

City Health Information

Volume 39 (2020) | No 3; 19-34

New York City Department of Health and Mental Hygiene

INFLUENZA PREVENTION AND CONTROL, 2020-2021

- During this influenza season, which coincides with the coronavirus disease 2019 (COVID-19) pandemic, use every opportunity to administer flu vaccines to reduce the burden of respiratory illnesses and protect vulnerable populations at risk for severe illness.
- Provider recommendation is the strongest predictor of vaccination. Ensure that you and your entire staff receive flu vaccine and that all staff counsel patients and caregivers on the benefits of flu vaccine.
- Vaccinate all patients aged 6 months and older as soon as flu vaccine is available.
- Be aware that the New York City (NYC) Board of Health requires all children aged 6 through 59 months attending city-licensed and regulated child care to receive the flu vaccine by December 31 of each year.
- Give inactivated flu vaccine to all pregnant persons in any trimester to prevent influenza infection and complications in both the patient and infant.
- For patients aged 65 years and older, the NYC Health Department recommends high-dose or adjuvanted flu vaccine.

INSIDE THIS ISSUE (click to access)

INTRODUCTION

- Important groups to vaccinate against influenza (box)
- Medical conditions that increase risk of severe complications from influenza (box)
- Coronavirus disease 2019 (COVID-19) (box)

VACCINATE SAFELY DURING COVID-19

MAKE SURE YOU AND YOUR STAFF ARE VACCINATED

- Vaccination requirements for healthcare workers (box)

IMPROVE VACCINATION RATES

- National Vaccine Advisory Committee (NVAC) Standards for Adult Immunization Practice (box)

PROVIDER RECOMMENDATION IS THE STRONGEST PREDICTOR OF VACCINATION

- Common questions about the importance of flu vaccination (box)
- What to tell patients about flu vaccine safety (box)
- Immunization and pharmacists (box)

DISCUSS VACCINE SAFETY

VACCINATE CHILDREN AS EARLY AS POSSIBLE

VACCINATE PREGNANT PEOPLE AGAINST INFLUENZA AND PERTUSSIS

- Reasons to give flu vaccine in any trimester of pregnancy (box)

VACCINATE OLDER ADULTS

THIS SEASON'S VACCINES

- Available flu vaccines for the 2020-2021 season (table)

ASSESS FOR CONTRAINDICATIONS AND PRECAUTIONS

- Administering the flu vaccine to patients with egg allergies (figure)

VACCINATE AGAINST PNEUMOCOCCAL DISEASE

- Pneumococcal vaccine administration for adults aged 19 years and older (table)

PRESCRIBE ANTIVIRALS FOR TREATMENT OF AND PROPHYLAXIS FOR INFLUENZA

REPORTING, ALERTS, AND SURVEILLANCE

SUMMARY

- Flu vaccine reminders (box)

RESOURCES FOR PROVIDERS

RESOURCES FOR PATIENTS

REFERENCES

CONTINUING EDUCATION ACTIVITY

Influenza is a highly contagious viral infection that results in serious illness, hospitalizations, and deaths every season. Infants, pregnant persons, older adults, and people of any age with chronic medical conditions are at higher risk for serious complications.¹ During the 2019-2020 influenza season, hospitalization rates for laboratory-confirmed influenza were higher than in most recent seasons; they were the highest recorded for any season among children aged 0 to 4 years and adults



**"Toddler about to receive a vaccine from a doctor," by SELF Magazine (photographer: Heather Hazzan; wardrobe: Ronald Burton; props: Campbell Pearson; hair: Hide Suzuki; makeup: Deanna Melluso at See Management; shot on location at One Medical), licensed under CC BY 2.0

aged 18 to 49 years.^{2,3} During this past season, influenza resulted in³⁻⁵

- an estimated 410,000 to 740,000 hospitalizations nationwide and
- 188 influenza-related pediatric deaths, including 4 children in New York City (NYC), as of October 1, 2020.

Vaccination is our best defense against influenza and its complications. An estimated 4.4 million influenza cases, 58,000 hospitalizations, and 3,500 deaths were prevented by vaccination in the United States during the 2018-2019 influenza season, which was severe for all ages.⁶ Among children aged 6 months to 4 years, vaccination averted an estimated 43.0% of hospitalizations during the 2018-2019 season.⁶

Despite the importance of flu vaccination, coverage in NYC falls short of the Healthy People 2020 target of 70.0% for all age groups, except ages 6 through 59 months.⁷ Vaccination among children aged 6 through 59 months increased from 64.0% in the 2017-2018 season to 76.8% in the 2019-2020 season (unpublished Citywide Immunization Registry [CIR] data), after implementation of the NYC Board of Health flu vaccination requirement for children attending NYC-licensed and regulated child care.⁸ In contrast,

The New York City Board of Health requires all children aged 6 through 59 months attending city-licensed and regulated day care, school-based child care, Head Start, and prekindergarten programs to receive an annual flu vaccine by December 31 of each year.

BOX 1. IMPORTANT GROUPS TO VACCINATE AGAINST INFLUENZA^{1,10}

- All children aged 6 through 59 months, especially children aged younger than 2 years
- Adults aged 50 years and older, especially those 65 years and older
- People 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**)
- Healthcare 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**)

56.5% of children aged 5 through 8 years and 44.3% of children aged 9 to 18 years received the flu vaccine during the 2019-2020 season (unpublished CIR data).

Among adults aged 65 years and older, 67.6% reported that they received the flu vaccine (NYC Health Department, 2019 Community Health Survey). In 2018, non-Latino Black adults aged 65 years and older had significantly lower vaccination rates (49.5%), compared with non-Latino White (64.7%), Latino (67.4%), and Asian (73.1%) older adults. In 2019, vaccination improved among non-Latino Black older adults with a rate of 63.4%, compared with non-Latino White (67.5%), Latino (69%), and Asian (75.6%) older adults, although racial and ethnic disparities persist.⁹ Among adults aged 18 years and older, the vaccination rate was 48.2% overall; non-Latino Black adults had a significantly lower rate at 42.6%, compared with non-Latino White (50.8%), Latino (49.4%), and Asian (48.9%) adults.

As influenza and SARS-CoV-2, the novel coronavirus causing coronavirus disease 2019 (COVID-19), will likely co-circulate this season, flu vaccination will reduce the overall burden of respiratory illnesses and protect vulnerable populations at risk for severe influenza-related illness, the healthcare system, and other critical infrastructure. Use every opportunity to administer flu vaccines to all persons aged 6 months and older. Eliminate disparities in flu vaccination rates by ensuring those at greatest risk, including essential workers such as healthcare personnel (eg, those working in nursing homes, long-term care facilities, and pharmacies) and others in the [critical infrastructure workforce](#), are vaccinated (**Box 1**^{1,10} and **2**).¹¹ It will be especially important to vaccinate those

BOX 2. MEDICAL CONDITIONS THAT INCREASE RISK OF SEVERE COMPLICATIONS FROM INFLUENZA¹

- 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
- Immunocompromise due to any cause, including immunosuppression caused by medications or by HIV infection
- Conditions requiring aspirin- or salicylate-containing medications in people aged younger than 19 years because of risk of Reye syndrome after influenza infection
- Morbid obesity (body mass index ≥ 40)

at greatest risk of severe illness from influenza and COVID-19 (**Box 1-3^{1,10-14}**), including:

- Adults aged 65 years and older;
- Residents of nursing homes or long-term care facilities; and
- Persons with certain underlying conditions including chronic lung disease, heart disease, and a weakened immune system.

VACCINATE SAFELY DURING COVID-19

During the COVID-19 pandemic, follow these [best practices](#) for safe interactions among staff and patients when administering flu and other vaccines¹¹:

- Screen for symptoms of COVID-19 among staff and patients.
 - Staff who screen positive for COVID-19 should not work while they are sick; when they can return to work will depend on the severity of their illness and immune status (**Resources**).

BOX 3. CORONAVIRUS DISEASE 2019 (COVID-19)¹¹⁻¹⁴

- COVID-19 is a disease caused by the novel coronavirus SARS-CoV-2
- As of October 4, 2020, 208,821 people in the United States and 23,852 people (19,211 confirmed, 4,641 probable) in New York City have died from COVID-19
- Most people with COVID-19 have mild to moderate symptoms, including fever, cough, and/or sore throat. Less commonly, COVID-19 may lead to pneumonia, other severe complications, hospitalization, or death
- Persons at increased risk for severe COVID-19 complications include
 - Adults aged 50 years and older, especially those 65 years and older
 - Residents of nursing homes or long-term care facilities
 - Persons of all ages with certain underlying medical conditions such as
 - Lung disease
 - Moderate to severe asthma
 - Heart disease
 - Weakened immune system
 - Obesity
 - Diabetes
 - Kidney disease
 - Liver disease
 - Cancer
- Black and Latino New Yorkers have disproportionately borne the burden of severe COVID-19 illness and death. See [Health Equity Considerations and Racial and Ethnic Minority Groups](#)

- Routine vaccination should be deferred for persons with suspected or confirmed COVID-19 to avoid exposing healthcare personnel and others.
- Minimize chances for exposures.
 - Limit the number of patients in your facility at any given time to prevent crowding.
 - Maintain physical distancing (minimum of 6 feet between individuals) through use of signage/barriers and floor markers.
 - Install barriers, such as clear plastic sneeze guards, to limit physical contact with patients at triage.
 - Implement policies for the use of a cloth face covering for patients and visitors.
- Ensure all staff adhere to infection prevention and control procedures and follow Standard Precautions for hand hygiene and environmental cleaning.
- Ensure that staff wear medical facemasks at all times.
- When administering:
 - Injectable vaccines, if gloves are worn, change gloves and wash hands between patients.
 - Intranasal or oral vaccine, wear gloves. There is an increased likelihood of coming into contact with a patient's mucous membranes and body fluids. Between patients, change gloves and wash hands. Administration of flu vaccines is not considered an aerosol-generating procedure; therefore, use of an N95 or higher-level respirator is not recommended.

In addition to the [guidance for providing routine immunization services during the pandemic](#) listed above, the CDC has also provided [guidance on planning vaccination clinics at satellite, temporary, or off-site locations](#).

MAKE SURE YOU AND YOUR STAFF ARE VACCINATED

All healthcare workers should be vaccinated against influenza as soon as vaccine is available to protect themselves, their families, and their patients from influenza infection and transmission (**Box 4^{15,16}**). Flu vaccination among NYC healthcare workers in regulated facilities increased after New York State (NYS) influenza prevention regulations were established in 2013; in the 2019-2020 season, the vaccination rate was 72.2% (unpublished NYS Health Department data).

IMPROVE VACCINATION RATES

During the COVID-19 pandemic, there has been substantial disruption to outpatient medical care and vaccination.¹⁷ To ensure your patients' vaccinations are up-to-date, implement best practices to improve vaccination rates, such as 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 for Adult Immunization Practice (**Box 5**^{11,18,19}).

PROVIDER RECOMMENDATION IS THE STRONGEST PREDICTOR OF VACCINATION

Provider recommendation is the strongest predictor of whether patients receive needed vaccines.^{20,21} Explain the importance of annual flu vaccination, especially during the COVID-19 pandemic, in plain language, respectfully addressing the patient's or parent's questions or concerns related to safety, potential side effects, effectiveness, or other issues that keep them from readily accepting vaccination (**Box 6**^{22,23} and **7**^{1,24-26}).

- Tell your patients that you consider vaccinations, including flu vaccine, to be a healthcare priority.
- Explain why you, your staff, and your family get vaccinated against influenza each year.
- Ensure that all staff members who have contact with patients 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 office visits and restrictions about out-of-network providers.
 - In NYC, 74% of children are eligible for publicly funded vaccine through the Vaccines for Children (VFC) program (unpublished 2020 CDC Population Estimate Survey data) (**Resources for Providers**). More children may become eligible for the VFC program because of recent insurance loss or increased economic hardship due to the COVID-19 pandemic. Order additional vaccine for children who are newly eligible for the VFC program and increase awareness of this program among patients.²⁷
- If you do not offer vaccinations, refer patients to other vaccine providers, including pharmacies (**Box 8**¹⁹).

DISCUSS VACCINE SAFETY

Explain that vaccines are safe, generally causing only mild reactions, and discuss any concerns patients may have (**Box 7**^{1,24-26}). Before vaccinating, give patients the CDC Vaccine Information Statement (VIS) as required by law. VISs 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 for Providers**).

BOX 4. VACCINATION REQUIREMENTS FOR HEALTHCARE WORKERS^{15,16}

- When the New York State Commissioner of Health declares that influenza is prevalent, Articles 28, 36, and 40 require healthcare and residential facilities to
 - document the flu vaccination status of all healthcare 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 healthcare facilities must also report healthcare 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

BOX 5. NATIONAL VACCINE ADVISORY COMMITTEE (NVAC) STANDARDS FOR ADULT IMMUNIZATION PRACTICE^{11,18,19}

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. Administer all due or overdue vaccinations according to the routine immunization schedule during the same visit
 - b. Use non-patient-specific [standing orders](#) to allow registered 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 (**Resources for Providers**)
 - c. If you do not stock vaccine, use [NYC HealthMap](#) to find a local vaccine provider such as a pharmacist for referral (**Box 8**)
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

VACCINATE CHILDREN AS EARLY AS POSSIBLE

Young children are at high risk of serious complications from influenza. It is especially important to protect infants aged younger than 6 months because they are at high risk of influenza-related hospitalizations and medically attended visits but are too young to be vaccinated. Strongly encourage household contacts and childcare providers to also get vaccinated.

BOX 6. COMMON QUESTIONS ABOUT THE IMPORTANCE OF FLU VACCINATION^{22,23}

Q: Why do I need a flu vaccine?

A: You need a flu vaccine because influenza can cause serious illness, especially in young children, pregnant people, older adults, and people with certain chronic medical conditions such as asthma, heart disease, and/or diabetes. Influenza can cause complications that lead to hospitalization and/or death, even in otherwise healthy children and adults. Flu vaccination is one way to decrease the risk of you and your family getting sick and needing medical care during the COVID-19 pandemic.

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 many influenza infections, even though it may not be 100% 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 did not 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 3 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 do not get vaccinated can get influenza themselves and pass it on to people who may be more likely to have serious complications, including infants younger than 6 months, pregnant people, older adults, and people with chronic health conditions.

The NYC Board of Health requires all children aged 6 through 59 months attending city-licensed and regulated child care to receive an annual flu vaccine by December 31 of each year.⁸ With implementation of the flu vaccine mandate during the 2018-2019 flu season, the vaccination rate for children in this age group

BOX 7. WHAT TO TELL PATIENTS ABOUT FLU VACCINE SAFETY^{1,24-26}

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 localized reaction, such as nasal congestion
- Serious side effects are very rare
- The FDA and CDC maintain robust surveillance systems for the detection and identification of any safety issues

The flu vaccine is made from safe ingredients

- Thimerosal is a vaccine preservative 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
- **No evidence of harm** has been found with the low doses of thimerosal in vaccines; there have been minor reactions such as redness and swelling at the injection site
- There is no thimerosal in single-dose preparations of flu vaccine
- All multidose vials of flu vaccines contain a small amount of thimerosal

The flu vaccine is unlikely to cause a severe allergic reaction

- Many forms of flu vaccine do not contain common allergens such as preservatives, antibiotics, or gelatin; some are egg-free. There is no latex in any of this season's vaccines
- If you have an allergy to any of the vaccine ingredients or have had a reaction to a previous vaccination, I will review with you whether you are still eligible to receive flu vaccine

The flu vaccine cannot cause influenza

- The inactivated flu shot does not contain live viruses, so it cannot cause influenza
- The nasal spray flu shot does contain live viruses; however, the viruses are weakened so that they cannot cause influenza but they may cause nasal congestion

during the 2019-2020 season was 76.8%, a greater than 10% increase from before the mandate was implemented (unpublished CIR data).

The CDC recommends administering 2 doses of flu vaccine (at least 4 weeks apart) to all children aged 6 months through 8 years, if they have not received 2 or more doses of flu vaccine before July 1, 2020. For those doses received before July 1, 2020, the 2 doses of flu vaccine 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 NYS can administer flu vaccine to children aged as young as 2 years (**Box 8**¹⁹).

VACCINATE PREGNANT PEOPLE AGAINST INFLUENZA AND PERTUSSIS

Influenza

Influenza can be dangerous to pregnant people and infants who are too young to receive the vaccine. The flu vaccine protects pregnant people against influenza as well as their newborns in the first few months of life

BOX 8. IMMUNIZATION AND PHARMACISTS¹⁹

- Pharmacists in New York State are authorized to administer
 - Flu vaccine to everyone aged 2 years and older
 - 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
- Pharmacists administering flu vaccine should check the Citywide Immunization Registry (CIR) to assess for and coadminister any other vaccines that are due
- Pharmacies routinely report flu (and other) vaccines to the CIR; during the 2019-2020 season, they reported administering more than 560,000 doses of flu vaccine (unpublished CIR data)
- On August 24, 2020, the US Department of Health and Human Services [amended](#) the Public Readiness and Emergency Preparedness Act (PREP Act), authorizing state-licensed pharmacists to order and administer vaccines recommended by the Advisory Committee on Immunization Practices for children aged 3 through 18 years, to increase access to childhood vaccines and decrease the risk of vaccine-preventable disease outbreaks

^aNew York State pharmacists may vaccinate children aged as young as 2 years, but each pharmacy may have its own age limits

through transplacental transfer of antibodies during pregnancy.²⁸ The American College of Obstetricians and Gynecologists (ACOG)²⁹ and ACIP¹ recommend flu vaccination in pregnancy as the standard of care. In 2017, almost 1 in 5 pregnant people in NYC reported that they did not get a recommendation from their healthcare provider to receive a flu vaccine during the 12 months before delivery. Only 59.7% of pregnant people reported receiving the flu vaccine that year (unpublished Pregnancy Risk Assessment Monitoring System [PRAMS] data, 2017), which is lower than the Healthy People 2020 goal of 80% flu vaccine coverage among pregnant people.⁷

As provider recommendation is the greatest predictor of vaccination,^{20,21} strongly recommend and offer inactivated flu vaccine to all pregnant people in any trimester as soon as vaccine becomes available (**Box 9**^{28,30-34}).

Pertussis

When offering and administering flu vaccine, providers should also strongly recommend and offer tetanus, diphtheria, and pertussis (Tdap) vaccine to all pregnant people during each pregnancy, preferably during 27 to 36 weeks' gestation. Young infants are at greatest risk of severe disease, hospitalizations, and death from pertussis.³⁵ Like the flu vaccine, 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 prevented 91.4% of pertussis infections among infants in the first 2 months of life, before the first infant dose of diphtheria, tetanus, and pertussis (DTaP) vaccine is typically administered.³⁶

BOX 9. REASONS TO GIVE FLU VACCINE IN ANY TRIMESTER OF PREGNANCY^{28,30-34}

- Pregnant people are 4 times more likely to have an influenza-related hospitalization than nonpregnant people
- Influenza increases the risk of premature labor and delivery
- Vaccination prevents influenza infection in the infant through transplacental antibody transfer, which protects infants aged younger than 6 months who are too young to get vaccinated and 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 people without harm and is available in single-dose preparation without thimerosal

In 2017, only 66.4% of pregnant people in NYC reported that their provider recommended Tdap vaccine during any prenatal care visit, and 61.4% reported receiving Tdap vaccine (unpublished PRAMS data, 2017). See [ACIP's complete Tdap vaccination recommendations](#) for pregnancy and pertussis.

VACCINATE OLDER ADULTS

For adults aged 65 years and older, the NYC Health Department recommends high-dose or adjuvanted flu vaccines. This season, high-dose flu vaccine is available only as a quadrivalent vaccine (**Table 1^{1,37}**). Adjuvanted flu vaccine is available as both trivalent and quadrivalent vaccine.

Studies have demonstrated that high-dose trivalent inactivated influenza vaccine (IIV3) had 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

However, if you only have SD quadrivalent inactivated vaccine, do not delay vaccinating your patients aged 65 years and older.

THIS SEASON'S VACCINES

For the 2020-2021 season, IIV3 egg-based vaccine contains A/Guangdong-Maonan/SWL1536/2019 (H1N1)pdm09-like virus (updated); A/Hong Kong/2671/2019 (H3N2)-like virus (updated); and B/Washington/02/2019 (B/Victoria lineage)-like virus (updated).

Only adjuvanted flu vaccine is available as a trivalent vaccine. All other egg-based flu vaccines are quadrivalent and include the trivalent viruses as well as a B/Phuket/3073/2013-like (Yamagata lineage) virus.

All cell culture-based influenza vaccine (ccIIV) or recombinant influenza vaccine (RIV) are only available in quadrivalent formulation and contain A/Hawaii/70/2019 (H1N1)pdm09-like virus (updated); A/Hong Kong/45/2019 (H3N2)-like virus (updated); B/Washington/02/2019 (B/Victoria lineage)-like virus (updated); and B/Phuket/3073/2013-like (Yamagata lineage) virus.

TABLE 1. AVAILABLE FLU VACCINES FOR THE 2020-2021 SEASON^{a,1,37}

Type	Trade Name	Manufacturer	Age Indication	Presentation	Thimerosal Content ^b
Quadrivalent Vaccines					
Inactivated	Afluria Pediatric	Seqirus	6-35 months	0.25-mL prefilled syringe	Preservative-free
	Afluria	Seqirus	≥ 3 years	0.5-mL prefilled syringe	Preservative-free
			≥ 6 months	5.0-mL multidose vial	24.5 mcg/dose
	Fluzone	Sanofi Pasteur	≥ 6 months	0.5-mL prefilled syringe	Preservative-free
				0.5-mL single-dose vial	Preservative-free
				5.0-mL multidose vial	25 mcg/dose
FluLaval	GlaxoSmithKline	≥ 6 months	0.5-mL prefilled syringe	Preservative-free	
Fluarix	GlaxoSmithKline	≥ 6 months	0.5-mL prefilled syringe	Preservative-free	
Cell culture-based ^c	Flucelvax	Seqirus	≥ 4 years	0.5-mL prefilled syringe	Preservative-free
				5.0-mL multidose vial	25 mcg/dose
Recombinant ^c	Flublok	Sanofi Pasteur	≥ 18 years	0.5-mL prefilled syringe	Preservative-free
Live attenuated	FluMist	AstraZeneca	2-49 years	0.2-mL single-dose prefilled intranasal sprayer	Preservative-free
High-dose	Fluzone High Dose	Sanofi Pasteur	≥ 65 years	0.7-mL prefilled syringe	Preservative-free
Adjuvanted	Fluad	Seqirus	≥ 65 years	0.5-mL prefilled syringe	Preservative-free
Trivalent Vaccines					
Adjuvanted	Fluad	Seqirus	≥ 65 years	0.5-mL prefilled syringe	Preservative-free

^aAll vaccines listed are intramuscular, except live attenuated vaccine, which is intranasal; all vaccines listed are latex-free

^bNew York State law prohibits the administration of vaccines containing more than trace amounts of thimerosal to pregnant people and children aged younger than 3 years, unless this vaccine cannot be obtained despite good-faith effort. In these instances, vaccination of children aged less than 3 years and pregnant people is still recommended because the substantial risk of complications or death from influenza in these groups outweighs the unproven risk of vaccination with thimerosal-containing vaccine

^cThese vaccines are egg-free

In both egg-based vaccine and ccIIV or RIV, the H1N1, H3N2, and B/Victoria flu strains were updated from last season’s formulations to better match circulating strains.

Administer any licensed, age-appropriate influenza vaccine (IIV, ccIIV, RIV, or intranasally administered live attenuated influenza vaccine [LAIV]).¹ See **Table 1^{1,37}** for information on this season’s vaccines.

ASSESS FOR CONTRAINDICATIONS AND PRECAUTIONS

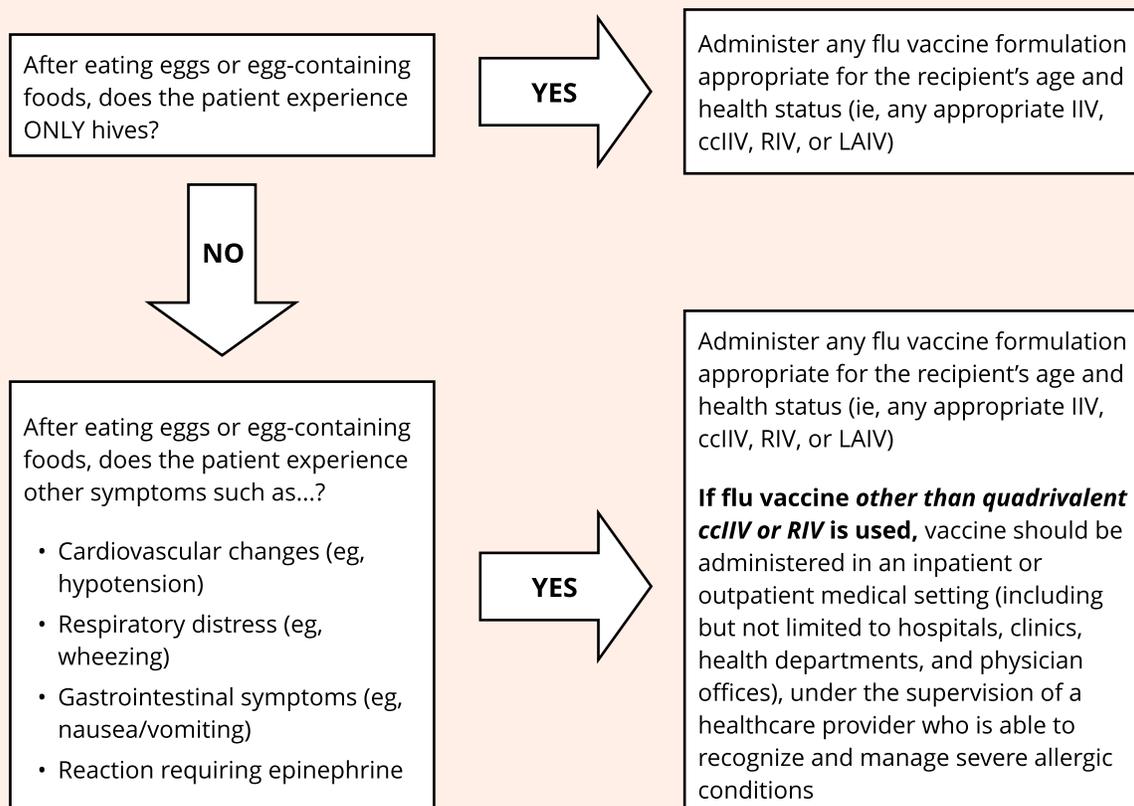
Ask about patients’ current health status, including any acute illness and history of reactions to flu vaccine. For people with a history of egg allergy, ACIP updated their recommendations for administering the flu vaccine, noting that if flu vaccine **other than quadrivalent ccIIV or RIV** is used, vaccine should be administered in an inpatient or outpatient medical setting, under the supervision of a healthcare provider who is able to recognize and manage severe allergic conditions (**Figure 1³⁸**).^{1,39} 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, with or without fever, consider the risks and benefits of administering flu vaccine.²⁴
- **History of Guillain-Barré Syndrome (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 may outweigh the risks.^{1,24}

Inform patients that alternate formulations of flu vaccine are available if they have a known allergy to one or more vaccine components, including preservatives, antibiotics, and/or gelatin. None of the 2020-2021 vaccines contain latex. Check the [CDC Vaccine Contents Table](#) or vaccine package inserts to find a formulation without the implicated ingredient.

FIGURE. ADMINISTERING THE FLU VACCINE TO PATIENTS WITH EGG ALLERGIES^{1,38}



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

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

In addition to the labeled contraindications, ACIP recommends that LAIV should not be administered to the following groups¹:

- children aged 2 through 4 years who have received a diagnosis of asthma or whose parents report (or 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 people,
- persons who have taken influenza antiviral medications within the previous 48 hours to 17 days, depending on the antiviral used.

In 2020, ACIP added that people with asplenia or sickle cell disease, cochlear implant, and/or active cerebrospinal fluid leak should not receive LAIV.

Precautions to LAIV use 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.⁴⁰ In NYC, influenza and pneumonia together are the third leading cause of death.⁴¹

Two vaccines are approved to prevent pneumococcal disease: pneumococcal conjugate vaccine (PCV13) and pneumococcal polysaccharide vaccine (PPSV23). Per ACIP recommendations, children aged 59 months and younger should routinely receive the PCV13 series.⁴² Some children with chronic medical conditions may require a single supplemental dose of PCV13 through age 71 months depending on their prior vaccination history. People aged 6 through 64 years who do not have a qualifying medical condition are not routinely recommended to receive pneumococcal vaccine. However, many people aged 6 through 64 years do

have a qualifying medical condition requiring one or both pneumococcal vaccines and should receive PCV13 followed by PPSV23 at a minimum interval of 8 weeks (Table 2^{43,44}). Adults aged 65 years and older with a qualifying medical condition should also receive both pneumococcal vaccines, with administration of PCV13 followed by PPSV23 at a minimum interval of 8 weeks.

ACIP continues to recommend routine administration of PPSV23 to all adults aged 65 years and older. In 2019, ACIP updated its guidance for immunocompetent adults aged 65 years and older, and recommends administration of PCV13 with [shared clinical decision-making \(Resources for Providers\)](#).⁴⁴ Immunocompetent adults receiving both pneumococcal vaccines should have PCV13 followed by PPSV23 at a minimum interval of 1 year (Table 2^{43,44}).

The Centers for Medicare and 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.

PRESCRIBE ANTIVIRALS FOR TREATMENT OF AND PROPHYLAXIS FOR INFLUENZA

Treatment

The following groups are at higher risk of complications from influenza and should receive antiviral treatment:

- children aged younger than 2 years;
- adults aged 65 years and older;
- people with
 - 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,
 - immunosuppression, including that caused by medications or by HIV infection,
 - morbid obesity (ie, body mass index \geq 40);
- people who are pregnant or postpartum (within 2 weeks after delivery);

Continued on page 29

TABLE 2. PNEUMOCOCCAL VACCINE ADMINISTRATION FOR ADULTS AGED 19 YEARS AND OLDER^{43,44}

Medical Indication	Underlying Medical Condition	PCV13 ^a for ≥ 19 y	PPSV23 ^b for 19 through 64 y		PCV13 ^a at ≥ 65 y	PPSV23 at ≥ 65 y
		Recommended	Recommended	Revaccination	Recommended	Recommended
None	None of the below				✓ With shared clinical decision making ^c	✓ ^d
Immuno-competent persons	Alcoholism				✓ With shared clinical decision making ^c	✓ ^d ≥ 5 y after any PPSV23 at < 65 y
	Chronic heart disease ^e					
	Chronic liver disease		✓			
	Chronic lung disease ^f					
	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	✓	✓	✓	✓	✓
	Sickle cell disease/other hemoglobinopathies		≥ 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
Immuno-compromised persons	Chronic renal failure	✓	✓	✓	✓	✓
	Congenital or acquired immunodeficiencies ^g					
	Generalized malignancy					
	HIV infection					
	Hodgkin disease					
	Iatrogenic immunosuppression ^h					
	Leukemia					
	Lymphoma					
	Multiple myeloma					
	Nephrotic syndrome					
	Solid organ transplant					

PCV13, pneumococcal conjugate vaccine; PPSV23, pneumococcal polysaccharide vaccine

^aIf PPSV23 is administered before PCV13, PCV13 can be given 1 year after PPSV23 for adults aged 19 years and older

^bAdults who received PPSV23 between ages 19 and 64 years need an additional dose of PPSV23 at age 65 years or older and 5 or more years after any prior dose of PPSV23. No additional doses of PPSV23 should be given following the dose administered at age 65 years or older

^cUpdated guidance from the Advisory Committee on Immunization Practices no longer routinely recommends PCV13 for immunocompetent adults aged 65 years and older, but recommends the administration of PCV13 with [shared clinical decision making](#)

^dAll adults aged 65 years and older should receive PPSV23. In immunocompetent adults receiving both pneumococcal vaccines, PPSV23 should be administered at a minimum interval of 1 year after PCV13

^eIncluding congestive heart failure and cardiomyopathies

^fIncluding chronic obstructive pulmonary disease, emphysema, and asthma

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

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

Continued from page 27

- people aged younger than 19 years who are receiving long-term aspirin- or salicylate-containing medications because of the risk of Reye syndrome after influenza infection;
- American Indians/Alaska Natives;¹⁰
- residents of nursing homes and other chronic care facilities.

Four antiviral medications are approved to treat influenza A and B.^{45,46}

- 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 AAP.
- 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.
- Oral baloxavir (Xofluza™) for patients aged 12 years and older: The most commonly reported adverse reactions include diarrhea, bronchitis, nasopharyngitis, headache, and nausea, but the incidence of these side effects is not significantly higher than in a placebo group.

Prophylaxis

Use oseltamivir (ages 3 months and older) and zanamivir (ages 5 years and older) for prophylaxis if⁴⁵

- the patient is 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.

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.⁴⁵ 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.⁴⁵ 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.⁴⁵

Influenza antiviral medications may reduce the effectiveness of LAIV if given within the following intervals:¹

- Oseltamivir or zanamivir: 48 hours before to 2 weeks after LAIV
- Peramivir: 5 days before to 2 weeks after LAIV
- Baloxavir: 17 days before to 2 weeks after LAIV

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.
- The NYC Health Department recommends incorporating CIR consent into a general consent process.

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 electronic health record (EHR) system. Contact cir@health.nyc.gov with your facility address, contact information, and current EHR, or call 347-396-2400 to learn more.

When the COVID-19 vaccine becomes available, we expect that all vaccine providers will need to register with the CIR and have a CIR Facility Code to order it.

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 aged younger than 18 years 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 (866-692-3641).

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

Updates, alerts, and surveillance

- Register for Health Department influenza alerts through the [Health Alert Network](#) or by calling 866-692-3641.

- 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.

SUMMARY

Hospitalizations and deaths occur every influenza season. With the potential for both influenza and SARS-CoV-2 viruses to circulate at the same time, use every opportunity to administer flu vaccines to all eligible persons aged 6 months and older to prevent influenza and its complications. This will help to reduce the burden of respiratory illnesses in the community and protect vulnerable populations at risk for severe illness, the healthcare system, and critical infrastructure. Follow safe vaccinating practices and use evidence-based strategies, such as standing orders and reminder-recall systems, to improve flu vaccination rates and eliminate disparities.

FLU VACCINE REMINDERS^{47,48}

- 1. Order enough vaccine**, including enough preservative-free vaccine for pregnant persons 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 program, order flu vaccine now if you have not already done so at the [Citywide Immunization Registry \(CIR\)](#). See [Dear Colleague letter](#) for details
- 2. Ensure you have sufficient medical supplies**, including syringes, needles, and epinephrine pens, to vaccinate and administer anaphylaxis treatment
- 3. Store vaccines safely** to ensure full potency. See [Checklist for Safe Vaccine Storage and Handling](#)
- 4. Use your electronic health record (EHR) system** or CIR to identify and contact patients who need vaccination and to monitor vaccination coverage in your practice
- 5. 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 (**Resources for Providers**)
- 6. Report all immunizations administered to all patients using the CIR**
 - a. Pediatric care practices should report all administered flu vaccine doses to the CIR. You 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
- 7. 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

RESOURCES FOR PROVIDERS

New York City (NYC) Health Department

- Provider Access Line: 866-NYC-DOH1 (866-692-3641)
- Immunization information for providers: <http://www1.nyc.gov/site/doh/providers/health-topics/immunization-information-for-healthcare-providers.page>
See section on Influenza and Pneumococcal Information
- Vaccines for Children program: <https://www1.nyc.gov/site/doh/providers/nyc-med-cir/vaccines-for-children-program.page>
- Health Alert Network (HAN): sign up at <https://a816-healthpsi.nyc.gov/NYCMED/Account/HANSubscribe> or 866-692-3641
- E-mail questions to: nycflu@health.nyc.gov

Coronavirus disease 2019 (COVID-19)

- NYC Health Department. COVID-19: Information for providers: <https://www1.nyc.gov/site/doh/covid/covid-19-providers.page>
- Centers for Disease Control and Prevention (CDC)
 - Information for healthcare professionals about COVID-19: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/index.html>
 - Vaccination guidance during a pandemic: <https://www.cdc.gov/vaccines/pandemic-guidance/index.html>
 - Guidance for planning vaccination clinics held at satellite, temporary, or off-site locations: <https://www.cdc.gov/vaccines/hcp/admin/mass-clinic-activities/index.html>
 - Criteria for return to work for healthcare personnel with SARS-CoV-2 infection (interim guidance): <https://www.cdc.gov/coronavirus/2019-ncov/hcp/return-to-work.html>
 - Health equity considerations and racial and ethnic minority groups: <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html>

Reporting and documentation

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

Immunization recommendations

- CDC
 - Seasonal influenza (flu). Information for health professionals: www.cdc.gov/flu/professionals
 - Vaccine administration: <https://www.cdc.gov/vaccines/hcp/admin/admin-protocols.html>

- Advisory Committee for Immunization Practices (ACIP)
 - Immunization schedules: www.cdc.gov/vaccines/schedules
 - Pneumococcal ACIP vaccine recommendations: www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/pneumo.html
 - Shared clinical decision-making recommendations: <https://www.cdc.gov/vaccines/acip/acip-scdm-faqs.html>
- National Foundation for Infectious Diseases. Webinar: Shared clinical decision-making for immunization recommendations: <https://www.gotostage.com/channel/ff5edf4ebb134ec481037f5c774daa3f/recording/62c4059dfe71461fadfd80cb3d5be82a/watch>
- NYS Department of Health regulation for healthcare workers: http://www.health.ny.gov/diseases/communicable/influenza/seasonal/providers/prevention_of_influenza_transmission
- Immunization Action Coalition. Influenza vaccine: <http://www.immunize.org/influenza>
- American College of Physicians. Adult immunization: <https://www.acponline.org/clinical-information/clinical-resources-products/adult-immunization>
- American College of Obstetricians and Gynecologists. Immunization information: <http://www.immunizationforwomen.org>

Improving vaccination rates

- NYC Health Department. Adult immunization action kit: <https://www1.nyc.gov/site/doh/providers/resources/public-health-action-kits-adult-immunization.page>
- NYC Vaccines for Children Program provider requirements. Enrollment and re-certification: <https://www1.nyc.gov/site/doh/providers/nyc-med-cir/vaccines-for-children-requirements.page>
- Standing orders
 - NYS Office of the Professions. Non-patient-specific standing order and protocol guidelines: <http://www.op.nysed.gov/prof/nurse/immunguide.htm>
 - Immunization Action Coalition. Standing orders templates for administering vaccines: <http://www.immunize.org/standing-orders>
 - CDC. Use of standing orders programs to increase adult vaccination rates: <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr4901a2.htm>
- CDC. Use of reminder and recall by vaccination providers: <https://www.cdc.gov/mmwr/preview/mmwrhtml/00054628.htm>
- Centers for Medicare and Medicaid Services: Influenza vaccination strategies: <https://innovation.cms.gov/files/x/pgp-flu-vaccination.pdf>
- CDC. Influenza 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

Continued on next page

RESOURCES FOR PROVIDERS *(continued)***Cultural competence**

- US Department of Health and Human Services. Think cultural health: <https://cccm.thinkculturalhealth.hhs.gov>
Free online educational program accredited for physicians, physician assistants, and nurse practitioners (registration required)
- EthnoMed: <http://ethnomed.org>
Community cultural profiles and subjects related to ethnic groups; patient education materials in various languages
- Culture Clues™: <https://depts.washington.edu/pfes/CultureClues.htm>
Tip sheets about concepts and preferences of patients from diverse cultures

Coding and billing information

- Immunization Action Coalition. Vaccinating Adults. A Step-by-Step Guide: <https://www.immunize.org/guide>
See Step 7B: How to Bill for Adult Immunizations
- Centers for Medicare and Medicaid Services
 - Medicare part B immunization billing: seasonal influenza virus, pneumococcal, and hepatitis B: https://www.cms.gov/outreach-and-education/medicare-learning-network-mln/mlnproducts/downloads/qr_immun_bill.pdf
 - Medicare part D vaccines: <https://www.cms.gov/outreach-and-education/medicare-learning-network-mln/mlnproducts/downloads/vaccines-part-d-factsheet-icn908764.pdf>

City Health Information archives: <https://www1.nyc.gov/site/doh/providers/resources/city-health-information-chi.page>

RESOURCES FOR PATIENTS**General information**

- National Foundation for Infectious Diseases. Influenza and adults: <https://www.nfid.org/infectious-diseases/influenza-and-adults>

Educational materials

- NYC Health Department
 - Seasonal flu (influenza): <http://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>
 - Vaccinations and pregnancy: <https://www1.nyc.gov/site/doh/health/publications/health-bulletin/health-bulletin-119.page>
- Immunization Action Coalition. Vaccine information statements (VIS): <http://www.immunize.org/vis>
Available in many languages

- CDC. Seasonal influenza resource center. Free resources: <http://www.cdc.gov/flu/freeresources/index.htm>
Flyers, posters, brochures, and VIS forms for the general public, families, children, and high-risk groups

Vaccination locations

- NYC Health Department. Immunization clinics: <http://www1.nyc.gov/site/doh/services/immunization-clinics.page>
- NYC Health + Hospitals healthcare centers: https://www.nychealthandhospitals.org/health_care
- NYCHealthMap: <https://a816-healthpsi.nyc.gov/nychealthmap>
Searchable map of health services
- US Department of Health and Human Services. Find a health center: <https://findahealthcenter.hrsa.gov>

REFERENCES

1. Grohskopf LA, Alyanak E, Broder KR, et al. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices—United States, 2020–2021 influenza season. *MMWR Recomm Rep.* 2020;69(8):1–24.
2. Xu X, Blanton L, Elal AI, et al. Update: influenza activity in the United States during the 2018–19 season and composition of the 2019–20 influenza vaccine. *MMWR Morb Mortal Wkly Rep.* 2019;68(24):544–551.
3. Centers for Disease Control and Prevention (CDC). Weekly US influenza surveillance report. Accessed October 1, 2020. <https://www.cdc.gov/flu/weekly/index.htm>
4. CDC. 2019–2020 US flu season: preliminary in-season burden estimates. Updated October 1, 2020. Accessed October 1, 2020. <https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm>
5. New York City (NYC) Department of Health and Mental Hygiene (DOHMH). Influenza surveillance report: week ending May 2, 2020 (week 18). Accessed October 1, 2020. <https://www1.nyc.gov/assets/doh/downloads/pdf/hcp/weekly-surveillance05022020.pdf>
6. Chung JR, Rolfes MA, Flannery B, et al. Effects of influenza vaccination in the United States during the 2018–2019 influenza season. *Clin Infect Dis.* 2020;ciz1244.
7. US Department of Health and Human Services. HealthyPeople.gov. Immunization and infectious diseases. Accessed October 1, 2020. <https://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives>
8. NYC DOHMH. Statements from Health Commissioner Dr. Mary T. Bassett and Corporation Counsel Chief of Appeals Richard Dearing on NY Court of Appeals upholding mandated flu vaccines for daycare and preschool children. June 28, 2018. Accessed October 1, 2020. <https://www1.nyc.gov/assets/doh/downloads/pdf/press/2018/20180628-statement-flu-vaccines-children.pdf>
9. National Health Interview Survey, 2017. Presented at: Meeting of the Advisory Committee on Immunization Practices (ACIP). June 24–25, 2020; Atlanta, Georgia.

Continued on next page

REFERENCES (continued)

10. Groom AV, Hennessy TW, Singleton RJ, Butler JC, Holve S, Cheek JE. Pneumonia and influenza mortality among American Indian and Alaska Native people, 1990-2009. *Am J Public Health*. 2014;104(Suppl 3):S460-S469.
11. CDC. Vaccination guidance during a pandemic. Updated June 9, 2020. Accessed October 1, 2020. <https://www.cdc.gov/vaccines/pandemic-guidance/index.html>
12. CDC. Coronavirus disease 2019 (COVID-19): Data tracker. Accessed October 1, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/us-cases-deaths.html>.
13. NYC DOHMH. COVID-19: data. Accessed October 1, 2020. <https://www1.nyc.gov/site/doh/covid/covid-19-data.page>
14. CDC. Coronavirus disease 2019 (COVID-19): health equity considerations and racial and ethnic minority groups. Updated July 24, 2020. Accessed October 1, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html>
15. New York State (NYS) Department of Health. Regulation for prevention of influenza transmission by healthcare and residential facility and agency personnel. Updated February 2020. Accessed October 1, 2020. http://www.health.ny.gov/diseases/communicable/influenza/seasonal/providers/prevention_of_influenza_transmission
16. Centers for Medicare and Medicaid Services. Ambulatory Surgical Center Specifications Manuals, Version 9.0 and 10.0. Accessed October 1, 2020. <https://qualitynet.org/asc/specifications-manuals>
17. Mehrotra A, Chernew M, Linetsky D, Hatch H, Cutler D. The impact of the COVID-19 pandemic on outpatient visits: a rebound emerges. To the Point. The Commonwealth Fund. May 19, 2020. October 1, 2020. <https://doi.org/10.26099/ds9e-jm36>
18. National Vaccine Advisory Committee. Recommendations from the National Vaccine Advisory Committee: standards for adult immunization practice. *Public Health Rep*. 2014;129(2):115-123.
19. NYS Office of the Professions. Frequently asked questions: administration of immunizations. Updated June 11, 2019. Accessed October 1, 2020. <http://www.op.nysed.gov/prof/pharm/pharmimmunizationfaq.htm>
20. Benedict KM, Santibanez TA, Black CL, et al. Recommendations and offers for adult influenza vaccination, 2011-2012 season, United States. *Vaccine*. 2016;35(9):1353-1361.
21. 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.
22. CDC. Misconceptions about seasonal flu and flu vaccines. Updated September 1, 2020. Accessed October 1, 2020. <https://www.cdc.gov/flu/about/qa/misconceptions.htm>
23. CDC. Frequently asked influenza (flu) questions: 2020-2021 season. Updated September 21, 2020. Accessed October 1, 2020. <https://www.cdc.gov/flu/season/faq-flu-season-2020-2021.htm>
24. CDC. Influenza (flu) vaccine safety. Updated September 21, 2020. Accessed October 1, 2020. <https://www.cdc.gov/flu/protect/vaccine/vaccinesafety.htm>
25. CDC. Live attenuated influenza vaccine (LAIV) (the nasal spray flu vaccine). Updated September 2, 2020. Accessed October 1, 2020. <https://www.cdc.gov/flu/about/qa/nasalspray.htm>
26. CDC. Vaccines and immunizations. Possible side effects from vaccines. Updated April 2, 2020. Accessed October 1, 2020. <http://www.cdc.gov/vaccines/vac-gen/side-effects.htm>
27. CDC. Meeting of the Advisory Committee on Immunization Practices (ACIP). June 24-25, 2020; Atlanta, Georgia.
28. Zaman K, Roy E, Arifeen SE, et al. Effectiveness of maternal influenza immunization in mothers and infants. *N Engl J Med*. 2008;359:1555-1564.
29. American College of Obstetricians and Gynecologists. ACOG Committee Opinion No. 732: Influenza vaccination during pregnancy. *Obstet Gynecol*. 2018;131(4):e109-e114.
30. 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.
31. Martin A, Cox S, Jamieson DJ, Whiteman MK, Kulkarni A, Tepper NK. Respiratory illness hospitalizations among pregnant women during influenza season, 1998-2008. *Matern Child Health J*. 2013;17(7):1325-1331.
32. Naleway AL, Irving SA, Henninger ML, et al; 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.
33. 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.
34. CDC. Influenza (flu) vaccine and pregnancy. Updated December 12, 2019. Accessed October 1, 2020. <https://www.cdc.gov/vaccines/pregnancy/hcp-toolkit/flu-vaccine-pregnancy.html>
35. Winter K, Zipprich J, Harriman K, et al. Risk factors associated with infant deaths from pertussis: a case-control study. *Clin Infect Dis*. 2015;61(7):1099-1106.
36. Baxter R, Bartlett J, Fireman B, Lewis E, Klein NP. Effectiveness of vaccination during pregnancy to prevent infant pertussis. *Pediatrics*. 2017;139(5):e20164091.
37. NYS Department of Health. New York State law prohibits the administration of vaccines containing more than trace amounts of thimerosal to children less than 3 years of age and pregnant women. Published April 23, 2008. Accessed October 1, 2020. https://www.health.ny.gov/prevention/immunization/providers/state_law_restricting_thimerosal_2008-04-23.htm
38. CDC. Flu vaccine and people with egg allergies. Updated September 22, 2020. Accessed October 1, 2020. <https://www.cdc.gov/flu/prevent/egg-allergies.htm>
39. Grohskopf LA, Sokolow LZ, Broder KR, et al. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices—United States, 2016-17 influenza season. *MMWR Recomm Rep*. 2016;65(5):1-54.
40. CDC. Pneumococcal disease. Symptoms and complications. Updated September 6, 2017. Accessed October 1, 2020. <http://www.cdc.gov/pneumococcal/about/symptoms-complications.html>
41. Li W, Onyebeke C, Huynh M, et al. *Summary of Vital Statistics, 2017*. New York, NY: New York City Department of Health and Mental Hygiene, Bureau of Vital Statistics; 2019. <https://www1.nyc.gov/assets/doh/downloads/pdf/vs/2017sum.pdf>
42. CDC. Pneumococcal disease: contraindications and precautions to vaccination. Updated April 15, 2019. Accessed October 1, 2020. <https://www.cdc.gov/vaccines/pubs/pinkbook/pneumo.html#contraindications>
43. CDC. Pneumococcal vaccine timing for adults. Updated June 25, 2020. Accessed October 1, 2020. <https://www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf>
44. Matanock A, Lee G, Gierke R, Kobayashi M, Leidner A, Pilishvili T. Use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine among adults aged ≥ 65 years: updated recommendations of the Advisory Committee on Immunization Practices. *MMWR Morb Mortal Wkly Rep*. 2019;68(46):1069-1075.
45. CDC. Influenza antiviral medications: summary for clinicians. Updated August 31, 2020. Accessed October 1, 2020. <https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>
46. Ng KE. Xofluza (baloxavir marboxil) for the treatment of acute uncomplicated influenza. *P T*. 2019;44(1):9-11.
47. Immunization Action Coalition. Standing orders for administering influenza vaccine to adults. Updated September 2020. Accessed October 1, 2020. <http://www.immunize.org/catg.d/p3074.pdf>
48. NYS Department of Health. Bureau of Immunization. New York State law restricting use of thimerosal-containing influenza vaccines. October 23, 2009. Accessed October 1, 2020. http://www.health.ny.gov/regulations/public_health_law/section/2112/information_for_physicians/docs/update_to_state_law_restricting_thimerosal.pdf

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

Bill de Blasio
Mayor

Dave A. Chokshi, MD, MSc
Commissioner of Health and Mental Hygiene

Division of Disease Control
Demetre Daskalakis, MD, MPH, Deputy Commissioner

Bureau of Immunization
Jane R. Zucker, MD, MSc, Assistant Commissioner
Bindy L. Crouch, MD, MPH, Adult Immunization and Clinic Services Director
Edward Wake, Former Adult Immunization Unit Chief
Krishika A. Graham, MD, MPH, Adult Immunization Medical Specialist

Division of Epidemiology
R. Charon Gwynn, PhD, Deputy Commissioner

Bureau of Public Health Training and Information Dissemination
Calaine Hemans-Henry, MPH, CHES, Assistant Commissioner
Joanna Osolnik, MPH, CHES, Senior Director, Office of Information Dissemination
Peggy Millstone, Former Director, Scientific Education Unit
Sandhya George, Medical Editor
Liz Selkove, Medical Editor
Melissa Donze, MPH, Program Manager

Copyright © 2020 The New York City Department of Health and Mental Hygiene
E-mail *City Health Information* at: nycdohrp@health.nyc.gov
New York City Department of Health and Mental Hygiene.
Influenza prevention and control, 2020-2021. *City Health Information*.
2020;39(3):19-34.



CONTINUING EDUCATION ACTIVITY

This issue of *City Health Information*, including the continuing education activity, can be viewed [here](#).

Instructions

Read this issue of *City Health Information* for the correct answers to the questions. To receive continuing education credit, you must answer 80% of questions correctly. Visit <https://www.surveymonkey.com/r/PJ3K2P9> to complete this activity online.

CME Accreditation Statement for Joint Providership

NYC Health + Hospitals is accredited by The Medical Society of the State of New York (MSSNY) to provide continuing medical education for physicians. This activity has been planned and implemented in accordance with the Accreditation Requirements and Policies of the MSSNY through the joint providership of NYC Health + Hospitals and the New York City Department of Health and Mental Hygiene. NYC Health + Hospitals designates this continuing medical education activity for a maximum of 1 *AMA PRA Category 1 Credit*[™]. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Financial Disclosure and Conflict of Interest Statement

Participating faculty members and planners have no relevant financial relationships to disclose:

- Bindy Crouch, MD, MPH
- Krishika Graham, MD, MPH
- Scott Harper, MD, MSc, MPH
- Lucy Kingangi, MBChB, MPH
- Alice Yeung, MPH
- Jane Zucker, MD, MSc

Time to Complete

This activity will take approximately 60 minutes to complete.