NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE
Oxiris Barbot, MD
Acting Commissioner

October 31, 2018

Jane R. Zucker, MD, MSc
Assistant Commissioner
Bureau of Immunization

42-09 28th Street, CN21
Queens, NY 11101-4132

Dear Colleague:

This is an update on the availability and distribution of seasonal influenza vaccine. As of October 19, 2018, about 141 million doses of flu vaccine have already been distributed nationally. Currently, influenza activity is at a minimal level in the United States, as well as in New York City (NYC), though some NYC specimens submitted for influenza testing have already tested positive, and flu activity is expected to increase in the coming weeks. One influenza-associated pediatric death has already been confirmed in NYC.

In NYC, we have been allocated 89% of the total amount of flu vaccine that we pre-booked for the Vaccines for Children (VFC) program, and most of this vaccine has been shipped to facilities. Flu vaccine orders continue to be filled at this time, though facilities may be receiving partial shipments until their order has been completely shipped. Providers who requested to have their entire order shipped to them by October 31 should have received their complete order already. All products are in good supply. For any help you might need with your VFC flu order, please call (347) 396-2489. If you need additional VFC vaccine, don't stop vaccination efforts; update your flu vaccine order so we can ship more vaccine.

Flu vaccine is still available for purchase for providers and medical facilities who need vaccine for their non-VFC eligible or adult populations. More information about what products are available can be found at https://www.izsummitpartners.org/ivats/

Vaccination should be well underway at your facility. Consider setting up flu vaccine-only clinics, especially at night and/or on weekends, to facilitate vaccinating all your patients. If you cannot accommodate a patient's need for specific days and time for vaccination, refer them to pharmacies that offer flu vaccine; licensed pharmacists in New York State may now vaccinate children, starting at 2 years of age, against influenza.

Attached is the NYC Department of Health and Mental Hygiene's City Health Information's annual edition on influenza prevention and control. In it you will find information on influenza disease, strategies for improving flu vaccine coverage, including use of Citywide Immunization Registry (CIR) tools, influenza treatment and prophylaxis, and pneumococcal vaccine.

For questions on flu vaccine, other than those pertaining to your VFC order, please call (347) 396-2400 or email nycimmunize@health.nyc.gov. We thank you for your continuing efforts at protecting NYC residents from influenza.

Sincerely,

Jane R. Zucker

Jane R. Zucker, MD, MSc

City Health Information

Volume 37 (2018) | No 7; 57-69

New York City Department of Health and Mental Hygiene

INFLUENZA PREVENTION AND CONTROL, 2018-2019

- This past influenza season (2017-2018) was severe in New York City (NYC) and throughout the United States, with the highest overall hospitalization rates recorded since the current surveillance system began in 2003.
- Ensure that you and your entire staff receive flu vaccine and that staff educates patients and caregivers about the benefits of flu vaccine.
- Vaccinate all patients aged 6 months and older as soon as flu vaccine is available (see page 58 for new NYC Board of Health requirements).
- Give inactivated vaccine to all pregnant women in any trimester to prevent influenza infection and complications in both the woman and her infant.
- Strongly consider high-dose or adjuvanted flu vaccine for patients aged 65 years and older.

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Influenza is an extremely contagious viral infection that puts certain groups such as infants, pregnant women, older adults, and people of any age with chronic medical conditions at higher risk of serious complications.[1] The 2017-2018 influenza season was very severe, with the highest overall hospitalization rates recorded since the current surveillance system began in 2003.[2,3] During the season, there were[4]

- an estimated 900,000 hospitalizations, more than 70% of which were among adults aged 65 years and older,
- Over 80,000 deaths, more than 90% of which were in adults aged 65 years and older,
- 183 influenza-related pediatric deaths, including 5 children in New York City (NYC) (date reported as of October 12, 2018).[5]

Vaccination is our best defense against influenza and its complications. In the 2016-2017 influenza season, vaccination prevented an estimated 5.29 million influenza cases, 2.64 million medical visits, and 84,700 related hospitalizations in the United States.[6]

Despite the importance of flu vaccination, coverage in NYC falls short of the Healthy People 2020 target of 70% for all age groups.[7] In 2017-2018, flu vaccine coverage in NYC was 49% for children through age 18 (unpublished Citywide Immunization Registry [CIR] data). Based on the 2017 Community Health Survey, coverage was 44% for adults aged 18 years and older, and 66% for adults aged 65 years and older (unpublished NYC Health Department data). Non-Latino Blacks had the lowest coverage (38%) compared with 45% among non-Latino Whites, 46% among Latinos, and 47% among Asians (unpublished NYC Health Department data).

Strongly recommend and offer flu vaccine for all patients aged 6 months and older as soon as vaccine becomes available, especially for people at highest risk of influenza and its complications (**Boxes 1** and **2**).

BOX 1. IMPORTANT GROUPS TO VACCINATE[1]

- All children aged 6 through 59 months, especially children aged younger than 2 years
- Adults aged 50 years and older, especially adults aged 65 years and older
- Women who are or may be pregnant during influenza season
- Residents of nursing homes and other long-term care facilities
- American Indians and Alaska Natives
- Adults and children with certain high-risk medical conditions (**Box 2**)
- Health care workers
- Household contacts and caregivers of
  - children aged younger than 5 years, especially those younger than 6 months
  - adults aged 50 years and older
  - people with certain medical conditions (**Box 2**)

The New York City Board of Health requires all children aged 6 through 59 months attending city-licensed and regulated daycare and school-based prekindergarten programs to receive an annual flu vaccine by December 31st of each year.[5]

BOX 2. MEDICAL CONDITIONS THAT INCREASE RISK OF SEVERE COMPLICATIONS[1]

- Asthma and chronic lung disease (eg, chronic obstructive pulmonary disease, cystic fibrosis)
- Heart disease (eg, congenital heart disease, congestive heart failure, coronary artery disease)
- Renal, hepatic, neurologic, hematologic, or metabolic disorders, including diabetes
- Weakened immune system due to disease or medication (eg, HIV/AIDS, cancer, chronic steroid use)
- Conditions requiring aspirin- or salicylate-containing medications in people younger than 19 years of age because of risk of Reye syndrome after influenza infection
- Morbid obesity (body mass index ≥ 40)

GET VACCINATED AND VACCINATE YOUR STAFF

All health care workers should be vaccinated as soon as vaccine is available to protect themselves, their families, and their patients from influenza infection and transmission (**Box 3**[8,9]). Flu vaccine coverage among NYC health care workers in regulated facilities increased after state influenza prevention regulations were established in 2013; coverage was 74% in the 2017-2018 season (unpublished NYS Health Department data).

IMPROVE VACCINATION COVERAGE IN YOUR PRACTICE

Improve vaccination coverage by using standing orders, reminder-recall systems, self-screening tools, posters, and patient handouts (**Resources for Providers**) and follow the National Vaccine Advisory Committee (NVAC) Standards (**Box 4**[10,11]).

BOX 3. VACCINATION REQUIREMENTS FOR HEALTH CARE WORKERS[8,9]

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

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STRONGLY RECOMMEND AND OFFER VACCINATION

Provider recommendation is the strongest predictor of whether patients receive needed vaccines.[12,13] Explain the importance of annual flu vaccination in plain language, respectfully addressing the patient's or parent's questions (**Box 6**[14]).

- Tell your patients that you consider vaccinations, including flu vaccine, to be a health care priority.
- Explain why you, your staff, and your family get vaccinated each year.
- Ensure that all staff members who have patient contact give the same culturally competent, affirmative, and accurate messages about flu vaccination (**Resources for Providers**).
- Advise patients that flu vaccination is covered by most insurance plans and is available at no cost under the Affordable Care Act (ACA), though there may be a copayment for an office visit and restrictions about out-of-network providers.
- If you do not offer vaccinations, refer patients to other vaccine providers, including pharmacies.

BOX 4. NATIONAL VACCINE ADVISORY COMMITTEE (NVAC) STANDARDS FOR ADULT IMMUNIZATION PRACTICES[10]

1. **ASSESS the immunization status of all patients at every visit**
2. **STRONGLY RECOMMEND needed vaccines**
3. **ADMINISTER needed vaccines or REFER patients to another vaccinator**
   a. Use standing orders to allow nurses to independently assess patient vaccination status and administer needed vaccines without a direct order from the physician; this will save time and reduce missed opportunities for vaccination
   b. If you do not stock vaccine, use NYC HealthMap to find a local vaccine provider such as a pharmacist (**Box 5**[11])
4. **DOCUMENT all vaccines that patients receive**
   a. Use the Citywide Immunization Registry (CIR) to document vaccinations and to let other providers know which vaccines patients have received
   b. Report immunizations given to adult patients to the CIR, with the patient's written or verbal consent

BOX 5. IMMUNIZATION AND PHARMACISTS[11]

Pharmacists in New York State are authorized to administer

- Flu vaccine to everyone aged 2 years and older (as of April 1, 2018)
- Tetanus-containing (Td/Tdap), pneumococcal (PCV13 and PPSV23), meningococcal (MenACWY and MenB), and zoster vaccines to adults aged 18 years and older

Patients can check with their local pharmacy directly or visit NYC HealthMap to search for vaccines available, ages served,[a] and payment and insurance information, including participation in the Vaccines for Children Program.

[a]New York State pharmacists may vaccinate children as young as 2 years of age, but each pharmacy may have its own age limits.

BOX 6. COMMON QUESTIONS ABOUT THE IMPORTANCE OF FLU VACCINATION[14]

Q: Why do I need the flu vaccine?

A: You need the flu vaccine because influenza can cause serious illness, especially in young children, pregnant women, older adults, and people with certain chronic medical conditions such as asthma, heart disease, and/or diabetes. It can cause complications that lead to hospitalization and/or death, even in otherwise healthy children and adults.

Q: Will a flu vaccine do any good? I got a flu vaccine once and got the flu anyway.

A: Yes, a flu vaccine will give you protection against the influenza virus and prevent most influenza infections, even though it may not be 100 percent effective. If you do get influenza, the vaccine can make your illness milder and reduce the risk of complications, including hospitalization and death.

Q: How late is too late to get a flu vaccine?

A: You can be vaccinated against influenza at any time during the influenza season. Influenza viruses circulate all year. Influenza activity usually peaks between January and March, but outbreaks have occurred as late as May. If you didn't get a flu vaccine at the start of influenza season, you should still be vaccinated after December and into the new year.

Q: Do I need a flu vaccine every year?

A: Yes. Everyone aged 6 months and older needs a flu vaccine every year. Influenza viruses can change each influenza season, so you need a flu vaccine every year. This year's flu vaccine includes 2 new influenza strains.

Q: Why do I need a flu vaccine if other people are vaccinated? Won't that keep me from getting influenza?

A: Your best protection against influenza is getting vaccinated yourself. Influenza is highly contagious. People who don't get vaccinated can get influenza themselves and also pass it on to people more likely to have serious complications, including infants younger than 6 months, pregnant women, older adults, and people with chronic health conditions.

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DISCUSS VACCINE SAFETY

Explain that vaccines are safe, generally causing only mild reactions, and discuss any concerns patients may have (**Box 7**[1,15-17]). Before vaccinating, give the CDC Vaccine Information Statement (VIS) as required by law. Vaccine Information Statements are available in more than 30 languages and should be given in a language that the recipient or parent can understand (see Immunization Action Coalition and **Resources**).

BOX 7. WHAT TO TELL PATIENTS ABOUT FLU VACCINE SAFETY[1,15-17]

Vaccines generally cause only mild reactions

- Flu vaccines have a long safety track record and are thoroughly tested by the FDA for purity and potency before they are released for distribution
- Most side effects are minor and pass quickly
- The flu shot can cause soreness, redness, or swelling at the injection site, headache, fatigue, muscle aches, and low-grade fever
- The nasal spray flu vaccine may cause a location reaction, such as nasal congestion
- Serious side effects are very rare
- FDA and CDC maintain robust surveillance systems for detection and identification of any safety issues

The flu vaccine is made from safe ingredients

- There is no mercury of any type in single-dose preparations of flu vaccine
- All multidose vials of flu vaccines contain a small amount of thimerosal, which is made with ethyl mercury. Ethyl mercury is not the same as the type of mercury associated with fish (which is called methylmercury). Ethyl mercury is quickly excreted from the body and does not cause harm

The flu vaccine is unlikely to cause a severe allergic reaction

- Before giving a vaccine, I ask patients if they have an allergy to any of the vaccine ingredients or if they had a reaction to a previous vaccination
- Many forms of flu vaccine don't contain common allergens such as preservatives, antibiotics, or gelatin; some are egg-free. There is no latex in any of this season's vaccines

The flu vaccine cannot cause influenza

- The inactivated flu shot does not contain live viruses, so it cannot cause influenza

VACCINATE CHILDREN AS EARLY AS POSSIBLE

Young children are at high risk of serious complications from influenza. It's especially important to protect infants younger than 6 months of age because they are at high risk of influenza-related hospitalizations and medically attended visits but are too young to be vaccinated. The NYC Board of Health requires all children aged 6 through 59 months attending city-licensed and regulated daycare and school-based prekindergarten programs to receive an annual flu vaccine by December 31st of each year.[5] Strongly encourage household contacts and child care providers to also get vaccinated.

CDC recommends administering 2 doses of flu vaccine (at least 4 weeks apart) this flu season to all children aged 6 months through 8 years if they have not received 2 or more doses of flu vaccine before July 1, 2018. The 2 doses of flu vaccine administered prior to July 1, 2018 need not have been administered in the same season or in consecutive seasons. All other children should receive 1 dose of flu vaccine.[1] As of April 1, 2018, pharmacists in New York State (NYS) can administer flu vaccine to children as young as 2 years of age.[11]

For the 2018-2019 influenza season, the Advisory Committee on Immunization Practices (ACIP) recommends any licensed, age-appropriate influenza vaccine, including live-attenuated influenza vaccine (LAIV4).[18] The American Academy of Pediatrics recommends inactivated vaccine as the primary choice for all children because LAIV4 was less effective than inactivated vaccine against A/H1N1 during past seasons and its effectiveness against H1N1 this year is unknown.[19]

VACCINATE PREGNANT WOMEN AGAINST INFLUENZA AND PERTUSSIS

Influenza

Influenza can be dangerous to pregnant women and their infants who are too young to receive the vaccine. The American College of Obstetricians and Gynecologists (ACOG)[20] and ACIP[1] recommend flu vaccination in pregnancy as the standard of care. In 2016, almost 1 in 5 pregnant NYC women reported that they did not get a recommendation from their health care provider to receive a flu vaccine during the 12 months before delivery. Only 59% of pregnant women

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reported receiving the flu vaccine that year (unpublished Pregnancy Risk Assessment Monitoring System [PRAMS] data), lower than the Healthy People 2020 goal of 80% flu vaccine coverage among pregnant women.[7]

Strongly recommend and offer inactivated flu vaccine to all pregnant patients in any trimester as soon as vaccine becomes available (**Box 8**[21-26]).

Pertussis

Strongly recommend and offer tetanus, diphtheria, and pertussis (Tdap) vaccine to all pregnant patients during each pregnancy, preferably during 27 to 36 weeks' gestation. Young infants are at greatest risk of severe disease and death from pertussis.[27] The Tdap vaccine protects newborns in the first few months of life against pertussis through transplacental transfer of antibodies during pregnancy. A large US study concluded that maternal Tdap vaccination was 91% protective against infant pertussis, especially in the first 2 months of life, and 88% effective before infants' first dose of diphtheria, tetanus, and pertussis (DTap), typically administered at 2 months of age.[28]

In 2016, only 65% of pregnant women in NYC reported that they received a recommendation from their provider for Tdap vaccine during any prenatal care visit and 61% reported actually receiving Tdap vaccine (unpublished PRAMS data, 2016).

See ACIP's complete Tdap vaccination recommendations for pregnancy and whooping cough.

BOX 8. REASONS TO GIVE FLU VACCINE IN ANY TRIMESTER OF PREGNANCY[21-26]

- 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 in the infant through transplacental antibody transfer, which protects infants younger than 6 months of age who are too young to get vaccinated and are at high risk of complications
- Vaccination with inactivated vaccine during pregnancy is safe in any trimester
- Inactivated flu vaccine has been given to millions of pregnant women without harm and is available in single-dose preparation without thimerosal

VACCINATE OLDER ADULTS

For adults aged 65 years and older, the NYC Health Department recommends high-dose or adjuvanted flu vaccine. High-dose trivalent inactivated influenza vaccine (IIV3) has demonstrated higher effectiveness compared with standard dose (SD) IIV3 in preventing laboratory-confirmed influenza (relative vaccine efficacy [VE] 24.2%) and hospitalizations due to influenza (relative VE 17.8%) among adults aged 65 years and older.[1] Limited data have shown increased effectiveness of adjuvanted IIV3 compared with SD IIV3 in preventing laboratory-confirmed influenza (relative VE 63%).[1]

THIS SEASON'S VACCINES

For the 2018-2019 season, IIV3 contains an A/Michigan/45/2015 A(H1N1)pdm09-like virus, an A/Singapore/INFIMH-16–0019/2016 A(H3N2)-like virus, and a B/Colorado/06/2017-like (B/Victoria lineage) virus. The quadrivalent inactivated influenza vaccine (IIV4) includes the trivalent vaccine viruses as well as a B/Phuket/3073/2013-like (B/Yamagata lineage) virus. The A(H3N2) and B (Victoria) components of both the trivalent and quadrivalent vaccines have been changed from last season's formulations.[1]

Administer any licensed, age-appropriate influenza vaccine (inactivated influenza vaccine [IIV], cell culture-based influenza vaccine (ccIIV4), recombinant influenza vaccine [RIV], or intranasally administered LAIV4).[1] Stress the importance of quadrivalent vaccines with your patients aged younger than 65 years. For adults 65 years and older, the NYC Health Department recommends high-dose or adjuvanted flu vaccine. See **Table 1** for information on this season's vaccines.

ASSESS FOR CONTRAINDICATIONS AND PRECAUTIONS

Ask about patients' current health status, including any acute illness and history of reactions to flu vaccine, such as Guillain-Barré syndrome (GBS). For people with a history of egg allergy, ACIP recommendations for administering the flu vaccine remain the same since the 2016-2017 season[1,29] (**Figure**[30]). Alert patients to potential reactions to the vaccine and tell them to report any concerning reactions.

- Current illness: A patient with mild illness such as diarrhea, upper respiratory tract illness, or otitis media, or on current antimicrobial therapy, can be safely vaccinated. If illness is moderate to severe,

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with or without fever, consider the risks and benefits of administering flu vaccine.[15]

- History of GBS: Explain the risks and benefits of vaccination in patients with a history of GBS within 6 weeks of receipt of a previous flu vaccination. If such patients are also at high risk of severe influenza complications, the benefits might outweigh the risks.[1,15]

Inform patients that alternate formulations of flu vaccine are available if they have a known sensitivity to one or more vaccine components, including preservatives, antibiotics, and/or gelatin. None of the 2018-2019 vaccines contains latex. Check the CDC Vaccine Contents Table or vaccine package inserts to find a formulation without the implicated ingredient.

A previous severe allergic reaction to flu vaccine, such as anaphylaxis, is a contraindication to future receipt of the vaccine, regardless of the component suspected to be responsible for the reaction.[1]

TABLE 1. AVAILABLE FLU VACCINES FOR THE 2018-2019 SEASON[1]

Trade Name (Manufacturer)	Presentation[a]	Age Indication
Inactivated influenza vaccines, quadrivalent (IIV4s), standard-dose (IM)		
Afluria Quadrivalent (Seqirus)	0.5-mL prefilled syringe	≥ 5 years
	5.0-mL multidose vial (24.5 µg mercury/0.5 mL)	≥ 5 years
	5.0-mL multidose vial, jet injector (24.5 µg mercury/0.5 mL)	18-64 years
Fluarix Quadrivalent (GlaxoSmithKline)	0.5-mL prefilled syringe	≥ 6 months
FluLaval Quadrivalent (ID Biomedical Corp of Quebec)	0.5-mL prefilled syringe	≥ 6 months
	5.0-mL multidose vial (< 25 µg mercury/0.5 mL)	≥ 6 months
Fluzone Quadrivalent (Sanofi Pasteur)	0.25-mL prefilled syringe	6-35 months
	0.5-mL prefilled syringe	≥ 3 years
	0.5-mL single-dose vial	≥ 3 years
	5.0-mL multidose vial (25 µg mercury/0.5 mL)	≥ 6 months
Inactivated influenza vaccine, quadrivalent, cell culture-based (ccIIV4) vaccine (IM)		
Flucelvax Quadrivalent (Seqirus)	0.5-mL prefilled syringe	≥ 4 years
	5.0-mL multidose vial (25 µg mercury/0.5 mL)	≥ 4 years
Recombinant influenza vaccine, quadrivalent (RIV4) (IM)		
Flublok Quadrivalent (Sanofi Pasteur)	0.5-mL prefilled syringe	≥ 18 years
Inactivated influenza vaccine, trivalent (IIV3), standard dose (IM)		
Afluria (Seqirus)	0.5-mL prefilled syringe	≥ 5 years
	5.0-mL multidose vial (24.5 µg mercury/0.5 mL)	≥ 5 years
	5.0-mL multidose vial, jet injector (24.5 µg mercury/0.5 mL)	18-64 years
Inactivated influenza vaccine, trivalent (IIV3), high-dose (IM)		
Fluzone High-Dose (Sanofi Pasteur)	0.5-mL prefilled syringe	≥ 65 years
Adjuvanted inactivated influenza vaccine, trivalent (aIIV3), standard-dose (IM)		
Fluad (Seqirus)	0.5-mL prefilled syringe	≥ 65 years
Live attenuated influenza vaccine (LAIV), quadrivalent (NAS)		
FluMist Quadrivalent (AstraZeneca)	0.2-mL single-dose prefilled intranasal sprayer	2-49 years

Abbreviations: IM, intramuscular; NAS, intranasal.
[a]Information in parentheses indicates quantity of thimerosal (mercury µg/0.5mL) that vaccine contains. The vaccines without parentheses do not contain thimerosal.

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In addition to the labeled contraindications (other than egg allergy), ACIP recommends that LAIV should not be administered to the following groups[1]:

- children aged 2 through 4 years
  - who have received a diagnosis of asthma, or
  - whose parents report (or the medical record notes) that the child had wheezing or asthma during the preceding 12 months,
- immunocompromised people,
- close contacts and caregivers of severely immunosuppressed persons who require a protected environment,
- pregnant women,
- persons who have taken influenza antiviral medications within the previous 48 hours.

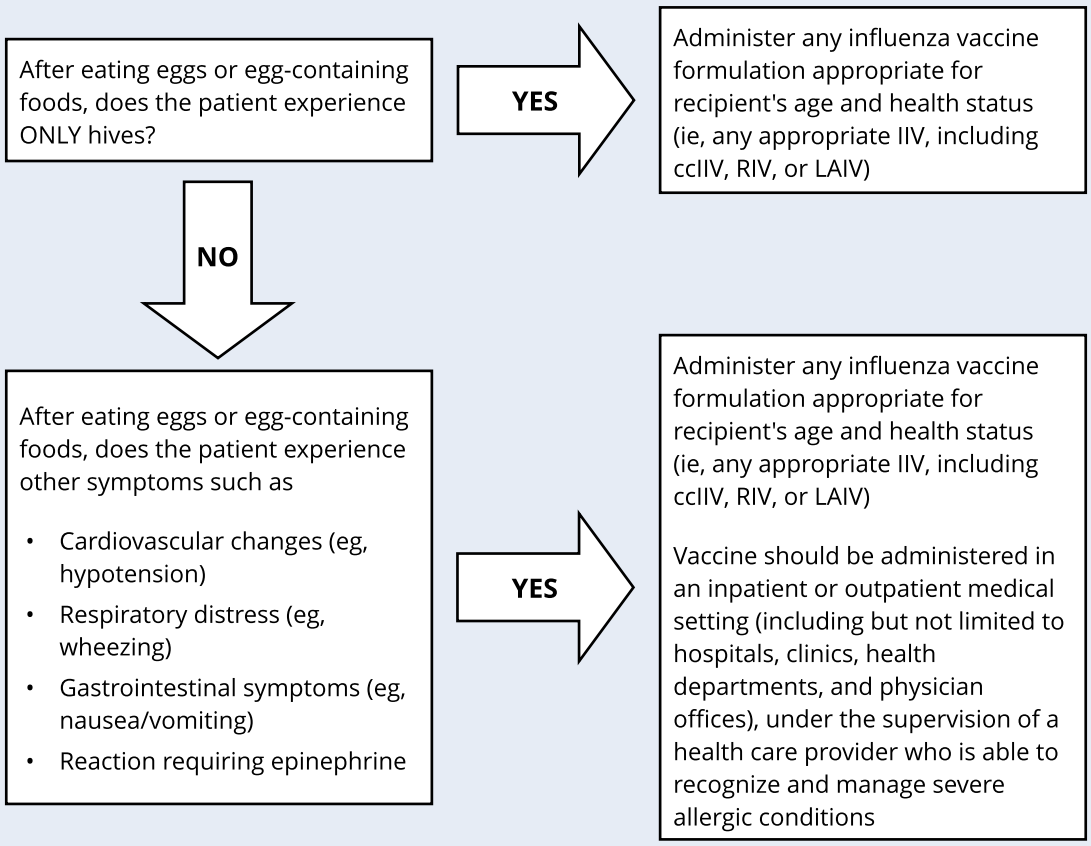
Precautions specific to LAIV include asthma in persons aged 5 years and older and presence of certain medical conditions that might predispose to complications after wild-type influenza infection (eg, chronic pulmonary, cardiovascular [except isolated hypertension], renal, hepatic, neurologic, hematologic, or metabolic disorders [including diabetes]).[1]

VACCINATE AGAINST PNEUMOCOCCAL DISEASE

Pneumococcal infection is a serious complication of influenza that can lead to severe pneumonia, meningitis, bacteremia, and sinus and ear infections.[31] In NYC, influenza and pneumonia together are the third leading cause of death as reported in the NYC Health Department Annual Summary of Vital Statistics.[32]

Two vaccines are approved to prevent pneumococcal disease: pneumococcal conjugate vaccine (PCV13) and pneumococcal polysaccharide vaccine (PPSV23). Per ACIP recommendations, children aged 5 years and younger should routinely receive the PCV13 series. People aged 6 through 64 years with qualifying medical conditions should receive PPSV23 and/or PCV13.

FIGURE. ADMINISTERING THE FLU VACCINE TO PATIENTS WITH EGG ALLERGIES[30]



Abbreviations: ccIIV, cell culture-based inactivated influenza vaccine; IIV, inactivated influenza vaccine; LAIV, live attenuated influenza vaccine; RIV, recombinant influenza vaccine.

NOTE: Regardless of a recipient's egg allergy history, all vaccination providers should be familiar with the office emergency plan and be currently certified in cardiopulmonary resuscitation. Epinephrine and equipment for maintaining an airway should be available for immediate use.

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All adults aged 65 years and older should receive PCV13 followed by PPSV23 at least 1 year apart. If the patient has already received 1 or more doses of PPSV23, the dose of PCV13 should be given at least 1 year after they received the most recent dose of PPSV23.[33] Adults aged 65 and older with certain high-risk conditions are an exception and may need both vaccinations (PCV13 and PPSV23) sooner than 1 year apart (**Table 2**[34]).

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

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

TABLE 2. PNEUMOCOCCAL VACCINE ADMINISTRATION FOR ADULTS AGED 19 AND OLDER[34]

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	√	√ ≥ 8 wk after PCV13		√ If no previous PCV13 vaccination	√ ≥ 8 wk after PCV13, ≥ 5 y after any PPSV23 at < 65 y
	Cerebrospinal fluid leaks					
Persons with functional or anatomic asplenia	Congenital or acquired asplenia	√	√ ≥ 8 wk after PCV13	√ ≥ 5 y after first dose PPSV23	√ If no previous PCV13 vaccination	√ ≥ 8 wk after PCV13, ≥ 5 y after any PPSV23 at < 65 y
	Sickle cell disease/other hemoglobinopathies					
Immunocom-promised persons	Chronic renal failure	√	√ ≥ 8 wk after PCV13	√ ≥ 5 y after first dose of PPSV23	√ If no previous PCV13 vaccination	√ ≥ 8 wk after PCV13, ≥ 5 y after any PPSV23 at < 65 y
	Congenital or acquired immunodefi-ciencies[d]					
	Generalized malignancy					
	HIV infection					
	Hodgkin disease					
	Iatrogenic immunosuppression[e]					
	Leukemia					
	Lymphoma					
	Multiple myeloma					
	Nephrotic syndrome					
	Solid organ transplant					

[a]Adults who received PPSV23 between ages 19 and 64 years need an additional dose of PPSV23 at 65 years of age or older and 5 or more years after any prior dose of PPSV23. 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.

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INFLUENZA REPORTING, ALERTS, AND SURVEILLANCE

Reporting vaccinations

- Report all vaccinations administered to children aged 18 years and younger to the CIR within 2 weeks of administration. To register with or access the CIR, log on to NYCMED.
- For patients aged 19 years and older, physicians are strongly encouraged to report vaccines administered to the CIR with the patient's verbal or written consent.
- Pharmacists and registered nurses **must** report vaccinations administered to the CIR for patients aged 19 years and older with the patient's verbal or written 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 or Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) incentive payments when using their EHR to report to the CIR. For more information, see Overview of Meaningful Use and Immunization Reporting and the Centers for Medicare and Medicaid Services.

Report immunizations to the CIR using your EHR system. Contact cir@health.nyc.gov with your facility address, contact information, and current EHR, or call 347-396-2400 to learn more.

Reporting influenza cases and deaths

- Report nosocomial cases of even 1 laboratory-confirmed case of influenza or clusters of 2 or more cases of influenza-like illness in Article 28 facilities. Either
  - 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.
- Report deaths in children under 18 years of age 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-NYC-DOH1 (692-3641).

Visit Reporting Diseases and Conditions for further information.

Updates, alerts, and surveillance

- Register for Health Department influenza alerts through the Health Alert Network or by calling 888-692-3641.
- Regularly visit the Health Department's influenza web page for information about local influenza activity, flu vaccine recommendations, and vaccine supply.
- Consider joining the Health Department's ILINet Influenza Surveillance Program as a sentinel physician. You will receive a weekly e-mail influenza update and guidance on influenza management. Contact Alice Yeung at 347-396-2608 or e-mail ayeung@health.nyc.gov for information.

PRESCRIBE ANTIVIRALS FOR TREATMENT AND PROPHYLAXIS

Treatment

Three antiviral medications are approved to treat influenza A and B.[35]

- Oral oseltamivir (Tamiflu®) for patients aged 2 weeks and older: Adverse events include nausea, vomiting, and headache. Off-label use of oseltamivir for treatment of influenza in infants aged younger than 14 days is recommended by the CDC and the American Academy of Pediatrics.
- Inhaled zanamivir (Relenza®) for patients aged 7 years and older: Allergic reactions include oropharyngeal or facial edema and skin rash; adverse events include sinusitis, dizziness, and ear, nose, and throat infections. Zanamivir is not recommended for people with underlying respiratory diseases such as asthma or chronic obstructive pulmonary disease.
- Intravenous peramivir (Rapivab®) for patients aged 2 years and older: The most common side effect is diarrhea.

Prophylaxis

Use oseltamivir (ages 3 months and older) and zanamivir (ages 5 years and older) for prophylaxis in people if[35]

- they are at high risk of complications after they are exposed to influenza **and**
- the vaccine is medically contraindicated or was administered within 2 weeks after exposure.

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If a child is aged younger than 3 months, use of oseltamivir for chemoprophylaxis is not recommended unless the situation is judged critical due to limited data in this age group.[35]

Prophylaxis with oseltamivir and zanamivir is generally not recommended if it has been more than 48 hours since initial exposure to influenza. Peramivir is not recommended for prophylaxis. See package inserts for complete product safety information.[35]

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; these agents are ineffective against influenza B viruses.[35]

Influenza antiviral medications may reduce the effectiveness of LAIV if given within 48 hours before to 14 days after LAIV administration.[1]

SUMMARY

The 2017-2018 influenza season was severe in NYC and throughout the United States. Improve flu vaccine coverage by following the NVAC recommendations for organizational or office-level strategies. Get vaccinated, ensure your staff do the same, and vaccinate all patients aged 6 months and older (especially those at high risk) as soon as vaccine is available to prevent influenza and its complications.

INFLUENZA QUIZ

1. Flu vaccine can be given to pregnant women
   a. During the first trimester only
   b. Through the second trimester
   c. At no time during pregnancy
   d. Anytime during pregnancy
2. The strongest influence on a patient's or parent's decision to vaccinate is
   a. Peer group behavior
   b. Provider recommendation
   c. Public service announcements
   d. Manufacturer marketing
3. Which is true of Citywide Immunization Registry reporting requirements?
   a. Providers must report all vaccinations, without parent or patient consent.
   b. Providers must report all vaccinations given to children through age 18.
   c. Providers should report vaccinations given to patients aged 19 and older, with the patient's oral or written consent.
   d. B and C

Answers: 1-**D**; 2-**B**; 3-**D**

FLU VACCINE REMINDERS[36,37]

1. **Order enough vaccine,** including enough preservative-free vaccine for pregnant women and children aged younger than 3 years, as required by New York State public health law. See Influenza Vaccine Availability Tracking System - IVATS for information
   a. If you are enrolled in the Vaccines for Children (VFC) program, please order flu vaccine now at the Citywide Immunization Registry (CIR). See Dear Colleague letter for details
   b. If you need additional flu vaccine, the NYC Health Department anticipates there will be vaccine available for order
2. **Store vaccines safely** to ensure full potency. See Checklist for Safe Vaccine Storage and Handling
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. Provide a Vaccine Information Statement (VIS) in the appropriate language, record the date the VIS was given, and the edition date of the VIS (see **Resources for Providers** for details)
5. **Report all immunizations administered to all patients using the CIR**
   a. Pediatric care practices should report all administered flu vaccine doses to the CIR and can access up-to-date influenza reports any time during influenza season. Contact cir@health.nyc.gov with your facility address, contact information, and current EHR or call 347-396-2400
   b. To inform vaccination quality improvement initiatives, facilities can also use the CIR to generate practice-level vaccine coverage reports, identify unvaccinated patients, and use the CIR texting function for reminder and recall messages
6. **Report adverse reactions to the federal Vaccine Adverse Event Reporting System** (VAERS), 800-822-7967

See **Resources for Providers** for tips on increasing the vaccination rate in your practice.

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RESOURCES FOR PROVIDERS

New York City (NYC) Health Department contact information

- Provider Access Line: 9 AM to 5 PM; 866-NYC-DOH1 (692-3641)
- Influenza website: http://www1.nyc.gov/site/doh/providers/health-topics/immunization-information-for-healthcare-providers.page
- E-mail questions to NYC Health Department: nycflu@health.nyc.gov
- Health Alert Network (HAN): sign up at https://a816-healthpsi.nyc.gov/NYCMED/Account/Login or 888-692-3641

Reporting and documentation

- New York State Health (NYS) Department
  - Bureau of Communicable Disease Control: 518-473-4439
  - Health Care Facility Infection Control (Nosocomial) Report Form DOH 4018: www.health.state.ny.us/forms/doh-4018.pdf
- Centers for Medicare & Medicaid Services Reporting Requirements: https://www.cdc.gov/nhsn/pdfs/cms/cms-reporting-requirements.pdf
- Centers for Disease Control and Prevention (CDC). Vaccine Information Statements: www.cdc.gov/vaccines/hcp/vis/index.html

Immunization recommendations

- CDC. Influenza Vaccines, 2018-2019: www.cdc.gov/flu/professionals
- Advisory Committee for Immunization Practices (ACIP)
  - Recommended Child and Adult Immunization Schedules—United States, 2018: www.cdc.gov/vaccines/schedules
  - Pneumococcal ACIP Vaccine Recommendations: www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/pneumo.html
- CDC. Vaccine administration: https://www.cdc.gov/vaccines/hcp/admin/admin-protocols.html
- NYS influenza recommendations for health care workers: www.health.ny.gov/diseases/communicable/influenza/seasonal/providers/prevention_of_influenza_transmission
- Immunization Action Coalition: www.immunize.org/influenza
- American College of Physicians Adult Immunization Portal: https://www.acponline.org/clinical-information/clinical-resources-products/adult-immunization
- American College of Obstetricians and Gynecologists Immunization Information for Ob-Gyns and Their Patients: www.immunizationforwomen.org

Improving vaccination coverage

- NYC Health Department Immunization Toolkit: https://www1.nyc.gov/site/doh/providers/resources/public-health-action-kits-adult-immunization.page
- Standing orders
  - https://www.cdc.gov/mmwr/preview/mmwrhtml/rr4901a2.htm
  - http://www.immunize.org/standing-orders
- Reminder Recall: https://www.cdc.gov/mmwr/preview/mmwrhtml/00054628.htm
- Centers for Medicare & Medicaid Services: The CMS Innovation Center. Influenza vaccination strategies: https://innovation.cms.gov/Files/x/PGP-Flu-Vaccination.pdf
- CDC. Print materials: https://www.cdc.gov/flu/resource-center/freeresources/print/index.htm
  Downloadable posters and patient handouts by audience in different sizes, formats, and languages

Cultural competence

- Think Cultural Health: cccm.thinkculturalhealth.hhs.gov
  Free online educational program accredited for physicians, physician assistants, and nurse practitioners (registration required)
- EthnoMed: ethnomed.org
  Specific community cultural profiles and subjects related to ethnic groups; patient education materials in various languages
- Culture Clues™: depts.washington.edu/pfes/CultureClues.htm
  Tip sheets about concepts and preferences of patients from the diverse cultures served by the University of Washington Medical Center

Coding and billing information

- American College of Physicians. Billing and coding adult immunizations: www.acponline.org/system/files/documents/running_practice/payment_coding/coding/billvaccines.pdf
- Centers for Medicare & Medicaid Services. Medicare billing: www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/qr_immun_bill.pdf

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RESOURCES FOR PATIENTS

Patient education materials

- NYC Health Department: www.nyc.gov/flu
  Publications, brochures, and posters
- Adult Immunization Action Kit: https://www1.nyc.gov/site/doh/providers/resources/public-health-action-kits-adult-immunization.page
- Immunization Action Coalition. Vaccine Information Statements (VIS): www.immunize.org/handouts/influenza-vaccines.asp
  Patient VIS forms at bottom of page (available in English and multiple other languages)
- CDC: www.cdc.gov/flu/freeresources/index.htm
  Free flyers, posters, brochures, and VIS forms for the general public, families and children, and high-risk groups

General information

- National Foundation for Infectious Diseases. Influenza (Flu): www.adultvaccination.org/influenza_flu_vaccine_immunization_adult_vaccination.htm

Vaccination locations

- Immunization clinics: http://www1.nyc.gov/site/doh/services/immunization-clinics.page
- NYC Health + Hospitals health care centers: https://www.nychealthandhospitals.org/health_care
- NYC HealthMap: nyc.gov/health/map
  Searchable map of health services

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City Health Information

nyc.gov/health

42-09 28th Street, Long Island City, NY 11101 (347) 396-2914

Bill de Blasio
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New York City Department of Health and Mental Hygiene.
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City Health Information. 2018;37(7):57-69.

ASK CHI

Have questions or comments about Influenza?

Email

AskCHI@health.nyc.gov

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