



INFLUENZA PREVENTION AND CONTROL, 2012-2013

- **Vaccinate everyone aged 6 months and older against influenza.**
- **Vaccinate day care and school-aged children, who are key transmitters of disease, as early as possible.**
- **Give inactivated vaccine to all pregnant women in any trimester.**
- **Vaccinate all health care workers against influenza.**
- **New health care worker vaccination reporting requirements for acute-care facilities will take effect in January 2013.**

On average, more than 200,000 people in the United States (US) are hospitalized each year for influenza-related respiratory and circulatory conditions.¹ In 2011-2012, in New York State as well as nationwide, hospitalization rates were highest in adults aged 65 years and older and children younger than 5 years old.^{2,3} During that period, the number of emergency department visits in New York City (NYC) due to influenza-like illness was highest in children younger than 5 years old.⁴ Most of the 1,654 influenza- and pneumonia-related deaths in NYC were in people older than 65 years.⁵

Influenza activity remained relatively mild throughout the 2011-2012 season, with lower rates of hospitalization and fewer deaths due to influenza and pneumonia than in recent years. Influenza activity began to rise in February and transiently peaked only in mid-March, demonstrating the unpredictability of influenza activity. Severity of illness can also vary from year to year.³ Global surveillance data indicate changes in the pattern of circulating influenza viruses; as a result, the vaccine for the 2012-2013 season includes 2 new strains.³ Increased influenza activity was noted in several Southern Hemisphere nations in July; providers should be prepared for potential increases in local activity later this season.

Vaccination remains a critical preventive measure against influenza and its potentially severe complications. Everyone aged 6 months and older, particularly those in higher-risk groups, such as older

adults, young children, pregnant women, people of any age with underlying chronic conditions (eg, chronic lung and cardiovascular disease or a metabolic or endocrine disorder such as diabetes), and health care workers, should be routinely immunized each year (**Boxes 1 and 2**).⁶ Every available tool to increase vaccination rates in the community should be used. Strategies such as comprehensive health care worker vaccination programs and increased vaccination of day care and school-aged children can potentially reduce influenza transmission.⁷⁻¹⁰ Pharmacies that offer influenza vaccine also play an important role in improving vaccination coverage in adults.



BOX 1. IMPORTANT GROUPS FOR INFLUENZA VACCINATION

- Children aged 6 through 59 months, especially those <2 years
- People aged ≥50 years, especially those ≥65 years
- People with certain high-risk medical conditions (**Box 2**)
- Women who are pregnant or plan to be pregnant
- Health care workers
- Residents of long-term care facilities (aged ≥6 months)
- American Indians/Alaskan Natives
- People with body mass index ≥40 kg/m²
- Household contacts and caregivers of:
 - Children aged <5 years, especially those <6 months
 - Adults aged ≥50 years, especially those ≥65 years
 - People with certain medical conditions (**Box 2**)

BOX 2. MEDICAL CONDITIONS THAT INCREASE RISK FOR SEVERE INFLUENZA COMPLICATIONS¹¹

- Chronic pulmonary disorders (including asthma)
- Cardiovascular diseases (except hypertension)
- Renal, hepatic, neurologic/neurodevelopmental, hematologic, metabolic, or endocrine disorders (including diabetes mellitus)
- Weakened immune system due to disease such as HIV or AIDS, medications such as chronic steroids, or cancer treatment (ie, radiation or chemotherapy)
- Long-term aspirin therapy in children and adolescents <19 years of age because of risk for Reye syndrome after influenza infection

INFLUENZA IN CHILDREN

Influenza in children results in increased visits to clinics, emergency departments, and hospitals, increased use of antibiotics, school absenteeism, and lost parental work time.^{12,13} Children aged 6 through 59 months and children with certain medical conditions such as asthma and neurologic/developmental disorders are among those at higher risk for severe complications of influenza (**Box 2**).¹¹ Even without high-risk medical conditions,¹⁴ children younger than 5 years old, especially those younger than 2 years old, are at increased risk for hospitalization from flu.^{9,11}

Children in day care and school are a major source of influenza transmission in the community and should be vaccinated as early as possible.⁸⁻¹¹ Vaccinated children in day care spread 42% less febrile respiratory illness to their unvaccinated household contacts—and 80% less to unvaccinated household contacts aged 5 through 17 years—compared with unvaccinated children in day care.¹⁰ School-aged children have the highest incidence

of influenza,^{9,11} although the illness is often not diagnosed.¹⁵ It is estimated that a vaccination rate as low as 20% in school-aged children could potentially reduce mortality in adults aged 64 years and older more effectively than a vaccination rate of 90% in older adults.⁸

Per recommendations from the Centers for Disease Control and Prevention (CDC), all children aged 6 months and older should receive at least 1 dose of seasonal influenza vaccine. Children aged 6 months through 8 years may also require a second dose of vaccine, administered at least 4 weeks after the first dose, for optimal protection against influenza disease. Children requiring a second dose include¹⁶:

1. All children who have not received at least 2 doses of seasonal influenza vaccine in the past.
2. Children who have received 2 or more doses of seasonal influenza vaccine in the past, but did not receive at least 1 dose of seasonal influenza vaccine in either the 2010-11 or 2011-12 season or 1 dose of monovalent 2009 (H1N1) vaccine.

INFLUENZA IN ADULTS

CDC recommends annual influenza vaccination for all adults, especially for people at higher risk (**Boxes 1 and 2**).

Pregnant women are an important priority group for vaccination (**Box 3**).^{11,17} Educate pregnant patients about vaccination to prevent influenza in themselves and their infants (see **Resources** for free patient educational

BOX 3. INFLUENZA IN PREGNANCY

Women are 5 times more likely to be vaccinated if their providers offer or recommend influenza vaccination during pregnancy.¹⁷

The American College of Obstetricians and Gynecologists, American Academy of Family Physicians, Advisory Committee on Immunization Practices, and many other professional organizations strongly encourage providers to urge their pregnant patients to get vaccinated against influenza. Women should be vaccinated in any trimester with a single dose of trivalent inactivated vaccine (TIV) as soon as vaccine is available.

- During pregnancy, women are more susceptible to severe illness from influenza¹⁸ and have a 4-fold greater risk of influenza-related hospitalization than nonpregnant women.¹⁹
- Pregnant women with influenza have an increased risk of premature labor and delivery.^{20,21}
- Pregnant women who are vaccinated protect themselves and their infants younger than 6 months; these infants are not old enough to receive vaccine and are at high risk for influenza-related hospitalization.^{17,20}
- Vaccination in pregnancy is safe. In the last decade, influenza vaccine has been given to millions of pregnant women without causing harm.¹⁸

materials).¹⁷ Women who are known to be pregnant should be immunized with inactivated vaccine containing no more than 1.25 µg of mercury per 0.5 mL dose. Use single-dose vials of vaccine and prefilled syringes because multidose vials contain the mercury-based preservative thimerosal.²² There is no need to test for pregnancy before vaccinating. Postpartum women can receive either trivalent inactivated (TIV) or live attenuated influenza vaccine (LAIV), even if they are breastfeeding.²⁰

Health care workers are at increased risk for acquiring influenza infection and transmitting disease to their patients, colleagues, and families. All health care workers should receive annual influenza vaccination with either TIV or LAIV. Health care workers younger than 50 years old may receive LAIV unless they are pregnant or have chronic medical conditions (**Box 2**).^{23,24} TIV is recommended for health care workers who are in close contact with severely immunocompromised patients being cared for in a protective environment (eg, bone marrow or stem cell transplant unit).^{11,33}

BOX 4. VACCINATION OF HEALTH CARE WORKERS

- High influenza vaccination coverage protects staff and patients and reduces disease burden, health care costs, and absenteeism.²⁵⁻²⁷
- In 2011-2012 in New York State, only 44% of health care workers received influenza vaccination,²⁸ far below the 90% target set by Healthy People 2020.
- According to the 2009 NYC Community Health Survey, only about 42% of health care workers in NYC reported receiving an influenza vaccination within the preceding 12 months.²⁹
- The National Vaccine Advisory Committee recommends that health care employers and facilities educate providers about influenza vaccination, integrate vaccination into existing programs, and consider mandatory immunization.³⁰
- The American College of Physicians, Infectious Diseases Society of America, Pediatric Infectious Diseases Society, and other groups recommend mandatory vaccination of all health care workers (barring medical contraindications) as the best way to achieve targeted immunization rates.³¹
- **As of January 2013, the Centers for Medicare and Medicaid Services (CMS) will require acute-care facilities to monitor and report summary counts of health care worker influenza vaccinations through CDC's National Healthcare Safety Network (NHSN).**⁷ Facilities failing to comply with the reporting requirements will be subject to payment reduction, and quality data will be made publicly available on the Hospital Compare Web site (www.hospitalcompare.hhs.gov) starting in the 2013-14 season.⁷ CMS has also finalized reporting requirements for ambulatory surgical centers to begin in 2014.³²

All medical facilities employing health care workers should provide vaccine to their staff in line with standards from the Joint Commission on the Accreditation of Healthcare Organizations as well as recommendations of numerous professional organizations, including the Association for Professionals in Infection Control and the Society for Healthcare Epidemiology of America. Evidence-based approaches such as mobile carts, vaccination of senior staff, and gaining support of institutional leaders can help facilities increase vaccination coverage.²⁵ To accommodate health care workers, vaccination should be provided during all shifts and on weekends. In the absence of an employer requirement, significantly higher vaccination coverage can be achieved among health care personnel who are offered vaccination onsite, free of charge, and for more than 1 day.³⁴ For more information on improving vaccination rates in health care workers, see **Resources—National Foundation for Infectious Diseases**.

In January 2013, new national reporting requirements for health care worker vaccination rates will go into effect for acute-care facilities (**Box 4**). Facilities should immediately begin to familiarize themselves with the requirements and collaborate with appropriate departments in their institution to assist in data collection. Refer to www.nyc.gov/flu for more information.

PNEUMOCOCCAL DISEASE AND INFLUENZA

Pneumococcal disease is a serious complication of influenza that leads to an estimated 5,000 deaths annually in the US.³⁵ Pneumococcal polysaccharide vaccine (PPSV) coverage rates among New Yorkers aged 65 and older have been persistently below national goals and vary by racial/ethnic groups, with rates of 40% for Asians, 41% for blacks, 48% for Latinos, and 54% for non-Hispanic whites.³⁶

Recommend pneumococcal vaccine at any time of year for patients who are

- Aged 65 years and older.
- Aged 2 through 64 years with chronic cardiovascular (except hypertension), hepatic, or pulmonary disease (eg, asthma); diabetes; cochlear implants; functional or anatomic asplenia (including those with sickle cell disease).
- Aged 19 through 64 years who smoke cigarettes.¹¹
- Aged 2 years and older and have compromised immunity, including those with HIV, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure, and nephritic syndrome; dialysis patients; and people receiving immunosuppressive therapy or organ or bone marrow transplants.

BOX 5. COMMON MISCONCEPTIONS ABOUT INFLUENZA AND VACCINATION^{37,38}

Myth 1. Influenza is no worse than a very bad cold and is only dangerous in older people.

Fact. Influenza is a severe respiratory illness that can cause misery for patients. Symptoms include congestion, fever, cough, body aches, and complete exhaustion, and can last for 2 to 3 weeks. While most people who become seriously ill or die from influenza complications are older than 65 years, influenza can be dangerous for very young children, healthy younger adults, and people of any age with chronic health conditions. People at lower risk for complications can still transmit influenza to others who are susceptible, including children less than 6 months old, who cannot be vaccinated.

Myth 2. Chronic health conditions such as cardiac disease or asthma are contraindications to influenza vaccination.

Fact. Patients with chronic health conditions are at higher risk for complications from influenza and should be vaccinated annually with a trivalent inactivated vaccine (TIV).

Myth 3. Pregnancy is a contraindication to influenza vaccination.

Fact. Pregnant women are at higher risk for severe complications from influenza (see **Box 3**). Vaccination protects both women and their newborns. Thimerosal-free preparations of TIV may be used during all stages of pregnancy.

Myth 4. Close contact with immunosuppressed patients is a contraindication to influenza vaccination.

Fact. Immunosuppressed patients may be at increased risk of contracting influenza disease *and its complications* even if vaccinated, so it is *especially* important for close contacts, including health care workers, to be vaccinated, preferably with inactivated vaccine. See page 29 for information on live attenuated influenza vaccine.

Myth 5. Influenza vaccination will cause a mild version of the flu.

Fact. Inactivated influenza vaccine contains killed viruses that cannot cause infection. Live attenuated influenza vaccine contains only weakened viruses that replicate at cooler temperatures within the nose and may therefore cause postvaccination nasal congestion. The viruses cannot infect the lungs or other areas where the temperature is warmer. Occasionally, people may report mild transient reactions, including fever, muscle pain, chills, tiredness/weakness, or headache. These reactions generally last only 1 or 2 days as the immune system produces antibodies.³⁹

Myth 6. It's too early to get vaccinated in August and too late after the end of November.

Fact. Influenza vaccination should begin as soon as vaccine becomes available and continue until vaccine expires. Protection will last all season, into the following year. Furthermore, influenza activity is unpredictable; outbreaks can occur as late as May.

Myth 7. Influenza vaccine contains mercury, which is unsafe.

Fact. Multidose vials of influenza vaccine contain a small amount of thimerosal, a preservative used to protect against bacterial contamination. Ethylmercury is a metabolite of thimerosal and differs from methylmercury, which is a neurotoxic agent.⁴⁰ Numerous studies have found no association between thimerosal and developmental disorders. Thimerosal is usually only associated with minor local injection site reactions such as redness and swelling.⁴¹

Myth 8. It's better not to get vaccinated and become "naturally" immune to influenza.

Fact. Influenza is a debilitating preventable illness with potentially severe complications. Vaccination is the best method of protection against the morbidity and mortality associated with influenza.

People with functional or anatomic asplenia or any immunocompromising condition will require 1 additional PPSV dose 5 years after their first dose. Similarly, people who received PPSV before age 65 need to receive 1 additional dose after turning 65 if at least 5 years have elapsed since the previous dose. For full recommendations, see www.cdc.gov/mmwr/preview/mmwrhtml/mm5934a3.htm.

CDC's Advisory Committee on Immunization Practices recently endorsed vaccination of immunocompromised adults aged 19 years and older with 13-valent pneumococcal conjugate vaccine (PCV-13). Recommendations on using PCV-13 in adults will be available at www.cdc.gov.

IMPROVING VACCINATION RATES

Use a variety of strategies to help improve vaccination coverage in your facility. Provider recommendation has a strong effect on patient acceptance of vaccination. Offer influenza vaccine (and pneumococcal vaccine, if appropriate) at every patient visit from the time vaccine becomes available until it expires. Educate patients and staff about influenza vaccination and dispel any misconceptions that may hinder efforts to increase vaccination in your practice (**Box 5**). Do not limit influenza vaccination for patients to specified hours or weekend

BOX 6. HEALTH DEPARTMENT TOOLS TO INCREASE IMMUNIZATION

- **The Citywide Immunization Registry (CIR)** is an electronic central recordkeeping system that tracks immunizations of people vaccinated in New York City and securely maintains immunization records. The CIR offers guidance on immunizations that are due and can generate reminder/recall lists of patients due for immunizations, including children aged 6 months through 8 years who may require a second dose of influenza vaccine. The CIR can also print letters and address labels for patient reminders.

You must report all vaccinations administered to children <19 years of age to the CIR within 2 weeks of administration. You may report vaccinations given to people aged 19 years and older if you have the patient's written consent. Encourage your adult patients to participate in the CIR to ensure future availability of vaccination records.

For further information or to register with the CIR, visit the CIR Web site, www.nyc.gov/health/cir, or call 347-396-2400.

- **The Primary Care Information Project (PCIP)** helps providers adopt electronic health records and use them to identify patients who are due for follow-up or routine preventive care appointments, track immunization coverage in their practice, and report immunizations to the CIR. For more information, contact PCIP at 347-396-4888 or by e-mail at pcip@health.nyc.gov.
- **NYC Health Department publications on influenza and pneumococcal disease:**
www.nyc.gov/html/doh/html/pub/pub.shtml?t=imm
www.nyc.gov/html/doh/downloads/pdf/epi/databrief7.pdf

clinics. Keep a flexible schedule if possible, and offer patients a variety of options to help fit their needs.

Reminding patients via phone calls or postcard mailings may improve vaccination coverage. Many electronic medical record systems, as well as the Citywide Immunization Registry (CIR), offer reminder/recall features to contact patients due for influenza immunization (**Box 6**).

Pharmacy-based vaccination can serve as an important adjunct to increase vaccination coverage in the community (**Box 7**). Be sure to ask patients aged 18 and older if they have received an influenza vaccination this season in a pharmacy or other venue and document this in the patient's medical record.

AVAILABLE VACCINES

This season's influenza vaccine contains the A/California/7/2009 (H1N1)-like virus, and 2 new strains: an A/Victoria/361/2011 (H3N2)-like virus and a B/Wisconsin/1/2010-like virus (from the B/Yamagata lineage of viruses).¹⁶ The 2012-2013 influenza vaccine is available in both inactivated and live attenuated forms. See

BOX 7. PHARMACISTS AND INFLUENZA VACCINATION

New York State-licensed pharmacists who are certified by the New York State Education Department can administer influenza and pneumococcal vaccines to adults aged 18 years and older if they obtain a non-patient-specific standing order from a New York State-licensed physician or nurse practitioner. Starting in 2012, pharmacists may also administer herpes zoster vaccine if they receive a patient-specific order from a prescribing health care provider. Pharmacists who are interested in offering influenza and pneumococcal vaccination but are unable to obtain a standing order should contact the New York City Health Department at www.nyc.gov/html/doh/flu/html/public/pharma.shtml for further information.

Resources—CDC vaccine dosing table for currently licensed influenza vaccine formulations.

Trivalent inactivated vaccine (TIV) is available in intramuscular and intradermal formulations. The intradermal vaccine, Fluzone[®] Intradermal, is formulated as a single-dose, prefilled microinjection syringe that contains 40% less antigen in a smaller volume than intramuscular TIV preparations and has a much shorter needle. Fluzone Intradermal vaccine is indicated for use in adults aged 18 through 64 years.⁴² Fluzone[®] High-Dose is an intramuscular vaccine indicated for use in adults aged 65 years and older; it has a higher dose of antigen to stimulate a better immune response.⁴³

While there are few contraindications to TIV, people who have moderate to severe acute febrile illness should defer vaccination until their illness improves. A history of Guillain-Barré syndrome (GBS) within 6 weeks following a dose of TIV is considered a precaution for use of TIV.¹¹ Allergy to eggs is no longer considered an absolute contraindication to vaccination with TIV (see page 30).

Live attenuated influenza vaccine (LAIV) is administered intranasally and licensed for use only in healthy people aged 2 through 49 years. It should not be given to people aged 50 years or older; children aged 6 through 23 months; children 2 through 4 years of age with asthma or 1 or more episodes of wheezing within the past year; pregnant women; or people with certain chronic health conditions such as asthma, diabetes, heart disease, kidney disease (**Box 2**), or a history of GBS.¹¹ When considering LAIV for children aged 2 through 4 years, screen for possible reactive airway disease and use TIV if hyperreactivity is identified.¹¹ People, including health care personnel, who have received LAIV should wait 7 days after vaccination to visit severely immunocompromised patients in protected environments (eg, a bone marrow or stem cell transplant unit)¹¹ or use TIV instead.

ADMINISTERING VACCINE

Vaccine distribution for this season has already begun. Vaccinate all of your eligible patients for influenza and continue through the spring until the vaccine expires.

Obtaining vaccine: Although generally prebooked in the spring, influenza vaccine can still be purchased. Go to www.nyc.gov/html/doh/downloads/pdf/imm/flu-imm-order-info.pdf for a list of manufacturers and www.flusupplynews.com for a list of distributors. If you are enrolled in the Vaccines for Children (VFC) program, order vaccine for all eligible children and adolescents online at www.nyc.gov/health/cir. Be sure to order an adequate supply of preservative-free vaccine to administer to young children and pregnant women.

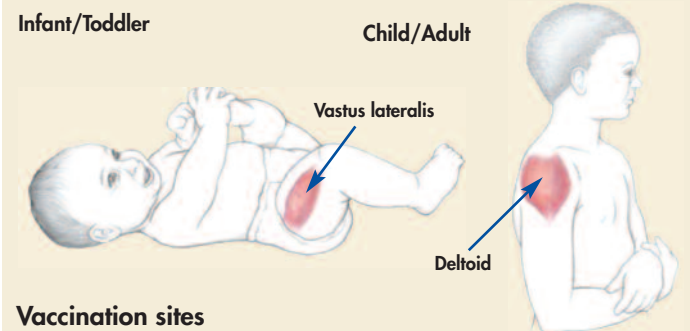
Storing vaccine: Store vaccines correctly to ensure full potency (see www.immunize.org/catg.d/p3035.pdf for a sample safety and storage checklist). Store vaccine in a standard household-size refrigerator with a separate freezer compartment; do not use a dormitory-style unit or store food, beverages, or clinical specimens along with vaccines. Refrigerator temperature should be maintained at 35° to 46° Fahrenheit (2° to 8° Celsius) and be logged twice per day with a certified and calibrated thermometer. Place “Do Not Unplug” signs next to electrical outlets for the refrigerator and freezer and display emergency contact information in the event of a power failure. Do not use expired vaccines as they may be ineffective. If vaccines are exposed to temperatures outside of the recommended range, call the vaccine manufacturer to determine if they may still be used.

Vaccination forms: Give patients and parents the Vaccine Information Statement (VIS) to read before vaccination as required by federal law. Separate statements are available for TIV and LAIV in multiple languages (www.immunize.org/VIS). Have those refusing vaccination sign a Vaccine Refusal Form, available at www.immunize.org/catg.d/p4068.pdf.

Administering vaccine: Trivalent influenza vaccine is administered as either an intramuscular or intradermal injection into the deltoid area of the upper arm at a 90° angle. For intramuscular vaccine, choose needle size based on the patient’s weight: heavier patients require a longer needle (see **Figure**). The needle should be long enough to penetrate the muscle mass and prevent vaccine from seeping into subcutaneous tissue, but not long enough to reach the underlying bone.⁴⁴ Live attenuated influenza vaccine is administered intranasally. Intradermal vaccine is administered using the prefilled microinjection syringe system described earlier.

Recordkeeping: Document all vaccinations administered in the patient’s electronic or paper medical record and include the VIS edition date and the date the VIS was given to the patient or parent/guardian. If the

FIGURE. ANATOMIC SITES FOR INTRAMUSCULAR IMMUNIZATION



Vaccination sites

- Adults and older children: Deltoid muscle.
- Infants and children aged 6 through 35 months: Preferred site is the anterolateral aspect of the thigh.

Recommended needle lengths

- Adults and older children: ≥1 in. (>25 mm) (longer needles may be needed, depending on the patient’s size).
- Children with adequate deltoid muscle mass: 7/8 in. to 1.25 in.
- Children aged <12 months: 7/8 in. to 1 in.

Sources: ACIP recommendations and product prescribing information.

Figure used with permission of the California Department of Public Health Immunization Branch.

patient has signed a Vaccine Refusal Form, include the form in the medical record. Be sure to record vaccinations given outside of your medical facility as well. Many electronic medical records, including those used by the Primary Care Information Project, have a feature for this. Facilities without electronic health records may use the Vaccine Administration Record for Adults (www.nyc.gov/html/doh/downloads/pdf/csi/flu03kit-clin-adminrec.pdf) or a preventive services flow sheet.

ADVERSE EVENTS

All vaccines can be associated with minor reactions, including pain and redness at the injection site, headache, fatigue, or discomfort.⁴⁵ Injection site reactions, including redness, swelling, induration, and itching, are more common with the TIV intradermal vaccine than with the intramuscular formulations; these reactions resolve within 3 to 7 days. Other transient side effects of intradermal vaccine include headache, muscle ache, and tiredness.^{6,42,43} The most common adverse events reported with LAIV are runny nose or nasal congestion in all ages, fever >100°F in children aged 2 to 6 years, and sore throat in adults.⁴⁶

Allergic reactions: Allergy to egg protein is not an absolute contraindication to administration of TIV when proper precautions are taken, and it must be distinguished from allergy to influenza vaccine. Patients reporting less

severe egg allergy, that is, those who can eat lightly cooked egg (eg, scrambled egg) without reaction, can receive TIV per the usual protocol. Patients who have previously experienced **only** hives after eating eggs or foods containing eggs can also receive TIV (not LAIV), but must be observed for at least 30 minutes afterward for signs of a reaction. There is no need to divide doses or perform skin testing prior to administration.⁶ Severe allergic reactions to influenza vaccine are rare. A previous severe allergic reaction to influenza vaccine is always a contraindication to receipt of vaccine, regardless of the component suspected responsible for the reaction.⁶ Patients who have experienced severe symptoms, such as cardiovascular changes (eg, angioedema), respiratory distress, lightheadedness, gastrointestinal reactions (eg, nausea, vomiting), or who required epinephrine or other emergency medical intervention after egg exposure, are more likely to have a serious systemic or anaphylactic reaction upon reexposure to egg proteins and should be referred to a physician with expertise in managing allergic conditions for further evaluation.⁶

All vaccines should be administered in settings in which personnel and equipment for rapid recognition and treatment of anaphylaxis are available.⁶

ANTIVIRAL MEDICATIONS

Antiviral agents are used for treatment of influenza-infected individuals and are most effective in reducing the severity of illness when administered within 48 hours after illness onset.⁴⁷ Oseltamivir (Tamiflu[®]) capsules and oral suspension and zanamivir (Relenza[®]) oral inhalation are active against influenza A and B viruses. They may also be used as chemoprophylaxis for health care workers and people at higher risk for complications, if they are not vaccinated (eg, vaccine is medically contraindicated).⁴⁷ Two other antiviral agents, amantadine (Symmetrel[®], Symadine[®]) and rimantadine (Flumadine[®]), are active only against influenza A viruses and are not recommended for treatment or prophylaxis of currently circulating viruses due to drug resistance.⁴⁷

REPORTING AND SURVEILLANCE

The NYC Health Department and its many partners regularly monitor influenza activity. Updates are posted both on the Health Department's Health Alert Network (HAN), which providers can register for at NYC MED (www.nyc.gov/health/nycmed) and at its influenza Web site (www.nyc.gov/flu).

The NYC Health Department asks providers to report:

- Nosocomial cases of lab-confirmed influenza or clusters of 2 or more cases of influenza-like illness in Article 28 facilities. Report these cases to the New York State Department of Health at 518-474-1142 or

electronically through the Health Commerce System (HCS) Nosocomial Outbreak Reporting Application at https://commerce.health.state.ny.us/hcsportal/hcs_home.portal?_nfpb=true&_pageLabel=hcs_home_page, or complete a Healthcare Facility Infection Control (Nosocomial) Report available at www.nyhealth.gov/forms/doh-4018.pdf and fax to 518-402-5165.

- Influenza-associated deaths in people aged 17 years and younger should be reported to the NYC Health Department at 347-396-2600 if they meet either of these criteria:
 - clinically compatible illness in which there is a positive influenza test; or
 - death from an unknown febrile respiratory illness.

Join the NYC Health Department's ILINet Influenza Surveillance Program. In less than 30 minutes a week, you can participate as a sentinel physician in an important national public health initiative. For more information, go to www.cdc.gov/flu/weekly/fluactivitysurv.htm. The data you provide will help us monitor the transmission of influenza in NYC. In return, you will get a limited number of free influenza tests at the NYC Public Health Laboratory and guidance on influenza management. Please contact Beth Nivin at 347-396-2616, or e-mail bnivin@health.nyc.gov for further information.

SUMMARY

Infection with influenza can cause severe illness and significant morbidity and mortality, including illness due to pneumococcal infection. Everyone aged 6 months and older should be vaccinated against influenza, especially people in priority groups. All health care workers should be vaccinated to reduce the spread of influenza. Children in day care and school are key transmitters of disease and should be vaccinated as early as possible. Vaccinate pregnant women in any trimester with TIV.

Begin offering vaccine as soon as it becomes available and continue until vaccine expires. Increase vaccination rates in your practice using multiple evidence-based approaches. Pharmacy-based vaccination can be an important adjunct to your efforts to increase influenza and pneumococcal vaccination in adults. Being a strong advocate for immunization can help increase coverage rates and lower morbidity and mortality due to influenza and pneumococcal infection in New York City. ♦



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References Available Online at www.nyc.gov/health/chi

RESOURCES

NYC Department of Health and Mental Hygiene

- Provider Access Line. 9:00 AM to 5:00 PM:
1-866-692-3641/1-866-NYC-DOH1
After business hours: 212-764-7667
- Influenza Web site: www.nyc.gov/flu
- Health Alert Network (HAN): Sign up at
<https://a816-healthpsi.nyc.gov>
<https://a816-health29ssl.nyc.gov/sites/NYCHAN/WebPages/home.aspx> or 1-888-692-3641.
- E-mail questions to DOHMH: nycflu@health.nyc.gov
- Provider information:
www.nyc.gov/html/doh/html/imm/imminfo.shtml
- *City Health Information*. Implementing Panel Management to Improve Patient Care.
www.nyc.gov/html/doh/downloads/pdf/chi/chi30-2.pdf
- Flu Locator:
www.nyc.gov/html/doh/flu/html/home/home.shtml
- Free patient educational materials in multiple languages:
www.nyc.gov/html/doh/html/imm/flu-ptk5.shtml
- Primary Care Information Project: 347-396-4888 or e-mail pcip@health.nyc.gov
- Bureau of Immunization:
www.nyc.gov/html/doh/html/imm/imm.shtml

New York State Department of Health

- Bureau of Communicable Disease Control: 518-473-4439
- Nosocomial Report Form DOH 4018:
www.health.state.ny.us/forms/doh-4018.pdf

Other Organizations

- Centers for Disease Control and Prevention: 1-800-232-4636 or www.cdc.gov/flu
 - Influenza vaccine dosing table, 2012-2013:
<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6132a3.htm#tab>
 - Seasonal influenza vaccination resources for health professionals: www.cdc.gov/flu/professionals/vaccination
 - Free patient education materials:
www.cdc.gov/flu/freeresources/index.htm
 - Recommended Adult Immunization Schedule—United States, 2012:
www.cdc.gov/vaccines/recs/schedules/downloads/adult/mmwr-adult-schedule.pdf
 - Recommended Immunization Schedules for Persons Aged 0 Through 18 Years—United States, 2012:
www.cdc.gov/vaccines/recs/schedules/downloads/child/0-18yrs-11x17-fold-pr.pdf
- Immunization Action Coalition: www.immunize.org/influenza
- National Foundation for Infectious Diseases: www.nfid.org/idinfo/influenza
 - Influenza immunization among health care personnel:
www.nfid.org/pdf/publications/hcwmonograph.pdf
 - Immunizing healthcare personnel against influenza: best practices report: www.nfid.org/Docs/hcwtoolkit/bestpracticestoolkitdocument.pdf
- American College of Physicians Immunization Portal:
<http://immunization.acponline.org>