Prevention Strategies for Seasonal Influenza in Healthcare Settings

This guidance supersedes previous CDC guidance for both seasonal influenza and the Interim Guidance on Infection Control Measures for 2009 H1N1 Influenza in Healthcare Settings, which was written to apply uniquely to the special circumstances of the 2009 H1N1 pandemic as they existed in October 2009. As stated in that document, CDC planned to update the guidance as new information became available. In particular, one major change from the spring and fall of 2009 is the widespread availability of a safe and effective vaccine for the 2009 H1N1 influenza virus. Components of this vaccine have been included in the 2010-2011 trivalent seasonal vaccine. Second, the overall risk of hospitalization and death among people infected with this strain was uncertain in spring and fall of 2009, but is now known to be substantially lower than pre-pandemic assumptions. In addition, more information has been recently published or presented indicating that face mask use and hand hygiene reduce the risk of influenza infection in health care and household settings. The current circumstances and new information justify an update of the recommendations.

This updated guidance continues to emphasize the importance of a comprehensive influenza prevention strategy that can be applied across the entire spectrum of healthcare settings. CDC will continue to evaluate new information as it becomes available and will update or expand this guidance as needed. Additional information on influenza prevention, treatment, and control can be found on CDC's influenza website: www.cdc.gov/flu.

Definition of Healthcare Settings

For the purposes of this guidance, healthcare settings include, but are not limited to, acute-care hospitals; long-term care facilities, such as nursing homes and skilled nursing facilities; physicians' offices; urgent-care centers, outpatient clinics; and home healthcare. This guidance is not intended to apply to other settings whose primary purpose is not healthcare, such as schools or worksites, because many of the aspects of the populations and feasible countermeasures will differ substantially across settings. However, elements of this guidance may be applicable to specific sites within non-healthcare settings where care is routinely delivered (e.g. a medical clinic embedded within a workplace or school).

Definition of Healthcare Personnel

For the purposes of this guidance, the 2008 Department of Health and Human Services definition of Healthcare Personnel (HCP) will be used [http://www.hhs.gov/ophs/programs/initiatives/vacctoolkit/definition.html]. Specifically, HCP refers to all persons, paid and unpaid, working in healthcare settings who have the potential for

exposure to patients and/or to infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air. HCP include, but are not limited to, physicians, nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, students and trainees, contractual personnel, home healthcare personnel, and persons not directly involved in patient care (e.g., clerical, dietary, house-keeping, laundry, security, maintenance, billing, chaplains, and volunteers) but potentially exposed to infectious agents that can be transmitted to and from HCP and patients. This guidance is not intended to apply to persons outside of healthcare settings for reasons discussed in the previous section.

Introduction

Influenza is primarily a community-based infection that is transmitted in households and community settings. Each year, 5% to 20% of U.S. residents acquire an influenza virus infection, and many will seek medical care in ambulatory healthcare settings (e.g., pediatricians' offices, urgent-care clinics). In addition, more than 200,000 persons, on average, are hospitalized each year for influenza-related complications [http://www.cdc.gov/flu/keyfacts.htm]. Healthcare-associated influenza infections can occur in any healthcare setting and are most common when influenza is also circulating in the community. Therefore, the influenza prevention measures outlined in this guidance should be implemented in all healthcare settings. Supplemental measures may need to be implemented during influenza season if outbreaks of healthcare-associated influenza occur within certain facilities, such as long-term care facilities and hospitals [refs: Infection Control Guidance for the Prevention and Control of Influenza in Acute-care Settings: http://www.cdc.gov/flu/professionals/infectioncontrol/healthcarefacilities.htm; Infection Control Measures for Preventing and Controlling Influenza Transmission in Long-Term Care Facilities: http://www.cdc.gov/flu/professionals/infectioncontrol/longtermcare.htm].

Influenza Modes of Transmission

Traditionally, influenza viruses have been thought to spread from person to person primarily through large-particle respiratory droplet transmission (e.g., when an infected person coughs or sneezes near a susceptible person) [http://www.cdc.gov/flu/professionals/acip/clinical.htm]. Transmission via large-particle droplets requires close contact between source and recipient persons, because droplets generally travel only short distances (approximately 6 feet or less) through the air. Indirect contact transmission via hand transfer of influenza virus from virus-contaminated surfaces or objects to mucosal surfaces of the face (e.g., nose, mouth) may also occur. Airborne transmission via small particle aerosols in the vicinity of the infectious individual may also occur; however, the relative contribution of the different modes of influenza transmission is unclear. Airborne transmission over longer distances, such as from one

patient room to another has not been documented and is thought not to occur. All respiratory secretions and bodily fluids, including diarrheal stools, of patients with influenza are considered to be potentially infectious; however, the risk may vary by strain. Detection of influenza virus in blood or stool in influenza infected patients is very uncommon.

Fundamental Elements to Prevent Influenza Transmission

Preventing transmission of influenza virus and other infectious agents within healthcare settings requires a multi-faceted approach. Spread of influenza virus can occur among patients, HCP, and visitors; in addition, HCP may acquire influenza from persons in their household or community. The core prevention strategies include:

- administration of influenza vaccine
- implementation of respiratory hygiene and cough etiquette
- appropriate management of ill HCP
- adherence to infection control precautions for all patient-care activities and aerosol-generating procedures
- implementing environmental and engineering infection control measures.

Successful implementation of many, if not all, of these strategies is dependent on the presence of clear administrative policies and organizational leadership that promote and facilitate adherence to these recommendations among the various people within the healthcare setting, including patients, visitors, and HCP. These administrative measures are included within each recommendation where appropriate. Furthermore, this guidance should be implemented in the context of a comprehensive infection prevention program to prevent transmission of all infectious agents among patients and HCP.

Recommendations

1. Promote and administer seasonal influenza vaccine

Annual vaccination is the most important measure to prevent seasonal influenza infection. Achieving high influenza vaccination rates of HCP and patients is a critical step in preventing healthcare transmission of influenza from HCP to patients and from patients to HCP. According to current national guidelines, unless contraindicated, vaccinate all people aged 6 months and older, including HCP, patients and residents of long-term care facilities [refs: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5908a1.htm?s_cid=rr5908a1_w and

http://www.cdc.gov/flu/professionals/vaccination/].

Systematic strategies employed by some institutions to improve HCP vaccination rates have included providing incentives, providing vaccine at no cost to HCP, improving access (e.g., offering vaccination at work and during work hours), requiring personnel to sign declination forms to acknowledge that they have been educated about the benefits and risks of vaccination, and mandating influenza vaccination for all HCP without contraindication. Many of these approaches have been shown to increase vaccination rates; tracking influenza vaccination coverage among HCP can be an important component of a systematic approach to protecting patients and HCP. Regardless of the strategy used, strong organizational leadership and an infrastructure for clear and timely communication and education, and for program implementation, have been common elements in successful programs. More information on different HCP vaccination strategies can be found in the Appendix: Influenza Vaccination Strategies.

2. **Take Steps to Minimize Potential Exposures**

A range of administrative policies and practices can be used to minimize influenza exposures before arrival, upon arrival, and throughout the duration of the visit to the healthcare setting. Measures include screening and triage of symptomatic patients and implementation of respiratory hygiene and cough etiquette. Respiratory hygiene and cough etiquette are measures designed to minimize potential exposures of all respiratory pathogens, including influenza virus, in healthcare settings and should be adhered to by everyone – patients, visitors, and HCP – upon entry and continued for the entire duration of stay in healthcare settings [http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm].

Before Arrival to a Healthcare Setting

- When scheduling appointments, instruct patients and persons who accompany them to inform HCP upon arrival if they have symptoms of any respiratory infection (e.g., cough, runny nose, fever) and to take appropriate preventive actions (e.g., wear a facemask upon entry, follow triage procedure).

- During periods of increased influenza activity:
    - Take steps to minimize elective visits by patients with suspected or confirmed influenza. For example, consider establishing procedures to minimize visits by patients seeking care for mild influenza-like illness who are not at increased risk

for complications from influenza (e.g., provide telephone consultation to patients with mild respiratory illness to determine if there is a medical need to visit the facility).

Upon Entry and During Visit to a Healthcare Setting

- Take steps to ensure all persons with symptoms of a respiratory infection adhere to respiratory hygiene, cough etiquette, hand hygiene, and triage procedures throughout the duration of the visit. These might include:

    - Posting visual alerts (e.g., signs, posters) at the entrance and in strategic places (e.g., waiting areas, elevators, cafeterias) to provide patients and HCP with instructions (in appropriate languages) about respiratory hygiene and cough etiquette, especially during periods when influenza virus is circulating in the community. Instructions should include:
        - How to use facemasks or tissues to cover nose and mouth when coughing or sneezing and to dispose of contaminated items in waste receptacles.
        - How and when to perform hand hygiene.

    - Implementing procedures during patient registration that facilitate adherence to appropriate precautions (e.g., at the time of patient check-in, inquire about presence of symptoms of a respiratory infection, and if present, provide instructions).

- Provide facemasks (See definition of facemask in Appendix) to patients with signs and symptoms of respiratory infection.
- Provide supplies to perform hand hygiene to all patients upon arrival to facility (e.g., at entrances of facility, waiting rooms, at patient check-in) and throughout the entire duration of the visit to the healthcare setting.

- Provide space and encourage persons with symptoms of respiratory infections to sit as far away from others as possible. If available, facilities may wish to place these patients in a separate area while waiting for care.

- During periods of increased community influenza activity, facilities should consider setting up triage stations that facilitate rapid screening of patients for symptoms of influenza and separation from other patients.

3. Monitor and Manage Ill Healthcare Personnel

HCP who develop fever and respiratory symptoms should be:

- Instructed not to report to work, or if at work, to stop patient-care activities, don a facemask, and promptly notify their supervisor and infection control personnel/occupational health before leaving work.

- Reminded that adherence to respiratory hygiene and cough etiquette after returning to work is always important. If symptoms such as cough and sneezing are still present, HCP should wear a facemask during patient-care activities. The importance of performing frequent hand hygiene (especially before and after each patient contact and contact with respiratory secretions) should be reinforced.

- Excluded from work until at least 24 hours after they no longer have a fever (without the use of fever-reducing medicines such as acetaminophen). Those with ongoing respiratory symptoms should be considered for evaluation by occupational health to determine appropriateness of contact with patients.

- Considered for temporary reassignment or exclusion from work for 7 days from symptom onset or until the resolution of symptoms, whichever is longer, if returning to care for patients in a Protective Environment (PE) such as hematopoietic stem cell transplant patients (HSCT) [http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf].

    - Patients in these environments are severely immunocompromised, and infection with influenza virus can lead to severe disease. Furthermore, once infected, these patients can have prolonged viral shedding despite antiviral treatment and expose other patients to influenza virus infection. Prolonged shedding also increases the chance of developing and spreading antiviral-resistant influenza strains; clusters of influenza antiviral resistance cases have been found among severely immunocompromised persons exposed to a common source or healthcare setting.

- HCP with influenza or many other infections may not have fever or may have fever alone as an initial symptom or sign. Thus, it can be very difficult to distinguish influenza from many other causes, especially early in a person's illness. HCP with fever alone should follow workplace policy for HCP with fever until a more specific cause of fever is identified or until fever resolves.

HCP who develop acute respiratory symptoms without fever may still have influenza infection and should be:

- Considered for evaluation by occupational health to determine appropriateness of contact with patients. HCP suspected of having influenza may benefit from influenza antiviral treatment.

- Reminded that adherence to respiratory hygiene and cough etiquette after returning to work is always important. If symptoms such as cough and sneezing are still present, HCP should wear a facemask during patient care activities. The importance of performing frequent hand hygiene (especially before and after each patient contact) should be reinforced.

- Allowed to continue or return to work unless assigned to care for patients requiring a PE such as HSCT [http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf]; these HCP should be considered for temporary reassignment or considered for exclusion from work for 7 days from symptom onset or until the resolution of all non-cough symptoms, whichever is longer.

Facilities and organizations providing healthcare services should:

- Develop sick leave policies for HCP that are non-punitive, flexible and consistent with public health guidance to allow and encourage HCP with suspected or confirmed influenza to stay home.

    - Policies and procedures should enhance exclusion of HCPs who develop a fever and respiratory symptoms from work for at least 24 hours after they no longer have a fever, without the use of fever-reducing medicines.

- Ensure that all HCP, including staff who are not directly employed by the healthcare facility but provide essential daily services, are aware of the sick leave policies.

- Employee health services should establish procedures for tracking absences; reviewing job tasks and ensuring that personnel known to be at higher risk for exposure to those with suspected or confirmed influenza are given priority for vaccination; ensuring that employees have prompt access, including via telephone to medical consultation and, if necessary, early treatment; and promptly identifying individuals with possible influenza. HCP should self-assess for symptoms of febrile respiratory illness. In most cases, decisions about work restrictions and assignments for personnel with respiratory illness should be guided by clinical signs and symptoms rather than by laboratory testing for

influenza because laboratory testing may result in delays in diagnosis, false negative test results, or both.

4. Adhere to Standard Precautions

During the care of any patient, all HCP in every healthcare setting should adhere to standard precautions, which are the foundation for preventing transmission of infectious agents in all healthcare settings. Standard precautions assume that every person is potentially infected or colonized with a pathogen that could be transmitted in the healthcare setting. Elements of standard precautions that apply to patients with respiratory infections, including those caused by the influenza virus, are summarized below. All aspects of standard precautions (e.g., injection safety) are not emphasized in this document but can be found in the CDC Healthcare Infection Control Practices Advisory Committee (HICPAC) guideline titled *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings, Guidelines for Preventing Healthcare-Associated* Pneumonia and *Guidelines for Hand Hygiene in Healthcare Settings Published 2002* [http://www.cdc.gov/hicpac/2007IP/2007ip_part4.html#4; http://www.cdc.gov/mmwr/PDF/rr/rr5116.pdf; http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5303a1.htm].

Hand Hygiene

- HCP should perform hand hygiene frequently, including before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of personal protective equipment, including gloves. Hand hygiene in healthcare settings can be performed by washing with soap and water or using alcohol-based hand rubs. If hands are visibly soiled, use soap and water, not alcohol-based hand rubs.

- Healthcare facilities should ensure that supplies for performing hand hygiene are available.

Gloves

- Wear gloves for any contact with potentially infectious material. Remove gloves after contact, followed by hand hygiene. Do not wear the same pair of gloves for care of more than one patient. Do not wash gloves for the purpose of reuse.

Gowns

- Wear gowns for any patient-care activity when contact with blood, body fluids, secretions (including respiratory), or excretions is anticipated. Remove gown and perform hand hygiene before leaving the patient's environment. Do not wear the same gown for care of more than one patient.

5. Adhere to Droplet Precautions

- Droplet precautions should be implemented for patients with suspected or confirmed influenza for 7 days after illness onset or until 24 hours after the resolution of fever and respiratory symptoms, whichever is longer, while a patient is in a healthcare facility. In some cases, facilities may choose to apply droplet precautions for longer periods based on clinical judgment, such as in the case of young children or severely immunocompromised patients, who may shed influenza virus for longer periods of time [http://www.cdc.gov/hicpac/2007IP/2007ip_part4.html#5.

- Place patients with suspected or confirmed influenza in a private room or area. When a single patient room is not available, consultation with infection control personnel is recommended to assess the risks associated with other patient placement options (e.g., cohorting [i.e., grouping patients infected with the same infectious agents together to confine their care to one area and prevent contact with susceptible patients], keeping the patient with an existing roommate). For more information about making decisions on patient placement for droplet precautions, see CDC HICPAC *Guidelines for Isolation Precautions* [section V.C.2: http://www.cdc.gov/hicpac/2007IP/2007ip_part4.html#5].

- HCP should don a facemask when entering the room of a patient with suspected or confirmed influenza. Remove the facemask when leaving the patient's room, dispose of the facemask in a waste container, and perform hand hygiene.

    - If some facilities and organizations opt to provide employees with alternative personal protective equipment, this equipment should provide the same protection of the nose and mouth from splashes and sprays provided by facemasks (e.g., face shields and N95 respirators or powered air purifying respirators).

- If a patient under droplet precautions requires movement or transport outside of the room:

    - Have the patient wear a facemask, if possible, and follow respiratory hygiene

and cough etiquette and hand hygiene.

- Communicate information about patients with suspected, probable, or confirmed influenza to appropriate personnel before transferring them to other departments in the facility (e.g., radiology, laboratory) or to other facilities.

- Patients under droplet precautions should be discharged from medical care when clinically appropriate, not based on the period of potential virus shedding or recommended duration of droplet precautions. Before discharge, communicate the patient's diagnosis and current precautions with post-hospital care providers (e.g., home-healthcare agencies, long-term care facilities) as well as transporting personnel.

6. Use Caution when Performing Aerosol-Generating Procedures

Some procedures performed on patients with suspected or confirmed influenza infection may be more likely to generate higher concentrations of infectious respiratory aerosols than coughing, sneezing, talking, or breathing. These procedures potentially put HCP at an increased risk for influenza exposure. Although there are limited data available on influenza transmission related to such aerosols, many authorities [refs: WHO, http://www.who.int/csr/resources/publications/aidememoireepidemicpandemid/en/index.html] recommend that additional precautions be used when such procedures are performed. These include some procedures that are usually planned ahead of time, such as bronchoscopy, sputum induction, elective intubation and extubation, and autopsies; and some procedures that often occur in unplanned, emergent settings and can be life-saving, such as cardiopulmonary resuscitation, emergent intubation and open suctioning of airways. Ideally, a combination of measures should be used to reduce exposures from these aerosol-generating procedures when performed on patients with suspected or confirmed influenza. However, it is appropriate to take feasibility into account, especially in challenging emergent situations, where timeliness in performing a procedure can be critical to achieving a good patient outcome. Precautions for aerosol-generating procedures include:

- Only performing these procedures on patients with suspected or confirmed influenza if they are medically necessary and cannot be postponed.

- Limiting the number of HCP present during the procedure to only those essential for patient care and support. As is the case for all HCP, ensure that HCP whose duties require them to perform or be present during these procedures are offered influenza vaccination.

- Conducting the procedures in an airborne infection isolation room (AIIR) when feasible. This will not be feasible for unplanned, emergent procedures, unless the patient is already in an AIIR. Such rooms are designed to reduce the concentration of infectious aerosols and prevent their escape into adjacent areas using controlled air exchanges and directional airflow. They are single patient rooms at negative pressure relative to the surrounding areas, and with a minimum of 6 air changes per hour (12 air changes per hour are recommended for new construction or renovation). Air from these rooms should be exhausted directly to the outside or be filtered through a high-efficiency particulate air (HEPA) filter before recirculation. Room doors should be kept closed except when entering or leaving the room, and entry and exit should be minimized during and shortly after the procedure. Facilities should monitor and document the proper negative-pressure function of these rooms. [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm]

- Considering use of portable HEPA filtration units to further reduce the concentration of contaminants in the air. Some of these units can connect to local exhaust ventilation systems (e.g., hoods, booths, tents) or have inlet designs that allow close placement to the patient to assist with source control; however, these units do not eliminate the need for respiratory protection for individuals entering the room because they may not entrain all of the room air. Information on air flow/air entrainment performance should be evaluated for such devices.

- HCP should adhere to standard precautions [http://www.cdc.gov/hicpac/2007IP/2007ip_part4.html#4], including wearing gloves, a gown, and either a face shield that fully covers the front and sides of the face or goggles.

- HCP should wear respiratory protection equivalent to a fitted N95 filtering facepiece respirator or equivalent N95 respirator (e.g., powered air purifying respirator, elastomeric) during aerosol-generating procedures (See definition of respirator in Appendix). When respiratory protection is required in an occupational setting, respirators must be used in the context of a comprehensive respiratory protection program that includes fit-testing and training as required under OSHA's Respiratory Protection standard (29 CFR 1910.134) [http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=12716].

- Unprotected HCP should not be allowed in a room where an aerosol-generating procedure has been conducted until sufficient time has elapsed to remove

potentially infectious particles. More information on clearance rates under differing ventilation conditions is available [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5210a1.htm#tab1].

- Conduct environmental surface cleaning following procedures (see section on environmental infection control).

7. Manage Visitor Access and Movement Within the Facility

Limit visitors for patients in isolation for influenza to persons who are necessary for the patient's emotional well-being and care. Visitors who have been in contact with the patient before and during hospitalization are a possible source of influenza for other patients, visitors, and staff.

For persons with acute respiratory symptoms, facilities should develop visitor restriction policies that consider location of patient being visited (e.g., oncology units) and circumstances, such as end-of-life situations, where exemptions to the restriction may be considered at the discretion of the facility. Regardless of restriction policy, all visitors should follow precautions listed in the respiratory hygiene and cough etiquette section.

Visits to patients in isolation for influenza should be scheduled and controlled to allow for:

- Screening visitors for symptoms of acute respiratory illness before entering the hospital.
- Facilities should provide instruction, before visitors enter patients' rooms, on hand hygiene, limiting surfaces touched, and use of personal protective equipment (PPE) according to current facility policy while in the patient's room.
- Visitors should not be present during aerosol-generating procedures.
- Visitors should be instructed to limit their movement within the facility.
- If consistent with facility policy, visitors can be advised to contact their healthcare provider for information about influenza vaccination.

8. Monitor Influenza Activity

Healthcare settings should establish mechanisms and policies by which HCP are promptly alerted about increased influenza activity in the community or if an outbreak occurs within the facility and when collection of clinical specimens for viral culture may help to inform public health efforts. Close communication and collaboration with local and state health

authorities is recommended. Policies should include designations of specific persons within the healthcare facility who are responsible for communication with public health officials and dissemination of information to HCP.

9. **Implement Environmental Infection Control**

Detailed information on environmental cleaning in healthcare settings can be found in CDC's *Guidelines for Environmental Infection Control in Health-Care Facilities* [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5210a1.htm] and *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings* [section IV.F. Care of the environment: http://www.cdc.gov/hicpac/2007IP/2007ip_part4.html].

Standard cleaning and disinfection procedures (e.g., using cleaners and water to preclean surfaces prior to applying disinfectants to frequently touched surfaces or objects for indicated contact times) are adequate for influenza virus environmental control in all settings within the healthcare facility, including those patient-care areas in which aerosol-generating procedures are performed. Management of laundry, food service utensils, and medical waste should also be performed in accordance with standard procedures. There are no data suggesting these items are associated with influenza virus transmission when these items are properly managed. Laundry and food service utensils should first be cleaned, then sanitized as appropriate. Some medical waste may be designated as regulated or biohazardous waste and require special handling and disposal methods approved by the State authorities.

10. Implement Engineering Controls

Consider designing and installing engineering controls to reduce or eliminate exposures by shielding HCP and other patients from infected individuals. Examples of engineering controls include installing physical barriers such as partitions in triage areas or curtains that are drawn between patients in shared areas. Engineering controls may also be important to reduce exposures related to specific procedures such as using closed suctioning systems for airways suction in intubated patients. Another important engineering control is ensuring that appropriate air-handling systems are installed and maintained in healthcare facilities [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5210a1.htm].

11. Train and Educate Healthcare Personnel

Healthcare administrators should ensure that all HCP receive job- or task-specific education and training on preventing transmission of infectious agents, including influenza, associated with healthcare during orientation to the healthcare setting. This information should be

updated periodically during ongoing education and training programs. Competency should be documented initially and repeatedly, as appropriate, for the specific staff positions. A system should be in place to ensure that HCP employed by outside employers meet these education and training requirements through programs offered by the outside employer or by participation in the healthcare facility's program [http://www.cdc.gov/hicpac/2007IP/2007ip_part4.html#1].

- Key aspects of influenza and its prevention that should be emphasized to all HCP include:
    - Influenza signs, symptoms, complications, and risk factors for complications. HCP should be made aware that, if they have conditions that place them at higher risk of complications, they should inform their healthcare provider immediately if they become ill with an influenza-like illness so they can receive early treatment if indicated.
    - Central role of administrative controls such as vaccination, respiratory hygiene and cough etiquette, sick policies, and precautions during aerosol-generating procedures.
    - Appropriate use of personal protective equipment including respirator fit testing and fit checks.
    - Use of engineering controls and work practices including infection control procedures to reduce exposure.

12. Administer Antiviral Treatment and Chemoprophylaxis of Patients and Healthcare Personnel when Appropriate

Refer to the CDC web site for the most current recommendations on the use of antiviral agents for treatment and chemoprophylaxis. Both HCP and patients should be reminded that persons treated with influenza antiviral medications continue to shed influenza virus while on treatment. Thus, hand hygiene, respiratory hygiene and cough etiquette practices should continue while on treatment http://www.cdc.gov/flu/professionals/antivirals/index.htm.

13. Considerations for Healthcare Personnel at Higher Risk for Complications of Influenza

HCP at higher risk for complications from influenza infection include pregnant women and women up to 2 weeks postpartum, persons 65 years old and older, and persons with chronic diseases such as asthma, heart disease, diabetes, diseases that suppress the

immune system, certain other chronic medical conditions, and morbid obesity [www.cdc.gov/hn1flu/highrisk.htm]. Vaccination and early treatment with antiviral medications are very important for HCP at higher risk for influenza complications because they can decrease the risk of hospitalizations and deaths. HCP at higher risk for complications should check with their healthcare provider if they become ill so that they can receive early treatment.

Some HCP may identify themselves as being at higher risk of complications, and express concerns about their risks. These concerns should be discussed and the importance of careful adherence to these guidelines should be emphasized. Work accommodations to avoid potentially high-risk exposure scenarios, such as performing or assisting with aerosol-generating procedures on patients with suspected or confirmed influenza, may be considered in some settings, particularly for HCP with more severe or unstable underlying disease.[1]

Appendix: Additional Information about Influenza

Information about Facemasks:

- www.cdc.gov/Features/MasksRespirators/
- www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/GeneralHospitalDevicesandSupplies/PersonalProtectiveEquipment/ucm055977.htm
- A facemask is a loose-fitting, disposable device that creates a physical barrier between the mouth and nose of the wearer and potential contaminants in the immediate environment. Facemasks may be labeled as surgical, laser, isolation, dental or medical procedure masks. They may come with or without a face shield. If worn properly, a facemask is meant to help block large-particle droplets, splashes, sprays or splatter that may contain germs (viruses and bacteria) from reaching your mouth and nose. Facemasks may also help reduce exposure of the wearer's saliva and respiratory secretions to others. While a facemask may be effective in blocking splashes and large-particle droplets, a facemask, by design, does not filter or block very small particles in the air that may be transmitted by coughs, sneezes or certain medical procedures.
- Facemasks are cleared by the U.S. Food and Drug Administration (FDA) for use as

[1] In considering this guidance, employers should familiarize themselves with the *Americans with Disabilities Act of 1990 (Pub. L. 101-336) (ADA),* which may impact how they implement this guidance. Details specific to the ADA and influenza preparedness are provided on the U.S. Equal Employment Opportunity Commission web site [http://www.eeoc.gov/facts/pandemic_flu.html].

medical devices. Facemasks should be used once and then thrown away in the trash.

Information about Respirators:

- www.cdc.gov/Features/MasksRespirators/
- www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/GeneralHospitalDevicesandSupplies/PersonalProtectiveEquipment/ucm055977.htm
- www.cdc.gov/niosh/npptl/topics/respirators/disp_part/RespSource3.html#e
- A respirator is a personal protective device that is worn on the face, covers at least the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases, or vapors. Respirators are certified by the National Institute for Occupational Safety and Health (NIOSH), CDC, and N95 respirators may also be cleared or approved by FDA as medical devices, depending on the intended use. A commonly used respirator is a filtering facepiece respirator (often referred to as an N95).
  - To work properly, respirators must be specially fitted for each person who wears one (this is called "fit-testing" and is usually done in a workplace where respirators are used).
  - OSHA Respiratory Protection eTool: https://www.osha.gov/SLTC/etools/respiratory/index.html

Key Facts about Influenza: http://www.cdc.gov/flu/keyfacts.htm

Clinical Information (signs and symptoms, modes of transmission, viral shedding): http://www.cdc.gov/flu/professionals/acip/clinical.htm

World Health Organization (WHO). Epidemic- and pandemic-prone acute respiratory diseases – Infection prevention and control in health care: http://www.who.int/csr/resources/publications/aidememoireepidemicpandemid/en/index.html

Control of Influenza Outbreaks in Acute-care Settings: http://www.cdc.gov/flu/professionals/infectioncontrol/healthcarefacilities.htm

Infection Control Measures for Preventing and Controlling Influenza Transmission in Long-Term Care Facilities: http://www.cdc.gov/flu/professionals/infectioncontrol/longtermcare.htm

Preventing Opportunistic Infections in HSCT/Bone Marrow Transplant Recipients (p. 18): http://www.cdc.gov/mmwr/PDF/rr/rr4910.pdf

Seasonal Influenza Vaccination Resources for Health Professionals:

http://www.cdc.gov/flu/professionals/vaccination/#patient

Guidance for Prevention and Control of Influenza in the Peri- and Postpartum Settings:
http://www.cdc.gov/flu/professionals/infectioncontrol/peri-post-settings.htm

Clinical Description & Lab Diagnosis of Influenza:
http://www.cdc.gov/flu/professionals/diagnosis/

Treatment (Antiviral Drugs): http://www.cdc.gov/H1N1flu/antivirals/

Influenza Vaccination Strategies:

Health and Human Services Toolkit to Improve Vaccination among Healthcare Personnel:
http://www.hhs.gov/ophs/programs/initiatives/vacctoolkit/index.html

Veterans Health Administration Influenza Manual:
http://www1.va.gov/vhapublications/ViewPublication.asp?pub_ID=1978

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August 23, 2010

Dear Colleague:

The Centers for Disease Control and Prevention (CDC), in collaboration with the New York City Department of Health and Mental Hygiene, is pilot-testing a new CDC-sponsored quality measure for reporting influenza vaccination among healthcare personnel (HCP). Influenza vaccination of HCP is associated with lower rates of patient illness and death from influenza, and fewer sick days among HCP. The National Quality Forum (NQF), a nonprofit organization dedicated to healthcare quality improvement, has recently issued a time-limited endorsement to this standardized quality measure. Quality measures that receive full NQF endorsement may be used by the Centers for Medicare and Medicaid Services (CMS) or other organizations.

The goals of the pilot test are: (1) to determine the feasibility of implementing the quality measure in various healthcare institutions; and (2) to identify barriers and facilitators to implementing this measure widely. Participation in this project is voluntary. Data obtained by CDC from this pilot will be published in aggregate form and will not individually identify participating institutions in any reports or publications. Institution-level data will be shared with the New York City Department of Health and Mental Hygiene, who may use it for institution-based public reporting of HCP influenza vaccination rates, based on existing laws or agreements to this effect.

Participating institutions will be expected to electronically submit two reports (mid-point and final) to CDC describing rates of influenza vaccination, medical contraindications to vaccination, and declination of influenza vaccination among HCP working at the institution. We will also be collecting information about data sources and challenges to reporting data.

The data and feedback we receive from you during this pilot project will shape the specifications of the final measure for endorsement by NQF. Your participation in this pilot is extremely important to ensure that this measure is practical and useful for healthcare institutions of all types and sizes across the country.

Thank you for your participation in this effort to protect and promote the health of your staff and their patients. For further information regarding this project or to enroll your facility, please contact Dr. Anita Geevarughese in the Bureau of Immunizations at (212) 676-2282 or email at ageevarughese@health.nyc.gov.

Sincerely,

Lance E. Rodewald, M.D.
Director
Immunization Services Division
National Center for Immunization and
Respiratory Diseases

NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE
Thomas Farley, M.D., M.P.H.
Commissioner

September 2010

Dear Colleague:

The New York City Department of Health and Mental Hygiene (DOHMH) is currently enrolling facilities to field test a new CDC-sponsored standardized measure to determine influenza vaccination coverage rates among healthcare personnel. This is a national multi-center project that will include hospitals, community health centers and other facility types.

We are asking if you would be willing to participate in this project. Your facility would be required to track influenza vaccination coverage among healthcare personnel for the 2010-2011 season and requested to define and report their activities in the following areas:

- Definition of healthcare personnel
- Methods and data sources for capturing coverage rates, including tracking of declinations, medical contraindications and documented immunizations from other providers
- Protocols for reporting.

Annual influenza immunization has become the standard of care for healthcare personnel who may be at greater risk of transmitting influenza to high-risk patients. However, national influenza immunization coverage rates for healthcare personnel still remain at only ~40%. Given this new standard, your assistance in developing a consistent measure to determine coverage levels and to compare coverage across institutions is imperative to increasing health care personnel vaccination levels. Results from this pilot will be used to create a comprehensive and standardized measure that may be utilized by CMS or other organizations to measure performance in healthcare facilities.

Your participation in this project should involve little more time or effort than required for routine employee health tracking efforts. The DOHMH will provide technical support and tracking tools to facilities. Sites will also be requested to participate in periodic conference calls with other similar medical facilities to provide program updates, report on data collected and share best practices. Your facility may be asked to participate in a site visit for validation purposes. In exchange for your time and participation, DOHMH will be offering limited quantities of free influenza vaccine.

To enroll your facility, or for further information, please contact Dr. Anita Geevarughese in the Bureau of Immunization at 212-676-2282 or email at ageevarughese@health.nyc.gov.

Thank you for your participation in this project.

Sincerely,

Thomas Farley, M.D., M.P.H.
Commissioner