Interim Influenza Surveillance, Reporting and Testing Guidance for Local Health Departments

Michigan Department of Community Health
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This interim guidance outlines Michigan Department of Community Health (MDCH) recommendations on influenza surveillance, reporting and testing for local health departments in light of recent variant H3N2 (H3N2v) influenza cases associated with swine exposure in Michigan and neighboring states. These recommendations will assist in characterizing the current H3N2v outbreak and virus transmissibility.

Future updates may be issued if influenza virus severity, activity, or transmission changes. Please feel free to call the MDCH Division of Communicable Disease at (517) 335-8165 with any questions.

Background on H3N2v Human Cases

- In 2011, a new swine influenza A (H3N2v) virus was detected that had acquired the M gene from the influenza A(H1N1)pdm09 (2009 H1N1) virus. It is possible that the 2009 H1N1 virus M gene may make H3N2 viruses in swine more transmissible to humans and possibly among humans.
- According to USDA swine influenza surveillance, this H3N2 virus has been detected in swine in a number of U.S. states and may be circulating widely in U.S. swine at this time. When human infections with these viruses occur, these viruses are called "variant" viruses (which can also be denoted with the letter "v").
- During 2011, 12 human cases of H3N2v influenza viruses were reported in 5 states. From July 2012 - August 10, 2012, 153 new human cases have been reported in association with direct and indirect exposure to swine at county fairs. Cases have occurred in Michigan and bordering states.
- Limited human-to-human transmission of this virus occurred during 2011. No sustained (ongoing) community transmission of H3N2v virus has been observed at this time.
- Most cases have occurred in children; children may lack cross-protective immunity to the H3N2v virus. Clinical symptoms are usually mild and are consistent with seasonal flu symptoms. As with seasonal flu, those at higher risk for flu-related complications may develop more serious illness.
- CDC recommends annual seasonal influenza vaccination for all persons aged 6 months and older to protect against seasonal influenza viruses; however, seasonal influenza vaccine is unlikely to protect against variant influenza viruses, including H3N2v viruses.
- The two FDA–approved prescription antiviral drugs oseltamivir (Tamiflu) and zanamivir (Relenza) – which are used to treat infection with seasonal influenza viruses –are also expected to be effective in treating H3N2v virus infection. Early initiation of antiviral treatment is most effective.
- Influenza variant viruses have not been shown to be transmissible to people through eating or proper handling of pork (pig meat) or other products derived from pigs.
- The most current national information, including case counts updated every Friday, can be found on the CDC's website http://www.cdc.gov/flu/swineflu/influenza-variant-viruses-h3n2v.htm.
- Michigan influenza activity is available in the MI FluFocus weekly report (www.michigan.gov/flu).

Influenza Case Identification, Testing and Treatment

- Current seasonal influenza circulation in Michigan is very sporadic. Therefore, patients with an influenza-like illness (fever $\geq$100°F plus a cough and/or a sore throat) should be questioned about recent exposure to swine or attendance at county or state fairs.

- Collection of respiratory specimens, preferably nasopharyngeal swabs, has always been encouraged for influenza-like illness patients of any patient type (e.g., outpatients, hospitalizations, deaths) during times of low influenza circulation. Due to the recent H3N2v situation, there is extra emphasis on influenza testing for patients in the following priority areas:
    - Patients reporting direct or indirect swine exposure or attendance at a county fair
    - Children <18 years of age
    - Severe presentations of influenza-like illness
    - Outbreaks of influenza-like illness, especially among children
- Commercially available rapid influenza diagnostic tests (RIDTs) **may not** detect H3N2v virus in respiratory specimens. In addition, a positive test result for influenza A cannot confirm H3N2v virus infection because these tests cannot distinguish between influenza A virus subtypes (does not differentiate between human influenza A viruses and H3N2v virus).
- PCR testing available at private, clinical and hospital labs will most likely detect the presence of influenza A virus infection, but may not differentiate an H3N2v infection.
- In Michigan, PCR testing that can diagnose H3N2v infection is currently only available at the MDCH Bureau of Laboratories. ***Specimens from suspect H3N2v cases should be submitted directly to MDCH.***
- Information on how to collect and submit specimens to the MDCH Bureau of Laboratories, including the required Test Requisition form, can be found at the following website: http://www.michigan.gov/mdch/0,1607,7-132-2945_5103-213906--,00.html.
- Information for clinicians regarding the treatment of H3N2v influenza is available at the following website: http://www.cdc.gov/flu/swineflu/h3n2v-clinician.htm

Influenza Reporting Recommendations

Weekly counts of influenza-like illness

- At the end of each week, continue to report these counts into the MDSS, marking them as "Confirmed" under the aggregate "Flu-like Disease" category, including during the summer.

Variant H3N2 (H3N2v) Influenza cases

- Please report any confirmed, probable or suspect case of H3N2v influenza to MDCH at (517) 335-8165 and enter the case into MDSS using the "Novel Influenza" case form. Complete the Case Details form in MDSS.
- A CDC form will need to be completed for all confirmed H3N2v cases; MDCH will work with local health departments to complete these forms if cases are identified.
- **Case definitions**
    - **Confirmed:** Influenza A (H3N2v) infection with lab confirmation by one of the methods below:
        - Positive (presumptive) results consistent with H3N2v (Influenza A/H3 and pdmInfA positive, H1 and pdmH1 negative) using the CDC rRT-PCR Dx Panel (currently only available at MDCH Bureau of Laboratories)
        - Genetic sequencing performed at the CDC Influenza Division Laboratory
        - 4-fold rise in strain specific antibodies in specimens drawn 2 weeks apart (CDC only)
    - **Probable:** A case meeting clinical criteria* and criteria for epidemiological linkage†, but for which no confirmatory laboratory testing for influenza virus infection has been performed, or for which test results are inconclusive or do not provide a sufficient level of detail to rule out infection with H3N2v (e.g., a rapid influenza diagnostic test)

- **Case Under Investigation (Suspect):** A case meeting the clinical criteria* but not criteria for epidemiologic linkage and is pending laboratory confirmation.
- *Clinical criteria: Illness compatible with influenza virus infection: fever ≥100°F with cough and/or sore throat
- †Criteria for Epidemiological Linkage: Contact with one or more confirmed H3N2v cases or attendance at an event where confirmed cases have been identified AND transmission of H3N2v virus by the usual modes of respiratory pathogen transmission is plausible

Individual Seasonal Influenza cases (not H3N2v cases)

- **Case definitions**
  - **Confirmed:** Cases with results positive for influenza via confirmatory laboratory test methods (PCR, viral culture, direct fluorescent antigen or DFA, indirect fluorescent antigen or IFA).
  - **Probable:** Cases with results positive for influenza via screening test methods (rapid test, enzyme immunoassay or EIA).
  - **Suspect:** Cases with no lab testing but that do have an influenza-like illness.
  - Cases with negative test results can be classified as either "Suspect" or "Not a Case" depending on clinical presentation and current community prevalence of influenza.
  - Serology testing (also referred to as antibody testing, IgG, IgM, IgA) is not an approved testing method unless there are paired specimens collected at least two weeks apart that demonstrate a four-fold rise in titers.
- **Pediatric influenza-associated deaths (<18 years of age)**
  - Notify MDCH via phone at (517) 335-8165.
  - Enter case into MDSS using the "Influenza" form and fill out the case details form.
- **Severe, unusual presentations of influenza (encephalitis, pulmonary hemorrhage, pregnant or newly postpartum women with severe complications or ICU hospitalization, etc.):** Notify MDCH at (517) 335-8165 and complete the MDSS "Influenza" case detail form for each case.
- **Facility outbreaks**
  - Please notify MDCH via phone at (517) 335-8165.
  - Individual cases can be entered onto the MDSS "Influenza" form as feasible.
- **Suspect cases of avian influenza or other novel influenza strains (not 2009 A/H1N1 strain)**
  - Please notify MDCH within 24 hours, preferably immediately, at (517) 335-8165 or after hours at (517) 335-9030.
  - Enter case on the "Novel Influenza" form in MDSS and fill out the case details form.
- **All other individual influenza cases**
  - As a local health jurisdiction, decide whether to enter as other individual cases on the "Influenza" form or as aggregate counts under "Flu-like Disease" in MDSS.
  - While individual reporting of hospitalizations, adult deaths, and lab-confirmed cases is voluntary, this information is still useful and will be evaluated. If reporting individually in MDSS, be sure to update the Patient Status variable if it is a hospitalization or death.
  - For surveillance purposes, MDCH may pursue confirmatory lab testing on specimens from MDSS cases during time of low influenza prevalence (e.g., summer months). Local health departments do not need to obtain additional epidemiologic information on these cases unless requested by MDCH.