# Respiratory Outbreak Toolkit

Guidance for Respiratory and Influenza Outbreak Management in Long-Term Care Facilities

Washington County Department of Health and Human Services
Public Health Division — Disease Control and Prevention
155 N First Ave., Hillsboro, OR 97124
**Phone: 503-846-3594** (24/7)
Fax: 503-846-3644

*October 2, 2018*

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# Respiratory Outbreak Checklist

When a respiratory outbreak is identified, use this checklist as a guide to prevent further transmission.

**NOTIFY**

- ❒ Notify Washington County Public Health at **503-846-3594** (24/7) and provide information about ill residents and staff, hospitalizations, lab-confirmed cases, symptoms and onset dates.

**TEST**

- ❒ Have 3-5 nasopharyngeal swab specimens tested at a lab (your lab or OSPHL).
- ❒ For residents admitted to area hospitals, request a respiratory viral panel PCR test.

**IMPLEMENT INFECTION CONTROL MEASURES (Standard and Droplet Precautions)**

- ❒ Use PPE
- ❒ Isolate ill residents
- ❒ Exclude ill staff
- ❒ Promote respiratory hygiene, hand hygiene and cough etiquette
- ❒ Stop group activities (including communal meals)
- ❒ Discontinue admissions and transfers
- ❒ Notify and limit visitors
- ❒ Cohort staff assignments
- ❒ Vaccinate unvaccinated residents and staff

**TRACK NEW ILL CASES**

- ❒ Implement or continue active surveillance by documenting the symptoms and personal information of ill residents and staff on the **Respiratory Case Log**. Update the list of hospitalized residents daily.
    - Collect all lab reports and send lab results to Washington County Public Health.

**TREATMENT**

- ❒ Provide antiviral treatment immediately to all LTCF residents with confirmed or suspected influenza.

**CHEMOPROPHYLAXIS**

- ❒ Administer chemoprophylaxis to all residents when >/= 2 ill within 48 hours AND at least one resident with lab-confirmed influenza.

**CLOSING THE OUTBREAK**

- ❒ Maintain contact with Washington County Public Health for the duration of illness in your facility plus two incubation periods (7 days after the last case onset for influenza outbreaks). After confirmation from Washington County Public Health, declare the outbreak over.

## When to Call Washington County Public Health

Triggers to call Washington County Public Health:

- **Two or more cases of influenza-like illness** (documented fever of 100°F or greater with cough or sore throat) within 3 days of each other.
- **One laboratory confirmed influenza positive case along with other cases of respiratory infection** in a unit of a long-term care facility (an influenza outbreak is likely occurring).
- **Evidence of severe illness** – Two or more resident deaths or three or more resident hospitalizations with similar respiratory symptoms in a two-week period.
- **Chest x-ray confirmed pneumonia in three or more residents** who are linked by time and place.
- **Unusually high absenteeism by staff/volunteers** (10 or more individuals or 20 percent or more of the population) who report respiratory symptoms.

**Washington County Public Health Disease Control and Prevention should be notified of every suspected or confirmed influenza outbreak in a long-term care facility**, especially if a resident develops influenza while on or after receiving antiviral chemoprophylaxis. Oregon law requires long-term care facilities to report communicable disease outbreaks to local public health authorities as soon as possible (OAR-333-018-000). Washington County Public Health will notify the Oregon Health Authority of outbreaks.

## What to Report

When you call Washington County Public Health, you will be asked to provide the following information:

Facility name, address and contact information
Total number of residents, staff and food handlers in your facility
Total number of ***ill*** residents, staff and food handlers
Symptoms and onset dates
Number of hospitalizations and deaths
Total number of floors, units, wings and/or buildings
Total number of ***affected*** floors, units, wings and/or buildings
Number of staff who float between floors or units
Positive lab results from any resident and the processing facility

## What to Return

1. **Respiratory Case Log**

Washington County Public Health Disease Control and Prevention: **503-846-3594**
This number is monitored 24 hours a day, 7 days a week.

# Tri-County LTCF Respiratory Outbreak Surveillance Data

Influenza season lasts from October of one year to May of the next. In the past 5 influenza seasons, October 2013 to May 2018, there were 146 respiratory outbreaks in long-term care facilities (LTCFs) in the Tri-County region, an area that includes Clackamas, Multnomah and Washington Counties.

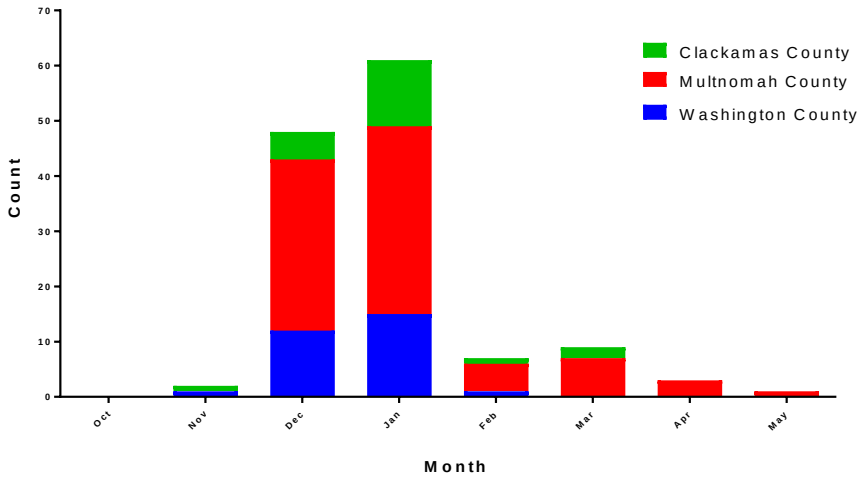
**Table 1. Acute Respiratory Outbreaks in Long-Term Care Facilities in the Greater Portland Area, October 2013 – May 2018 (n = 146)**

| Season | Total No. of Outbreaks | % of Outbreaks Caused by Influenza‡ | Case Count |
|---|---|---|---|
| 2013-2014 | 4 | 50% | 36 |
| 2014-2015 | 28 | 100% | 385 |
| 2015-2016 | 14 | 50% | 174 |
| 2016-2017 | 55 | 96% | 687 |
| 2017-2018 | 45 | 91% | 387 |
| | 146 | | **1,669** |

‡ Other pathogens that caused acute respiratory outbreaks included: respiratory syncytial virus (7), rhinovirus (6), human metapneumovirus (1) and coronavirus (1).

In the past 5 seasons, 90% of all reported Tri-County LTCF respiratory outbreaks were caused by influenza, resulting in the illness of over 1,435 facility residents, staff and volunteers. We typically see the majority of outbreaks reported in December and January.

**Figure 1. Lab-Confirmed Influenza and Influenza-Like Outbreaks* in Long-Term Care Facilities in the Greater Portland Area, October 2013 – May 2018 (n = 131)**




*An outbreak is defined as 2 or more residents and/or facility staff with lab-confirmed influenza or a documented fever of 100°F or greater with a cough or sore throat within 4 days of one another.

During the influenza season, the Oregon Public Health Division publishes a weekly surveillance report called **Flu Bites** detailing the number of hospitalizations, circulating influenza types and affected age groups in Oregon. You can subscribe here: https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/DISEASESURVEILLANCEDATA/INFLUENZA/Pages/surveil.aspx

## Outbreak Prevention and Detection

Preventing transmission of influenza viruses and other infectious agents within long-term care facilities requires a multi-faceted approach that includes vaccination, surveillance and exclusion.

1. **Ensure your staff is vaccinated for influenza.**
   Health care personnel who get vaccinated help to reduce the following:
   - Transmission of influenza to residents and other staff
   - Staff absenteeism
   - Influenza-related illness and death, especially among people at increased risk for severe influenza illness
   - Facility-associated outbreaks

   Contraindications to vaccination include history of:
   - Severe reaction to an influenza vaccine
   - Severe allergic reaction to eggs or other vaccine components
   - Moderate to severe febrile illness
   - Guillain-Barré Syndrome within six weeks after receipt of a prior influenza vaccination

2. **Keep track of who is and is not vaccinated for influenza.**
   Record which residents and staff are vaccinated. For examples of logs please contact Washington County Public Health.

3. **Know your baseline to detect an outbreak early.**
   During influenza season, looks for signs and symptoms of influenza in all your new and current residents, staff and visitors. Track symptoms and disease onset dates for ill residents and staff. An increase in the above expected number of illnesses and/or a confirmed influenza case with other respiratory illnesses should trigger a call to Washington County Public Health.

> During an outbreak in your facility, **conduct daily active surveillance**, as described above, **until at least one week after the last case** has occurred.

4. **Exclusion of ill persons.**
   Ill personnel and visitors should be excluded from your facility until their illness has resolved. Having a strong sick policy in place, particularly during the influenza season, will help curb transmission to residents from ill staff.

# Outbreak Response and Reporting

**We think we have an outbreak. Now what?**

1. **Notify** Washington County Public Health immediately about suspected respiratory outbreaks at **503-846-3594** (24/7).

2. **Test**.
   Influenza testing should occur when any resident has signs and symptoms of influenza-like illness, particularly during influenza season:
   - A fever (generally ≥100°F) or feels feverish/chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches or fatigue. Some residents may have vomiting or diarrhea.
   - **Note that elderly persons and other long-term care facility residents, including those who are medically fragile and those with neurocognitive conditions, may manifest atypical signs and symptoms with influenza virus infection, and may not have a fever.**

**Test for influenza in the following people:**

- Ill persons who are in the affected unit, as well as ill persons in previously unaffected units in your facility who become ill within 3 days of other cases.
- Persons who develop acute respiratory illness symptoms more than 3 days after beginning antiviral chemoprophylaxis.

If there is ONE laboratory-confirmed influenza case along with other cases of respiratory infection in a unit of a long-term care facility, an influenza outbreak may be occurring!

**Influenza testing recommendations:**

- Determine if influenza virus is the cause of illness by performing influenza testing on respiratory specimens (nasal swabs, throat swabs, nasopharyngeal swabs, or nasopharyngeal/nasal aspirates) of ill residents with signs and symptoms suggestive of influenza.
- The best influenza test is reverse transcription polymerase chain reaction (RT-PCR), available at OSPHL and most hospitals in Washington County.
- Some facilities perform rapid influenza diagnostic tests, the reliability of which changes with disease prevalence. **Confirmation of rapid test results with a PCR test is recommended**.
  - False negative results from a rapid test are more likely to occur during influenza season, when prevalence is high.
  - False positive results from a rapid test are more likely to occur outside of influenza season, when prevalence is low.
- If it is not influenza season, also test for other respiratory pathogens.
- Ensure that the laboratory performing the tests notifies your facility of the test results promptly. Obtain copies of the lab results to share with Washington County Public Health.

- If your facility performs another influenza test (e.g., viral culture or direct florescent antibody staining (DFA), consult with Washington County Public Health if you have questions about the reliability of test results.

**Oregon State Public Health Laboratory (OSPHL) testing:**

- Once an outbreak is declared, the OSPHL can test up to six specimens (nasopharyngeal swabs preferred) from respiratory (influenza or influenza-like) outbreaks and subtype positive specimens. This is important because positive results confirm the cause of an outbreak and inform Washington County Public Health and the CDC which flu strains are circulating in the state of Oregon. Washington County Public Health can send facilities "ILI go kits" for specimen collection upon request. For more information about testing at the OSPHL: https://public.health.oregon.gov/LaboratoryServices/Pages/test.aspx?TestID=346

**3. Implement infection control measures** (Standard and Droplet Precautions).

Once a respiratory outbreak has been identified, outbreak control measures should be implemented immediately. The control measures listed here focus on influenza outbreaks, but similar measures may be helpful in other respiratory illness outbreaks.

***Standard Precautions:***

Standard Precautions are intended to be applied to the care of all patients in all health care settings, regardless of the suspected or confirmed presence of an infectious agent, to prevent the spread of infectious agents among patients and health care professionals.

Examples include:

- Wearing gloves if hand contact with body fluids or potentially contaminated surfaces is anticipated.
- Wearing a gown if soiling of clothes with residents' body fluids or respiratory secretions is anticipated.
- Changing gloves and gowns after each patient encounter and performing hand hygiene.
- Wash hands before and after touching the resident, after touching the residents' environment, or after touching the residents' respiratory secretions or body fluids whether or not gloves are worn. Gloves do not replace the need for performing hand hygiene.

***Droplet Precautions:***

Droplet Precautions are intended to prevent transmission of pathogens spread through close respiratory or mucous membrane contact with respiratory secretions. **Droplet precautions should be implemented for residents with suspected or confirmed influenza for seven days after illness onset or until 24 hours after the resolution of fever and respiratory symptoms, whichever is longer, while a resident is in a health care facility.**

Examples include:

- Placing ill residents in private rooms. If a private room is not available, place residents suspected of having influenza with one another (cohort).
- Wear a facemask (a surgical or procedure mask) upon entering the resident's room. Remove the facemask when leaving the room and dispose of the facemask in a waste container.
- If resident movement or transport is necessary, have the resident wear a facemask.
- Communicate information about patients with suspected, probable or confirmed influenza to appropriate personnel before transferring them to other departments.

Residents with influenza may continue to shed influenza viruses while on antiviral treatment. Infection control measures to reduce transmission, including Standard and Droplet Precautions, should continue while the resident is taking antiviral therapy. This will also reduce the transmission of viruses that may have become resistant to antiviral therapy.

**Consider the following additional measures to reduce transmission among residents and health care personnel:**

- Review benefits of cough etiquette and distribute **"Cover Your Cough"** posters throughout the facility (ask Washington County Public Health if you need copies of the posters, available in English and Spanish).
- Stop all group activities in your facility and serve all meals in the residents' rooms during an outbreak, especially for symptomatic residents.
- Avoid new admissions to the entire facility or transfers to units with symptomatic residents for 24 hours after the last symptoms are noted.
- Limit visitation, screen visitors for illness and exclude ill persons from your facility via posted notices (please let Washington County Public Health know if you need signs to post). Consider restricting visitation by children during community outbreaks of influenza.
- Restrict personnel movement from areas of your facility having illness to areas not affected by the outbreak (cohort staff).
- Administer the current season's influenza vaccine to unvaccinated residents and health care personnel.

Washington County Environmental Health is available for a consultation regarding cleaning your facility. Call **503-846-8722**, Monday through Friday, 8 a.m. – 5 p.m.

4. **Track new ill cases.**

Once a single laboratory confirmed case of influenza has been identified, it is likely there are other cases among exposed persons. Fill out the **Respiratory Case Log** to track symptoms and disease onset dates for ill residents and staff. The line list will help you know when an outbreak is ending as well as when to stop antiviral prophylaxis and relax restrictions for activities and visitors.

5. **Administer antivirals for treatment of influenza to residents.**
   All long-term care facility residents who have confirmed or suspected influenza should receive antiviral treatment immediately. Treatment should not wait for laboratory confirmation of influenza. **Antiviral treatment works best within the first two days of symptoms.** However, these medications can still help when given after 2 days to those who are very sick or those who have progressive illness.

   Washington County Public Health has Model Standing Orders for Tamiflu Treatment that you facility can use. Please remember that an authorized provider must complete and sign an order for **each patient**.

6. **Administer antivirals for chemoprophylaxis of influenza to residents.**
   During documented outbreaks of influenza in long-term care facilities, antiviral chemoprophylaxis is **recommended for all residents, regardless of their influenza vaccination** status. Chemoprophylaxis should be given to all residents on all floors and units of your facility. Breakthrough cases frequently occur when antiviral medications are administered only to residents on the affected unit or ward and not to all residents in a facility. Although highly effective, antiviral chemoprophylaxis is not 100% effective in preventing influenza illness. The CDC recommends antiviral chemoprophylaxis for a minimum of two weeks. Chemoprophylaxis can be discontinued after two weeks or seven days after the onset of symptoms in the last person infected, whichever is longer.

   ***Healthcare personnel:*** Antiviral chemoprophylaxis can be offered to unvaccinated personnel who provide care to persons at high risk of complications. Chemoprophylaxis may be considered for all employees, regardless of their influenza vaccination status, if the outbreak is caused by a strain of influenza virus that is not well matched by the vaccine. Chemoprophylaxis should also be considered in personnel for whom the influenza vaccine is contraindicated. For newly vaccinated staff, antiviral chemoprophylaxis can be administered up to two weeks following influenza vaccination with Recombinant Influenza Vaccine (RIV). Persons receiving antiviral chemoprophylaxis should not receive Live Attenuated Influenza Virus Vaccine (LAIV), and persons receiving LAIV should not receive antiviral treatment or chemoprophylaxis until 14 days after LAIV administration.

   Washington County Public Health has Model Standing Orders for Tamiflu Treatment that you facility can use. Please remember that an authorized provider must complete and sign an order for **each patient**.

***Though rare, be aware of the possibility of a drug-resistant virus:***

Residents or staff receiving antiviral medications who do not respond to treatment or who become sick with influenza after starting chemoprophylaxis might have an infection with an antiviral drug-resistant influenza virus. **To limit the potential transmission of antiviral drug-resistant influenza virus, measures should be taken to reduce contact between ill persons taking antiviral drugs for treatment and other persons, including those receiving antiviral chemoprophylaxis.** Infection control measures are especially important for patients who are immunocompromised to reduce the risk for transmission of oseltamivir-resistant viruses.

Notify Washington County Public Health **immediately** if a resident or staff develops influenza while on or after receiving antiviral chemoprophylaxis.

# Respiratory Case Log

**Facility:** _____ **% Residents Vaccinated:**

**Outbreak #:** _____ **% Staff Vaccinated:**

| IDENTIFIERS | | | | | | ONSET | | SIGNS & SYMPTOMS/OUTCOME | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| List all residents, staff or volunteers with any respiratory illness | Age | Sex | Resident, staff or volunteer | Room (residents only) | Job duty code (staff only) | Onset date | Fever ≥100°F (highest temp) | Cough | Sore throat | Pneumonia | Seen by a provider | Emergency dept visit | Admitted to hospital overnight | Died | Vaccinated for Influenza | Lab confirmed influenza | Other Lab Results (i.e. adenovirus) | Duration of illness | Comments |
| Name | Years | F or M | Codes Below | # | Codes Below | Date (m/d) | 00:00 am pm | Check all that apply | | | | | | | | | | hours | |
| John Smith | 86 | M | R | 123B | | 1/4 | 2:00 PM | Yes | Yes | Yes | No | Yes | No | No | No | Yes | No | 48 | Chemoprophylaxis |
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| | | | | | | Totals | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

**Instructions:**

Complete all columns for each person. Save and email form by secured email to Washington County Health Department, by fax at 503-846-3644. For help using this log, contact a CD nurse at Washington County Public Health Disease Control and Prevention: **503-846-3594**

**Use these codes for patient type**

| | |
|---|---|
| R | resident |
| S | staff |
| V | volunteer |
| O | other |

**Use these job codes for staff duties**

| | |
|---|---|
| A | administrative/clerical |
| F | food service |
| H | housekeeping |
| M | maintenance/facilities |
| P | patient care |
| W | washroom/laundry |
| O | other |

Last revised: 10/2/2018