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INFLUENZA PREVENTION AND CONTROL, 2016-2017

- Vaccinate all patients aged 6 months and older as soon as flu vaccine is available.
- Give inactivated vaccine to all pregnant women in any trimester to prevent influenza infection and complications in both the woman and her infant.
- Ensure that you and your staff receive flu vaccine; enlist staff to educate patients on the benefits of flu vaccine and to dispel myths.
- Live-attenuated influenza vaccine (LAIV) is not recommended for use this year because of lower effectiveness.*
- Consider high-dose or adjuvanted flu vaccine for patients aged 65 years and older.*

* New recommendation for the 2016-2017 influenza season.

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Influenza is a highly contagious viral infection that causes debilitating illness, hospitalizations, and deaths every year. In 2014, influenza and its complications (including pneumonia) was the third leading cause of death in New York City (NYC), accounting for 2,220 deaths.¹ Certain groups are at greater risk for influenza complications (see page 38), including people aged 65 and older, who account for more than half of all flu-related hospitalizations² and about 90% of associated deaths in the US.³

Vaccination is the best protection against influenza and its complications. During the 2014-2015 flu season, vaccination averted an estimated 2 million influenza cases and 67,000 related hospitalizations in the US.⁴ Despite the proven benefit of vaccination, only 57% of NYC adults aged 50 and older received influenza vaccine in 2014.⁵ As of early November 2015, nationwide vaccination rates were well below Healthy People 2020 targets for children younger than 18 (39% vs 70% target) and for adults aged 65 and older (60% vs 70% target).⁶



Vaccination coverage is highest when physicians strongly recommend flu vaccine to their patients and are vaccinated themselves.⁷ Increase coverage in your practice by taking the following steps:

- Strongly recommend and offer vaccination for all patients aged 6 months and older as soon as vaccine is available, especially for patients at higher risk for influenza and its complications (**Boxes 1 and 2**).⁸
- Ensure that you and your entire staff are vaccinated to protect yourselves and your patients who may be vulnerable to infection.⁹
- Enlist clinical staff to help explain the benefits and side effects of vaccination to patients.

BOX 1. IMPORTANT GROUPS TO VACCINATE⁸

- Children younger than age 5, especially those younger than 2 years old
- Adults aged 65 years and older
- Pregnant women (and women up to 2 weeks postpartum)
- Residents of nursing homes and other long-term care facilities
- American Indians and Alaskan Natives
- People with certain high-risk medical conditions (**Box 2**)
- Health care workers
- Household contacts and caregivers of
 - Children younger than 5 years, especially those younger than 6 months
 - Adults aged 65 years and older
 - People with certain medical conditions (**Box 2**)

BOX 2. MEDICAL CONDITIONS THAT INCREASE RISK FOR SEVERE COMPLICATIONS⁸

- Asthma and chronic lung disease (eg, COPD, cystic fibrosis)
- Heart disease (eg, congenital heart disease, congestive heart failure, and coronary artery disease)
- Renal, hepatic, neurologic/neurodevelopmental,^a hematologic, metabolic, or endocrine disorders, including diabetes
- Weakened immune system due to disease or medication (eg, HIV/AIDS, cancer, chronic steroid use)
- Long-term aspirin therapy in people younger than 19 years old because of risk for Reye syndrome after influenza infection
- Morbid obesity (body mass index ≥ 40)

^aIncluding brain, spinal cord, peripheral nerve, and muscle disorders, epilepsy, stroke, intellectual disability, moderate to severe developmental delay, muscular dystrophy, or spinal cord injury.

Administer vaccine during the office visit or refer patients for vaccination as soon as vaccine is available. Adults aged 18 and older may be referred to pharmacies that offer vaccination services, but bear in mind that deferring vaccination to another visit or referring to other vaccinators may result in missed opportunities. Continue vaccinating until vaccine expires—although influenza season typically begins in early fall and continues through May, influenza viruses can circulate at any time of year.

STRESS THE IMPORTANCE OF INFLUENZA VACCINATION

Provider recommendation is the strongest predictor of whether patients receive needed vaccines.^{7,10,11}

- Explain the benefits of vaccination and answer any questions the patient may have (**Box 3**).
- Ensure that everyone on your staff who has patient contact gives the same affirmative messages and correct information about flu vaccination.
- Tell patients why you and your family get vaccinated each year.
- Let patients know that influenza vaccination is covered by many insurance plans and is available at no cost under the Affordable Care Act (ACA), though a copayment for an office visit and restrictions about in-network providers may apply.
- Offer patients informative handouts to read in the waiting room and to take home (**Resources: Patient Education Materials**).

VACCINATE CHILDREN AS EARLY AS POSSIBLE

Young children can transmit influenza within their families and the community, so child vaccination indirectly protects everyone through herd immunity.¹² This is especially important to protect infants younger than 6 months,¹³ who are at higher risk for serious influenza-related complications but are too young to be vaccinated.¹⁴

CDC recommends that children 6 months through 8 years be given a second dose of vaccine this season if they have not received at least 2 doses of flu vaccine in the past. All other children should receive 1 dose of flu vaccine. Before vaccinating, give parents the CDC Vaccine Information Statement (available in multiple languages), as required by law (**Resources: Patient Educational Materials—CDC, IAC**). Strongly encourage household contacts and child care providers to get vaccinated.

VACCINATE PREGNANT WOMEN AGAINST INFLUENZA AND PERTUSSIS

Influenza can be dangerous to pregnant women and their infants who are too young to receive the vaccine.¹⁴ The American Congress of Obstetricians and Gynecologists (ACOG),¹⁵ American Academy of Family Physicians (AAFP),¹⁶ CDC's Advisory Committee on Immunization Practices (ACIP),¹⁷ and numerous other medical associations recommend influenza

vaccination during pregnancy as the standard of care. In NYC, however, only 72.5% of providers offered or recommended vaccination to pregnant patients in 2013 (unpublished Pregnancy Risk Assessment Monitoring Systems data).

Strongly recommend and offer vaccination to all pregnant patients in any trimester as soon as flu vaccine is available (Box 4¹⁸⁻²³). Women whose providers offered or recommended flu vaccine are almost 8 times more likely to be vaccinated during pregnancy than women who do not receive the recommendation (unpublished data).

Administer Tdap vaccine during the visit. Tdap protects pregnant women against pertussis and safeguards their newborns in the first few months of life through transplacental transfer of antibodies. In 2014 and 2015, NYC saw an increase in pertussis cases, mainly among unvaccinated infants whose mothers had not received Tdap during pregnancy.²⁴ In NYC in 2011, only 38% of women received Tdap before, during, or after a recent pregnancy.²⁵ Studies from England indicate that vaccination during pregnancy confers about 90% protection against pertussis for infants.²⁶

CDC and ACOG suggest that Tdap be administered between 27 and 36 weeks of gestation, to maximize antibody transfer, although the vaccine may be given at any time during pregnancy.^{15,27} See ACIP's complete Tdap vaccination recommendations at [Pregnancy and Whooping Cough: Vaccine Effectiveness](#).

GET VACCINATED EARLY AND ENSURE YOUR STAFF DOES THE SAME

All health care workers should receive vaccine as soon as it becomes available to protect themselves, their families, and their patients from influenza infection and transmission. Because of recent state vaccination requirements, 81% of NYC health care workers in regulated facilities were vaccinated in 2015-2016 (unpublished data).

Vaccination requirements:

- When the New York State Commissioner of Health declares that influenza is prevalent, Articles 28, 36, and 40 health care and residential facility personnel must document the influenza vaccination status of all health care workers and provide masks for unvaccinated workers and ensure they are worn in the presence of patients or residents.²⁸
- Many health care facilities must also report health care workers' vaccination status to the Centers for Medicare & Medicaid Services (CMS) using the National Healthcare Safety Network Platform.²⁹ See [CMS Reporting Requirements \(Resources\)](#) for more information.

THIS SEASON'S VACCINES

Trivalent inactivated influenza vaccine (IIV3) consists of 2 influenza A strains and 1 influenza B strain and includes changes from last season's influenza A (H3N2) and influenza B viruses³⁰:

- A/California/7/2009 (H1N1)pdm09-like virus
- A/Hong Kong/4801/2014 (H3N2-like virus) (new strain)
- B/Brisbane/60/2008-like (B/Victoria lineage) virus

BOX 3. ANSWERING QUESTIONS ABOUT THE IMPORTANCE OF VACCINATION

Question: Why do I need a flu vaccine every year?

Response: *Influenza viruses are always changing, and the vaccine is usually changed to match predicted strains. The 2016-17 vaccine has been updated with influenza virus strains, so last year's vaccine will not fully protect you.*

Question: I've had influenza in the past—doesn't that give me immunity now?

Response: *No. Circulating influenza viruses can change from year to year, so you may not be immune to the current strains if you've never been exposed to them before. And even if this year's strains are the same as last year's, immunity from the vaccine declines over time. Also, some virus strains are more severe than others.*

Question: Does the flu vaccine really prevent influenza?

Response: *Yes, it does. No vaccine is 100% effective, but vaccination is still your best defense against influenza and its complications. If you get vaccinated and still get influenza, the illness may be less severe.*

Question: Isn't influenza a minor illness?

Response: *No. Even active, healthy people can get very sick for a week or more, and can even be hospitalized. And even if you do recover fast, you may have infected other people, including young children, older people, pregnant women, and people with serious medical conditions. Influenza can have dangerous consequences for them.*

Question: Why do I need the vaccine if other people get vaccinated? Won't I be protected?

Response: *No. We encounter many people each day and we can't assume that they've all been vaccinated. It's better to get vaccinated yourself. It not only protects you, it protects people who are too young to be vaccinated or can't be vaccinated because of a medical condition.*

BOX 4. REASONS TO GIVE INFLUENZA VACCINE IN ANY TRIMESTER OF PREGNANCY¹⁸⁻²³

- Pregnant women are 4 times more likely to have an influenza-related hospitalization than nonpregnant women.
- Influenza increases the risk of premature labor and delivery.
- Vaccination prevents influenza infection through transplacental antibody transfer in infants younger than 6 months, who are at high risk of influenza-related hospitalization but too young to be vaccinated.
- Vaccination with inactivated vaccine during pregnancy is safe in any trimester. Inactivated flu vaccine
 - o has been given to millions of pregnant women without harm,
 - o is available in single-dose preparation without thimerosal for pregnant women.

Quadrivalent influenza vaccine, available in inactivated (IIV4) form, will also contain a B strain, the B/Phuket/3073/2013-like (B/Yamagata lineage) virus.³⁰

Recombinant (recombinant hemagglutinin [RIV3]) and cell culture-based (ccIIV4) vaccines, which contain a very small amount of egg protein, are also available this season for age-appropriate patients with egg allergy.

Vaccines for people aged 65 and older include standard-dose and high-dose vaccines, and a new adjuvanted seasonal flu vaccine (FLUAD™).³¹

In a large US study, high-dose vaccine was 22% more effective in preventing both probable influenza and influenza-related hospital admissions than standard-dose vaccine in people aged 65 and older.³²

While CDC has not recommended preferential use of any of these vaccines, the NYC Health Department recommends that you use either high-dose vaccine, based on the study results, or adjuvanted flu vaccine in patients aged 65 and older, who may not mount a strong immune response to standard-dose vaccines.

BOX 5. WHAT TO TELL PATIENTS ABOUT VACCINE SAFETY³³⁻³⁵

Explain vaccine safety and common reactions

- Flu vaccines have a long safety track record and are thoroughly tested by the FDA before they are released for distribution.
- FDA and CDC maintain strong surveillance systems for detection and identification of any safety signals associated with vaccines.
- Serious side effects are very rare. Most side effects are minor and pass quickly.
 - The flu shot can cause soreness, redness, or swelling at the injection site (swelling is more common with intradermal vaccine), headache, fatigue, muscle aches, and low-grade fever.

Address specific concerns about flu vaccine safety

• Question: Is there any mercury in the vaccine?

Response: Single-dose preparations of flu vaccine do not contain the preservative thimerosal, which is made with ethylmercury. This type of mercury is different from the type associated with fish, which is methylmercury. Ethylmercury is nontoxic, quickly excreted from the body, and does not cause harm. Only multidose vials of influenza vaccines contain a small amount of thimerosal.

• Question: Is there anything in the vaccine that can cause an allergic reaction?

Response: Before I give a vaccine, I always ask patients if they have an allergy to any components of the vaccine or if they had a reaction to a previous vaccination. Many formulations of flu vaccine don't contain common allergens, for example, preservatives, antibiotics, latex, or gelatin.

Live-attenuated influenza vaccine (LAIV) is not recommended for use this season by CDC and ACIP because of lower effectiveness demonstrated for the past 3 flu seasons. Last season, the preliminary estimate of vaccine effectiveness for LAIV against any virus was 3% (95% CI -49% to 37%) and for IIV was 63% (95% CI 52% to 72%) in people aged 2 through 17 years.³⁶ The reason for the poorer overall performance of LAIV compared with IIV is not well understood. If you purchased or pre-ordered LAIV, contact the vaccine distributor to cancel the order without penalty. Providers who need to book additional vaccine should do so immediately. LAIV accounts for approximately 8% of the US flu vaccine market, and the other vaccine manufacturers are expected to provide additional vaccine to fill the gap.

A complete list of seasonal influenza vaccines and ACIP dosing recommendations is available at [Influenza ACIP Vaccine Recommendations](#).

Vaccine administration. Influenza vaccines are available in intramuscular and intradermal formulations.

- Intramuscular vaccine: injected at a 90° angle with a needle long enough to penetrate muscle mass and prevent the vaccine from seeping into subcutaneous tissue.
- Intradermal vaccine: given with the prefilled microinjection system and approved for people aged 18 through 64.

For additional tips on vaccine administration, see [Administering Vaccines: Dose, Route, Site, and Needle Size](#) and view a demonstration of intramuscular vaccination at <https://www.youtube.com/watch?v=jdboI3SKgR0>.

VACCINE SAFETY

Advise patients that vaccines are safe and discuss any concerns about adverse reactions (**Box 5**³³⁻³⁵). Ask about the patient's current health status, including any acute illness; history of reactions to influenza vaccine (including Guillain-Barré syndrome [GBS]); and allergies.

- **Current illness:** It is safe to vaccinate a patient with mild illness, such as diarrhea, upper respiratory tract illness, or otitis media. If illness is moderate to severe, with or without fever, vaccinate at your and the patient's discretion.³³
- **History of GBS:** Consider the benefits and risks of vaccination in patients with a history of GBS within 6 weeks of receipt of a previous influenza vaccination. If such patients are also at high risk for severe flu complications, the benefits might outweigh the risks.³³

Allergies. The Advisory Committee on Immunization Practices has recently updated its guidance on influenza vaccination in persons with a history of egg allergy:

1. Persons with a history of egg allergy who have experienced only hives after exposure to egg may receive any licensed influenza vaccine that is otherwise appropriate for the recipient's age and health status.
2. Persons with a history of severe reaction to egg (ie, any symptom other than hives, such as angioedema, respiratory distress, lightheadedness, or recurrent emesis); or who required epinephrine or another emergency medical

intervention, may similarly receive any licensed influenza vaccine that is otherwise appropriate for the recipient's age and health status. The selected vaccine should be administered in an inpatient or outpatient medical setting (including but not necessarily limited to hospitals, clinics, health departments, and physician offices) under the supervision of a health care provider who is able to recognize and manage severe allergic conditions.

3. Providers should observe all patients for 15 minutes after vaccination to decrease the risk for injury should patients experience syncope.

Alternate formulations of vaccine without preservatives, latex, and/or gelatin are available for patients with a known sensitivity to one or more vaccine components. Consult the [CDC Recommendations Table](#) or vaccine package inserts to find a formulation that does not include the implicated ingredient.

Please note: A previous severe allergic reaction to influenza vaccine is a contraindication to future receipt of the vaccine, regardless of the component suspected of being responsible for the reaction.

VACCINATE AGAINST PNEUMOCOCCAL DISEASE

Pneumococcal infections are a serious complication of influenza that can result in severe pneumonia, meningitis, bacteremia, and sinus and ear infections.³⁹ High-risk groups, such as adults aged 65 and older, and people who have chronic medical conditions or are immunosuppressed, are considerably undervaccinated. Only 50% of New Yorkers aged 65 and older received pneumococcal vaccine in 2012, well below the Healthy People 2020 goal of 90%.⁴⁰

Two vaccines are available to prevent pneumococcal disease: pneumococcal conjugate vaccine (PCV13) and pneumococcal polysaccharide vaccine (PPSV23).

Routine recommendations:

- **All adults aged 65 and older** should receive both PCV13 and PPSV23 at least 1 year apart.
- **Children through age 5** should routinely receive the PCV13 series. Children must be vaccinated to enter a New York State-licensed child care center or prekindergarten.

Additional recommendations:

- **People aged 2 through 64 with qualifying medical conditions** should also receive PPSV23 and/or PCV13 (**Box 2** and **Table 41**).
- **Adults aged 65 and older with certain high-risk conditions** may need both vaccinations sooner than 1 year apart as well.

The Centers for Medicare & Medicaid covers the cost of both PCV13 and PPSV23 for Medicare patients, administered at least 11 months apart, in accordance with current ACIP recommendations.

See [Pneumococcal ACIP Vaccine Recommendations](#) and [Intervals Between PCV13 and PPSV23 Vaccines: Recommendations of the Advisory Committee on Immunization Practices \(ACIP\)](#) for detailed guidance.

PRESCRIBE ANTIVIRALS FOR TREATMENT AND PROPHYLAXIS

Treatment

- Three antiviral medications are approved for influenza treatment.⁴²
- Oral oseltamivir (Tamiflu®) for patients aged 2 weeks and older. Common side effects include transient nausea and vomiting.
- Inhaled zanamivir (Relenza®) for patients aged 7 years and older. Common side effects include diarrhea, nausea, sinusitis, and allergic reactions of oropharyngeal or facial edema. Zanamivir is not recommended for people with an underlying respiratory disease such as asthma or COPD.
- Intravenous peramivir (Rapivab®) for adults aged 18 and older. The most common side effect is diarrhea.

Prophylaxis

Use oseltamivir and zanamivir, but not peramivir, for health care workers and people at higher risk for complications if they are exposed to influenza and the vaccine is medically contraindicated or was administered within 2 weeks after exposure.⁴² See package inserts for complete product safety information.

Amantadine (Symmetrel®, Symadine®) and rimantadine (Flumadine®) are not recommended for treatment or prophylaxis of currently circulating influenza A viruses due to high levels of drug resistance, and these agents are not effective against influenza B viruses.

Use of brand names is for informational purposes only and does not imply endorsement by the New York City Department of Health and Mental Hygiene.

REQUIRED INFLUENZA REPORTING

Vaccinations

1. Report all vaccinations administered to children younger than 19 years of age to the Citywide Immunization Registry (CIR) within 2 weeks of administration. To register with or access the CIR, log onto [NYCMED](#).
2. Pharmacists and registered nurses must report vaccinations administered to patients aged 19 years and older with the patient's verbal or written consent. All other immunization providers, including physicians, are strongly encouraged to report vaccines administered to patients in this age group with verbal consent.

Use your electronic health record (EHR) system to report immunizations to the CIR. Contact cir@health.nyc.gov with your facility address, contact information, and current EHR, or call 347-396-2400 to learn more. Providers may be eligible to receive Meaningful Use incentive payments when using their EHR to report to the CIR. For more information, see [Overview of Meaningful Use and Immunization Reporting](#).

Influenza cases and deaths

Report:

1. Nosocomial cases of lab-confirmed influenza, or clusters of 2 or more cases of influenza-like illness, in Article 28 facilities.

- Call the New York State Department of Health at 518-474-1142 or
- Use the [Health Commerce System Nosocomial Outbreak Reporting Application](#) or

- Complete a [Healthcare Facility Infection Control \(Nosocomial\) Report](#) and fax it to 518-402-5165.

2. Deaths in people aged 17 or younger that occurred from a clinically compatible illness in which there is a positive influenza test or from an unknown febrile respiratory illness.

- Call the NYC Health Department's Provider Access Line (PAL) at 866-692-3641 (866-NYC-DOH1).

Visit [Reporting Diseases and Conditions](#) for further information.

TABLE. PNEUMOCOCCAL VACCINE ADMINISTRATION FOR ADULTS AGED 19 AND OLDER⁴¹

| Medical Indication | Underlying Medical Condition | PCV13 for ≥ 19 y | PPSV23 ^a for 19 through 64 y | | PCV13 at ≥ 65 y | PPSV23 at ≥ 65 y |
|--|--|------------------|---|------------------------------------|---------------------------------------|--|
| | | Recommended | Recommended | Revaccination | Recommended | Recommended |
| None | None of the below | | | | ✓ | ✓ ≥ 1 year after PCV13 |
| Immuno-competent persons | Alcoholism | | | | | ✓ ≥ 1 y after PCV13, ≥ 5 y after any PPSV23 at < 65 y |
| | Chronic heart disease ^b | | | | | |
| | Chronic liver disease | | | | | |
| | Chronic lung disease ^c | | ✓ | | ✓ | |
| | Cigarette smoking | | | | | |
| | Diabetes mellitus | | | | | |
| | Cochlear implants | | | | | |
| | Cerebrospinal fluid leaks | ✓ | ✓ ≥ 8 wk after PCV13 | | ✓ If no previous PCV13 vaccination | ✓ ≥ 8 wk after PCV13, ≥ 5 y after any PPSV23 at < 65 y |
| Persons with functional or anatomic asplenia | Congenital or acquired asplenia | | | | | ✓ ≥ 8 wk after PCV13, ≥ 5 y after any PPSV23 at < 65 y |
| | Sickle cell disease/other hemoglobinopathies | ✓ | ✓ ≥ 8 wk after PCV13 | ✓ ≥ 5 y after first dose PPSV23 | ✓ If no previous PCV13 vaccination | |
| Immuno-compromised persons | Chronic renal failure | | | | | ✓ ≥ 8 wk after PCV13, ≥ 5 y after any PPSV23 at < 65 y |
| | Congenital or acquired immunodeficiencies ^d | | | | | |
| | Generalized malignancy | | | | | |
| | HIV infection | | | | | |
| | Hodgkin disease | | | | | |
| | Iatrogenic immunosuppression ^e | ✓ | ✓ ≥ 8 wk after PCV13 | ✓ ≥ 5 y after first dose PPSV23 | ✓ If no previous PCV13 vaccination | |
| | Leukemia | | | | | |
| | Lymphoma | | | | | |
| | Multiple myeloma | | | | | |
| | Nephrotic syndrome | | | | | |
| Solid organ transplant | | | | | | |

^a This PPSV23 column only refers to adults 19 through 64 years of age. All adults 65 years of age or older should receive one dose of PPSV23 5 or more years after any prior dose of PPSV23, regardless of previous history of vaccination with pneumococcal vaccine. No additional doses of PPSV23 should be administered following the dose administered at 65 years of age or older.

^b Including congestive heart failure and cardiomyopathies.

^c Including chronic obstructive pulmonary disease, emphysema, and asthma.

^d Includes B- (humoral) or T-lymphocyte deficiency, complement deficiencies (particularly C1, C2, C3, and C4 deficiencies), and phagocytic disorders (excluding chronic granulomatous disease).

^e Diseases requiring treatment with immunosuppressive drugs, including long-term systemic corticosteroids and radiation therapy.

IMPROVING PRACTICE STANDARDS

Ramp up efforts to improve vaccination coverage in your practice by incorporating tips from national practice standards (**Box 6**⁴³).

REGISTER FOR INFLUENZA ALERTS

- Regularly visit the [NYC Health Department’s flu web page](#) for local influenza activity and flu vaccine recommendations and supply.
- Register for the [Health Alert Network \(HAN\)](#) to receive alerts on influenza and other emerging public health issues.
- Consider joining the Health Department’s ILINet Influenza Surveillance Program as a sentinel physician to receive a

BOX 6. NATIONAL VACCINE ADVISORY COMMITTEE (NVAC) STANDARDS FOR ADULT IMMUNIZATION PRACTICES⁴³

1. **ASSESS** the immunization status of all patients at every visit.
 - Stay current with the latest [Centers for Disease Control and Prevention adult immunization schedules](#).
 - Ensure that patients’ vaccine needs are routinely reviewed and that they receive vaccine reminders.
 - Integrate [vaccine assessment](#) into your practice’s patient flow.
2. **STRONGLY RECOMMEND** needed vaccines.
 - Tailor explanations to patients’ level of understanding.
 - Address their questions and concerns.
 - Highlight the benefits of vaccination and potential costs of getting sick.
3. **ADMINISTER** needed vaccines or **REFER** patients to another vaccinator.
 - Use standing orders to allow nurses to assess patient vaccine status and administer needed vaccination without a direct order from the physician; this will save time and reduce missed opportunities for vaccination.
 - Incorporate immunizations into the practice work flow, for example, when vital signs are taken.
 - If certain vaccines are not in stock at your practice, be sure to refer patients to a local provider that can vaccinate. Pharmacists in New York City can administer influenza, pneumococcal, meningococcal, zoster, and tetanus and diphtheria (TD), and tetanus, diphtheria, acellular pertussis (Tdap) vaccines to adults aged 18 and older.
4. **DOCUMENT** all vaccines that patients receive.
 - Use the [Citywide Immunization Registry \(CIR\)](#) in conjunction with your electronic health record system to document vaccinations and to let other providers know which vaccines patients have received.
 - If you refer patients to a vaccinator, follow up to confirm that patients received the recommended vaccines. The CIR receives reports of most vaccines given in a pharmacy. By connecting with the CIR, you will be able to check whether your patients received a flu vaccine elsewhere.
 - Ensure that all immunizations your adult patients receive are reported to the CIR, with the patient’s consent (written or verbal).

weekly e-mail influenza update and guidance on influenza management. Contact Beth Nivin at 347-396-2616 or e-mail bnivin@health.nyc.gov.

SUMMARY

Your recommendation is one of the most powerful motivators for vaccination. Strongly recommend annual influenza vaccination for all patients 6 months and older, especially infants, young children, older adults, people with chronic medical conditions or immunosuppression, and pregnant women. Consider high-dose or adjuvanted flu vaccine for patients aged 65 years and older. Ensure that you and your staff are vaccinated and prepared to educate patients and parents about the benefits and side effects of vaccination. ♦

INFLUENZA VACCINE REMINDERS^{44,45}

1. **Order enough vaccine**, including enough preservative-free vaccine for pregnant women and children younger than 3, as required by New York State public health law. See the [Influenza Vaccine Availability Tracking System—IVATS](#) for information about influenza vaccine availability from vaccine manufacturers and distributors.
 - If you are enrolled in the Vaccines for Children program, order vaccine at the [Citywide Immunization Registry \(CIR\)](#); include an adequate supply of preservative-free vaccine for children younger than 3 years of age.
 - If you have placed an order for LAIV, contact the vaccine distributor to cancel the order without penalty. Order other flu vaccine products to replace these doses.
2. **Store vaccines safely** to ensure full potency. See [Checklist for Safe Vaccine Storage and Handling](#) for vaccine safety steps.
3. **Use your electronic health record (EHR) system** to identify and contact patients who need vaccination and to monitor vaccination coverage in your practice.
4. **Document vaccines** administered and other required information in the patient’s record. Also record the date the Vaccine Information Statement (VIS) was given and the edition date of the VIS (see **Resources: Vaccine Documentation Requirements** for details). You may also choose to have parents sign a [Decision to Not Vaccinate My Child form](#), if applicable.
5. **Report all immunizations administered to all your patients using the Citywide Immunization Registry**. Pediatric care practices that report administered flu vaccine doses to the CIR can access up-to-date influenza reports any time during flu season. Contact cir@health.nyc.gov with your facility address, contact information, and current EHR, or call 347-396-2400.
6. **Report adverse reactions** to the federal [Vaccine Adverse Event Reporting System \(VAERS\)](#) (800-822-7967).

See **Resources: Improving Vaccination Coverage** for tips on increasing the vaccination rate in your practice.

RESOURCES FOR PROVIDERS

NYC Department of Health and Mental Hygiene Contact Information

- Provider Access Line. 9:00 AM to 5:00 PM:
866-692-3641/866-NYC-DOH1
- Influenza website (includes Flu Locator):
www.nyc.gov/flu
- E-mail questions to NYC Health Department:
nycflu@health.nyc.gov
- Health Alert Network (HAN): sign up at
a816-healthpsi.nyc.gov or 888-692-3641

New York State (NYS) Department of Health Reporting

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

Immunization Recommendations

- Centers for Disease Control and Prevention (CDC). Influenza Vaccines, 2016-2017: www.cdc.gov/flu/professionals/
- Seasonal Influenza Vaccination Resources for Health Professionals: www.cdc.gov/flu/professionals/vaccination
- Advisory Committee for Immunization Practices (ACIP)
 - Recommended Child and Adult Immunization Schedules—United States, 2016:
www.cdc.gov/vaccines/schedules
 - Pneumococcal ACIP Vaccine Recommendations:
www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/pneumo.html
 - PCV13 (Pneumococcal Conjugate) Vaccine:
www.cdc.gov/vaccines/vpd-vac/pneumo/vac-PCV13-adults.htm
- Vaccine administration information:
www.cdc.gov/vaccines/pubs/pinkbook/vac-admin.html
- NYS influenza recommendations for health care workers:
https://www.health.ny.gov/diseases/communicable/influenza/seasonal/providers/prevention_of_influenza_transmission/
- Immunization Action Coalition:
www.immunize.org/influenza
- How to Administer Intramuscular, Intradermal, and Intranasal Influenza Vaccines:
www.immunize.org/catg.d/p2024.pdf
- American College of Physicians Immunization Portal:
immunization.acponline.org

- American College of Obstetricians and Gynecologists Immunization Information for Ob-Gyns and Their Patients:
www.immunizationforwomen.org
- Vaccine Excipient & Media Summary:
www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/b/excipient-table-2.pdf

Improving Vaccination Coverage

- Centers for Medicare & Medicaid Innovation. Influenza vaccination strategies:
innovation.cms.gov/Files/x/PGP-Flu-Vaccination.pdf
- National Vaccine Advisory Committee Recommendations. Standards for Adult Immunization Practice:
www.cdc.gov/vaccines/hcp/adults/for-practice/standards/index.html

Coding and Billing Information

- American College of Physicians. Billing and coding adult immunizations:
www.acponline.org/running_practice/payment_coding/coding/billvaccines.pdf
- Centers for Medicare & Medicaid. Frequently asked questions and resources:
https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/qr_immun_bill.pdf

CMS Reporting Requirements

- Healthcare Facility HAI Reporting Requirements to CMS via NHSN—Current or Proposed Requirements:
www.cdc.gov/nhsn/pdfs/cms/cms-reporting-requirements.pdf

Vaccination Documentation Requirements

- Facts about VISs:
www.cdc.gov/vaccines/hcp/vis/about/facts-vis.html

Patient Education Materials

- NYC Health Department: www.nyc.gov/flu
Publications, brochures, and posters
- Immunization Action Coalition. Vaccine Information Statements:
www.immunize.org/handouts/influenza-vaccines.asp
Patient handouts (English, Spanish, Arabic, and Chinese)
- CDC: www.cdc.gov/flu/freeresources/index.htm
Free flyers, posters, brochures, and VISs for the general public, families and children, and high-risk groups

RESOURCES FOR PATIENTS

- NYC Health Department. Influenza Information: www.nyc.gov/flu

REFERENCES

1. New York City Department of Health and Mental Hygiene. EpiQuery. Leading cause of death (ICD-10), New York City, 2014. <https://a816-healthpsi.nyc.gov/epiquery/sasresults.jsp>. Accessed June 2, 2016.
2. Kostova D, Reed C, Finelli L, et al. Influenza illness and hospitalizations averted by influenza vaccination in the United States, 2005–2011. *PLoS One*. 2013;8(6):e66312.
3. Centers for Disease Control and Prevention (CDC). Estimates of deaths associated with seasonal influenza—United States, 1976–2007. *MMWR Morb Mortal Wkly Rep*. 2010;59(33):1057–1062.
4. CDC. Influenza (Flu). Estimated influenza illnesses and hospitalizations averted by vaccination – United States, 2014–15 influenza season. December 10, 2015. www.cdc.gov/flu/about/disease/2014-15.htm#table1. Accessed May 5, 2016.
5. New York City Department of Health and Mental Hygiene. EpiQuery. NYC Community Health Survey. Influenza (flu) vaccination, 2014 (Age-adjusted). <https://a816-healthpsi.nyc.gov/epiquery/sasresults.jsp>. Accessed May 5, 2016.
6. CDC. Influenza (Flu). National early season flu vaccination coverage, United States, November 2015. www.cdc.gov/flu/fluview/nifs-estimates-nov2015.htm. Accessed May 13, 2016.
7. Godoy P, Castilla J, Mayoral JM, et al, and the Working Group for the Survey on Influenza Vaccination in Primary Health Care Professionals. Influenza vaccination of primary healthcare physicians may be associated with vaccination in their patients: a vaccination coverage study. *BMC Fam Pract*. 2015;31;16(1):44. doi: 10.1186/s12875-015-0259-0.
8. CDC. Influenza (Flu). People at high risk of developing flu-related complications. www.cdc.gov/flu/about/disease/high_risk.htm. Accessed June 20, 2016.
9. Flannery B, Thaker SN, Clippard J, et al. Interim estimates of 2013–14 seasonal influenza vaccine effectiveness – United States. February 2014. *MMWR Morb Mortal Wkly Rep*. 2014;63(07):137–141.
10. Benedict KM, Kennedy ED, Santibanez TA, et al. Recommendations and offers for adult influenza vaccination, 2011–2012 season, United States. *Vaccine*. 2016 Apr 29. pii: S0264-410X(16)30226-2. doi: 10.1016/j.vaccine.2016.04.061. [Epub ahead of print].
11. Sevin AM, Romeo C, Gagne B, Brown NV, Rodis JL. Factors influencing adults' immunization practices: a pilot survey study of a diverse, urban community in central Ohio. *BMC Public Health*. 2016;16(1):424. doi: 10.1186/s12889-016-3107-9.
12. National Institute of Allergy and Infectious Diseases. Health & Research Topics—Community immunity ("herd" immunity). Updated October 21, 2010. www.niaid.nih.gov/topics/pages/communityimmunity.aspx. Accessed June 21, 2016.
13. American Academy of Pediatrics. Recommendations for prevention and control of influenza in children, 2015–2016. *Pediatrics*. 2015;136(4):792–808. doi: 10.1542/peds.2015-2920. Epub 2015 Sep 7.
14. Grohskopf LA, Shay DK, Shimabukuro TT, et al. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices—United States, 2013–2014. *MMWR Morb Mortal Wkly Rep*. 2013;62(RR07):1–43.
15. The American College of Obstetricians and Gynecologists. Committee Opinion No. 566, June 2013. Update on immunization and pregnancy: tetanus, diphtheria, and pertussis vaccination. www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Update-on-Immunization-and-Pregnancy-Tetanus-Diphtheria-and-Pertussis-Vaccination. Accessed August 31, 2016.
16. American Academy of Family Physicians. Prevention and control of seasonal influenza with vaccines www.aafp.org/patient-care/public-health/immunizations/influenza.html. Accessed May 26, 2016.
17. CDC. Influenza (Flu). Pregnant women and flu vaccination, Internet Panel Survey, United States, November 2015. www.cdc.gov/flu/fluview/pregnant-women-nov2015.htm. Accessed May 13, 2016.
18. CDC. Influenza. In: Hamborsky J, Kroger A, Wolf C, eds. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. 13th ed. Washington, DC: Public Health Foundation; 2015:chap 12.
19. Martin A, Cox S, Jamieson DJ, Whiteman MK, Kulkani A, Tepper NK. Respiratory illness hospitalizations among pregnant women during influenza season, 1998–2008. *Matern Child Health J*. 2013;17(7):1325–1331.
20. Zaman K, Roy E, Arifeen SE, et al. Effectiveness of maternal influenza immunization in mothers and infants. *N Engl J Med*. 2008;359(15):1555–1564.
21. Naleway AL, Irving SA, Henning ML, et al, for the Vaccine Safety Datalink and Pregnancy and Influenza Project. Safety of influenza vaccination during pregnancy: A review of subsequent maternal obstetric events and findings from two recent cohort studies. *Vaccine*. 2014;32(26):3122–3127.
22. Cox S, Posner SF, McPheeters M, Jamieson DJ, Kourtis AP, Meikle S. Hospitalizations with respiratory illness among pregnant women during influenza season. *Obstet Gynecol*. 2006;107(6):1315–1322.
23. CDC. Influenza (Flu). Flu vaccine safety and pregnancy. Updated May 24, 2016. www.cdc.gov/flu/protect/vaccine/qa_vacpregnant.htm. Accessed July 25, 2016.
24. New York City Department of Health and Mental Hygiene. Health Alert #40: Pertussis in New York City. October 15, 2015. www1.nyc.gov/assets/doh/downloads/pdf/cd/2014/Pertussis%20Alert%20_10_16_15final.pdf. Accessed June 22, 2016.
25. Ahluwalia IB, Ding H, D'Angelo D, et al. Tetanus, diphtheria, pertussis vaccination coverage before, during, and after pregnancy—16 states and New York City, 2011. *MMWR Morb Mortal Wkly Rep*. 2015;64(19):522–526.
26. Amirthalingam G, Andrews N, Campbell H, et al. Effectiveness of maternal pertussis vaccination in England: an observational study. *Lancet*. 2014;384(9953):1521–1528.
27. CDC. CDC Features. Pregnant? Get Tdap in your third trimester. www.cdc.gov/features/tdap-in-pregnancy/. Accessed May 16, 2016.
28. New York State Department of Health. Prevention of influenza transmission by healthcare and residential facility and agency personnel. Effective date: 11/19/14. https://www.health.ny.gov/regulations/recently_adopted/docs/2014-11-19_prevention_of_influenza_transmission.pdf. Accessed July 25, 2016.
29. Centers for Medicare & Medicaid Services. Ambulatory Surgical Center Quality Reporting Program. Quality Measure Specifications Manual. Version 5.1. Updated January 15, 2016. qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier1&cid=1138115987249. Accessed May 18, 2016.
30. CDC. Influenza (Flu). Frequently asked flu questions 2016–2017 influenza season. Updated August 25, 2016. www.cdc.gov/flu/about/season/flu-season-2016-2017.htm. Accessed August 31, 2016.
31. Food and Drug Administration. FDA Advisory Committee Briefing Document. FLUAD. Seasonal adjuvanted trivalent influenza vaccine (aTIV). September 15, 2015. www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/BloodVaccinesandOtherBiologics/VaccinesandRelatedBiologicalProductsAdvisoryCommittee/UCM461917.pdf. Accessed August 31, 2016.
32. Izurieta HS, Thadani N, Shay DK, et al. Comparative effectiveness of high-dose versus standard-dose influenza vaccines in US residents aged 65 years and older from 2012 to 2013 using Medicare data: a retrospective cohort analysis. *Lancet Infect Dis*. 2015;15(3):293–300.
33. CDC. Influenza (Flu). Seasonal influenza vaccine safety: a summary for clinicians. www.cdc.gov/flu/professionals/vaccination/vaccine_safety.htm. Accessed May 18, 2016.
34. CDC. Influenza (Flu). Intradermal influenza (flu) vaccination. Updated March 18, 2015. www.cdc.gov/flu/protect/vaccine/qa_intradermal-vaccine.htm. Accessed May 11, 2016.
35. CDC. Vaccines and immunizations. Possible side-effects from vaccine. Updated March 31, 2016. www.cdc.gov/vaccines/vac-gen/side-effects.htm. Accessed June 21, 2016.
36. CDC. ACIP votes down use of LAIV for 2016–2017 flu season. June 22, 2016. www.cdc.gov/media/releases/2016/s0622-laiv-flu.html. Accessed July 25, 2016.

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| <p>37. Grohskopf LA, Sokolow LZ, Broder KR, et al. Prevention and control of influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices – United States, 2016-17 influenza season. <i>MMWR Morb Mortal Wkly Rep</i>. 2016;65(RR-5):1-54.</p> <p>38. Grohskopf LA, Sokolow LZ, Olsen SJ, Bresee JS, Broder KR, Karron RA. Prevention and control of influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices, United States, 2015-16 influenza season. <i>MMWR Morb Mortal Wkly Rep</i>. 2015;64(30):818-825.</p> <p>39. CDC. Pneumococcal disease. Symptoms and complications. www.cdc.gov/pneumococcal/about/symptoms-complications.html. Accessed June 21, 2016.</p> <p>40. New York City Department of Health and Mental Hygiene. EpiQuery. NYC Community Health Survey. Pneumonia vaccination by age group, 2012, and Influenza vaccination by age group, 2013. https://a816-healthpsi.nyc.gov/epiquery/. Accessed May 20, 2016.</p> <p>41. CDC. Pneumococcal vaccine timing for adults. 11/30/2015. www.cdc.gov/vaccines/vpd-vac/pneumo/downloads/adult-vax-clinician-aid.pdf. Accessed July 25, 2016.</p> | <p>42. CDC. Influenza (Flu). Influenza antiviral medications: summary for clinicians. www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm. Accessed May 17, 2016.</p> <p>43. National Vaccine Advisory Committee. Reports and recommendations. Recommendations from the National Vaccine Advisory Committee: standards for adult immunization practice. <i>Public Health Rep</i>. 2014;129(2):115-123.</p> <p>44. New York State Department of Health. Bureau of Immunization. New York State (NYS) Law Restricting Use of Thimerosal-Containing Influenza Vaccines. 10/23/2009. https://www.health.ny.gov/regulations/public_health_law/section/2112/information_for_physicians/docs/update_to_state_law_restricting_thimerosal.pdf. Accessed August 31, 2016.</p> <p>45. Immunization Action Coalition. Standing orders for administering influenza vaccine to adults. www.immunize.org/catg.d/p3074.pdf. Accessed July 26, 2016.</p> |
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