# Special Protocol

(Effective through period of Commissioner's Order)

## Paramedic Administration of Immunizations Pursuant to a Public Health Order of the Commissioner:

### INACTIVATED INFLUENZA VACCINE

Inactivated influenza vaccines are inactivated (killed) vaccines, and are given by injection into the muscle (IM). Paramedics working in connection with a Massachusetts Department of Public Health (MDPH)-approved mobile integrated health (MIH) or community EMS program (CEMS), are already authorized by 105 CMR 700.003(A)(4) of the Drug Control Program (DCP) regulations, to administer vaccines. All other Paramedics are currently authorized and trained to administer certain medications intravenously, intramuscularly, subcutaneously, and intranasally. Paramedics operate in accordance with the Department's EMS System regulations and Statewide Treatment Protocols of the MDPH Office of Emergency Medical Services (OEMS) and in connection with an MDPH-licensed ambulance service. They also obtain authorization to practice from their ambulance services' affiliate hospital medical director.

The specific authorization granted by the Commissioner's Order, pursuant to the Department's DCP regulations, 105 CMR 700.004(H) authorizes currently certified Massachusetts Paramedics working in connection with an ambulance service, but not with an MIH or CEMS program, to administer vaccine for the prevention of influenza, in ages 3 and older, in accordance with this Special Protocol issued by OEMS. Prior to being deployed by their ambulance service to administer flu vaccine, such Paramedics must have successfully completed a vaccination training program approved by their ambulance service's AHMD.

### PARAMEDIC STANDING ORDERS

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a. Provide patient, parent or legal representative with a copy of the Vaccine Information Statement (VIS) and answer any questions.
b. Screen for contraindications according to attached CDC/ACIP document (or ascertain the result of such screening)
c. Always check the package insert prior to administration of any vaccine.
d. Shake the vial well before withdrawing and shake the prefilled syringe well before administering.
e. Administer IM vaccines at a 90° angle with 22-25-gauge needle. The needle length for IM injections depends upon the age, gender, and/or weight of the vaccine recipient. (See Table attachment.). Administer intramuscularly (IM), according to the recommended age-specific dose and schedule. (See CDC/ ACIP attachment.)
f. Administer influenza vaccine.
g. Observe patient for an allergic reaction for 15 - 20 minutes after administering vaccine. If an anaphylactic/allergic reaction occurs, treat according to Protocol 2.2A/2.2P Allergic Reaction/Anaphylaxis.
h. Report clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) at 1-800-822-7967 or http://www.vaers.hhs.gov/.

Protocol Continues

Protocol Continued



**PARAMEDIC STANDING ORDERS**

**Implementation Criteria**

Paramedics must be trained and authorized by their AHMD or designee prior to administering flu vaccine in any form. Under this protocol, paramedics can only administer vaccine while working for their ambulance service.

Such training must include at minimum the procedures to be followed by paramedics within the setting in which the vaccines are to be administered, for determining type and dose of vaccine to be given, including the identity of staff who will make such determination.

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**Needle Length and Injection Site for IM Injection**

| Gender and Weight | Needle Length | Injection Site | Injection Technique |
|---|---|---|---|
| **Children (3-18 years)** | 5/8" - 1" | Deltoid | Depends on Body Mass |
| **Male and Female <60 kg (<130 lbs)** | 5/8" | Deltoid | Do not bunch subcutaneous and muscle tissue |
| **Male and Female (130-152 lbs)** | 1" | | |
| **Female 70-90kg (152-200 lbs)** | 1"-1 ½" | | |
| **Male 70kg-118kg (152-260 lbs)** | | | |
| **Female >90kg (200lbs)** | 1 ½" | | |
| **Male >118kg (260 lbs)** | | | |

# Special Protocol

(Effective through period of Commissioner's Order)

## Paramedic Administration of Immunizations Pursuant to a Public Health Order of the Commissioner: LIVE ATTENUATED INFLUENZA VACCINE (LAIV4) (FLUMIST®)

**Live attenuated influenza vaccine (LAIV4)** or **FluMist®** is a live, attenuated (weakened) influenza vaccine that is sprayed into the nostrils. Paramedics working in connection with a Massachusetts Department of Public Health (MDPH)-approved mobile integrated health (MIH) or community EMS program (CEMS), are already authorized by 105 CMR 700.003(A)(4) of the Drug Control Program (DCP) regulations, to administer vaccines. All other Paramedics are currently authorized and trained to administer certain medications intravenously, intramuscularly, subcutaneously and intranasally. Paramedics operate in accordance with the MDPH EMS System regulations and Statewide Treatment Protocols of the MDPH Office of Emergency Medical Services (OEMS) and in connection with an MDPH-licensed ambulance service. They also obtain authorization to practice from their ambulance services' affiliate hospital medical director (AHMD).

The specific authorization granted by the Commissioner's Order, pursuant to the DCP regulations 105 CMR 700.003(H), authorizes currently certified Massachusetts Paramedics working in connection with an ambulance service, but not with an MIH or CEMS program, to administer vaccine for the prevention of influenza to persons ages 3 and older, in accordance with this Special Protocol issued by OEMS. Prior to being deployed by their ambulance service to administer flu vaccine, such Paramedics must have successfully completed a vaccination training program approved by their ambulance service's AHMD.

### PARAMEDIC STANDING ORDERS

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a. Provide patient, parent or legal representative with a copy of the appropriate Vaccine Information Statement (VIS) and answer any questions.
b. Screen for contraindications. (See CDC/ACIP attachment).
c. Administer 0.2 mL **LAIV** intranasally (0.1 mL: in each nostril), according to the recommended age-specific dose and schedule (Table 2).
   i. Remove the rubber tip protector.
   ii. With the patient in an upright position, head tilted back, place the tip just inside the nose to ensure that LAIV is delivered into the nose.
   iii. With a single motion, depress the plunger **as rapidly as possible** until the dose-divider clip prevents you from going any further.
   iv. Pinch and remove the dose-divider clip from the plunger.
   v. Place the tip just inside the other nostril and with a single motion; depress the plunger **as rapidly as possible** to deliver the remaining vaccine.
   vi. If the vaccine recipient sneezes after administration, the dose should **not** be repeated.
d. If possible, observe patient for an allergic reaction for 15 - 20 minutes after administering vaccine. If an Anaphylactic/Allergic reaction occurs treat according to Protocol 2.2A/2.2P Allergic Reaction/Anaphylaxis.
e. Report clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) at 1-800-822-7967 or http://www.vaers.hhs.gov/.

Protocol Continues

# Special Protocol

**(Effective through period of Commissioner's Order)**

Protocol Continued

**PARAMEDIC STANDING ORDERS**

**SPECIAL NOTE:** A health care provider can administer LAIV who cannot themselves receive LAIV (e.g., pregnant women, persons with asthma, etc.) or for whom it is not indicated (e.g., persons > 50 years of age). The only persons who should not administer LAIV are those who are severely immunocompromised themselves.

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**Implementation Criteria**

Paramedics must be trained and authorized by their AHMD or designee prior to administering flu vaccine in any form. Under this protocol, paramedics can only administer vaccine while working for their ambulance service.

Such training must include at minimum the procedures to be followed by paramedics within the setting in which the vaccines are to be administered, for determining type and dose of vaccine to be given, including the identity of staff who will make such determination.

# Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP)—United States, 2020-21

## Summary of Recommendations

For additional information: *MMWR Recomm Rep 2020;69(No. RR-8)*, at https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html.
This document is available in HTML format at https://www.cdc.gov/flu/professionals/acip/summary/summary-recommendations.htm.

## GROUPS RECOMMENDED FOR VACCINATION

- Routine annual influenza vaccination is recommended for all persons aged ≥6 months who do not have contraindications.
- A licensed vaccine appropriate for age and health status should be used. Consult package information for age indications.
- Emphasis should be placed on vaccination of high-risk groups and their contacts/caregivers. When vaccine supply is limited, vaccination efforts should focus on delivering vaccination to (no hierarchy is implied by order of listing):
  - Children aged 6 through 59 months
  - Adults aged ≥50 years
  - Persons with chronic pulmonary (including asthma), cardiovascular (excluding isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus)
  - Persons who are immunocompromised due to any cause, including (but not limited to) medications or HIV infection
  - Women who are or will be pregnant during the influenza season
  - Children and adolescents (aged 6 months through 18 years) receiving aspirin- or salicylate-containing medications who might be at risk for Reye syndrome associated with influenza
  - Residents of nursing homes and long-term care facilities
  - American Indians/Alaska Natives
  - Persons who are extremely obese (BMI ≥40 for adults)
  - Caregivers and contacts of those at risk:
    - Health care personnel, including all paid and unpaid persons working in health-care settings who have potential for exposure to patients and/or to infectious materials, whether or not directly involved in patient care;
    - Household contacts and caregivers of children aged ≤59 months (i.e., <5 years), particularly contacts of children aged <6 months, and adults aged ≥50 years;
    - Household contacts and caregivers of persons with medical conditions associated with increased risk of severe complications from influenza.

## TIMING OF VACCINATION

- Vaccine should be administered by the end of October, but vaccination should continue to be offered as long as influenza viruses are circulating locally and unexpired vaccine is available.
- Vaccination too early in the season (e.g., July or August) may lead to suboptimal immunity later in the season, particularly among older adults.
- Children aged 6 months through 8 years who require 2 doses (see Figure) should receive their first dose as soon as possible after vaccine becomes available, and the second dose ≥4 weeks later.

## ADULTS AGED ≥65 YEARS

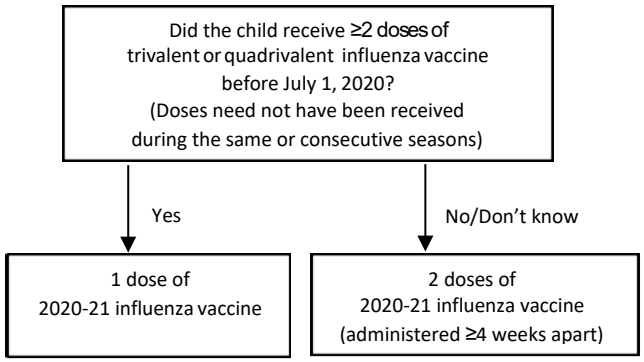
- Persons aged ≥65 years may receive any age-appropriate IIV or RIV4. Vaccination should not be delayed to find a particular product if an appropriate one is available.
- There are data supporting greater benefit of HD-IIV3, RIV4, or aIIV3 relative to standard-dose unadjuvanted IIVs in this age group, but comparisons of these three vaccines with one another are limited.
- HD-IIV3, the most well studied, was more effective than IIV3 in a large two-season randomized trial. However, HD-IIV3 will be replaced by HD-IIV4 in 2020-21, and aIIV4 will be also be available. Data comparing benefits of the newer HD-IIV4 or aIIV4 to standard-dose unadjuvanted IIVs are limited.

## VOLUME PER DOSE FOR CHILDREN AND ADULTS

- Four IIV4s are licensed for ages 6 through 35 months. Dose volumes differ for these vaccines for this age group. Children aged 6 through 35 months may receive (intramuscularly):
  - 0.25mL of Afluria Quadrivalent, or
  - 0.5mL of Fluarix Quadrivalent, or
  - 0.5mL of FluLaval Quadrivalent, or
  - ***Either*** 0.25mL ***or*** 0.5 mL of Fluzone Quadrivalent (**note**; 0.25mL prefilled syringes will not be available for 2020-21).
- Children aged 3 through 17 years may receive 0.5mL of an age-appropriate intramuscular IIV formulation.
- Adults aged ≥18 years may receive an age-appropriate intramuscular IIV or RIV4. The correct adult dose volume is 0.5mL for RIV4 and all IIVs except HD-IIV4, for which it is 0.7mL.
- If a 0.25mL intramuscular dose is administered to a person ≥36 months of age:
  - If the error is discovered immediately, administer the remaining additional volume needed to provide a full dose.
  - If the error is discovered later (after the recipient has left the vaccination setting), a full dose should be administered as soon as the recipient can return.
- Healthy non-pregnant persons (see ***LAIV4 Contraindications and Precautions,*** page 4) aged 2 through 49 years may alternatively receive 0.2mL of LAIV4 intranasally (0.1mL per nostril, using the supplied sprayer).

## NUMBER OF DOSES NEEDED FOR CHILDREN AGED 6 MONTHS THROUGH 8 YEARS

- Determine the number of doses needed based on child's age at time of first dose of 2020–21 influenza vaccine and number of doses of influenza vaccine received in previous seasons
  - For children aged 6 months through 8 years, determine the number of doses needed as shown below.
  - For children needing two doses, the second dose is recommended even if the child turns age 9 years between dose 1 and dose 2.
  - Persons aged ≥9 years need only one dose for 2020-21.
  - Children aged <6 months should not receive influenza vaccine.




## PREGNANT WOMEN

- All women who are pregnant or who might be pregnant during the influenza season should receive influenza vaccine.
- An age-appropriate IIV or RIV4 may be given at any time during pregnancy.
- LAIV4 should not be used during pregnancy.



8-19-2020

## IMMUNOCOMPROMISED PERSONS

- Immunocompromised persons should receive an age-appropriate IIV or RIV4.
- LAIV4 should not be used for immunocompromised persons.
- Immune response to vaccines might be blunted in immunocompromised persons, and might be reduced or minimal as a result of medications, chemotherapy, or transplant regimens.
- Timing vaccination during some period either before or after interventions which compromise immunity may be appropriate. The Infectious Diseases Society of America (IDSA) has published guidance concerning the timing of vaccination in relation to such interventions (see ***Further Information***, page 2).

## VACCINATION OF PERSONS WITH COVID-19

- For those who have acute illness with suspected or confirmed COVID-19, clinicians can consider delaying vaccination until patients are no longer acutely ill.
- If influenza vaccination is delayed, patients should be reminded to return for vaccination once recovered from COVID-19.

## CAREGIVERS AND CONTACTS OF HIGH-RISK PERSONS

- Caregivers and contacts (including those of immunosuppressed persons) may receive any age-appropriate IIV or RIV4.
- LAIV4 may be given to caregivers and contacts of persons who are not severely immunocompromised (i.e., who do not require a protected environment).
- Health care personnel or hospital visitors who receive LAIV4 should avoid providing care for severely immunosuppressed persons requiring a protected environment for 7 days after vaccination.

## PERSONS WITH CHRONIC MEDICAL CONDITIONS

- LAIV4 is not recommended for persons with some chronic medical conditions (see ***LAIV4 Contraindications and Precautions,*** page 4).

## PERSONS WITH EGG ALLERGY

- Persons who have experienced only hives after exposure to egg may receive any licensed, recommended, age-appropriate influenza vaccine (i.e., IIV, RIV4, or LAIV4).
- Persons reporting symptoms other than hives after exposure to egg (such as angioedema, respiratory distress, lightheadedness, or recurrent emesis; or who required epinephrine or another emergency medical intervention) may also receive any licensed and recommended influenza vaccine that is otherwise appropriate.
  - If a vaccine other than ccIIV4 or RIV4 is selected for such a person, it should be administered in an inpatient or outpatient medical setting and supervised by a health care provider who is able to recognize and manage severe allergic reactions.
- A previous severe allergic reaction to influenza vaccine, regardless of the component suspected of causing the reaction, is a contraindication to future receipt of any influenza vaccine.

## VACCINATION ISSUES FOR TRAVELERS

- Travelers who wish to reduce the risk for influenza should consider influenza vaccination, preferably ≥2 weeks before departure.
- Persons at high risk for complications of influenza who were not vaccinated during the preceding fall or winter should consider receiving influenza vaccine before departure, if they plan to travel to the tropics, with organized tourist groups or on cruise ships, or to the Southern Hemisphere during April–September.
- Influenza vaccine formulated for the Southern Hemisphere might differ in viral composition from Northern Hemisphere vaccine.
- Vaccination with Southern Hemisphere influenza vaccine prior to travel to the Southern Hemisphere may be reasonable; however, only one Southern Hemisphere formulation is licensed by FDA (Fluzone Quadrivalent Southern Hemisphere, Sanofi Pasteur), and it is generally not commercially available in the U.S.

## VACCINATION AND INFLUENZA ANTIVIRAL MEDICATIONS

- IIV and RIV4 may be administered to persons receiving influenza antiviral medications for treatment or chemoprophylaxis.
- Influenza antivirals might reduce effectiveness of LAIV4, if given before or after LAIV4. Persons who receive influenza antivirals during these periods should be revaccinated with an age-appropriate IIV or RIV4 (intervals may be longer in conditions where medication clearance is delayed, such as renal insufficiency):
  - Oseltamivir or zanamivir: 48 hours before to 2 weeks after LAIV4
  - Peramivir: 5 days before to 2 weeks after LAIV4
  - Baloxavir: 17 days before to 2 weeks after LAIV4

## USING INFLUENZA VACCINES WITH OTHER VACCINES

- IIVs and RIV4 may be administered concurrently or sequentially with other inactivated or live vaccines. Injectable vaccines given simultaneously should be administered at separate anatomic sites.
- LAIV4 may be administered simultaneously with other inactivated or live vaccines. If not given simultaneously, then ≥4 weeks should pass between administration of LAIV4 and another live vaccine.
- Immunogenicity and safety of simultaneous or sequential administration of two vaccines containing non-aluminum adjuvants has not yet been evaluated.

## VACCINE ADVERSE EVENT REPORTING SYSTEM (VAERS)

- VAERS is the national vaccine safety monitoring system that is co-managed by CDC and FDA. VAERS serves as an early warning system to detect possible safety problems with U.S. vaccines.
- Health care providers are required to report any adverse event listed by the vaccine manufacturer as a contraindication to further doses of the vaccine, and adverse events listed in the table at https://vaers.hhs.gov/docs/VAERS_Table_of_Reportable_Events_Following_Vaccination.pdf
- For information on how to report to VAERS, go the VAERS website at https://vaers.hhs.gov

## FURTHER INFORMATION

***CDC Influenza Information***

- General influenza page: www.cdc.gov/flu
- CDC FluView: www.cdc.gov/flu/weekly
- Periodic influenza updates: www.cdc.gov/mmwr
- Influenza Antivirals Guidance: www.cdc.gov/flu/professionals/antivirals/summary/clinicians.htm
- For more information, call CDC at (800) 232-4636.

***American Academy of Pediatrics (AAP) Guidance***

https://redbook.solutions.aap.org/selfserve/sspage.aspx?selfservecontentid=influenza-resources

***Infectious Diseases Society of America (IDSA) Guidance for vaccination of immunocompromised hosts***

https://academic.oup.com/cid/article/58/3/e44/336537

***Manufacturer package inserts for U.S.-licensed vaccines***

https://www.fda.gov/vaccines-blood-biologics/vaccines/vaccines-licensed-use-united-states

**VACCINE ABBREVIATIONS**

- Main influenza vaccine types include:
  - **IIV** = Inactivated Influenza Vaccine
  - **RIV** = Recombinant Influenza Vaccine
  - **LAIV** = Live Attenuated Influenza Vaccine
- Numerals following letter abbreviations indicate:
  - **4** for quadrivalent vaccines: one A(H1N1), one A(H3N2), and two B viruses (one from each lineage)
  - **3** for trivalent vaccines: one A(H1N1), one A(H3N2), and one B virus (from one lineage)
- Prefixes are used when necessary to refer specifically to certain IIVs:
  - **a** for adjuvanted inactivated influenza vaccine (aIIV4, aIIV3)
  - **cc** for cell culture-based inactivated influenza vaccine (ccIIV4)
  - **HD** for high-dose inactivated influenza vaccine (HD-IIV4)
  - **SD** for standard-dose inactivated influenza vaccine (SD-IIV4)

# U.S. INFLUENZA VACCINES FOR THE 2020-21 SEASON

## INACTIVATED INFLUENZA VACCINES (IIVs) and RECOMBINANT INFLUENZA VACCINE (RIV4)

| Trade name<br>*Manufacturer* | Presentation | Age indication | HA, µg/dose (each virus) | Thimerosal Yes/No (If yes, Mercury, µg/0.5mL) |
|---|---|---|---|---|
| **Quadrivalent IIVs (IIV4s)—Standard-dose—Egg-based** | | | | |
| Afluria Quadrivalent<br>*Seqirus* | 0.25 mL prefilled syringe*<br>0.5 mL prefilled syringe<br>5.0 mL multidose vial* | 6 through 35 mos<br>≥3 yrs<br>≥6 mos (needle/syringe)<br>18 through 64 yrs (jet injector) | 7.5/0.25 mL<br>15/0.5 mL<br>See note for dosing* | No<br>No<br>Yes (24.5) |
| Fluarix Quadrivalent<br>*GlaxoSmithKline* | 0.5 mL prefilled syringe | ≥6 mos | 15/0.5mL | No |
| FluLaval Quadrivalent<br>*GlaxoSmithKline* | 0.5 mL prefilled syringe | ≥6 mos | 15/0.5mL | No |
| Fluzone Quadrivalent<br>*Sanofi Pasteur* | 0.5 mL prefilled syringe†<br>0.5 mL single-dose vial<br>5.0 mL multidose vial | ≥6 mos<br>≥6 mos<br>≥6 mos | 15/0.5 mL<br>See note for dosing† | No<br>No<br>Yes (25) |
| **Quadrivalent IIV (IIV4)—Standard-dose—Cell culture-based (ccIIV4)** | | | | |
| Flucelvax Quadrivalent<br>*Seqirus* | 0.5 mL prefilled syringe<br>5.0 mL multidose vial | ≥4 yrs<br>≥4 yrs | 15/0.5mL | No<br>Yes (25) |
| **Quadrivalent IIV (IIV4)—High-dose—Egg-based (HD-IIV4)** | | | | |
| Fluzone High-Dose Quadrivalent<br>*Sanofi Pasteur* | 0.7 mL prefilled syringe | ≥65 yrs | 60/0.7mL | No |
| **Quadrivalent IIV (IIV4)—Standard-dose—Adjuvanted—Egg-based (aIIV4)** | | | | |
| Fluad Quadrivalent<br>*Seqirus* | 0.5 mL prefilled syringe | ≥65 yrs | 15/0.5mL | No |
| **Trivalent IIV (IIV3)—Standard-dose—Adjuvanted—Egg-based (aIIV3)** | | | | |
| Fluad<br>*Seqirus* | 0.5 mL prefilled syringe | ≥65 yrs | 15/0.5mL | No |
| **Quadrivalent RIV (RIV4)—Recombinant HA** | | | | |
| Flublok Quadrivalent<br>*Sanofi Pasteur* | 0.5 mL prefilled syringe | ≥18 yrs | 45/0.5mL | No |

*Abbreviations: IIV=inactivated influenza vaccine; RIV=recombinant influenza vaccine; HA=hemagglutinin; mos=months; yrs=years.*

** For Afluria Quadrivalent, children aged 6 through 35 mos should receive 0.25mL per dose. Persons ≥36 mos (≥3 yrs) should receive 0.5mL per dose.*

*† For Fluzone Quadrivalent, persons ≥36 mos (≥3 yrs) should receive 0.5mL per dose. Children aged 6 through 35 mos may receive either 0.25mL or 0.5mL per dose per the package insert. However, the 0.25mL prefilled syringe presentation is not expected to be available for the 2020-21 season. Note that 0.5mL vials should be accessed for only one dose, and multidose vials for only 10 doses, regardless of the volume of the doses taken or any remaining volume in the vial. Any vaccine remaining in a vial after the maximum number of doses has been removed should be discarded.*

### *Administration of IIVs and RIV4*

- IIVs and RIV4 are administered intramuscularly (IM):
  - Adults and older children: the deltoid is the preferred site.
  - Infants and younger children: the anterolateral thigh is the preferred site.
  - Detailed guidance for administration sites and needle length is available in the Best Practice Guidelines of the Advisory Committee on Immunization Practices (ACIP) at https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
  - Afluria Quadrivalent is licensed for IM administration via jet injector (the Pharmajet Stratis), for persons aged 18 through 64 years only.
  - RIV4 is licensed for persons aged ≥18 years and should not be used for children aged <18 years.

### *IIV and RIV4 Contraindications and Precautions*

**Contraindications:**

- History of severe allergic reaction to the vaccine or any of its components.
  - ACIP recommends that persons with egg allergy of any severity receive influenza vaccine (see Persons with Egg Allergy, above).
  - Information about vaccine components is located in package inserts from each manufacturer.

**Precautions:**

- Moderate or severe acute illness with or without fever.
- Guillain–Barré syndrome within 6 weeks following a previous dose of influenza vaccine.

## LIVE ATTENUATED INFLUENZA VACCINE (LAIV4)

| Trade name<br>*Manufacturer* | Presentation | Age indication | Virus count per dose<br>(each virus) | Thimerosal<br>Yes/No<br>(If yes, Mercury, µg/0.2mL) |
|---|---|---|---|---|
| **Quadrivalent LAIV (LAIV4)--Egg-based** | | | | |
| FluMist Quadrivalent<br>*AstraZeneca* | 0.2mL prefilled intranasal sprayer | 2 through 49 yrs | $10^{6.5\text{-}7.5}$ fluorescent focus units/0.2mL | No |

*Abbreviations: LAIV=live attenuated influenza vaccines; yrs=years.*

### *Administration of LAIV4*

- LAIV4 is administered intranasally using the supplied prefilled, single-use sprayer containing 0.2 mL of vaccine.
  - Half of the total sprayer contents is sprayed into the first nostril while the recipient is in the upright position.
  - The attached divider clip is removed and the second half of the dose administered into the other nostril.
- If the vaccine recipient sneezes immediately after administration, the dose should not be repeated.
- If nasal congestion is present that might interfere with delivery of the vaccine to the nasopharyngeal mucosa, deferral should be considered, or another age-appropriate vaccine should be administered.

### *LAIV4 Contraindications and Precautions*

**Contraindications:**

- History of severe allergic reaction to any vaccine component or after previous dose of any influenza vaccine;
  - However, ACIP recommends that persons with egg allergy of any severity receive influenza vaccine (see Persons with Egg Allergy, above).
  - Information about vaccine components is located in package inserts from the manufacturer.
- Concomitant aspirin or salicylate-containing therapy in children and adolescents;
- Children aged 2 through 4 years who have received a diagnosis of asthma or whose parents or caregivers report that a health care provider has told them during the preceding 12 months that their child had wheezing or asthma or whose medical record indicates a wheezing episode has occurred during the preceding 12 months;
- Children and adults who are immunocompromised due to any cause, including but not limited to immunosuppression caused by medications, congenital or acquired immunodeficiency states, HIV infection, anatomic asplenia, or functional asplenia (such as that due to sickle-cell anemia);
- Close contacts and caregivers of severely immunosuppressed persons who require a protected environment;
- Pregnancy;
- Persons with active communication between the cerebrospinal fluid (CSF) and the oropharynx, nasopharynx, nose, or ear or any other cranial CSF leak;
- Persons with cochlear implants (due to the potential for CSF leak, which might exist for some period of time after implantation. Providers might consider consulting with a specialist concerning risk of persistent CSF leak if an age-appropriate inactivated or recombinant vaccine cannot be used);
- Receipt of influenza antiviral medication within the previous 48 hours for oseltamivir and zanamivir, 5 days for peramivir, and 17 days for baloxavir, due to potential for interference with replication of live vaccine virus. Influenza antivirals may also interfere with the action of LAIV4 if given within 2 weeks after vaccination (see ***Vaccination and Influenza Antiviral Medications***, page 2).

**Precautions:**

- Moderate or severe acute illness with or without fever;
- Guillain–Barré syndrome within 6 weeks following a previous dose of influenza vaccine;
- Asthma in persons aged ≥5 years;
- Other underlying medical conditions that might predispose to complications attributable to severe influenza; e.g., chronic pulmonary, cardiovascular (excluding isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus).

## STORAGE AND HANDLING OF INFLUENZA VACCINES

- In all cases, manufacturer packaging information should be consulted for authoritative guidance regarding storage and handling of influenza vaccines.
- For guidance on specific situations not addressed in packaging materials, contact the manufacturer directly.
- Additional information may also be found in the *Vaccine Storage and Handling Toolkit,* which is available at: https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/index.html
- In general:
  - Vaccines should be protected from light and stored at recommended temperatures.
  - Influenza vaccines are recommended to be stored refrigerated between 2° to 8°C (36° to 46°F).
  - Vaccine that has been frozen should be discarded.
  - Single-dose vials should not be accessed for more than one dose.
  - Multidose vials should be returned to recommended storage conditions between uses, and once initially accessed should not be kept beyond the recommended period of time.
  - Vaccines should not be used after the expiration date on the label.
  - Multidose vials may have a labeled Beyond Use Date (BUD) in addition to the expiration date. The BUD specifies the number of days the vaccine may be used once accessed for the first time. If no BUD is provided, the listed expiration date should be used.
  - Package information may also specify a maximum number of doses contained in multidose vials (regardless of remaining volume). No more than the specified number of doses should be removed, and any remainder discarded.