GUIDELINES AND RECOMMENDATIONS

Infection Control Guidance for the Prevention and Control of Influenza in Acute-Care Facilities

November 15, 2007

Introduction

Influenza is a contagious respiratory disease that can cause substantial illness and death among long-term care facility residents and illness among personnel in long-term care facilities. Influenza vaccination of health care personnel and long-term care facility residents combined with basic infection control practices can help prevent transmission of influenza. Every effort should be made to ensure compliance with influenza vaccination recommendations each season. However, because influenza outbreaks can still occur among highly vaccinated long-term care residents, long-term care facility personnel should be prepared to monitor personnel and residents each year for influenza and promptly initiate measures to control the spread of influenza within facilities when outbreaks are detected. This document provides general guidance for prevention and control of influenza transmission in long-term care facilities. Links to recommendations for the 2007-08 influenza seasons are provided.

Transmission

Influenza is primarily transmitted from person-to-person via large virus-laden droplets that are generated when infected persons cough or sneeze; these large droplets can then settle on the mucosal surfaces of the upper respiratory tracts of susceptible persons who are near (e.g., within about 6 feet) infected persons. Three feet has often been used by infection control professionals to define close contact and is based on studies of respiratory infections; however, for practical purposes, this distance may range up to 6 feet. The World Health Organization defines close contact as "approximately 1 meter"; the U.S. Occupational Safety and Health Administration uses "within 6 feet." For consistency with these estimates, this document defines close contact as a distance of up to approximately 6 feet. Transmission may also occur through direct contact or indirect contact with respiratory secretions such as when touching surfaces contaminated with influenza virus and then touching the eyes, nose or mouth. Adults may be able to spread influenza to others from 1 day before getting symptoms to approximately 5 days after symptoms start. Children and people with weakened immune systems may be infectious and able to spread influenza to others for 10 or more days after symptoms begin.

Prevention and Control Measures

Strategies for the prevention and control of influenza in acute care facilities include the following: annual influenza vaccination of all eligible patients and health care personnel, implementation of Standard and Droplet Precautions for infected individuals, active surveillance and influenza testing for new illness cases, restriction of ill visitors and personnel, rapid administration of influenza antiviral medications for treatment and prevention during outbreaks, and Respiratory Hygiene/Cough Etiquette.

Vaccination

All health care personnel and persons at high risk for serious complications of influenza should receive annual influenza vaccination according to current national recommendations (http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1).

- Vaccination is the primary measure to prevent infection or development of illness from influenza, and thereby limit transmission of influenza and prevent complications from influenza.
- Inactivated influenza vaccine or live attenuated influenza vaccine (LAIV) may be used to vaccinate most health care personnel.
  - **Inactivated influenza vaccine** may be used for all health care personnel and is preferred for vaccinating health care personnel who have close contact with severely immunosuppressed persons (e.g., patients with hematopoietic stem cell transplants) during those periods in which the immunosuppressed person requires care in a protective environment.
  - The following persons should not receive inactivated influenza vaccine:
    - Persons known to have anaphylactic hypersensitivity to eggs or to other components of the influenza vaccine without first consulting a physician.
    - Persons with moderate-to-severe acute febrile illness usually should not be vaccinated until their symptoms have abated. However, minor illnesses with or without fever do not contraindicate use of influenza vaccine, particularly among children with mild upper-respiratory tract infection or allergic rhinitis.
    - Persons who are not at high risk for severe influenza complications and who are known to have experienced Guillain-Barré Syndrome within 6 weeks after a previous influenza vaccination. (Benefit may exceed risk for persons at high risk for severe influenza complications.)
  - **Live, attenuated vaccine (LAIV)** may be given to healthy adults less than 50 years of age who are not pregnant and who do not have contraindications to receiving the nasal vaccine. Health care personnel taking care of immunocompromised patients may receive LAIV. However, if healthcare personnel who care for severely immunocompromised patients in protected environments receive LAIV, then they should not care for these patients for 7 days following immunization.
  - The following persons should not receive LAIV
    - Persons with a history of hypersensitivity, including anaphylaxis, to any of the components of LAIV or to eggs
    - Persons 2-4 years old who have recurrent wheezing and healthy persons 50 years and older;
    - Persons with asthma, reactive airways disease or other chronic disorders of the pulmonary or cardiovascular systems;
    - Persons with other underlying medical conditions, including such metabolic diseases as diabetes mellitus, renal or hepatic dysfunction and hemoglobinopathies; or persons with known or suspected immunodeficiency diseases or who are receiving immunosuppressive therapies;
    - Children or adolescents receiving aspirin or other salicylates (because of the association of Reye's syndrome with wild-type influenza infection)
    - Persons with a history of Guillain-Barré syndrome;
    - Pregnant women;
    - Persons with a fever or significant nasal congestion that may interfere with delivery of the LAIV. (Administration of LAIV should be postponed.); persons with mild respiratory illness can receive LAIV.

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Infection Control Measures

In addition to influenza vaccination, the following infection control measures are recommended to prevent person-to-person transmission of influenza and to control influenza outbreaks in acute care facilities:

1. Surveillance

Conduct active surveillance for respiratory illness and use rapid influenza testing to identify outbreaks early so that infection control measures can be promptly initiated to prevent the spread of influenza in the facility.

2. Education

Educate personnel about the importance of influenza vaccination, signs and symptoms of influenza, control measures and indications for obtaining influenza testing.

3. Influenza Testing

Perform influenza testing (e.g., rapid diagnostic test, immunofluorescence) and viral cultures (http://www.cdc.gov/flu/professionals/diagnosis/index.htm) for influenza when clusters of respiratory illness occur or when influenza is suspected in a patient or healthcare provider.

4. Antiviral Chemoprophylaxis

Influenza antiviral chemoprophylaxis (http://www.cdc.gov/flu/professionals/antivirals/index.htm) may be given to patients and healthcare personnel in accordance with current recommendations. On the basis of influenza virus testing results conducted at CDC and Canada indicating high levels of resistance of influenza A virus to the adamantane class of antiviral mediations, CDC and ACIP recommend that neither amantadine nor rimantadine be used for the treatment or chemoprophylaxis of influenza A in the United States until susceptibility to these antiviral medications has been re-established among circulating influenza A viruses. Two FDA-approved influenza antiviral medications are recommended for use in the United States during the 2007-08 influenza season: oseltamivir (Tamiflu®) and zanamivir (Relenza®). Oseltamivir and zanamivir are chemically related antiviral medications known as neuraminidase inhibitors that have activity against both influenza A and B viruses.

5. Respiratory Hygiene/Cough Etiquette Programs

Respiratory hygiene/cough etiquette (http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm) should be implemented beginning at the first point of contact with a potentially infected person to prevent the transmission of all respiratory tract infections in acute care settings. Respiratory hygiene/cough etiquette includes:

- Posting visual alerts instructing patients and persons who accompany them to inform healthcare personnel if they have symptoms of respiratory infection
- Providing tissues or masks to patients and visitors who are coughing or sneezing so that they can cover their nose and mouth
- Ensuring that supplies for hand washing are available where sinks are located; providing dispensers of alcohol-based hand rubs in other locations
- Providing space for coughing persons to sit at least 3 to about 6 feet away from others, if feasiblewhere feasible.

6. Standard Precautions

During the care of any patient, health care personnel should adhere to Standard Precautions (http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html). For patients with symptoms of respiratory infection this includes:

- Wear gloves if hand contact with respiratory secretions or potentially contaminated surfaces is anticipated.
- Wear a gown if soiling of clothes with a patient's respiratory secretions is anticipated.

- Change gloves and gowns after each patient encounter and perform hand hygiene.
- Decontaminate hands before and after touching the patient and after touching the patient's environment or the patient's respiratory secretions, whether or not gloves are worn.
- When hands are visibly soiled or contaminated with respiratory secretions, wash hands with soap (either plain or antimicrobial) and water.
- If hands are not visibly soiled, use an alcohol-based hand rub.

7. Droplet Precautions)

In addition to Standard Precautions, healthcare personnel should adhere to Droplet Precautions (http://www.cdc.gov/ncidod/dhqp/gl_isolation_droplet.html) during the care of a patient with suspected or confirmed influenza for 5 days after the onset of illness:

- Place patient in a private room. If a private room is not available, place (cohort) suspected influenza patients with other patients suspected of having influenza; cohort confirmed influenza patients with other patients confirmed to have influenza.
- Wear a surgical or procedure mask when entering the patient's room. Remove the mask when leaving the patient's room and dispose of the mask in a waste container.
- If patient movement or transport is necessary, have the patient wear a surgical or procedure mask, if possible.

8. Restrictions for Ill Visitors and Ill Health Care Personnel

If there is no or only sporadic influenza activity occurring in the surrounding community:

- Discourage persons with symptoms of a respiratory infection from visiting patients. Post notices to inform the public about visitation restrictions.
- Monitor healthcare personnel for influenza-like symptoms and consider removing them from duties that involve direct patient contact, especially those who work in high-risk patient care areas (e.g., intensive care units [ICUs], nurseries, organ-transplant units). If excluded from duty, they should not provide patient care for 5 days after the onset of symptoms.

If widespread influenza activity is in the surrounding community:

- Notify visitors (e.g., via posted notices) that adults with respiratory symptoms should not visit the facility for 5 days and children with symptoms should not visit for 10 days following the onset of illness.
- Evaluate healthcare personnel, especially those in high risk areas (e.g., ICUs, nurseries, and organ transplant units) for symptoms of respiratory infection; perform rapid influenza tests (http://www.cdc.gov/flu/professionals/diagnosis/index.htm) to confirm that the causative agent is influenza and to determine whether they should be removed from duties that involve direct patient contact. If excluded, they should not provide patient care for 5 days following the onset of symptoms. Follow current recommendations for treatment of influenza (http://www.cdc.gov/flu/professionals/antivirals/indications.htm).

Control of Influenza Outbreaks in Acute Care Settings

When influenza outbreaks occur in acute care settings, the following measures should be taken to limit transmission:

- Perform rapid influenza virus testing (http://www.cdc.gov/flu/professionals/diagnosis/index.htm) of patients and personnel with recent onset of symptoms suggestive of influenza. In addition, obtain viral cultures from a subset of patients to determine the infecting virus type and subtype and to confirm the results of rapid tests since most rapid tests are less sensitive than cultures.
- Implement Droplet Precautions (http://www.cdc.gov/ncidod/dhqp/gl_isolation_droplet.html) for all patients with suspected or confirmed influenza.
- Separate suspected or confirmed influenza patients from asymptomatic patients.
- Restrict staff movement from areas of the facility having outbreaks.

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- Administer the current season's influenza vaccine to unvaccinated patients and health care personnel. Follow current vaccination recommendations (http://www.cdc.gov/flu/protect/keyfacts.htm) for the use of nasal and intramuscular influenza vaccines.
- Administer influenza antiviral chemoprophylaxis and treatment (http://www.cdc.gov/flu/professionals/antivirals/) to patients and health care personnel according to current recommendations.
- Consider antiviral chemoprophylaxis for all health care personnel, regardless of their vaccination status, if the health department determines the outbreak is caused by a variant of influenza virus that is a sub-optimal match with the vaccine.
- Curtail or eliminate elective medical and surgical admissions and restrict cardiovascular and pulmonary surgery to emergency cases during influenza outbreaks, especially those characterized by high attack rates and severe illness, in the community or acute care facility.

Prevention and Control of Influenza in Peri- and Postpartum Settings

Pregnant women and small infants are at increased risk of hospitalization from influenza complications. Recommendations for preventing influenza transmission between hospitalized infected mothers and their infants (http://www.cdc.gov/flu/professionals/infectioncontrol/peri-post-settings.htm) have been developed for clinicians and public health officials. (See links below.)

Additional Resources

The following resources provide information about preventing the spread of influenza in health care facilities:

- Control of Influenza Outbreaks in Institutions (http://www.cdc.gov/flu/professionals/infectioncontrol/institutions.htm)
- Questions and Answers: Influenza Vaccination for Healthcare Workers http://www.cdc.gov/ncidod/dhqp/id_influenza_vaccine.html
- Respiratory Hygiene/Cough Etiquette (http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm)
- Guideline for Isolation Precautions in Hospitals (http://www.cdc.gov/ncidod/dhqp/pdf/guidelines/Isolation2007.pdf)
  - Standard Precautions excerpt (http://www.cdc.gov/ncidod/dhqp/gl_isolation_standard.html)
  - Droplet Precautions excerpt (http://www.cdc.gov/ncidod/dhqp/gl_isolation_droplet.html)
- Guideline for Preventing Healthcare-Associated Pneumonia, Influenza excerpt (http://www.cdc.gov/ncidod/dhqp/id_influenza_pneuExcerpt.html)
- Prevention and Control of Influenza in the Peri- and Postpartum Settings (http://www.cdc.gov/flu/professionals/infectioncontrol/peri-post-settings.htm)
- Preventing Opportunistic Infections in HSCT/Bone Marrow Transplant Recipients (http://www.cdc.gov/ncidod/dhqp/gl_stemcell.html)
- Flu Vaccination Resources for Healthcare Professionals (http://www.cdc.gov/flu/professionals/vaccination/#patient)
- Healthcare Infection Control Practices Advisory Committee (HICPAC) Publications (http://www.cdc.gov/ncidod/dhqp/guidelines.html)
- Recommendations for Vaccination of Healthcare Personnel (http://www.cdc.gov/flu/professionals/acip/specificpopulations.htm#HCP)
- Influenza and Influenza Vaccine Information for Healthcare Personnel (http://www.cdc.gov/ncidod/dhqp/id_influenza_vaccine.html)

Educational Materials

- Patient and Provider Education Materials (http://www.cdc.gov/flu/professionals/flugallery/index.htm)
- Speak-up™ Campaign Brochure (http://www.jointcommission.org/NR/rdonlyres/F76BC658-5554-4A82-89ED-67E36F033CF8/0/Infection_Control_Brochure.pdf)
- Information about personal protective equipment (http://www.cdc.gov/ncidod/dhqp/ppe.html)

For more information, visit www.cdc.gov/flu, or call CDC at
800-CDC-INFO (English and Spanish) or 888-232-6358 (TTY).