



pennsylvania
DEPARTMENT OF HEALTH

Influenza Outbreaks in Long-term Care Facilities: Toolkit for Facilities



2022/23 Influenza Season

Pennsylvania Department of Health, Bureau of Epidemiology

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CDC Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities

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Outbreak Epidemic Curve Template

LTCF Outbreak Reporting Form

Introduction

This document contains resources to aid long-term care facilities (LTCFs) experiencing influenza or other respiratory virus outbreak, and is intended to expand upon the Centers for Disease Control and Prevention (CDC) “Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities.”

For the purposes of influenza outbreak investigation, control and surveillance, a “long-term care facility” can be defined as several types of facilities, including but not limited to: skilled nursing, rehabilitation, assisted living, personal care homes and intermediate care facilities.

This document is intended only to elaborate upon currently accepted guidance and regulations. For further information, please contact your local health jurisdiction to report suspected or confirmed influenza or other respiratory viral outbreaks and discuss outbreak control recommendations and surveillance (1-877-PA HEALTH [1-877-724-3258]). This guidance does not cover SARS-CoV-2 outbreaks, please refer to Pennsylvania Department of Health’s Health Alert Network (HAN) communications regarding control of SARS-CoV-2 outbreaks at Long Term Care Facilities or The CDC's Interim Infection Prevention and Control Recommendations for Healthcare Personnel During the Coronavirus Disease 2019 (COVID-19) Pandemic



Background

Influenza is a contagious respiratory illness caused by influenza viruses and spread through respiratory droplets. According to the CDC, "In the United States, on average 5% to 20% of the population gets the flu and more than 200,000 people are hospitalized from seasonal flu-related complications. Flu seasons are unpredictable and can be severe. Over a period of 30 years, between 1976 and 2006, estimates of flu-associated deaths in the United States range from a low of about 3,000 to a high of about 49,000 people. Some people, such as older people, young children, pregnant women, and people with certain health conditions, are at high risk for serious flu complications." (<https://www.cdc.gov/flu/highrisk/index.htm>)

Each year outbreaks of respiratory illness including pneumonia occur in institutional settings such as nursing homes and other long-term care facilities (LTCFs). Because of their underlying health status, residents in LTCFs are at high risk for developing serious complications or dying when they become acutely ill. Historically, specific emphasis has been placed on influenza, but other respiratory viruses can also be problematic in this setting; some of these include adenovirus, respiratory syncytial virus (RSV), human meta-pneumovirus, rhinovirus and parainfluenza.

Because people who live in long-term care facilities often have health conditions that put them at higher risk for serious respiratory virus complications (including death), prevention and control of influenza and other respiratory virus outbreaks in long-term care facilities is critical.

Influenza can be introduced into long-term care facilities by staff, volunteers or visitors who were exposed to influenza in the community. Once introduced into the facility, influenza can spread among residents very quickly, and residents of long-term care facilities, especially those with chronic health conditions, are at higher risk for serious flu and the other respiratory virus complications.

Background

As soon as a respiratory outbreak is suspected, the response to it should include laboratory testing (i.e., rapid antigen testing, PCR, and/or viral isolation) to evaluate residents and staff and determine the etiology of the outbreak. Once an influenza outbreak is confirmed, appropriate use of antivirals for prophylaxis of residents and potentially staff should be initiated. However, treatment with antivirals for ill residents suspected of having influenza should not wait for laboratory confirmation.

The following guidelines have been established to facilitate the investigation of viral respiratory disease outbreaks and the implementation of control measures. Vaccination of residents and healthcare workers against influenza, meticulous hand washing and respiratory hygiene programs are crucial in preventing respiratory outbreaks. In order to protect against complications of viral illnesses, as well as from primary bacterial infections, pneumococcal vaccination of residents is also recommended. These guidelines emphasize priorities regarding respiratory outbreak control as follows:

- Early detection of an outbreak through daily surveillance
- Stopping transmission through control measures
- Measuring morbidity and mortality
- Identifying the agent responsible for the outbreak through laboratory testing
- Using antiviral agents to help control outbreaks, if available for the causative agent such as influenza antiviral medications

The best way to prevent influenza is vaccination. All residents and staff of Pennsylvania long-term care facilities should be offered influenza vaccine annually. For more resources, please visit CDC at <http://www.cdc.gov/flu/healthcareworkers.htm>.

For current Pennsylvania influenza surveillance/activity information visit:

<http://www.flufreepa.com>

For current national influenza surveillance/activity information visit:

<https://www.cdc.gov/flu/weekly/index.htm>

Recommendations for Influenza Outbreak Control in Long-Term Care Facilities

These interventions are recommended for outbreak control in long-term care facilities. These recommendations are excerpted from the CDC's "Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities."

For more information and detail, please visit:

CDC Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities:

<http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm>

or speak to your local health jurisdiction by calling 1-877-PA HEALTH (1-877-724-3258).

More resources can be found at:

CDC Guidelines on controlling influenza in health care facilities:

<http://www.cdc.gov/flu/professionals/infectioncontrol/>

CDC Recommendations for antivirals:

<http://www.cdc.gov/flu/professionals/antivirals/index.htm>

CDC Antiviral summary:

[https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm#:~:text=Three%2odrugs%20are%20chemically%20related,%2C%20inhaled%20zanamivir%20\(trade%20name](https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm#:~:text=Three%2odrugs%20are%20chemically%20related,%2C%20inhaled%20zanamivir%20(trade%20name)



Checklist of Outbreak Control Interventions Long-Term Care Facilities Experiencing an Influenza Outbreak Should Implement

OUTBREAK CONTROL INTERVENTIONS THE FACILITY SHOULD IMPLEMENT	
Initial Outbreak Steps	
	Contact the appropriate regulatory agency and report the event. Submit the initial outbreak reporting form to the local health office in your jurisdiction.
	Test residents with respiratory illness for influenza and submit specimens to the Bureau of Laboratories (BOL) through the local health office in your jurisdiction.
	Implement daily active surveillance for respiratory illness among residents and staff (using Pennsylvania Department of Health [PA DOH] sample line listing if no similar tool is already in use by your facility).
Infection Control	
	Implement standard and droplet precautions for all residents with suspected/confirmed influenza. Place major emphasis on meticulous hand hygiene since it is the most effective measure for preventing further spread.
Transfers and Admissions	
	Avoid new admissions or transfers to wards with symptomatic residents.
	When transferring ill patients, notify receiving facility to ensure continuation of droplet precautions.
	When transferring well patients, notify receiving facility of the presence of an influenza outbreak.
Treatment and Prophylaxis	
	Administer antiviral treatment to residents who have suspected or confirmed influenza (do not wait for lab confirmation to begin treatment).
	Be aware of the possibility of drug-resistant virus and notify your local health jurisdiction immediately if suspected (generally occurs when patients either do not respond to a course of treatment or patients who were given prophylaxis and later became ill).
	The facility should promptly initiate antiviral chemoprophylaxis with oral oseltamivir to all non-ill residents living on the same unit as the resident with laboratory-confirmed influenza (outbreak affected units), regardless of whether they received influenza vaccination during the current season.
	Consideration may be given for extending antiviral chemoprophylaxis to residents on other unaffected units or wards in the long-term care facility based upon other factors (e.g. unavoidable mixing of residents or healthcare personnel from affected units and unaffected units).
	Consider or offer antiviral chemoprophylaxis for unvaccinated personnel who provide care to persons at high risk of complications.
	Oseltamivir is the recommended antiviral drug for chemoprophylaxis of influenza in long-term care settings. Having preapproved orders from physicians or plans to obtain orders for antiviral medications on short notice can substantially expedite administration of antiviral medications.
Influenza and pneumococcal Vaccination	
	Offer and administer influenza and pneumococcal vaccination to all unvaccinated residents and influenza vaccination to unvaccinated staff to reduce the impact of these vaccine-preventable diseases
Cohorting and Social Distancing	
	Cohort ill residents to a single unit or area if possible.
	Have symptomatic residents remain in their rooms (i.e., restriction from activities and group meals).
	Limit large group activities; consider serving all meals in resident rooms.
	Limit visitation and exclude ill persons from visiting the facility via posted notices.
Recommendations for Staff	
	Exclude staff with respiratory symptoms from work until at least 24 hours after they no longer have a fever (without the use of antipyretics).
	Monitor staff absenteeism due to respiratory illness.
	Restrict staff movement between affected and unaffected areas of the facility.

Red Flags: Indications That Further Resources or Recommendations Are Needed for Outbreak Control

- 1. Ill patients are not being treated with antivirals.** Antiviral treatment should be administered to all residents who have suspected or confirmed influenza (do not wait for lab confirmation to begin treatment). This is true even for residents whose primary care doctors are not on staff at the long-term care facility.
- 2. Many patients have been hospitalized or have died during the outbreak.** Antiviral treatment should be administered to all residents who have suspected or confirmed influenza (do not wait for lab confirmation to begin treatment). When transferring patients between facilities, please notify the receiving facility so that infection control precautions may be continued upon transfer.
- 3. Our facility continues to see an increasing number of cases, and/or the outbreak does not seem to be ending after implementation of outbreak control interventions.** Once patients are treated and prophylaxis is administered, the outbreak should wane after a few days. If this is not the case, your facility should review the outbreak control interventions to make sure they are being properly implemented. Additionally, further recommendations may be needed for outbreak control, please contact your local health jurisdiction for further guidance (1-877-PA HEALTH [1-877-724-3258]).
- 4. Patients are not responding to treatment.** This may indicate the presence of antiviral-resistant virus, secondary bacterial infection, or multiple circulating respiratory pathogens. Please contact your local health jurisdiction immediately for further guidance (1-877-PA HEALTH [1-877-724-3258]). Your local health jurisdiction may choose to offer testing of respiratory specimens for anti-viral resistance at our state public health laboratory.
- 5. Our facility reports previously well people who received prophylaxis are now ill with respiratory illness.** This may indicate the presence of antiviral-resistant virus, secondary bacterial infection, or multiple circulating respiratory pathogens. Please contact your local health jurisdiction immediately for further guidance (1-877-PA HEALTH [1-877-724-3258]). Your local health jurisdiction may choose to offer testing of respiratory specimens for anti-viral resistance at our state public health laboratory.
- 6. Facility staff requests further information or back-up.** Local health jurisdiction (1-877-PA HEALTH [1-877-724-3258]) is available to answer any questions or provide guidance if your facility requires it.

If you believe that one of more of these scenarios are occurring in your facility, please immediately contact your local health jurisdiction (1-877-PA HEALTH [1-877-724-3258]) for further guidance and recommendations for outbreak control.

Frequently Asked Questions for Long-Term Care Facilities Experiencing an Influenza Outbreak

1. Where can I find guidance and recommendations for control of influenza in long-term care facilities? (links current as of 10/2022)

Centers for Disease Control and Prevention (CDC)

a. Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities:

<http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm>

b. Seasonal Influenza- Infection Control in Health Care Facilities:

<http://www.cdc.gov/flu/professionals/infectioncontrol/>

c. Influenza Antiviral Medications: Summary for Clinicians:

<http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>

d. Seasonal Influenza- Antiviral Drugs:

<http://www.cdc.gov/flu/professionals/antivirals/index.htm>

Infectious Diseases Society of America

Clinical Practice Guidelines by the Infectious Diseases Society of America: 2018 Update on Diagnosis, Treatment, Chemoprophylaxis, and Institutional Outbreak Management of Seasonal Influenza:

<https://aca-demic.oup.com/cid/article/68/6/e1/5251935>

What is the CDC's definition of an influenza outbreak in a long-term care facility?

+

š If there is either 1) one laboratory-confirmed influenza positive case along with other cases of respiratory infection in a unit of a long-term care facility, or 2) two cases of respiratory infection or influenza-like-illness within 72 hours, an influenza outbreak might be occurring.

(<http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm>)

b. If one patient is positive for influenza A and another patient is positive for influenza B at the same time, these are considered two separate outbreaks because they are caused by two separate viruses.

Frequently Asked Questions for Long-Term Care Facilities Experiencing an Influenza Outbreak

3. What is considered a long-term care facility?

- e. For influenza outbreaks in Pennsylvania long-term care facilities, we include facilities regulated by both the Pennsylvania Department of Health (PA DOH) and the Department of Human Services (DHS). These include skilled nursing, rehabilitation, assisted living and personal care homes.
- f. We can also help to provide guidance for other types of facilities and group settings if influenza outbreaks are identified.

4. How is a "case" of influenza or influenza-like-illness in an LTCF influenza outbreak defined?

- g. Influenza case (lab-confirmed case)-- a patient/staff member with clinically compatible illness AND laboratory confirmation
- h. Influenza-like-illness (probable case)-- a patient/staff member experiencing influenza-like-illness (ILI), fever ($\geq 100^{\circ}\text{F}$) plus cough or sore throat

5. What should my facility do if we believe we have an influenza outbreak?

Please call your local health jurisdiction at 1-877-PA HEALTH (1-877-724-3258) to discuss recommendations for outbreak control.

6. Who is our facility's local health jurisdiction?

- a. The Pennsylvania Department of Health Bureau of Community Health Systems, through the six health districts, operates a network of district offices and state health centers, and acts as the implementation arm for the department's public health programs. The bureau oversees the coordination of similar programs with six county and four municipal health departments, other state and community agencies, professional groups, and community organizations.

- b. For more information, please visit:

<https://www.health.pa.gov/About/Pages/Bureaus%20and%20Offices.aspx>

- c. To reach your local health jurisdiction, please call 1-877-PA HEALTH (1-877-724-3258).

7. How soon after an outbreak is identified should the local health jurisdiction be notified?

All outbreaks in Pennsylvania should be reported within 24 hours. Many outbreak control measures (including antiviral treatment and chemoprophylaxis) are most effective when administered very soon after an outbreak is identified.

Frequently Asked Questions for Long-Term Care Facilities Experiencing an Influenza Outbreak

8. When should my facility consider testing for influenza?

- i. Given the SARS-CoV2 situation, long-term care facilities should use a low threshold for influenza testing, especially during influenza season. Please refer to PA [HAN 537](#) to review the full guidance regarding testing and management considerations for Long-term care facility residents with acute respiratory illness symptoms when SARS-CoV-2 and influenza viruses are co-circulating
- j. During a known outbreak, facilities should also test anyone with new ILI in an area of the facility previously unknown to have cases of influenza.
- k. The Infectious Diseases Society of America (IDSA) recommends: “Elderly persons ... with suspected sepsis or fever of unknown origin, irrespective of time from illness onset” should be considered for influenza testing
(<https://www.idsociety.org/practice-guideline/influenza/>)

9. Is influenza reportable in Pennsylvania?

- a. Yes, laboratory positive cases of influenza (including cases identified by rapid influenza testing done inside the long-term care facility) are reportable in Pennsylvania.
- b. Additionally, outbreaks of any kind are also reportable in Pennsylvania including all viral respiratory infection outbreaks.
- c. For a complete list of reportable diseases, visit:
<http://www.health.pa.gov/Your-Department-of-Health/Offices%20and%20Bureaus/epidemiology/Pages/Reportable-Diseases.aspx#.WFBZ5jco6cw>

10. Our facility sends influenza specimens for testing at another hospital or commercial lab, who then reports results to PA DOH. Do we still need to report the possibility of an influenza outbreak at our facility?

Yes, please report suspected or confirmed outbreaks of influenza to your local health jurisdiction at 1-877-PA HEALTH (1-877-724-3258) to discuss recommendations for outbreak control.

11. How do I know when the outbreak is over?

- a. For surveillance purposes, the outbreak can be considered to be “over” when 14 days have elapsed since the last patient became ill. This is calculated using two incubation periods (seven days for influenza) since the last patient became ill.
- b. If a new case is identified ≥ 14 days since the last case, it is considered to be a new outbreak (and the outbreak control recommendations should be implemented again).

Frequently Asked Questions for Long-Term Care Facilities Experiencing an Influenza Outbreak

12. What if residents are experiencing GI symptoms (i.e., vomiting, diarrhea)?

Though influenza can sometimes cause GI illness, it is also possible that GI symptoms are caused by a different agent (e.g., norovirus, Salmonella, or E. coli). Please call the PA-DOH or your local health jurisdiction to discuss recommendations for control of an outbreak of GI illness

13. Is it possible to have multiple respiratory viruses or bacteria circulating in a facility concurrently?

Yes, outbreaks where both influenza A, influenza B and or SARS-CoV2 were laboratory-confirmed have been reported.

14. What information will help your facility and the local health jurisdiction to manage the outbreak?

- a. When an outbreak is first identified, the PA DOH or your local health jurisdiction will be available to provide resources and recommendations for outbreak control.
- b. The best way to understand how an outbreak is progressing and evaluate outbreak control is to create and maintain a patient and staff line listing.
 - i. A line listing is simply a list of all affected patients and staff and selected information related to their illnesses.
 - ii. A template, instructions and example are included in this toolkit. If your facility would prefer to use its own template, that is acceptable, as long as it collects the same information listed in the PA-DOH line listing template.
- c. Your local health jurisdiction may request additional information about the outbreak. Using the outbreak line listing template will help provide most of the information they may need.



Frequently Asked Questions for Long-Term Care Facilities Experiencing an Influenza Outbreak

15. What are the steps that facilities should take when viral respiratory ILI outbreak is identified and flu/ SARS-CoV2 tests come back negative?

- For non-influenza outbreaks with other or no laboratory confirmed respiratory viruses, implement all the non-therapeutic intervention that are recommended during influenza outbreaks to prevent further transmission.
- The causative agent should be confirmed by laboratory testing preferably by respiratory pathogen panel test. The causative agent should be identified because respiratory viruses have different incubation and infectious periods.
- Outbreaks are identified if there are 2 or more residents have ILI symptoms within one incubation period. Incubation periods vary between respiratory viruses, but are usually between 12 hours and 5 days, extending up to 8 days for RSV and parainfluenza.

Incubation, infectious and exclusion periods for non-influenza respiratory viruses*

Disease	Incubation period (range)	Infectious period	Exclusion of ill staff**
Human Metapneumovirus	4–9 days	Virus shedding has been reported as 3–10 days, although it can be 13 days or even longer in immunocompromised people. It is not known if the virus shedding period is related to infectivity.	Until at least 24 hours after they no longer have a fever without antipyretics
Parainfluenza	2–6 days	3–10 days during initial infection, shedding rates are lower for subsequent infections.	Until at least 24 hours after they no longer have a fever without antipyretics
Respiratory Syncytial Virus	Average 5 days (3–7)	Before symptomatic until recovery (usually within 10 days). Shedding duration 7–10 days.	Until at least 24 hours after they no longer have a fever without antipyretics
Adenovirus	4–8 days	Variable: Asymptomatic carriage can persist for weeks or months. “Infection can be by reactivation of the virus, exposure to infected individuals or acquisition from an exogenous source.	Until at least 24 hours after they no longer have a fever without antipyretics
Rhinovirus	2–4 days	Variable: from the onset of symptoms until symptoms resolve, usually 7–14 days.	Until at least 24 hours after they no longer have a fever without antipyretics

* The incubation and infectiousness periods vary widely and should be used for illustrative purpose only. Call 1-877-PA HEALTH

(1-877-724-3258) to report any identified outbreaks and get guidance on specific recommendations for the different causative agents

**Facilities may take additional precautions such as longer staff exclusion period or temporary reassignment for staff who care for patients at greater risk for respiratory infections.

** Staff with longer lasting symptoms such as cough or other respiratory symptoms should use source control until they are symptom free.

Tracking Influenza Outbreaks in Long-term Care Facilities: Outbreak Case-Patient Line Listing

A case-patient line listing is designed to collect information about all ill cases (residents and staff) during an outbreak of influenza in a long-term care facility. A line-listing can also help the facility to track the outbreak and monitor case counts until the outbreak has finished, and can help your local health jurisdiction with required information that will be collected when the outbreak has finished.

Instructions

Upon identification of an outbreak, use this template to collect and organize information on cases. During an outbreak, collect key information to assist with controlling the outbreak and to inform your local health jurisdiction about outbreak details.

Each ill resident or staff member's information should be entered in a unique row on the line listing. Please use resident or staff identifier as well as their initials. Information should be updated periodically (e.g., daily) during the outbreak for all cases. The data fields contained in this template are explained below.



Data fields included in the Outbreak Case-Patient Line Listing:

Data field	Description
Demographic Information	
Resident/staff identifier	Identifier for each ill person (Please keep separate list of which identifier matches up with which person, but PA DOH does not need this list.)
Initials	Resident or staff member initials
Resident (R) or staff (S)	Is the case-patient a resident or a staff member?
Patient Room Number	Patient's room number
Staff role*	Staff role codes: P (Patient care) F (Food service) H (Housekeeping) M (Maintenance) A (Administrative/clerical) O (Other)
Age (years)	Age in years
Sex (M/F)	Sex, M (male) or F (female)
Signs and Symptoms	
Onset date (MM/DD/YYYY)	Date when symptoms first started (MM/DD/YYYY)
Duration (days)	Number of days the patient was ill (until the first symptom-free day)
Fever (Y/N/Unk)	Did the patient have fever? List Y (Yes), N (No), or Unk (Unknown)
Highest temp (°F)	Highest recorded temperature, in °F
Cough (Y/N/Unk)	Did the patient have cough? List Y (Yes), N (No), or Unk (Unknown)
Sore throat (Y/N/Unk)	Did the patient have sore throat? List Y (Yes), N (No), or Unk (Unknown)
Pneumonia (Y/N/Unk)	Did the patient have pneumonia? List Y (Yes), N (No), or Unk (Unknown)
Other: (Y/N/Unk)	Did the patient have other symptoms? Please define the other symptoms List Y (Yes), N (No), or Unk (Unknown)

Data fields included in the Outbreak Case-Patient Line Listing:

Data field	Description
Testing	
Rapid influenza test? (+A, +B, - or n/a)	Was a rapid influenza test done? If positive, list "+A" or "+B" for influenza A or B positive, respectively. If negative, list "-." If not done, list "n/a."
Non-rapid influenza test? (+A, +B, - or n/a)	Was a non-rapid influenza test done? If positive, list "+A" or "+B" for influenza A or B positive, respectively. If negative, list "-." If not done, list "n/a."
Chest X-ray? (+, -, or n/a)	Was a chest x-ray showing pneumonia done? If positive for pneumonia, list "+." If negative for pneumonia, list "-." If not done, list "n/a."
Vaccination and Treatment	
Influenza vaccination (Y/N/Unk)	Was the patient vaccinated against influenza in the current season? List Y (Yes), N (No), or Unk (Unknown)
Anti-viral treatment? (Tamiflu (T)/Xofluza (X)/ Relenza (R)/ (Unk)	Did the patient receive anti-viral treatment? If yes, list T (Tamiflu or oseltamivir), or X (Xofluza or baloxavir),R (Relenza or zanamivir) or Unk (Unknown)
Date of antiviral start (MM/DD/YYYY)	If the patient received antiviral treatment, what date was it first given? (MM/DD/YYYY)
Outcomes	
Hospitalized (Y/N/Unk)	Was the patient hospitalized? List Y (Yes), N (No), or Unk (Unknown)
Died (Y/N/Unk)	Did the patient die? List Y (Yes), N (No), or Unk (Unknown)
Resolved (Y/N/Unk)	Did the patient's illness resolve? List Y (Yes), N (No), or Unk (Unknown)

Tracking Influenza Outbreaks in Long-term Care Facilities: Outbreak Epidemic Curve

An epidemic curve (or epi curve) is used to display the onset of illness among cases associated with an outbreak of disease. This simple tool can help to show many things about the outbreak: time trends, pattern of spread, likely period of exposure and the outbreak's magnitude. The epi curve can help a facility to track the outbreak and monitor cases until the outbreak has finished.

The epi curve is a graph with two axes. The horizontal axis shows the date of illness onset for all ill cases. The vertical axis shows the number of cases. Cases are represented by an "X" in a box on the graph based on the date of their earliest symptom onset. If more than one case's symptoms began on the same day, these are stacked on the graph.

For more information on creating an Epidemic Curve, please visit <http://www.cdc.gov/training/QuickLearns/sCreateEpiCurve/index.html>

Instructions

Upon identification of an outbreak, use this template to collect and organize information on cases. During an outbreak, record each case as an "X" based on the date of the earliest symptoms. Both ill residents and ill staff members should be included on the graph.



Sample Outbreak Scenario

The following describes an outbreak scenario similar to those typically reported. This is a fictional scenario and is not based on any previous outbreak; any similarities to previous outbreaks are strictly coincidental. This scenario is for instructional purposes only, to demonstrate how to complete and outbreak line listing and epidemic curve. The scenarios are focusing on influenza and do not cover the co-circulation of SARS-CoV2 at the facilities. For guidance on outbreak management when influenza and SARS-CoV2 are co-circulating, refer to [PA-HAN 537](#)

The Initial Report

On January 3, 2021, a skilled nursing and rehabilitation facility calls its county state health center to report a possible influenza outbreak occurring in its facility and also to submit the initial outbreak reporting form. The facility has identified three ill residents and two ill staff who have symptoms of influenza-like-illness (fever [$\geq 100^{\circ}\text{F}$] plus cough or sore throat).

This is a 60-bed facility with three units and 100 staff members, and the facility is at full capacity. Unit A, the primary affected unit has 20 residents and 30 staff members.

- Resident 1: A 75-year-old female resides in room 101, on Unit A. Her onset was 1/1/2021; she has had a fever (101°F), cough and chest radiograph-confirmed pneumonia and was hospitalized. She was vaccinated in October 2020 against influenza. Rapid influenza test was positive for influenza A. Antiviral treatment (oseltamivir) was started on 1/3/2021. She is still ill at the time of outbreak identification (1/3/2021).
- Resident 2: A 78-year-old female, the roommate of resident 1, resides in room 101, on Unit A. Her onset was 1/3/2021, and she presented with a fever (101°F) and cough. She was vaccinated in October 2020 against influenza. Rapid influenza test was positive for influenza A. Antiviral treatment (oseltamivir) was started on 1/3/2021.
- Resident 3: A 73-year-old female resides in room 104, on Unit A. Her onset was 1/3/2021, and she presented with fever (100°F), cough and sore throat. She was vaccinated in October 2020 against influenza. Rapid influenza test was negative. Antiviral treatment (oseltamivir) was started on 1/3/2021.

Sample Outbreak Scenario

- Staff member 1: A 34-year-old female provides patient care on Unit A but in no other areas of the facility. Her onset was 12/30/2020, and she presented with fever (102°F) and cough. She was vaccinated in October 2020 against influenza. Rapid influenza test was positive for influenza A. She began treatment on 1/1/2021 and will be excluded from work until 24 hours after she is fever free without the use of fever-reducing medications.
- Staff member 2: A 25-year-old female works in housekeeping on Unit A, as well as other units in the facility. Her onset was 1/3/2021, and she presented with fever (101°F), cough and sore throat. She was not vaccinated against influenza during the current influenza season. She will begin treatment on 1/4/2021 and will be excluded from work until 24 hours after she is fever free without the use of fever-reducing medications.

Follow-Up Report

On January 5, 2021, the nursing home calls to report two additional cases who are ill with influenza-like-illness.

- Resident 4: An 81-year-old female resides in room 105, on the same unit as residents 1, 2 and 3. Her onset was on 1/4/2021. She did not have a fever, but did have a sore throat. She was vaccinated in October 2020 against influenza. Rapid influenza test was negative. Antiviral treatment (oseltamivir) was started on 1/4/2021.
- Resident 5: An 86-year-old female residing in room 106, on the same unit as residents 1-4. Her onset was 1/5/2021, and she presented with a fever (102°F), and cough. She was not vaccinated against influenza during the current influenza season. Rapid influenza test was positive for influenza A. Antiviral treatment (oseltamivir) was started on 1/5/2021.

Sample outbreak Report Form

Long Term Care Facility Influenza Outbreak Report Form

For influenza outbreaks in Pennsylvania (Pa.) long-term care facilities (LTCFs), 2021/22 Influenza Season

Initial Outbreak Information: Instructions for Long-term Care Facilities

When a new outbreak is identified, please complete and submit Initial Outbreak Information (page 1) within one workday (typed preferred).

When submitting the Initial Outbreak Information, the Final Outbreak Information (page 2) can be left blank. Please do not wait until the outbreak is over to submit the Initial Outbreak Information page.

IMPORTANT DEFINITIONS	
Influenza-like-illness (ILI)	Fever ($\geq 100^{\circ}\text{F}$) plus new cough or sore throat
LTCF Influenza Outbreak	One resident with laboratory-confirmed influenza plus at least one additional resident with ILI OR Two or more residents with ILI within 72 hours of each other
LTCF outbreak is "over"	When no new cases have occurred for 7 days
CDC interim guidelines for Influenza Outbreak Management in Long-Term Care Facilities: http://www.cdc.gov/flu/professionals/infectioncontrol/lto-facility-guidance.htm	

FACILITY INFORMATION	
Facility name:	Facility A County Adams County
Address (street, city, state, zip):	C street, B City, PA 99999
Name of reporter:	Joe Smith Title: RN
Phone:	(999) 999-9999 Fax: (999) 999-9999
Email:	Joe.Smith@facilityA.net
Type of facility (check all that apply)	
<input checked="" type="checkbox"/> Skilled nursing <input type="checkbox"/> Rehabilitation <input type="checkbox"/> Assisted living <input type="checkbox"/> Personal care home <input type="checkbox"/> Other (explain):	
License Numbers:	Pa. Dept. of Health 999999 Pa. Dept. of Human Services

INITIAL OUTBREAK INFORMATION AT TIME OF INITIAL REPORT	
Date initial outbreak information completed:	12/24/2021
Dates of symptom onset: First case:	12/23/2021 Most recent case: 12/24/2021
Current number of residents in facility:	60 Current number of staff in facility: 100
Number of residents with symptom(s)*:	3 Number of staff with symptom(s)*: 2
Number of residents hospitalized*:	1 Number of staff hospitalized*: 0
Number of resident deaths**:	0 Number of staff deaths**:
Where do residents with symptom(s) reside?	Where do staff with symptom(s) work?
<input type="checkbox"/> Single unit <input checked="" type="checkbox"/> Multiple units	<input type="checkbox"/> Single unit <input checked="" type="checkbox"/> Multiple units
Facility identifies any shortage(s) of: antivirals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No OR influenza vaccine <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
*Symptoms including fever, cough, sore throat, pneumonia, regardless of testing or results **Record only hospitalizations and deaths related to influenza	

LABORATORY TESTING AT TIME OF INITIAL REPORT	
Influenza type:	<input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> Both A&B <input type="checkbox"/> Unknown <input type="checkbox"/> Other (explain):
Number of residents tested:	3 Number of staff tested: 1
Number of residents with positive tests:	2 Number of staff with positive tests: 1

DOH USE ONLY: INVESTIGATOR AND OUTBREAK INFO	
Investigator Name	DOH office/jurisdiction
Phone	Fax Email
How was outbreak reported to DOH?	<input type="checkbox"/> Review of NEDSS <input type="checkbox"/> Notification by licensing agency (e.g., QA/nursing care facilities) <input type="checkbox"/> Notification by facility/provider <input type="checkbox"/> Other (explain):
Date and time of outbreak notification	Date: at AM PM
Will specimens be sent to BOL for testing?	<input type="checkbox"/> Yes <input type="checkbox"/> No BOL FI # (if assigned):

Sample Outbreak Summary

Resident 5 was the final resident to become ill, and no further respiratory illness was seen among residents or staff of this facility for 14 days after January 5, 2021 (the most recent patient's onset date).

In total, five resident and two employee cases were identified; all residents lived on the same unit in the facility, the only affected unit, Unit A. Twenty patients and 30 staff members who live or work on Unit A were exposed during the outbreak. This outbreak was laboratory confirmed and caused by influenza A virus. The first case onset was 12/30/2021, and the last was 01/05/2021. Only one case was hospitalized and none died, all cases recovered from their illness. The outbreak reporting forms, Case-Patient Line Listing and Outbreak Epidemic Curve were completed (see below) and submitted to the county state health center nurse when the outbreak was over (on 1/17/2021, 14 days after the last case's onset).

All ill residents were treated promptly with oseltamivir, and all cases responded quickly to treatment. Exposed residents in the affected unit (unit A) of facility were given prophylactic oseltamivir beginning on 01/04/2021. Forty-eight hours after prophylaxis began, no further cases were identified, and no one given prophylaxis developed symptoms.

This facility followed all guidelines for Influenza Outbreak Management in Long-Term Care Facilities. Available from CDC at:

<https://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm>

All unvaccinated residents and staff were offered influenza vaccination when the outbreak was identified. See example of completed outbreak report form, line listing and epidemic curve in the following pages.

Sample Outbreak Report Form

Long Term Care Facility Influenza Outbreak Report Form (page 2)

For influenza outbreaks in Pennsylvania (Pa.) long-term care facilities (LTCFs), 2021/22 Influenza Season

Final Outbreak Information: Instructions for Long-term Care Facilities

Please submit this form after the outbreak is over, (14 days have passed since the last patient became ill). Typed forms are preferred.

When submitting the Final Outbreak Information, you do not need to update the Initial Outbreak Information (page 1). Please enter the final outbreak totals on page 2 below and submit page 1 with page 2.

FACILITY INFORMATION	
Facility name: Facility A	County Adams County
FINAL OUTBREAK INFORMATION AT TIME OF FINAL REPORT	
Date final form completed: 01/09/2022	
Dates of symptom onset: First case: 12/23/2021	Most recent case: 12/24/2021
Current number of residents in facility: 60	Current number of staff in facility: 100
Number of residents with symptom(s)*: 4	Number of staff with symptom(s)*: 2
Number of residents hospitalized*: 1	Number of staff hospitalized*: 0
Number of resident deaths**: 0	Number of staff deaths**: 0
Where do residents with symptom(s) reside? <input type="checkbox"/> Single unit <input checked="" type="checkbox"/> Multiple units	Where do staff with symptom(s) work? <input type="checkbox"/> Single unit <input checked="" type="checkbox"/> Multiple units
Outbreak line listing submitted with outbreak <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
*Symptoms including fever, cough, sore throat, pneumonia, regardless of testing or results	
**Record only hospitalizations and deaths related to influenza	
LABORATORY TESTING AT TIME OF FINAL REPORT	
Influenza type: <input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> Both A& B <input type="checkbox"/> Unknown <input type="checkbox"/> Other (explain):	
Number of residents tested: 4	Number of staff tested: 1
Number of residents with positive tests: 4	Number of staff with positive tests: 1
ANTIVIRAL PROPHYLAXIS OF WELL BUT EXPOSED RESIDENTS/STAFF	
Was prophylaxis given to residents? <input type="checkbox"/> Yes, residents in the entire facility <input checked="" type="checkbox"/> Yes, residents in selected units only <input type="checkbox"/> Yes, roommates of ill residents only <input type="checkbox"/> No prophylaxis of residents <input type="checkbox"/> Other (explain):	Was prophylaxis given to staff? <input type="checkbox"/> Yes, staff in the entire facility <input checked="" type="checkbox"/> Yes, unvaccinated staff only <input type="checkbox"/> No prophylaxis of staff <input type="checkbox"/> Other (explain):
INFLUENZA VACCINATION DURING SEPTEMBER 2021 TO SEPTEMBER 2022	
Number* of residents vaccinated:	Number* of staff vaccinated:
Type of vaccine used: <input checked="" type="checkbox"/> Traditional quadrivalent <input type="checkbox"/> High-dose quadrivalent <input type="checkbox"/> Cell-based Quadrivalent <input type="checkbox"/> Other (explain):	
*Number vaccinated should not exceed the current number of residents or staff.	
DOH USE ONLY: FINAL OUTBREAK INFO	
PA NEDSS Investigation ID(s):	PA NEDSS Outbreak ID:
<input type="checkbox"/> No reports found in NEDSS inbox or NOFUN	

Pennsylvania Department of Health Influenza and Other Respiratory Illness Outbreak Quicksheet

Respiratory Illness Outbreaks of Concern

All respiratory illnesses:

- Outbreaks in institutions or congregate settings (e.g., schools, day camps) associated with hospitalizations or fatalities above baseline for that institution or setting.
- Outbreaks in a community assessed by the local health jurisdiction as having public health importance. **Influenza only:**

- Outbreaks in institutions (e.g., long-term care facilities, prisons, sleepover camps) with at least one case of laboratory confirmed influenza in the setting of a cluster (≥ 2 cases) of influenza-like illness (ILI)* within a 72-hour period.

** ILI is defined as fever ($\geq 100^{\circ}\text{F}$ or 37.8°C) plus cough and/or sore throat, in the absence of a known cause other than influenza. Persons with ILI often have fever or fever-ishness with cough, chills, headache, myalgia, sore throat, or runny nose. Some persons, such as the elderly, children with neuromuscular disorders, and young infants may have atypical clinical presentations.*

Laboratory Confirmation of Influenza and Other Respiratory Viruses

All respiratory illnesses:

Include any positive test performed by any clinical, commercial or local public health laboratory, including by positive rapid antigen test, direct fluorescence assay, culture or polymerase chain reaction (PCR). Comprehensive respiratory panel PCR tests (multiplex respiratory PCR) should be used to identify a causative agent especially if influenza testing is negative.

Influenza only:

- In order of priority, the following influenza tests are recommended, if readily available: PCR, immunofluorescence, or rapid influenza antigen tests.
- Rapid influenza antigen tests may vary in terms of sensitivity and specificity (ranging ~50–70%) when compared with PCR and may produce false positives, especially when influenza prevalence is low, and false negatives when influenza prevalence is high. It is recommended that influenza rapid antigen test results be confirmed with PCR testing at a local public health laboratory. PCR testing will also help identify subtype, which is useful for surveillance purposes.

- Even if it's not influenza season, influenza testing by PCR is recommended when any resident develops ILI symptoms, and especially when two or more residents develop ILI within 72 hours of each other.

Specimen Collection and Storage

- Specimens should be collected within the first 24-72 hours after symptom onset and no later than 5 days after symptom onset.
- Suitable upper respiratory samples include: nasopharyngeal (NP) swabs, nasal swabs, throat swabs, NP washes, nasal washes, NP aspirates, and nasal aspirates.
- For patients hospitalized with pneumonia, specimens from the lower respiratory tract should also be obtained, if possible. Suitable lower respiratory tract samples include: bronchoalveolar lavage, bronchial wash, tracheal aspirate, and lung tissue.
- Swab specimens should be collected using swabs with a synthetic tip (e.g., polyester or Dacron®) and an aluminum or plastic shaft. Swabs with cotton tips and wooden shafts are NOT recommended. Specimens collected with swabs made of calcium alginate are NOT acceptable.
- Place specimen swab in specimen collection vial containing 2-3ml of viral transport medium (VTM).
- Specimens should be kept refrigerated at 4°C and shipped on cold packs if they can be received by the laboratory within 3 days of the collection date.
- If samples cannot be received by the laboratory within 3 days, they should be frozen at -70°C or below and shipped on dry ice.
- Specimen instructions and submittal forms for suspect outbreaks of respiratory illness in residents or staff of long term care facilities (LTCF) are located here: <https://www.health.pa.gov/topics/Documents/Laboratories/Viral%20Testing%20Respiratory%20Swab%20Collection%20and%20Shipping%20Instructions%2009-29-17.pdf>

Respiratory Outbreak Infection Control Measures in Institutional Settings

- Implement droplet precautions for ill residents.
- Place ill residents in a private room. If a private room is not available, place (cohort) ill residents with one another.

- Have symptomatic residents stay in their own rooms as much as possible.
- Limit the number of large group activities and consider serving meals in resident rooms during outbreaks that involve multiple units of the facility.
- Avoid new admissions or transfers to wards with symptomatic residents.
- Limit visitation and exclude ill persons from visiting the facility via posted notices.
- Consider restricting visitation by children during community outbreaks of influenza.
- Monitor staff absenteeism due to respiratory symptoms and exclude those with ILI from work until at least 24 hours after they no longer have a fever.
- Restrict staff movement from areas of the facility having illness to areas not affected by the outbreak.
- Complete guidelines for influenza outbreaks in institutional settings can be found at:

CDC:

<https://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm>

Influenza Outbreak Prevention and Control in Institutional Settings

- Influenza outbreak **prevention:**
- **Vaccinate:** All residents should receive inactivated influenza vaccine annually before influenza season and all staff should receive influenza vaccine annually.
- **Surveillance:** During influenza season (October–mid-May) OR when there is influenza activity in the community, residents, staff and visitors should be monitored for ILI.
- **Test:** Influenza may be circulating at any time of the year. PCR testing is recommended when any resident develops signs and symptoms of ILI.
- **Exclude:** Exclude ill staff and visitors from the facility.

Influenza outbreak control:

Institutional influenza outbreak definition: An institution with at least one case of laboratory confirmed influenza in the setting of a cluster (≥ 2 cases) of ILI within a 72 hour period.

In addition to the infection control measures listed above, for respiratory outbreaks:

- Conduct daily active surveillance for ILI among residents, staff and visitors to the facility until at least one week after the last confirmed influenza case occurred.
- Conduct influenza testing in residents and staff with ILI who live or work in affected units as well as previously unaffected units in the facility. Residents or staff who develop acute ILI symptoms more than 72 hours after beginning antiviral chemoprophylaxis should also be tested.

- Offer influenza vaccine to residents and staff who previously declined it.

Treatment and Postexposure Prophylaxis during an Influenza Outbreak in Institutional Settings

Antiviral treatment:

- All residents and staff with ILI should receive antiviral treatment immediately; treatment should **NOT** be delayed while waiting for laboratory confirmation.
- There are four FDA-approved antiviral drugs recommended by CDC to treat flu this season:
 - oseltamivir phosphate (available as a generic version or under the trade name Tamiflu®),
 - zanamivir (trade name Relenza®)
 - peramivir (trade name Rapivab®), and
 - baloxavir marboxil (trade name Xofluza®).
- Treatment works best when started within the first 2 days of symptoms but may still be effective when given more than 48 hours after onset of symptoms.
- Amantadine and rimantadine are **NOT** recommended due to high levels of antiviral resistance.

Antiviral chemoprophylaxis:

- Exposed residents on units or wards with influenza cases in the long-term care facility (currently impacted wards) should receive antiviral chemoprophylaxis as soon as an influenza outbreak is determined, for a minimum of 2 weeks and continuing for at least 7–10 days after the last known case is identified, regardless of whether they received influenza vaccination during the current season
- Consider providing antiviral chemoprophylaxis to unvaccinated staff who provide care to persons at high risk of influenza complications.
- Chemoprophylaxis can be considered for all staff regardless of vaccination status if the outbreak is caused by a strain of influenza virus that is not well matched by the vaccine.
- Chemoprophylaxis is 75 mg oseltamivir given orally once a day for a minimum of 2 weeks and up to 1 week after the most recent known case was identified.
- Chemoprophylaxis can be administered to newly vaccinated staff up to 2 weeks following inactivated influenza vaccination.
- Persons receiving chemoprophylaxis should not receive live attenuated influenza vaccine (LAIV) and persons receiving LAIV should not receive chemoprophylaxis or antiviral treatment until 14 days after LAIV administration.
- Monitoring staff for ILI symptoms and early antiviral treatment is an alternative to chemoprophylaxis.

Reporting, Additional Questions or Assistance

ALL respiratory outbreaks including influenza is a reportable condition in PA, Please call your local public health authority at 1-877 PA HEALTH to report an outbreak or ask any guidance or help on prevention or control measures during an ongoing outbreak.

This guidance does not cover SARS-CoV-2 outbreaks, please refer to Pennsylvania Department of Health's communications regarding control of SARS-CoV-2 outbreaks at Long Term Care Facilities.

(Sample Letter if the Facility is Experiencing an Outbreak of Influenza-Like

Illness) *[Insert Facility Letterhead or Logo]*

[Insert Date]

Dear Family Member:

We are writing to let you know that *[Name of Facility]* is taking special precautions with visitors and residents for the next few weeks because of an increase of influenza (flu) in the facility. Although anyone can get the flu, it is most serious in the elderly, very young children, in people with chronic illnesses (such as lung disease, cancer, heart disease, or diabetes), or those with weakened immune systems. Influenza spreads easily in discharges from the nose and throat, usually when an infected person coughs or sneezes.

We are committed to doing everything possible to protect our residents. First, we have separated the resident(s) who are sick with flu to reduce their contact with other residents. Group activities will be limited or discouraged. Before the start of the influenza season, *[some or all]* residents and staff were vaccinated for influenza. If residents or staff are identified who did not receive a vaccination for this season, they are now being offered vaccine. Also, staff members will follow very specific infection control precautions during this period.

While we are not restricting visitors to the facility at this time, we ask that you do the following to help us prevent further spread of flu among residents:

- **Do not visit the facility if you know you are sick.** Wait to visit until you have been without a fever for at least 24 hours (without the use of fever-reducing medication).
- If visiting a resident who has the flu, **wear a mask** (provided at reception).
- **Wash your hands** (or use alcohol-based hand sanitizer) upon arrival to the facility and after your visit is over.
- **Get a flu shot** if you have not already done so.

We appreciate your cooperation in helping us to manage this situation and will let you know when the flu outbreak precautions are no longer necessary. If you have any questions in the meantime, please contact the *[Director of Nursing]*.

Sincerely,

[Facility Administrator / Director of Nursing]

[Insert Facility Letterhead or Logo]



Limit the Spread of Influenza-like Illness

Residents of long-term care facilities often experience severe disease if they get the flu or other respiratory illnesses.

Please help us reduce the spread of illness by taking these steps:

Please **do not** visit this facility if you have had **any** symptoms of influenza-like illness within the last 24 hours, including:

- Fever or feeling 'feverish',
- Sore throat, or
- Cough

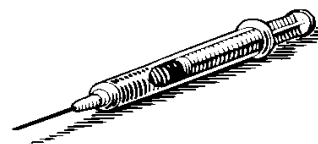


Please return for a visit to the facility only after you have been healthy and fever-free for **at least 24 hours** (without the use of a fever-reducing medicine).

If you choose to visit at this time, please:

- Use the alcohol-based hand sanitizer that has been provided (or soap and water) to clean your hands before *and* after the visit.
- Visit only the resident you have come to see and then leave after your visit is over.
- Wear a mask if the resident you are visiting is sick with influenza-like illness.
- Practice good respiratory etiquette. Always use a tissue or your sleeve when you sneeze or cough, and clean your hands immediately afterwards.

Get vaccinated with the current seasonal influenza vaccine. Call your healthcare provider or your local health department to learn where you can receive the vaccine.



If you have questions or concerns, please call the [Facility Administrator] at [phone number].
Thank you for your cooperation.

[Insert Date]

Visitors



Caring may mean not visiting.

- If you have a cough or illness: For the safety of your loved ones, please visit on another day.
- All other visitors: Please wash your hands before and after your visit.


Appendices


CDC Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities

Outbreak Case-Patient Line Listing Template PDF

Outbreak Epidemic Curve Template PDF

LTCF Outbreak Reporting Form

Outbreak Case-Patient Line Listing Template XLSX (open from the attachments section )

Outbreak Epidemic Curve Template XLSX (open from the attachments section )