syndrome (STSS)	Streptococcus pyogenes, group A, sterile sites, including Streptococcal Toxic Shock Syndrome (STSS)
Syphilis (Treponema pallidum) (6)	Syphilis (Treponema pallidum) (6)
Tetanus (Clostridium tetani)	Tetanus (Clostridium tetani)
Toxic Shock Syndrome (non-streptococcal) (1)	Toxic Shock Syndrome (non-streptococcal) (1)
Trichinellosis (Trichinella spiralis)	Trichinellosis (Trichinella spiralis)
Tuberculosis (Mycobacterium tuberculosis complex); report preliminary and final rapid test and culture results (4)	Tuberculosis (Mycobacterium tuberculosis complex); report preliminary and final rapid test and culture results (4)
Tularemia (Francisella tularensis) (4)	Tularemia (Francisella tularensis) (4)
Typhoid Fever (Salmonella typhi) and Paratyphoid Fever (serotypes Paratyphi A, Paratyphi B (tartrate negative), and Paratyphi C) (5)	Typhoid Fever (Salmonella typhi) and Paratyphoid Fever (serotypes Paratyphi A, Paratyphi B (tartrate negative), and Paratyphi C) (5)
Vibriosis (Non-cholera vibrio species) (5)	Vibriosis (Non-cholera vibrio species) (5)
Yellow Fever (Yellow Fever virus)	Yellow Fever (Yellow Fever virus)
Yersiniosis (Yersinia enterocolitica)	Yersiniosis (Yersinia enterocolitica)
LEGEND	
(1) Reporting within 3 days is required.	
(2) Reporting within 7 days is required.	
(3) Sexually transmitted infection for which expedited partner therapy is authorized. See www.michigan.gov/hivstd for details.	
(4) A laboratory shall immediately submit suspect or confirmed isolates, subcultures, or specimens from the patient being tested to the MDHHS Lansing laboratory.	
(5) Isolate requested. Enteric: If an isolate is not available from non-culture based testing, the positive broth and/or stool in transport medium must be submitted to the MDHHS Lansing laboratory.	
(6) Report pregnancy status, if available.	
Blue Bold Text = Category A bioterrorism or select agent, notify the MDHHS Laboratory immediately: (517) 335-0063	
This reporting is expressly allowed under HIPAA and required by Michigan Public Act 368 of 1978, 333.5111	
MDHHS maintains, reviews, and revises this list at least annually. For the most recent version please refer to: www.michigan.gov/cdinfo	
Michigan Department of Health and Human Services • Bureau of Laboratories • Bureau of Epidemiology and Population Health	
REV: 12/2018	

## Disease Reporting: **Potential Rabies Exposures & RPEP**

	Potential Rabies Exposures	Rabies Post-Exposure Prophylaxis Treatments
Reporting Requirement to LHDs from HCFs	Any animal bite where rabies is suspected should be reported to the LHD within 24 hours of the incident.	Any RPEP administrations (including the human rabies immunoglobulin) following a potential rabies exposure shall be reported to the LHD within 24 hours of the patient receiving each dose.
Reporting Requirement to MDHHS from LHDs	There is no requirement to report these incidents to MDHHS.	LHDs are now required to report RPEP administrations following a potential rabies exposure.
MDSS Disease Condition	Rabies: Potential Exposure & PEP*	Rabies: Potential Exposure & PEP*
MDSS Report Form	Rabies: Exposure and Post Exposure Treatment Investigation Report	Rabies: Exposure and Post Exposure Treatment Investigation Report

\* MDSS also has a disease condition "Rabies: Potential Exposure and PEP (Pre-2019)" for any report prior to February 14, 2019. These reports utilized the "Animal Bite Case Investigation Report" form.

# Reporting in MDSS:

## Overview of the Rabies: Exposure and Post-Exposure Treatment Investigation From

### The new report form in MDSS is “Animal Bite Investigation Report” form with the following revisions:

- Title of the form was changed to **“Rabies: Exposure and Post Exposure Treatment Investigation Report”**
- A **“Bat in room”** option was included under Exposure Type.
- An **“Animal Rabies MDSS Number”** section was added to allow investigators to record the MDSS number for animals submitted for rabies testing.
- **“Status of Animal at End of Quarantine”** only includes options “Alive/Well,” “Died/Euthanized,” and “Unknown/Lost to Follow Up.”
- Questions asked about RPEP now include:
  - “Rabies Post-Exposure Prophylaxis Recommendation”
  - “PEP Started”
  - “Status of PEP”
- Table includes extra column where the vaccine product may be recorded.
- “Were There Any Irregularities with the PEP Series (i.e. deviation from schedule, wrong injection site, or HRIG not administered)?”

3/7/2019 Rabies: Exposure and Post Exposure Treatment Investigation Report

Case ID First Name Last Name Rabies: Exposure and Post Exposure Treatment Investigation Report Page 3

### Disposition of Animal/Quarantine Information

Disposition of Animal (Check all that apply)  
☐ Euthanized ☐ Released (no risk) ☐ Escaped/Not Found ☐ Sent for Testing ☐ Quarantined ☐ Other \_\_\_\_\_

Laboratory Test Results  
☐ Negative ☐ Positive ☐ Unsatisfactory ☐ Not Tested

Animal Rabies MDSS Number (if applicable) \_\_\_\_\_

Quarantine Location/Address \_\_\_\_\_

Quarantine Start Date mm/dd/yyyy \_\_\_\_\_

Quarantine End Date mm/dd/yyyy \_\_\_\_\_

Status of Animal at End of Quarantine  
☐ Alive/Well ☐ Died/Euthanized ☐ Unknown/Lost to Follow Up

Patient Notified of Status of Animal  
☐ Yes ☐ No ☐ Unable to contact ☐ N/A

### Patient Treatment Information

Routine Follow-Up (Check all that apply)  
☐ Wound cleansed soap/H2O ☐ Disinfectant applied ☐ Medical treatment/attention received ☐ Tetanus immunization status reviewed ☐ Infection risk discussed ☐ Antibiotic prophylaxis recommended

Medical Treatment Facility \_\_\_\_\_

Tetanus Immunization Status \_\_\_\_\_

Has this person been previously vaccinated against rabies (or previously completed PEP)?  
☐ Yes ☐ No ☐ Unknown

If yes, date: \_\_\_\_\_

### Patient Treatment Information cont.

Rabies Post-Exposure Prophylaxis Recommendation  
☐ Recommended ☐ Not Recommended

PEP Started  
☐ Yes ☐ No ☐ Patient Refused ☐ Lost to Follow Up

Status of PEP  
☐ Series Completed ☐ Series Stopped ☐ Unknown/Lost to Follow Up

PEP Schedule	Date	Received?	Product
Rabies PEP Dose	(mm/dd/yyyy)	(Y=Yes N=No U=Unknown)	
Day 0 (RIG)			<input type="text"/> if other, please specify _____
Day 0			<input type="text"/> if other, please specify _____
Day 3			<input type="text"/> if other, please specify _____
Day 7			<input type="text"/> if other, please specify _____
Day 14			<input type="text"/> if other, please specify _____
Day 28 (if indicated)			<input type="text"/> if other, please specify _____

Were there any irregularities with the PEP series (i.e. deviation from schedule, wrong injection site, or HRIG not administered)?  
☐ Yes ☐ No ☐ N/A

If yes, please specify: \_\_\_\_\_

<https://mloginworker.michigan.gov/dch-mdss/mdss/ShowBlankPDF.do?ncd=2121155197075025>

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# Reporting Guidance & Educational Tools

## Resources Available on the MDHHS CD Info site

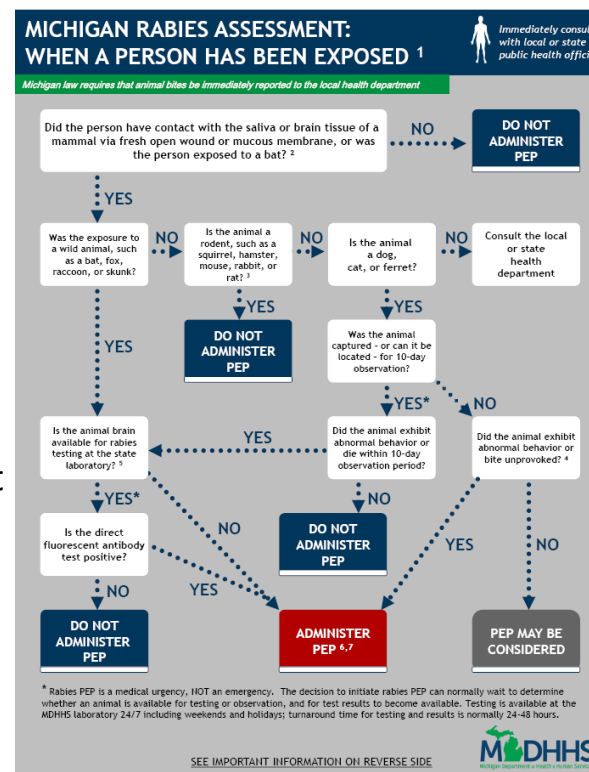
([www.michigan.gov/cdinfo](http://www.michigan.gov/cdinfo))

- Rabies and Rabies Post-Exposure Prophylaxis (PEP) Reporting Guidance
- Rabies PEP Reporting MDSS Export Guidance
- Reporting Potential Rabies Exposures & PEP in Michigan PowerPoint

## Other RPEP Educational Tools

- “Michigan Rabies Assessment: When a Person Has been Exposed” flowchart
- “Rabies Post-Exposure Prophylaxis (PEP)” posters

### Michigan Rabies Assessment: When A Person Has Been Exposed flowchart



### Rabies Post-Exposure Prophylaxis (PEP) Poster

**Rabies Post-Exposure Prophylaxis (PEP)**

**Before You Administer Rabies PEP Ask/Know:**

**If The Victim Was Bitten/Exposed To A Wild Animal (Except Rodents)\***

What to Ask	Action to Take
Is the animal available for rabies testing?	If "Yes" <b>WAIT to initiate PEP until test results are available</b> If "No" <b>Initiate PEP</b>

\*Small rodents are rarely infected with rabies (woodchucks are the exception).

**If The Victim Was Bitten By A Dog, Cat, or Ferret:**

What to Ask	Action to Take
Is the animal available for a 10-day observation period?	If "Yes" <b>WAIT to initiate PEP for animal to complete 10-day observation period</b> If "No," <b>Please refer to the Michigan Rabies Assessment Flowchart</b>

**Reporting and Questions About Unusual Circumstances**

Report any animal bites or exposures where rabies is suspected to your local health department

For questions about an animal exposure, please consult with your local health department at or call **517-335-8165**

<http://www.michigan.gov/rabies>

Hospital fees to initiate RPEP can exceed \$10,000!

Waiting a few days to begin treatment can prevent unnecessary patient discomfort and expense!

MDHHS

To order these documents, please fill out a [publication order form](#) and fax or mail to the MDHHS CD Division

# Acknowledgements

## **-RPEP Pilot Jurisdictions:**

Bay County Health Department  
Central Michigan District Health Department  
District Health Department #10  
Ionia County Health Department  
Jackson County Health Department  
Washtenaw County Health Department

## **-RPEP Reporting Working Group**

## **-Michigan Department of Health and Human Services:**

Rebecca Reik, MPH  
Jennifer Sidge, DVM, PhD  
Rachel Potter, DVM, MS

## **-CDC/CSTE Applied Epidemiology Mentors:**

Kimberly Signs, DVM  
Mary Grace Stobierski, DVM, MPH

This study/report was supported in part by an appointment to the Applied Epidemiology Fellowship Program administered by the Council of State and Territorial Epidemiologists (CSTE) and funded by the Centers for Disease Control and Prevention (CDC) Cooperative Agreement Number 1U38OT000143-05.

# Questions?

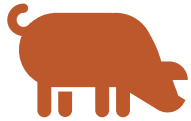


If you have any questions about rabies reporting,  
the Emerging and Zoonotic Infectious Diseases  
(EZID) Section at  
**(517)-335-8165**

# Swine Variant Influenza Tool Kit for Michigan Local Health Departments

KIMBERLY SIGNS, DVM

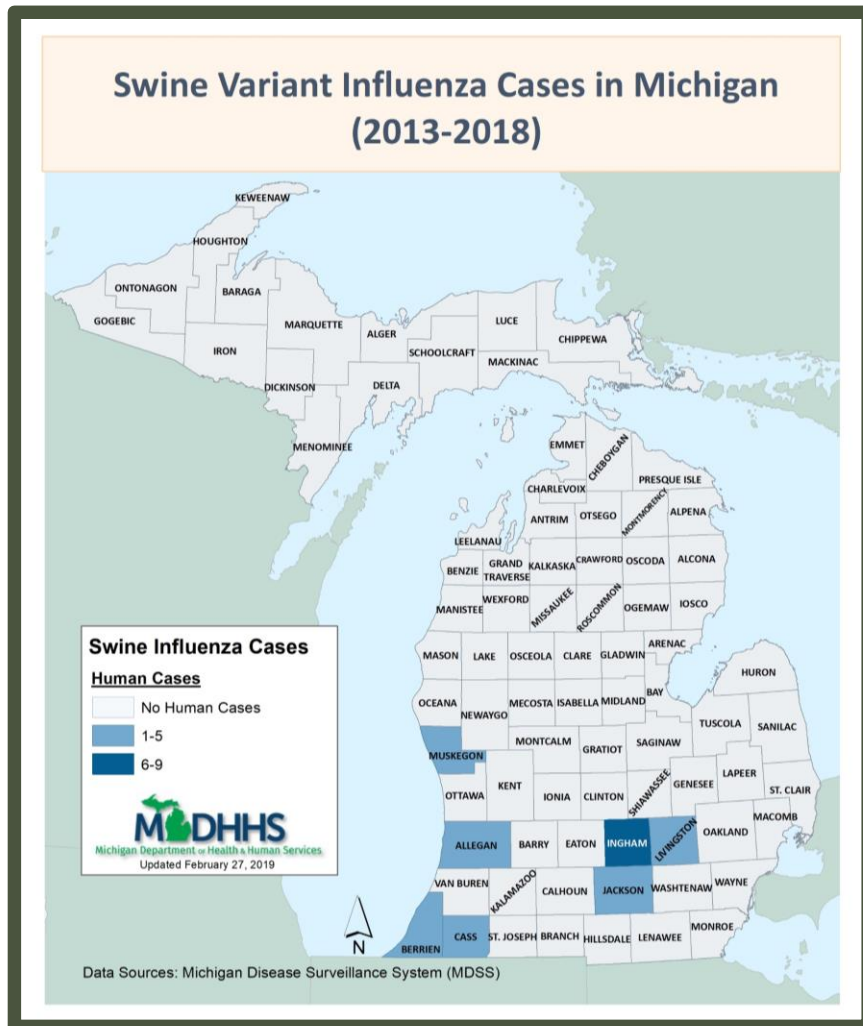
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EPIDEMIOLOGIST





# Swine Variant Influenza Cases: Michigan, 2013-2018

- 19 human cases of swine variant influenza in Michigan
- Cases either worked closely with pigs or visited fairs where pigs were exhibited
- Variants identified include H3N2v and H1N2v
- At least 6 of the counties reporting human cases also had sick pigs in exhibits at agricultural fairs that tested positive for swine influenza
- Strains matched those of humans



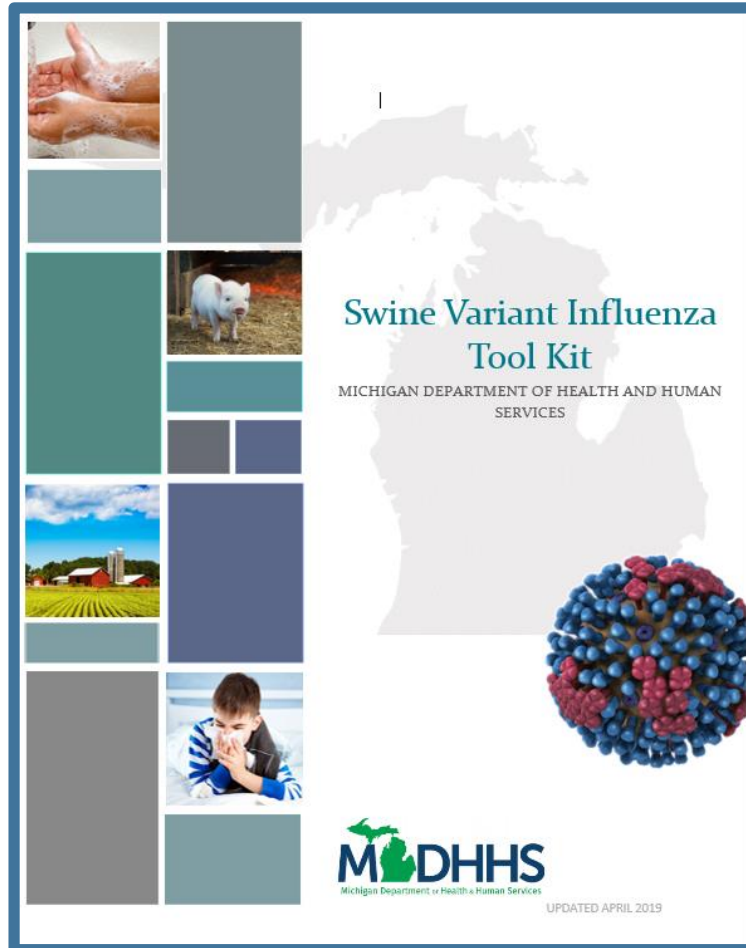
# 2018 Variant Influenza

MDHHS Developed Swine Variant Influenza Tool Kit:  
[www.michigan.gov/cdinfo](http://www.michigan.gov/cdinfo)

Two Michigan Local Health Departments responded to sick pigs at fairs

1. Livingston County Health Department: July 27, 2018 a pig at the Fowlerville Family Fair tested positive for Influenza A
  - Triggered public health and animal health response, including a press release, closing of the swine barn, notification to fair exhibitors, healthcare providers, swine purchasers and swine haulers/slaughter facilities.
  - 3 cases of H1N2v were identified in exhibitors and visitors to the fair from two different counties
  - Pig and human influenza variants were identical
2. Shiawassee County Health Department: August 10, 2018, a pig at the Shiawassee County Fair tested positive for Influenza A
  - Triggered public health and animal health response including a press release and closing of the swine barn
  - Public health response was hampered by staff shortage
  - No human cases were identified

# Updated Swine Variant Influenza Toolkit



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# Changes for 2019

- Background
- Pre-event Check List
- Frequently Asked Questions
  - For the public
  - For healthcare and public health providers
- Updated Talking Points
- Resources page
- Updated Exhibitor Survey Template
- MDSS/OMS Tracking Unit

## 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)

Investigation Questionnaire		
Variant.Influenza.TrackingTool		
How many individuals have responded to the survey?	300	
How many individuals have reported influenza-like symptoms?	6	
For the ill individuals, have you conducted contact tracing?	<input checked="" type="radio"/> yes <input type="radio"/> no <input type="radio"/> unknown	
How many survey respondents were individually contacted because of reported illness?	4	
How many total ill's have been reported?	6	
How many new ill's have been reported?	2	
How many total specimens have been collected?	2	
How many new specimens have been collected?	1	
What is the estimated symptom onset date range?	8/1-8/3/18	
Are there any additional updates you would like to report?	In prog: calling all ill ind	



# Lessons Learned

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**BE PREPARED!!!!**

**THESE EVENTS ALMOST ALWAYS UNFOLD LATE ON FRIDAY AFTERNOON IN THE HEIGHT OF SUMMER!!!**

[www.michigan.gov/cdinfo](http://www.michigan.gov/cdinfo)

## Influenza/Swine Variant Influenza

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Be prepared ahead of the fair season-identify your response team in advance

Get to know the fair managers, fair veterinarian, swine superintendents and MSU Extension staff

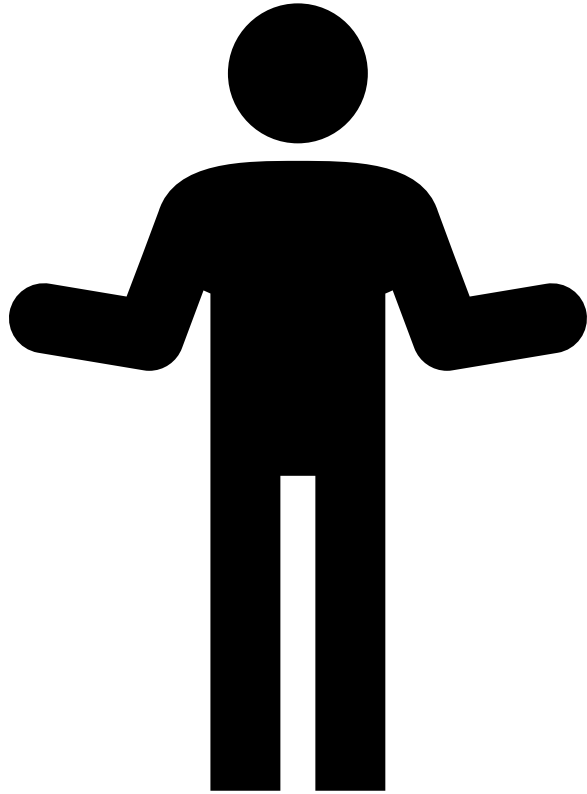


Provide zoonotic disease prevention education for fairs and exhibitors

Be prepared to conduct a contact investigation and collect respiratory specimens from ill individuals



Pre-prepare LHD-specific survey, press release, talking points and draft letters to potentially exposed groups



# Questions?

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MDHHS CD Division: 517-335-8165

[signsk@michigan.gov](mailto:signsk@michigan.gov)