Variant Influenza Quicksheet

November 2023

Background

An influenza A virus that normally circulates in pigs (but not people) is called swine influenza; when detected in a person, it is called a "variant influenza virus." Variant influenza virus infections are one kind of novel influenza virus infection. Other influenza viruses that don't usually circulate in people (such as avian influenza viruses), can also cause novel influenza virus infections in humans. Human infections with variant influenza viruses are not common but do sporadically occur, most commonly among people who have direct or frequent contact with pigs (e.g., children near pigs at a fair or workers in the swine industry). Unlike seasonal influenza viruses, which typically circulate widely during October–May, most variant influenza virus cases identified in the United States have occurred during summer months, when seasonal influenza virus activity is low.

Additional background information from the Centers for Disease Control and Prevention (CDC):

- Variant Influenza Viruses: Background and CDC Risk Assessment and Reporting
- Key Facts about Human Infections with Variant Viruses
- Human Infections with Variant Influenza Viruses in the United States

For information about other novel influenza viruses, including avian influenza, please see the CDPH Avian and Novel Influenza Quicksheet**.**

Clinical Information

Illness in humans infected with a variant influenza virus is typically mild, with symptoms like those of seasonal influenza. Like seasonal influenza, serious illness resulting in hospitalization and death is possible. People at high risk of serious complications from seasonal influenza and variant influenza include children less than 5 years, adults 65 years and older, pregnant people, and people with certain chronic medical conditions like asthma, diabetes, heart disease, and weakened immune systems.

Variant influenza clinical guidance from CDC:

- Interim Guidance for Clinicians on Human Infections with Variant Influenza Viruses
- Influenza Antiviral Medications: Summary for Clinicians
- Variant Influenza Virus Treatment

Public Health Preparation for Upcoming Agricultural Events

County, regional, and state fairs are locations where large numbers of people and pigs converge. The opportunity for transmission of variant influenza virus to people is enhanced if pigs with influenza infections are present.

Proactive consultation with fair managers and intervention by public health officials can identify and mitigate opportunities for contact between people and pigs.

Local health jurisdictions with upcoming agricultural fairs should be aware of the potential for variant influenza cases and take the following actions:

- Communicate with health care providers in your jurisdiction. Providers should be asked to be alert for patients with fever ≥38.0° C (100.4° F) and respiratory symptoms, particularly if occurring outside of the regular influenza season. If such a patient presents for care, providers should:
  - Ask about recent (within 10 days of illness onset) contact with pigs (direct, e.g., touched a pig, or indirect, e.g., walked through a barn where pigs were present)
  - Ask about recent (within 10 days of illness onset) attendance at an agricultural fair where pigs were present.
  - Collect respiratory specimens for influenza testing by a public health laboratory (PHL) from patients with ILI who report recent contact with pigs. Only PHLs can detect possible variant or

novel influenza viruses. Information on Laboratory Testing for Novel Influenza A.

- Meet with agricultural officials and managers of fairs in your jurisdiction to review disease prevention protocols for animal exhibitions, including monitoring for ill pigs.
  - Compendium of Measures to Prevent Disease Associated with Animals in Public Settings (National Association of State and Public Health Veterinarians [NASPHV])
  - Measures to Minimize Influenza Transmission at Swine Exhibitions (NASPHV)
  - Minimizing Influenza Transmission during Exhibitions – Checklist for Protecting Guests, Exhibitors, and Pigs (NASPHV)
  - California Department of Food and Agriculture Guidelines on Biosecurity of Pigs at Exhibition (California Department of Food and Agriculture [CDFA])
- Reach out to local 4-H and other youth or agricultural organizations that exhibit pigs at your county fair to provide education about swine influenza and how to prevent transmission to humans.
  - The Junior Disease Detectives: Operation Outbreak Graphic Novel (CDC): A graphic novel intended to educate youth about variant influenza and disease detective work conducted by public and animal health experts during infectious disease outbreaks.

Public Health Response to Suspect, Probable, or Confirmed Variant Influenza Virus Infections

The focus of the public health response to suspected, probable, or confirmed variant influenza virus infections is case finding and identification of ill contacts.

Testing Criteria: Situations of concern for variant influenza virus infections in humans that should prompt testing by a local PHL or the CDPH Viral and Rickettsial Disease Laboratory (VRDL):

- Reports from healthcare providers, or residents in your jurisdiction, of fever and respiratory symptoms in a person with recent (within 10 days of symptom onset) pig contact (direct or indirect) or attendance at an event (such as an agricultural fair) where pigs were present.
- Reports of clusters of influenza A (or influenza, if no influenza type information is available) from persons, healthcare providers, schools, camps, etc. within 10 days of a fair or other agricultural event in your jurisdiction where pigs were present.
- Reports of respiratory illness in pigs at a fair or other agricultural event in your jurisdiction that are credibly suspected or confirmed to be influenza in the presence of known symptomatic persons; local public health officials should initiate variant influenza case finding among humans.

If resources allow, testing at a PHL could also be considered for reports from clinical laboratories of influenza A positive specimens not known to be a seasonal influenza A subtype during or within 10 days of a fair or other agricultural event in your jurisdiction where pigs were present.

Isolation: Suspect, probable, and confirmed cases and symptomatic contacts should be asked to voluntarily self-isolate. Isolation should continue through their infectious period, or until infection with a novel virus has been excluded by a PHL or CDC. If the case is hospitalized, CDC recommends contact, droplet, and airborne precautions for all cases of novel influenza A infection, including airborne isolation in a negative pressure room, if possible.

- The infectious period for seasonal influenza is typically from 1 day before symptoms develop and up to 7 days after symptom onset. Some people, especially young children and people with weakened immune systems, might be able to infect others for a longer time.
- The infectious period for variant or novel influenza is assumed to be similar to seasonal influenza.

Although quarantine of asymptomatic contacts is not generally indicated, each situation will be evaluated in consultation with CDPH and CDC.

Case Finding: Case finding activities should commence if testing at a PHL indicates a person might be infected with a variant or other novel influenza virus.
Case finding activities when a suspect, probable or confirmed case is under investigation:

- At a minimum:
  - Identify close contacts of suspect, probable, and confirmed cases of variant influenza virus infection. Close contacts are defined as persons who were within six feet of an ill suspect, probable, or confirmed case for more than a brief period while the case was symptomatic.
  - Conduct daily active monitoring of close contacts for fever ≥38.0° C (100.4° F) and respiratory symptoms within 10 days of their last known exposure to a symptomatic suspect, probable, or confirmed case. Passive monitoring could be considered on a case-by-case basis in consultation with CDPH.
  - Promptly collect specimens for testing at a PHL from symptomatic close contacts whose symptom onset occurred within 10 days of last known exposure.
    - Please see the "Specimen Collection and Testing" section of the CDPH Avian and Novel Influenza Quicksheet for additional information.
  - Monitoring of close contacts may be discontinued when:
    - Laboratory testing of appropriately collected respiratory specimens from the suspect case by RT-PCR at a PHL or CDC has excluded infection with a variant or novel virus; OR
    - The close contact has not developed symptoms by the end of the monitoring period.
- If resources allow, consider the below additional case finding activities:
  - Alert local healthcare providers to ask about recent fair attendance or pig exposure among patients presenting with febrile respiratory illness. Advise providers to collect specimens from patients meeting the above criteria for influenza testing at a PHL.
  - Work with fair organizers and local 4-H and other youth organizations that exhibit pigs at your county fair to compile a list of other animal or pig exhibitors and their contact information. Contact other animal or pig exhibitors and assess them for fever and respiratory symptoms, either by phone or letter. Regardless of contact mechanism, the notification should include:
    - A description of the situation and why it is of concern;
    - Signs and symptoms of variant influenza; and
    - Instructions to contact the health department if they develop fever ≥38.0° C (100.4° F) and respiratory symptoms within 10 days of their last known exposure.
- The following information should be obtained for suspect human cases and their close contacts. The CDPH Immunization Branch has a screening questionnaire available upon request.
  - Basic demographic information, the patient's pig contact history, and disease severity should be provided to the Immunization Branch and VRDL at the time the specimen is shipped to VRDL.
  - Days, times, and locations of fair attendance and pig exposure of the suspect case and their close contacts.
  - Knowledge of, or contact with, sick animals and the type of sick animal.
  - Illness symptoms, if present.
  - Health care received for any reported illnesses.
  - Influenza testing.
- A line list of suspect, probable, or confirmed cases, or others being monitored or investigated, should be maintained at the local health jurisdiction and shared with the CDPH Immunization Branch. CalREDIE may be used for

- maintaining the line list by using the "Influenza – Novel Strain" condition.

Confirmatory Testing: If any unsubtypable influenza A virus with cycle threshold (CT) value <35 is detected at a local PHL (even if not associated with a known or suspected variant influenza case):

- Report this finding to VRDL (510-307-8585) and the Immunization Branch (510-620-3737) immediately by phone.
  - Local PHLs should ship as much specimen as possible to the VRDL for arrival on the earliest possible business day. Do NOT wait for the results of repeat testing to ship the specimen. VRDL will forward the specimen to CDC for confirmatory testing. Results of confirmatory testing will typically be available within one week.
  - Specimens sent to VRDL must be accompanied by a VRDL General Purpose Specimen Submittal Form**.** For additional instructions about this form please reference Having trouble opening the VRDL General Purpose Submittal Form? (PDF)
- Complete the novel influenza A case report form as soon as possible for all patients whose specimens are approved for confirmatory testing at CDC, and no later than three days after a variant influenza virus has been confirmed.
- Enter the case into CalREDIE, upload the novel influenza A case report form to the electronic filing cabinet, and notify InfluenzaSurveillance@cdph.ca.gov that the case report form has been uploaded.
- For non-CalREDIE participating jurisdictions, securely email the case report form to InfluenzaSurveillance@cdph.ca.gov or fax the completed case report form to 510-620-3949.

Resources

- When are the fairs in my jurisdiction? (CDFA)
- Novel influenza case definition (CSTE/CDC)
- For people who work with, raise, or exhibit pigs:
  - Key Facts about Swine Influenza (Swine Flu) in Pigs (CDC)
  - What People Who Raise Pigs Need to Know about Influenza (Flu) (CDC)
  - Key Facts for People Exhibiting Pigs at Fairs (CDC)
  - Issues for Fair Organizers to Consider When Planning Fairs (CDC)
  - CDC Interim Guidance for Workers who are Employed at Commercial Swine Farms: Preventing the Spread of Influenza A Viruses (CDC)
- Prevention
  - Prevention of Influenza Transmission between Pigs and People (CDC)
- Educational Materials
  - Flu Can Spread between Pigs and People poster (CDC): One-page poster explaining methods of transmission of influenza between pigs and people.
  - Animal Exhibit Safety poster (NASPHV): One-page poster about how to prevent illness when around animals.
  - Reduce Your Risk (North Carolina Department of Agriculture & Consumer Services): One-page poster about how to prevent illness when around animals.

Contact Information

- California Department of Public Health
  Immunization Branch
  Phone: 510-620-3737
  Email: InfluenzaSurveillance@cdph.ca.gov
- California Department of Public Health
  Viral and Rickettsial Disease Laboratory
  Phone: 510-307-8585

Figure 1. Public Health Response to Suspect, Probable, or Confirmed Variant Influenza Virus Infections