

## Control of Influenza and Pneumococcal Disease in Long-Term Care Facilities 2009 - 2010

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### Influenza Prevention and Control Measures

Strategies for the prevention and control of influenza in long-term care facilities include:

- Annual seasonal influenza vaccination of all residents and health-care personnel
- Standard and droplet precautions with suspect or confirmed influenza cases
- Active surveillance and influenza testing for new illness cases
- Restriction of ill visitors and personnel
- Administration of antiviral medications for prophylaxis and treatment
- Other prevention strategies, such as respiratory hygiene/cough etiquette programs

**Most residents of LTCFs are not at high risk of infection with 2009 H1N1 influenza as they are believed to have some immunity to the virus due to previous exposure to similar strains.**

### I. Prevention Measures

#### A. Vaccination

1. **Vaccination of Residents, Seasonal and H1N1 Influenza:** Use a systematic approach to vaccination, with checklists, to increase immunization levels.

The Centers for Medicaid and Medicare Services (CMS) require nursing homes to offer all residents *seasonal* influenza and pneumococcal vaccines and to document the results. Vaccinate each resident unless medically contraindicated, the resident or legal representative refuses or there is a vaccine shortage.

<http://www.cms.hhs.gov/NursingHomeQualityInits/downloads/NHQIVaccinationSupplement.pdf>

- Vaccinate residents against seasonal influenza as soon as vaccine becomes available. Vaccination of new residents should continue as long as influenza continues to circulate.
- Most residents of LTCFs will *not* fall into high priority vaccination groups for H1N1 vaccine due to age (these residents are assumed to have some level of protection against the virus), but those residents that do fall into high priority groups should be vaccinated when H1N1 vaccine is available. Other residents may be vaccinated later in the season if H1N1 vaccine supply is deemed sufficient and demand among priority groups has been met. MDPH will notify facilities when vaccine is available for use in residents of LTCFs.
- Include Vaccine Information Statements (VIS) for pneumococcal and influenza vaccines in the admission packet. VISs in many languages are available online at [www.immunize.org/vis](http://www.immunize.org/vis) and from MDPH. Obtain consent for vaccination from the resident or a family member on admission for annual influenza vaccination for the duration of stay at the facility.
- Implement standing orders for administration of flu and pneumococcal vaccines.
- Influenza and PPV23 vaccines are safe and effective when administered simultaneously in

separate syringes at different anatomical sites.

- Chart audits should ensure that there is documentation in every chart that the resident has been offered PPV23 vaccine and annual influenza vaccine.

**Pneumococcal polysaccharide vaccine (PPV23):** Pneumococcal pneumonia is the most common nursing home-acquired pneumonia. PPV23 protects against pneumococcal meningitis and bacteremic pneumococcal pneumonia, a complication of influenza. Administer PPV23 to all unvaccinated residents  $\geq 2$  years of age on admission. Administer a second dose to previously vaccinated residents who are  $\geq 65$  years of age if it has been  $\geq 5$  years since their first dose and they were  $< 65$  years of age when they received the first dose.

**Consider residents with uncertain immunization histories NOT immunized and vaccinate accordingly. The benefits of vaccination far outweigh any concerns about revaccination.**

## 2. Vaccination of Staff

**The Massachusetts Department of Public Health requires that long term care facilities (LCTF) offer all employees annual vaccination against the influenza virus and also provide employees with information about the risks and benefits of the vaccine.**

[http://www.mass.gov/Eeohhs2/docs/dph/quality/hcq\\_circular\\_letters/ltc\\_facilities\\_0611468.pdf](http://www.mass.gov/Eeohhs2/docs/dph/quality/hcq_circular_letters/ltc_facilities_0611468.pdf)

- All staff members must be offered seasonal vaccine free of charge and provided with information about the risks and benefits about the vaccine. For staff who decline vaccination after being provided with information, that declination should be documented by the staff member on a declination form.
- Staff members should get vaccinated with H1N1 vaccine when it becomes available with priority to those with direct patient contact or who are otherwise in target groups. Other employees should get vaccinated with H1N1 vaccine when the supply is sufficient and demand among priority groups is met. Those declining vaccination should sign a declination form to be kept by the facility.

3. **Vaccination of Family Members and Visitors:** Inform family members and other visitors about their role in the transmission of influenza to patients and encourage them to receive influenza vaccine. To find out where to get flu vaccine, they can call their health care provider or local board of health, visit the MassPRO website at <http://flu.masspro.org> for a list of flu vaccination clinics by town, or call the Department of Public Health at 1-866-627-7968.

**Plan to purchase influenza vaccine for employees and residents:** Unfortunately, MDPH is not able to supply seasonal influenza vaccine for employees or residents of LTCFs for the 2009-2010 season. Facilities should plan to purchase influenza vaccine from pharmaceutical distributors or the manufacturers. The National Vaccine Influenza Summit maintains a list of distributors with flu vaccine for sale, which will be updated every other week throughout the season. To access this information, go to: <http://www.preventinfluenza.org/ivats/>.

To receive H1N1 vaccine, LTCF are encouraged to contact their pharmacy provider. MDPH will be allocating H1N1 vaccine and ancillary supplies to the LTC pharmacy providers in MA for distribution to the sites that they service. For questions about H1N1 vaccine registration or to check to see if your pharmacy provider is enrolled please contact the H1N1 registration help desk at **888-578-5585 (617-983-6898)** OR BY EMAIL [MDPHH1N1REGISTRATION@STATE.MA.US](mailto:MDPHH1N1REGISTRATION@STATE.MA.US). YOU CAN ALSO VISIT THE WEBSITE AT: [HTTP://WWW.MASS.GOV/DPH/H1N1REGISTRATION](http://www.mass.gov/dph/h1n1registration)

### **Medicare Reimbursement for Administration of Influenza and Pneumococcal Vaccines:**

Medicare reimburses both for the cost of influenza and pneumococcal vaccines, and for administration of the vaccines. Reimbursement for administration of vaccine is \$25.21/dose in metro-Boston and \$22.41 in the rest of the state. For more information, call Barbara Kerr at 508-421-5938 or email [bkerr@publicsectorpartners.com](mailto:bkerr@publicsectorpartners.com).

## **II. Infection Control Measures**

The outbreak control measures described below should be promptly implemented in any one of the following circumstances:

- Influenza is confirmed by laboratory testing in at least one resident
- More than one resident in the facility or an area of the facility (e.g., separate unit) develops influenza-like illness (ILI) during a 1-week period.

ILI is defined as **fever  $\geq 100.4^{\circ}$  F with cough and/or sore throat**, in the absence of another known cause.

### **A. Surveillance for Influenza at Your Facility**

Facilities should establish a surveillance system to identify any increased incidence of ILI among patients. Educate personnel about the signs and symptoms of influenza and indications for obtaining influenza testing. Symptoms may include myalgia, headache or weakness. A cluster is defined as three or more cases of ILI occurring within 48 to 72 hours, in residents who are in close proximity to each other (e.g., in the same area of the facility). **An outbreak is defined as a sudden increase of ILI cases over the normal background rate. However, one case of influenza confirmed by any laboratory testing method in a LTC facility resident is also considered an outbreak.**

It is important to collect information about the location (wing, floor, unit, room); group activities; immunization history; predisposing factors; dates of onset; symptoms; complications (including pneumonia, hospitalization and death); pertinent diagnostic tests (including cultures, rapid tests, other laboratory tests and x-rays); and any antibiotics/antiviral agents administered. These data will be important in the development and targeting of your outbreak control strategy.

An *Influenza-Like Illness (ILI) Line Listing* has been attached for systematic collection of data in the event of ILI among patients or staff. Implement daily active surveillance for respiratory illness among all residents and health care personnel until at least 1 week after the last confirmed influenza case occurred.

Any sudden increase in absenteeism or illness among staff also warrants an investigation. Remind employees to notify their employee health service if they are experiencing febrile respiratory symptoms and exclude them from direct patient care for 5 days following onset of symptoms, or for 24 hours after resolution of fever if fever and symptoms persist longer, when possible.

## **B. Notification**

An immunization epidemiologist at MDPH should be notified within 24 hours at 617-983-6800 when:

- Influenza is diagnosed with laboratory confirmation in at least one resident;
- Three or more cases of ILI occur within 48 to 72 hours, in residents who are in close proximity to each other (e.g., in the same area of the facility); or
- There is an outbreak (e.g., a sudden increase of ILI cases over the normal background rate and/or one case of influenza confirmed by any laboratory testing method in a LTC facility resident).

All outbreaks should also be reported to:

- The MDPH Division of Health Care Quality at 800-462-5540 (Accident/Incident line) within 24 hours of outbreak recognition, and
- Your local board of health.

Advise all visitors and employees of influenza activity in the facility, through signage and other means. When transfers occur, notify the receiving facility of the influenza activity.

## **C. Specimen Testing**

In addition to influenza surveillance, diagnostic testing for influenza can aid clinical judgment and guide treatment decisions. Although influenza testing for the 2009-2010 season will be very limited in general, due to the importance of identifying the presence and type of influenza, LTCFs should call the MDPH Division of Epidemiology and Immunization at **617-983-6800** once a cluster of influenza-like illness has been identified to discuss testing.

### **Influenza testing**

**Virus isolation/PCR:** When ILI has been identified, LTCFs should call the MDPH epidemiologist on call to report the situation and discuss testing. The epidemiologist can arrange for kits to be sent to the facility. These kits include full instructions and nasopharyngeal (NP) swabs. Instructions can also be found at the Massachusetts influenza website, <https://www.mass.gov/flu> and selecting “Information for Specific Groups,” followed by “Information for Healthcare and Public Health Professionals.” The document can be found under the heading “Testing.”

Swab specimens should be obtained as soon as possible, and no later than 48 hours after symptom onset. In the event of an outbreak, specimens should be obtained from 1 - 2 patients with the most recent onset of symptoms.

Collect and send culture specimens, with a completed Specimen Submission Form (included), to the William A Hinton State Laboratory Institute (HSLI) Virus Isolation Laboratory. Timely transport of specimens to SLI is critical for virus recovery, as specimens received more than 3 days after collection are unsuitable for testing. In order to

optimize specimen submission, please call an MDPH immunization epidemiologist at (617) 983-6800 to discuss the best method for specimen transport.

- **Rapid antigen testing:** Rapid antigen testing is also available at some commercial laboratories, emergency departments and in some provider offices. HSLI does not perform rapid antigen testing. These rapid tests differ in the types of influenza virus they can detect and whether or not they can distinguish between types A and B. Due to the lower sensitivity (i.e., false negatives) of the rapid tests, clinicians should consider supplementing negative tests with viral culture or other means (i.e., PCR). Rapid tests have been shown to have particularly poor sensitivity for detecting 2009 H1N1 virus (10-70%). Despite the availability of rapid antigen testing, the collection of clinical specimens for viral culture is critical, because only culture isolates can provide specific information on circulating influenza subtypes and strains. Package inserts and the laboratory performing the test should be consulted for more detail.

### **RSV, parainfluenza and adenovirus diagnostic testing**

- **Virus Isolation:** To order testing for RSV, parainfluenza and adenovirus in addition to influenza, please submit an NP (not throat) swab along with the Specimen Submission Form and check the box for “Respiratory Virus Panel.”

### **Mycoplasma pneumoniae diagnostic testing**

- HSLI offers an IgM ELISA test on serum for *M. pneumoniae*. Serum specimens should be obtained no later than one week after symptom onset. Please call an MDPH epidemiologist at (617)983-6800 if you need instructions on submitting specimens for testing for *M. pneumoniae*.

## **D. Vaccination during an Outbreak**

It is important to have a system to be able to readily identify unvaccinated residents and staff. Review the immunization status of residents and staff and immunize all unvaccinated residents and staff with influenza vaccine as soon as possible. Because pneumococcal disease is a common complication of influenza, take this opportunity to immunize unvaccinated residents with pneumococcal (PPV23) vaccine as well.

## **E. Antiviral Agents**

Antiviral drugs should not be used as a substitute for vaccination. Antiviral drugs, however, can be used as an adjunct to immunization for chemoprophylaxis and control of influenza. There are currently four licensed influenza antiviral agents available in the US: amantadine, rimantadine, zanamivir and oseltamivir. Due to antiviral resistance, ACIP recommends that neither amantadine nor rimantadine be used for the treatment or chemoprophylaxis of any type of influenza A in the US.

**As of the writing of this document, CDC recommends that oseltamivir or zanamivir be used for the treatment and/or chemoprophylaxis of influenza.** To date, there have not been any outbreaks of novel H1N1 influenza in LTCFs. However, if novel H1N1 were identified in such a facility, ill patients should be treated with either oseltamivir or zanamivir. In addition, chemoprophylaxis with either drug should be started as early as possible to reduce the spread of the virus in such situations.

Because decisions regarding the specific antiviral prophylaxis in the LTCF setting are complex, they should be made in consultation with an MDPH epidemiologist, and may require testing of virus from the outbreak.

Dosage recommendations vary by age group and medical condition. For more information about the use of antiviral medications in the control of influenza, visit the CDC website on antivirals at: <http://www.cdc.gov/h1n1flu/recommendations.htm> and consult the package inserts.

When antiviral agents are used for outbreak control, they should be administered to all residents (include all employees if variant strain is found that is not well matched to vaccine), regardless of immunization status. The drugs should be continued for 2 weeks after all residents and staff have been vaccinated and as long as one week after the last resident case occurred. The antiviral dose for each resident is determined based on age, renal function, liver function and other pertinent characteristics. If there is a variant strain or unusual circumstances occurring during a season, MDPH will issue appropriate bulletins and advisories. Pre-approved medication orders, or plans to obtain physician's orders on short notice, should be in place so that chemoprophylaxis can be started as soon as possible.

#### **F. Respiratory Hygiene/Cough Etiquette Programs**

Respiratory hygiene/cough etiquette should be implemented whenever residents or visitors have symptoms of respiratory infection to prevent the transmission of respiratory infections in LTCFs. Tools to assist with promoting and implementing these recommendations are available at [www.cdc.gov/flu/professionals/infectioncontrol/resphgiene.htm](http://www.cdc.gov/flu/professionals/infectioncontrol/resphgiene.htm) and <http://www.cdc.gov/flu/protect/covercough.htm>.

#### **G. Standard Precautions ([http://www.cdc.gov/ncidod/dhqp/gl\\_isolation\\_standard.html](http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html))**

During the care of any resident with symptoms of a respiratory infection, health care personnel should adhere to standard precautions:

#### **H. Droplet Precautions ([http://www.cdc.gov/ncidod/dhqp/gl\\_isolation\\_droplet.html](http://www.cdc.gov/ncidod/dhqp/gl_isolation_droplet.html))**

In addition to standard precautions, health care workers should adhere to expanded droplet precautions during the care of a resident with suspected or confirmed influenza:

#### **I. Restrictions for Ill Visitors and Employees**

If influenza activity is occurring in the surrounding community:

- Actively communicate to the public at large and visitors (e.g., via posted notices) that adults with respiratory symptoms should not visit the facility for 5 days and children with symptoms for 10 days following the onset of illness.
- Actively screen unvaccinated health care personnel for symptoms of respiratory infection and exclude those with symptoms for 5 days following the onset of symptoms.
- Monitor residents for symptoms of respiratory illness to determine need for precautions.

#### **J. Other Considerations**

In addition to standard and droplet precautions, consider the following procedures:

- Limiting visitors and restricting new admissions.
- To maintain the residents' ability to socialize and access rehabilitation services when influenza infections are unlikely and no influenza is suspected or confirmed, permit residents with respiratory symptoms to participate in group activities if they can be placed > 3 feet from other residents and can perform respiratory hygiene/cough etiquette.
- If influenza is suspected in any resident, influenza testing should be done promptly. Confine symptomatic residents with suspected or confirmed influenza to their rooms or group them together in rooms or on one unit (i.e., cohort) for 5 days following the onset of symptoms. Personnel should work on only one unit, if possible.
- Patients receiving antiviral treatment for influenza should continue to be confined until treatment is completed to prevent the spread of antiviral resistant influenza viruses.

### **Additional Information**

CDC. Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009. MMWR 2009;58:1-52.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr58e0724a1.htm>.

CDC. Influenza vaccination of health-care personnel: recommendations of the Healthcare Infection Control Practices Advisory (HICPAC) and the Advisory Committee on Immunization Practices (ACIP) 2006:55(No. RR-2). <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5502a1.htm>.

CDC. Prevention of pneumococcal disease: recommendations of the ACIP. MMWR 1997;46 (No. RR-8). <http://www.cdc.gov/mmwr/preview/mmwrhtml/00047135.htm>

Vaccine Information Statements (VISs) for all vaccines in many languages: [www.immunize.org/vis](http://www.immunize.org/vis).

Visit the MDPH web site [www.mass.gov/dph/flu](http://www.mass.gov/dph/flu). Hard copies and technical consultation are available from your MDPH Regional Office or by calling MDPH at 617-983-6800 or 888-658-2850.

# INFLUENZA-LIKE ILLNESS (ILI) LINE LIST

Facility Name: \_\_\_\_\_

Date: \_\_\_\_\_

	Name	Patient (P) or Staff (S)	Age	Wing/Unit	Flu Vax?	H1N1 Vax?	Pneumo Vax?	Date of Onset	Symptoms (check box)							CXR? Findings?	Hospitalized?	Died?	Flu Dx test and result	Other tests and results	Antiviral?
									Fever (temp)	Cough	Sore throat	URI	Muscle Aches	Weakness	Vomiting						
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