Pediatric and Adult Influenza Recommendations 2023-2024 Season

Michigan Physician Peer Education Project On Immunizations

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MDHHS Michigan Department of Health & Human Services

GRETCHEN WHITMER, GOVERNOR | ELIZABETH HERTEL, DIRECTOR

MICHIGAN STATE UNIVERSITY | Extension

Presenter Disclosure

- ACCME Disclosure

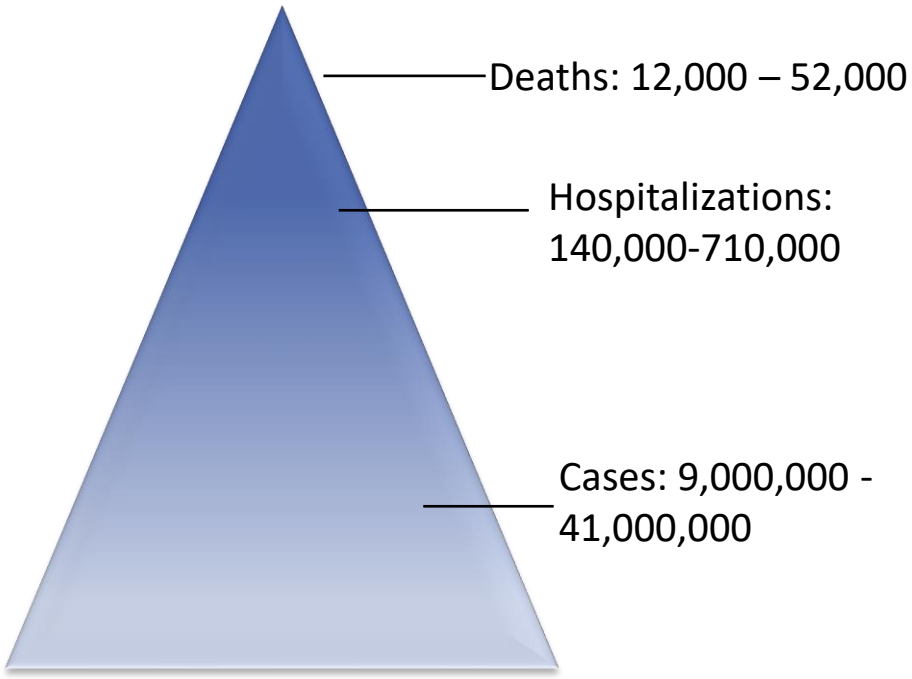
Pediatric and Adult Influenza Update Objectives

- Discuss influenza disease rates, surveillance, and vaccine coverage levels
- Discuss influenza vaccine recommendations
- Identify strategies to improve influenza vaccination rates

Influenza Disease Burden

- Difficult to predict severity and timing
- Rates of serious illness and death are greatest in:
  - Persons aged 65 years and older
  - Children less than 5 years, especially children less than 2 years of age
  - Persons with medical conditions that put them at high risk
- Only half develop classic clinical flu symptoms
- 5 categories of surveillance: viral, mortality, hospitalization, geographic spread, and outpatient influenza-like illness (ILINet)[2]
  - We need more ILINet providers!
  - For more information email, DoeblerM@michigan.gov

National Estimated Range of Annual Burden of Influenza- U.S. 2010-2020[1]



1. www.cdc.gov/flu/about/burden/index.html
2. www.michigan.gov/flu/0,6720,7-321-101694-121722--,00.html

Influenza-Associated Pediatric Deaths

- Became nationally reportable in 2004 for people younger than 18 years of age
- Total influenza-associated pediatric deaths in the U.S. by season are listed in the table below:

Seasons	Total Deaths
2019-20	199
2020-21	1
2021-22	49
2022-23	177

- "Influenza-Associated Pediatric Deaths in the United States, 2010–2016[2]"
  - Published February 2018
  - Average annual number: 113
    - Highest incident rate among children less than 6 months (0.66 per 100,000)
  - 65% died within a week of symptom onset
  - Half had no pre-existing medical conditions
  - Only 31% of children 6 months and older had received any flu vaccinations

1. www.cdc.gov/flu/weekly/index.htm#ILIMap
2. https://pediatrics.aappublications.org/content/141/4/e20172918

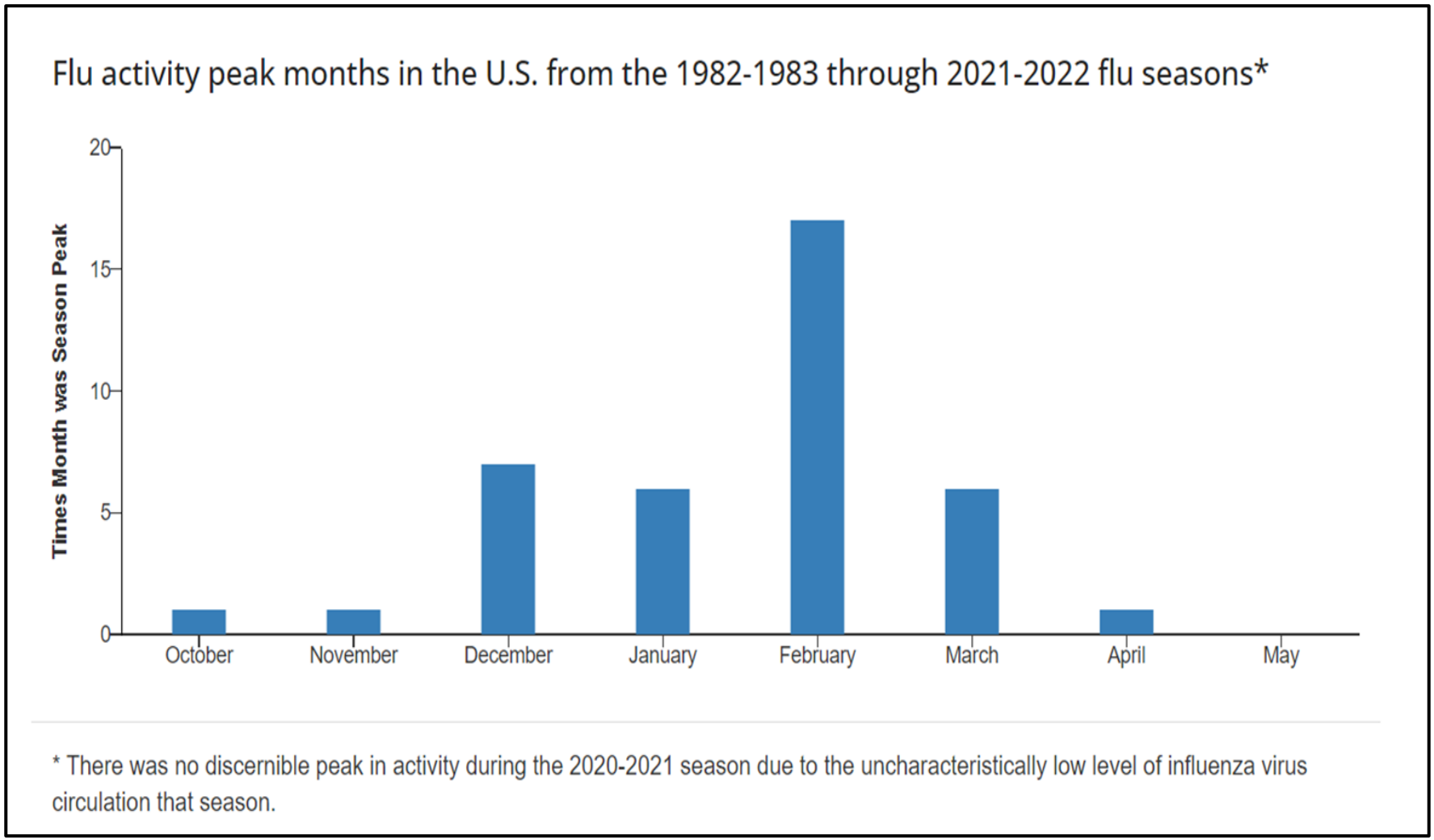
2023-2024 Influenza Vaccination Strains

- **Egg-based IIV4s and LAIV4**
  - **A/Victoria/4897/2022 (H1N1) pdm09-like**
  - A/Darwin/9/2021 (H3N2)-like
  - B/Austria/1359417/2021 (Victoria lineage)-like
  - B/Phuket/3073/2013 (Yamagata lineage)-like
- **Cell-culture-based IIV4 and RIV4**
  - **A/Wisconsin/67/2022 (H1N1) pdm09-like**
  - A/Darwin/6/2021 (H3N2)-like
  - B/Austria/1359417/2021 (Victoria lineage)-like
  - B/Phuket/3073/2013 (Yamagata lineage)-like

Red type denotes change compared to 2022-2023

Recommended composition of influenza virus vaccines for use in the 2023-2024 northern hemisphere influenza season (who.int)

Flu Season Timing



www.cdc.gov/flu/weekly/index.htm

2023-2024 Seasonal Influenza Vaccine Recommendations

ACIP RECOMMENDATIONS

FLU VACCINE TIMING

INFLUENZA VACCINE PRODUCTS

2023-2024 Influenza Recommendations

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season

Lisa A. Grohskopf, MD[1]; Lenee H. Blanton, MPH[1]; Jill M. Ferdinands, PhD[1]; Jessie R. Chung, MPH[1], Karen R. Broder, MD[2]; H. Keipp Talbot, MD[3]

[1]*Influenza Division, National Center for Immunization and Respiratory Diseases, CDC;* [2]*Immunization Safety Office, National Center for Emerging and Zoonotic Infectious Diseases, CDC;* [3]*Division of Infectious Diseases, Vanderbilt University Medical Center, Nashville, Tennessee*

Summary

*This report updates the 2022–23 recommendations of the Advisory Committee on Immunization Practices (ACIP) concerning the use of seasonal influenza vaccines in the United States (*MMWR Recomm Rep 2022;71[No. RR-1]:1–28*). Routine annual influenza vaccination is recommended for all persons aged ≥6 months who do not have contraindications. All seasonal influenza vaccines expected to be available in the United States for the 2023–24 season are quadrivalent, containing hemagglutinin (HA) derived from one influenza A(H1N1)pdm09 virus, one influenza A(H3N2) virus, one influenza B/Victoria lineage virus, and one influenza B/Yamagata lineage virus. Inactivated influenza vaccines (IIV4s), recombinant influenza vaccine (RIV4), and live attenuated influenza vaccine (LAIV4) are expected to be available.*

For most persons who need only 1 dose of influenza vaccine for the season, vaccination should ideally be offered during September or October. However, vaccination should continue after October and throughout the season as long as influenza viruses are circulating and unexpired vaccine is available. Influenza vaccines might be available as early as July or August, but for most adults (particularly adults aged ≥65 years) and for pregnant persons in the first or second trimester, vaccination during July and August should be avoided unless there is concern that vaccination later in the season might not be possible. Certain children aged 6 months through 8 years need 2 doses; these children should receive the first dose as soon as possible after vaccine is available, including during July and August. Vaccination during July and August can be considered for children of any age who need only 1 dose for the season and for pregnant persons who are in the third trimester during these months if vaccine is available.

ACIP recommends that all persons aged ≥6 months who do not have contraindications receive a licensed and age-appropriate seasonal influenza vaccine. With the exception of vaccination for adults aged ≥65 years, ACIP makes no preferential recommendation for a specific vaccine when more than one licensed, recommended, and age-appropriate vaccine is available. ACIP recommends that adults aged ≥65 years preferentially receive any one of the following higher dose or adjuvanted influenza vaccines: quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4). If none of these three vaccines is available at an opportunity for vaccine administration, then any other age-appropriate influenza vaccine should be used.

Primary updates to this report include the following two topics: 1) the composition of 2023–24 U.S. seasonal influenza vaccines and 2) updated recommendations regarding influenza vaccination of persons with egg allergy. First, the composition of 2023–24 U.S. influenza vaccines includes an update to the influenza A(H1N1)pdm09 component. U.S.-licensed influenza vaccines will contain HA derived from 1) an influenza A/Victoria/4897/2022 (H1N1)pdm09-like virus (for egg-based vaccines) or an influenza A/Wisconsin/67/2022 (H1N1)pdm09-like virus (for cell culture-based and recombinant vaccines); 2) an influenza A/Darwin/9/2021 (H3N2)-like virus (for egg-based vaccines) or an influenza A/Darwin/6/2021 (H3N2)-like virus (for cell culture-based and recombinant vaccines); 3) an influenza B/Austria/1359417/2021 (Victoria lineage)-like virus; and 4) an influenza B/Phuket/3073/2013 (Yamagata lineage)-like virus. Second, ACIP recommends that all persons aged ≥6 months with egg allergy should receive influenza vaccine. Any influenza vaccine (egg based or nonegg based) that is otherwise appropriate for the recipient's age and health status can be used. It is no longer recommended that persons who have had an allergic reaction to egg involving symptoms other than urticaria should be vaccinated in an inpatient or outpatient medical setting supervised by a health care provider who is able to recognize and manage severe allergic reactions if an egg-based vaccine is used. Egg allergy alone necessitates no additional safety measures for influenza vaccination beyond those recommended for any recipient of any vaccine, regardless of severity of previous reaction to egg. All vaccines should be administered in settings in which personnel and equipment needed for rapid recognition and treatment of acute hypersensitivity reactions are available.

Corresponding author: Lisa A. Grohskopf, Influenza Division, National Center for Immunization and Respiratory Diseases, CDC. Telephone: 404-639-2552; Email: lgrohskopf@cdc.gov.

[Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season | MMWR (cdc.gov)]

Core Influenza Vaccine Recommendations

Photo Courtesy of the National Museum of Health and Medicine

- Recommended for all person's aged 6 months and older who do not have contraindications
- With the exception of vaccination for adults 65 years and older, no preferential recommendation is made for one flu vaccine product over another when more than one licensed, recommended, and age-appropriate product is available
- Vaccinate close contacts of those at high risk to provide another layer of protection including
  - Health Care Personnel (HCP)
  - Parents/Caretakers of infants less than 6 months of age
- Continue to ensure that persons at higher risk for influenza related complications are vaccinated

Timing of Flu Vaccination

- ACIP recommends that flu vaccination be offered by the end of October
- Children aged 6 months through 8 years who need 2 doses should receive their 1st dose ASAP after vaccine becomes available to allow the 2nd dose to be received ideally by the end of October
  - Minimum interval between doses: 4 weeks
  - If both doses haven't been received by the end of October, still complete the 2-dose series
- Children of any age needing 1 dose this season, should also ideally be vaccinated by the end of October. Vaccination of these children can occur as soon as vaccine is available, as there is less evidence to suggest waning immunity among children compared with adults
- For non-pregnant adults, influenza vaccination during July and August should be avoided unless there is concern that later vaccination might not be possible

Timing of Flu Vaccination, Cont.

- Pregnant Persons in First or Second Trimester
  - Waiting to vaccinate until September or October is preferable, unless there is concern that later vaccination might not be possible
- Pregnant Persons in Third Trimester
  - Vaccination soon after vaccine becomes available (July/August) can be considered for pregnant persons during the third trimester, as vaccination of pregnant persons has been shown to reduce risk of influenza illness of their infant during the first months of life

Timing of Flu Vaccination, Cont.

Likelihood of persistence of vaccine-induced protection through the season

Avoiding missed opportunities to vaccinate, or vaccinating after onset of flu circulation occurs

- Continue to vaccinate as long as flu viruses are circulating, and unexpired vaccine is available
- No recommendation is made for revaccination (i.e., providing a booster dose) later in the season for persons who have already been fully vaccinated

Types of Influenza Vaccine Available in 2023-2024 Season

- Main Influenza vaccine types:
  - IIV4=inactivated influenza vaccine, quadrivalent
  - RIV4=recombinant influenza vaccine, quadrivalent
  - LAIV4=live attenuated influenza vaccine, quadrivalent
- Prefixes are used when necessary to refer to some specific IIVs
  - a=adjuvanted inactivated influenza vaccine quadrivalent (aIIV4)
  - cc=cell culture-based inactivated influenza vaccine quadrivalent (ccIIV4)
  - HD=high-dose inactivated influenza vaccine quadrivalent (HD-IIV4)
- Numerals following the letter abbreviations indicate the number of flu strains represented in the vaccine
  - All influenza vaccines available in the U.S. for the 2023-2024 season are quadrivalent

A Look At IIV4

IIV4[1]
Flu Strains: 2 A, 2 B
Product Type: Egg-based, standard-dose (SD), unadjuvanted
Age Indication: 6 months and older
Route: IM (Intramuscularly)
For persons who are healthy, have any underlying medical conditions, or who are pregnant

[1]Inactivated influenza vaccines labeled for IM administration **must** be given IM; if not dose must be repeated.

"Quick Look at Inactivated Influenza Vaccines (Quadrivalent): IIV4, High-Dose IIV4 (HD-IIV4), and Adjuvanted IIV4 (aIIV4), 2023-24": at www.michigan.gov/flu

A Look at HD-IIV4 and aIIV4

HD-IIV4 (Fluzone® High-Dose Quadrivalent)	aIIV4 (Fluad® Quadrivalent)
Flu Strains: 2 A, 2 B	
Route: Give intramuscularly (IM)	
Age Indication: 65 years and older	
Has 4x more antigen than SD flu vaccine	Adjuvant (MF59) added to create stronger immune response
For persons who are healthy or have any underlying medical conditions	

Age indication varies by flu vaccine product; triple check the vaccine you are using before administering

Inactivated influenza vaccines labeled for IM administration **must** be given IM; if not dose must be repeated.

"Quick Look at Inactivated Influenza Vaccines (Quadrivalent): IIV4, High-Dose IIV4 (HD-IIV4), and Adjuvanted IIV4 (aIIV4), 2023-24" at www.michigan.gov/flu

A Look at ccIIV4 and RIV4

ccIIV4 (Flucelvax® Quadrivalent)	RIV4 (Flublok® Quadrivalent)
Flu Strains: 2 A, 2 B	
Route: Give intramuscularly (IM)	
Age: 6 months and older	**Age: 18 years** and older
Produced in a mammalian cell line	Produced in an insect cell line
For persons who are healthy, have any underlying medical conditions, or who are pregnant	

"Quick Look at 2023-24 Cell Culture-based Inactivated Influenza Vaccine (Quadrivalent): ccIIV4 2023-24" and "Quick Look at Recombinant Influenza Vaccine (Quadrivalent): RIV4, 2023-24": www.Michigan.gov/flu

A Look at LAIV4

LAIV4 (FluMist® Quadrivalent)
Flu Strains: 2 A, 2 B
Route: Administered intranasally (IN/NAS)
Age Indication: 2-49 years (healthy, not pregnant)

Remember: Do not miss an opportunity to vaccinate, use any age-appropriate flu vaccine that is available!

"Quick Look at Live Attenuated Influenza Vaccine (Quadrivalent): LAIV4, 2023-24",
at www.michigan.gov/flu

Influenza vaccination for persons 65 years and older

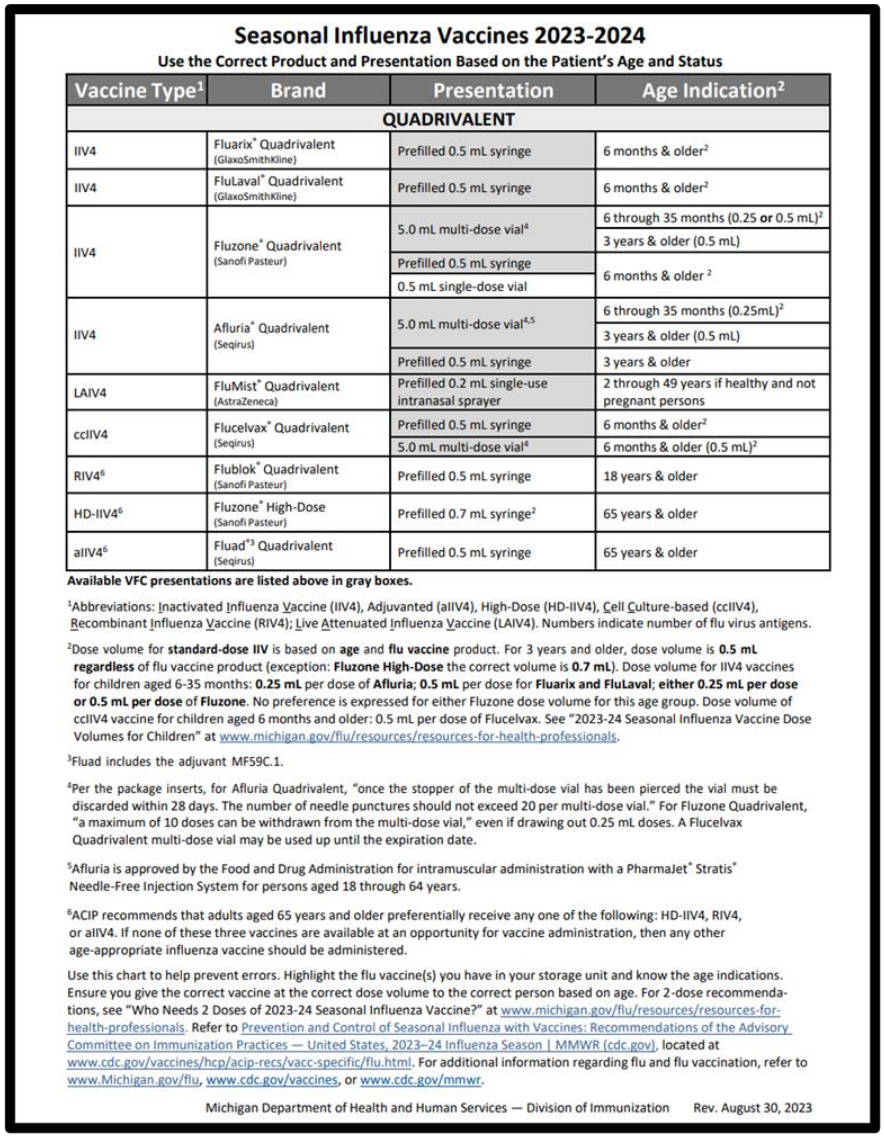
- ACIP recommends that adults aged 65 years and older preferentially receive any one of the following higher dose or adjuvanted influenza vaccines:
  - Quadrivalent high-dose inactivated influenza vaccine (HD-IIV4),
  - Quadrivalent recombinant influenza vaccine (RIV4), or
  - Quadrivalent adjuvanted inactivated influenza vaccine (aIIV4)
- If none of these three vaccines are available at an opportunity for vaccine administration, then any other age-appropriate influenza vaccine should be administered

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season | MMWR (cdc.gov)

2023-24 Flu Vaccine Presentation Chart

- Lists flu vaccine products, brand names, age indications, product presentations
- Multi-dose vials:
  - Afluria: once stopper has been pierced, discard vial after 28 days or 20 needle punctures to the vial, whichever comes first
  - Fluzone: max 10 doses can be withdrawn (even if 0.25 mL doses)
  - Flucelvax: use up until exp. date

www.michigan.gov/flu → Resources → Resources for Health Professionals



Seasonal Influenza Vaccines 2023-2024

Use the Correct Product and Presentation Based on the Patient's Age and Status

Vaccine Type[1]	Brand	Presentation	Age Indication[2]
QUADRIVALENT			
IIV4	Fluarix® Quadrivalent (GlaxoSmithKline)	Prefilled 0.5 mL syringe	6 months & older[2]
IIV4	FluLaval® Quadrivalent (GlaxoSmithKline)	Prefilled 0.5 mL syringe	6 months & older[2]
IIV4	Fluzone® Quadrivalent (Sanofi Pasteur)	5.0 mL multi-dose vial[4]	6 through 35 months (0.25 **or** 0.5 mL)[2]
			3 years & older (0.5 mL)
		Prefilled 0.5 mL syringe	6 months & older [2]
		0.5 mL single-dose vial	
IIV4	Afluria® Quadrivalent (Seqirus)	5.0 mL multi-dose vial[4,5]	6 through 35 months (0.25mL)[2]
			3 years & older (0.5 mL)
		Prefilled 0.5 mL syringe	3 years & older
LAIV4	FluMist® Quadrivalent (AstraZeneca)	Prefilled 0.2 mL single-use intranasal sprayer	2 through 49 years if healthy and not pregnant persons
ccIIV4	Flucelvax® Quadrivalent (Seqirus)	Prefilled 0.5 mL syringe	6 months & older[2]
		5.0 mL multi-dose vial[4]	6 months & older (0.5 mL)[2]
RIV4[6]	Flublok® Quadrivalent (Sanofi Pasteur)	Prefilled 0.5 mL syringe	18 years & older
HD-IIV4[6]	Fluzone® High-Dose (Sanofi Pasteur)	Prefilled 0.7 mL syringe[2]	65 years & older
aIIV4[6]	Fluad®[3] Quadrivalent (Seqirus)	Prefilled 0.5 mL syringe	65 years & older

Available VFC presentations are listed above in gray boxes.

[1]Abbreviations: Inactivated Influenza Vaccine (IIV4), Adjuvanted (aIIV4), High-Dose (HD-IIV4), Cell Culture-based (ccIIV4), Recombinant Influenza Vaccine (RIV4); Live Attenuated Influenza Vaccine (LAIV4). Numbers indicate number of flu virus antigens.

[2]Dose volume for **standard-dose IIV** is based on **age** and **flu vaccine** product. For 3 years and older, dose volume is **0.5 mL regardless** of flu vaccine product (exception: **Fluzone High-Dose** the correct volume is **0.7 mL**). Dose volume for IIV4 vaccines for children aged 6-35 months: **0.25 mL** per dose of **Afluria**; **0.5 mL** per dose for **Fluarix and FluLaval**; **either 0.25 mL per dose or 0.5 mL per dose** of **Fluzone**. No preference is expressed for either Fluzone dose volume for this age group. Dose volume of ccIIV4 vaccine for children aged 6 months and older: 0.5 mL per dose of Flucelvax. See "2023-24 Seasonal Influenza Vaccine Dose Volumes for Children" at www.michigan.gov/flu/resources/resources-for-health-professionals.

[3]Fluad includes the adjuvant MF59C.1.

[4]Per the package inserts, for Afluria Quadrivalent, "once the stopper of the multi-dose vial has been pierced the vial must be discarded within 28 days. The number of needle punctures should not exceed 20 per multi-dose vial." For Fluzone Quadrivalent, "a maximum of 10 doses can be withdrawn from the multi-dose vial," even if drawing out 0.25 mL doses. A Flucelvax Quadrivalent multi-dose vial may be used up until the expiration date.

[5]Afluria is approved by the Food and Drug Administration for intramuscular administration with a PharmaJet® Stratis® Needle-Free Injection System for persons aged 18 through 64 years.

[6]ACIP recommends that adults aged 65 years and older preferentially receive any one of the following: HD-IIV4, RIV4, or aIIV4. If none of these three vaccines are available at an opportunity for vaccine administration, then any other age-appropriate influenza vaccine should be administered.

Use this chart to help prevent errors. Highlight the flu vaccine(s) you have in your storage unit and know the age indications. Ensure you give the correct vaccine at the correct dose volume to the correct person based on age. For 2-dose recommendations, see "Who Needs 2 Doses of 2023-24 Seasonal Influenza Vaccine?" at www.michigan.gov/flu/resources/resources-for-health-professionals. Refer to Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season | MMWR (cdc.gov), located at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html. For additional information regarding flu and flu vaccination, refer to www.Michigan.gov/flu, www.cdc.gov/vaccines, or www.cdc.gov/mmwr.

Michigan Department of Health and Human Services — Division of Immunization Rev. August 30, 2023

Flu Vaccine Guidance for Use in Children

PEDIATRIC DOSE VOLUMES

NUMBER OF DOSES NEEDED IN 2023-2024 SEASON

Influenza Vaccine Dose Volumes

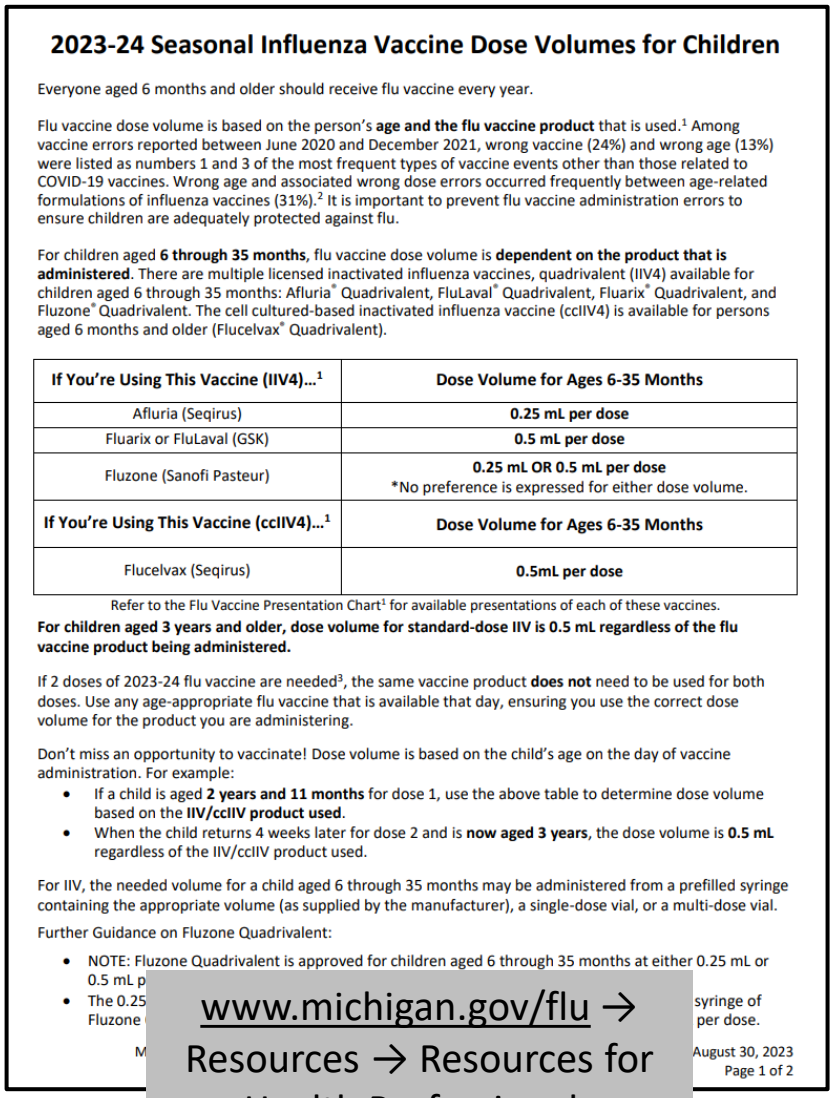
- Five IIV4 products are approved for persons 6 months and older
- For 6-35 months, dose volume depends on the flu vaccine product that is administered

If You're Using This Vaccine...	Dose Volume for Ages 6-35 Months
Afluria (Seqirus)	**0.25 mL** per dose
Fluarix, FluLaval (GSK), or Flucelvax (Sequirus)	**0.5 mL** per dose
Fluzone (Sanofi Pasteur)	**0.25 mL OR 0.5 mL** per dose *No preference is expressed for either dose volume

For children aged 3 years and older, dose volume for SD-IIV **0.5 mL** regardless of the flu vaccine product being administered

Influenza Vaccine Dose Volumes, Cont.

- Prevent flu vaccine administration errors in children-review guidance document
- For IIV4 the needed volume for a child aged 6-35 months may be administered from a manufacturer supplied prefilled syringe, a single-dose vial, or multi-dose vial
  - If 0.25 mL is used from a Fluzone Quadrivalent 0.5 mL single-dose vial, then the 0.25 mL remaining in the single-dose vial must be discarded



2023-24 Seasonal Influenza Vaccine Dose Volumes for Children

Everyone aged 6 months and older should receive flu vaccine every year.

Flu vaccine dose volume is based on the person's **age and the flu vaccine product** that is used.[1] Among vaccine errors reported between June 2020 and December 2021, wrong vaccine (24%) and wrong age (13%) were listed as numbers 1 and 3 of the most frequent types of vaccine events other than those related to COVID-19 vaccines. Wrong age and associated wrong dose errors occurred frequently between age-related formulations of influenza vaccines (31%).[2] It is important to prevent flu vaccine administration errors to ensure children are adequately protected against flu.

For children aged **6 through 35 months**, flu vaccine dose volume is **dependent on the product that is administered**. There are multiple licensed inactivated influenza vaccines, quadrivalent (IIV4) available for children aged 6 through 35 months: Afluria® Quadrivalent, FluLaval® Quadrivalent, Fluarix® Quadrivalent, and Fluzone® Quadrivalent. The cell cultured-based inactivated influenza vaccine (ccIIV4) is available for persons aged 6 months and older (Flucelvax® Quadrivalent).

If You're Using This Vaccine (IIV4)…[1]	Dose Volume for Ages 6-35 Months
Afluria (Seqirus)	**0.25 mL per dose**
Fluarix or FluLaval (GSK)	**0.5 mL per dose**
Fluzone (Sanofi Pasteur)	**0.25 mL OR 0.5 mL per dose** *No preference is expressed for either dose volume.
If You're Using This Vaccine (ccIIV4)…[1]	**Dose Volume for Ages 6-35 Months**
Flucelvax (Seqirus)	**0.5mL per dose**

Refer to the Flu Vaccine Presentation Chart[1] for available presentations of each of these vaccines.

For children aged 3 years and older, dose volume for standard-dose IIV is 0.5 mL regardless of the flu vaccine product being administered.

If 2 doses of 2023-24 flu vaccine are needed[3], the same vaccine product **does not** need to be used for both doses. Use any age-appropriate flu vaccine that is available that day, ensuring you use the correct dose volume for the product you are administering.

Don't miss an opportunity to vaccinate! Dose volume is based on the child's age on the day of vaccine administration. For example:

- If a child is aged **2 years and 11 months** for dose 1, use the above table to determine dose volume based on the **IIV/ccIIV product used**.
- When the child returns 4 weeks later for dose 2 and is **now aged 3 years**, the dose volume is **0.5 mL** regardless of the IIV/ccIIV product used.

For IIV, the needed volume for a child aged 6 through 35 months may be administered from a prefilled syringe containing the appropriate volume (as supplied by the manufacturer), a single-dose vial, or a multi-dose vial.

Further Guidance on Fluzone Quadrivalent:

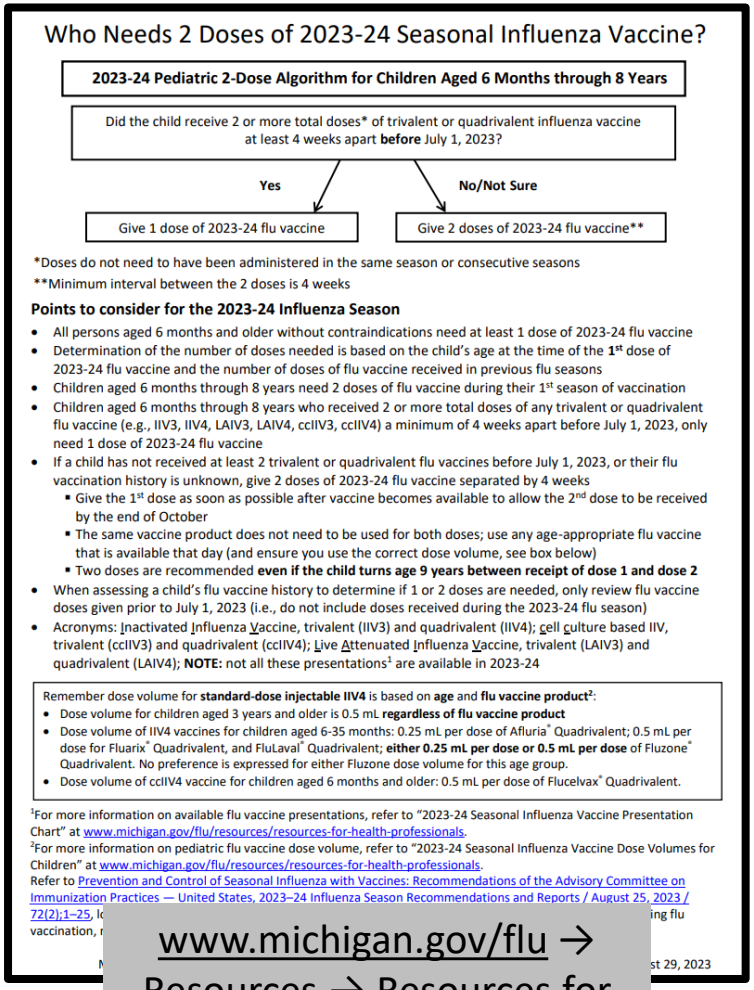
- NOTE: Fluzone Quadrivalent is approved for children aged 6 through 35 months at either 0.25 mL or 0.5 mL p
- The 0.25 Fluzone (syringe of per dose.

M August 30, 2023
Page 1 of 2

www.michigan.gov/flu → Resources → Resources for Health Professionals

2-Dose Recommendation for Children 6 months-8 years

- # of doses needed is based on child's age at time of 1st dose of 2023-24 flu vaccine and # of doses of flu vaccine received in previous seasons
- Assess how many seasonal flu vaccines (i.e., trivalent, quadrivalent) received before **7/1/2023**
  - If 2 or more doses: give 1 dose this season
  - If only 1 dose or has NEVER received flu vaccine: **give 2 doses this season** (separate by 4 weeks)
- 2 doses do not need to be from the same season or consecutive seasons, need to be spaced at least 4 weeks apart
- Give 1st dose as soon as possible after vaccine is available so 2nd dose can be received by end of October
- If the child turns 9 years between dose 1 and dose 2, still give dose 2



Who Needs 2 Doses of 2023-24 Seasonal Influenza Vaccine?

2023-24 Pediatric 2-Dose Algorithm for Children Aged 6 Months through 8 Years

Did the child receive 2 or more total doses* of trivalent or quadrivalent influenza vaccine at least 4 weeks apart **before** July 1, 2023?

Yes → Give 1 dose of 2023-24 flu vaccine

No/Not Sure → Give 2 doses of 2023-24 flu vaccine**

*Doses do not need to have been administered in the same season or consecutive seasons

**Minimum interval between the 2 doses is 4 weeks

Points to consider for the 2023-24 Influenza Season

- All persons aged 6 months and older without contraindications need at least 1 dose of 2023-24 flu vaccine
- Determination of the number of doses needed is based on the child's age at the time of the **1st** dose of 2023-24 flu vaccine and the number of doses of flu vaccine received in previous flu seasons
- Children aged 6 months through 8 years need 2 doses of flu vaccine during their 1st season of vaccination
- Children aged 6 months through 8 years who received 2 or more total doses of any trivalent or quadrivalent flu vaccine (e.g., IIV3, IIV4, LAIV3, LAIV4, ccIIV3, ccIIV4) a minimum of 4 weeks apart before July 1, 2023, only need 1 dose of 2023-24 flu vaccine
- If a child has not received at least 2 trivalent or quadrivalent flu vaccines before July 1, 2023, or their flu vaccination history is unknown, give 2 doses of 2023-24 flu vaccine separated by 4 weeks
  - Give the 1st dose as soon as possible after vaccine becomes available to allow the 2nd dose to be received by the end of October
  - The same vaccine product does not need to be used for both doses; use any age-appropriate flu vaccine that is available that day (and ensure you use the correct dose volume, see box below)
  - Two doses are recommended **even if the child turns age 9 years between receipt of dose 1 and dose 2**
- When assessing a child's flu vaccine history to determine if 1 or 2 doses are needed, only review flu vaccine doses given prior to July 1, 2023 (i.e., do not include doses received during the 2023-24 flu season)
- Acronyms: Inactivated Influenza Vaccine, trivalent (IIV3) and quadrivalent (IIV4); cell culture based IIV, trivalent (ccIIV3) and quadrivalent (ccIIV4); Live Attenuated Influenza Vaccine, trivalent (LAIV3) and quadrivalent (LAIV4); **NOTE:** not all these presentations[1] are available in 2023-24

Remember dose volume for **standard-dose injectable IIV4** is based on **age** and **flu vaccine product**[2]:

- Dose volume for children aged 3 years and older is 0.5 mL **regardless of flu vaccine product**
- Dose volume of IIV4 vaccines for children aged 6-35 months: 0.25 mL per dose of Afluria® Quadrivalent; 0.5 mL per dose for Fluarix® Quadrivalent, and FluLaval® Quadrivalent; **either 0.25 mL per dose or 0.5 mL per dose** of Fluzone® Quadrivalent. No preference is expressed for either Fluzone dose volume for this age group.
- Dose volume of ccIIV4 vaccine for children aged 6 months and older: 0.5 mL per dose of Flucelvax® Quadrivalent.

[1]For more information on available flu vaccine presentations, refer to "2023-24 Seasonal Influenza Vaccine Presentation Chart" at www.michigan.gov/flu/resources/resources-for-health-professionals.
[2]For more information on pediatric flu vaccine dose volume, refer to "2023-24 Seasonal Influenza Vaccine Dose Volumes for Children" at www.michigan.gov/flu/resources/resources-for-health-professionals.
Refer to Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season Recommendations and Reports / August 25, 2023 / 72(2);1–25, l... ing flu vaccination, r...

...st 29, 2023

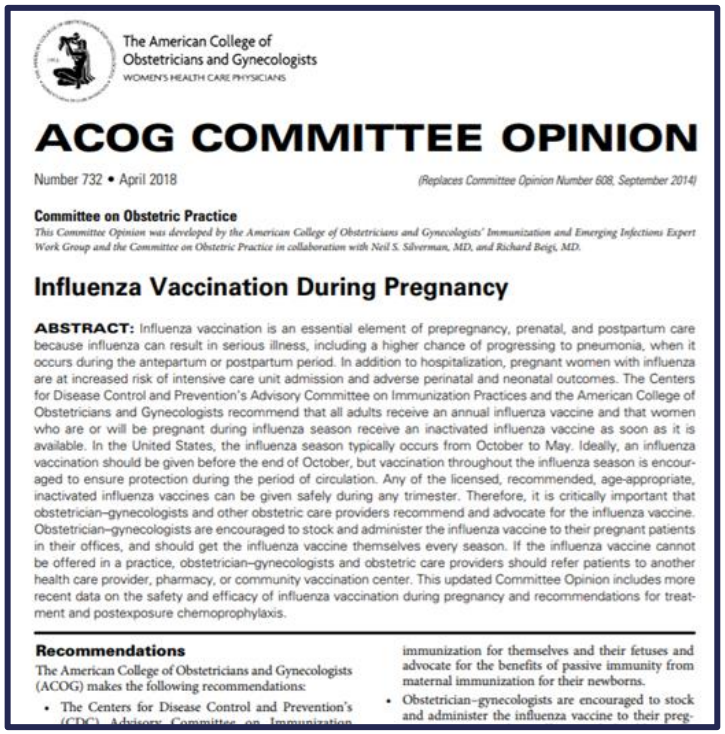
www.michigan.gov/flu → Resources → Resources for Health Professionals

MCIR is programmed for 2-dose assessment. Use MCIR and be sure to put doses into MCIR!

Flu Vaccine and Pregnancy

Pregnancy Flu Vaccine Recommendation

- Pregnant and postpartum persons have been observed to be at higher risk for severe illness and complications from flu, particularly during 2nd and 3rd trimesters
- Flu vaccination during pregnancy lowers risk of flu hospitalization in pregnant persons by average 40%, in babies less than 6 months old by average 72%
- ACIP and ACOG recommend that:
  - All persons who are pregnant or who might be pregnant or postpartum during the flu season receive flu vaccine
  - Any licensed, recommended, and age-appropriate IIV or RIV4 may be used **(LAIV4 should not be used during pregnancy)**
  - Administer at any time during pregnancy, before and during the flu season



The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

ACOG COMMITTEE OPINION

Number 732 • April 2018 *(Replaces Committee Opinion Number 608, September 2014)*

Committee on Obstetric Practice

This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Immunization and Emerging Infections Expert Work Group and the Committee on Obstetric Practice in collaboration with Neil S. Silverman, MD, and Richard Beigi, MD.

Influenza Vaccination During Pregnancy

ABSTRACT: Influenza vaccination is an essential element of prepregnancy, prenatal, and postpartum care because influenza can result in serious illness, including a higher chance of progressing to pneumonia, when it occurs during the antepartum or postpartum period. In addition to hospitalization, pregnant women with influenza are at increased risk of intensive care unit admission and adverse perinatal and neonatal outcomes. The Centers for Disease Control and Prevention's Advisory Committee on Immunization Practices and the American College of Obstetricians and Gynecologists recommend that all adults receive an annual influenza vaccine and that women who are or will be pregnant during influenza season receive an inactivated influenza vaccine as soon as it is available. In the United States, the influenza season typically occurs from October to May. Ideally, an influenza vaccination should be given before the end of October, but vaccination throughout the influenza season is encouraged to ensure protection during the period of circulation. Any of the licensed, recommended, age-appropriate, inactivated influenza vaccines can be given safely during any trimester. Therefore, it is critically important that obstetrician–gynecologists and other obstetric care providers recommend and advocate for the influenza vaccine. Obstetrician–gynecologists are encouraged to stock and administer the influenza vaccine to their pregnant patients in their offices, and should get the influenza vaccine themselves every season. If the influenza vaccine cannot be offered in a practice, obstetrician–gynecologists and obstetric care providers should refer patients to another health care provider, pharmacy, or community vaccination center. This updated Committee Opinion includes more recent data on the safety and efficacy of influenza vaccination during pregnancy and recommendations for treatment and postexposure chemoprophylaxis.

Recommendations

The American College of Obstetricians and Gynecologists (ACOG) makes the following recommendations:

- The Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization

immunization for themselves and their fetuses and advocate for the benefits of passive immunity from maternal immunization for their newborns.

- Obstetrician–gynecologists are encouraged to stock and administer the influenza vaccine to their preg-

1. Influenza Vaccination During Pregnancy (acog.org)
2. Low Rates of Vaccination During Pregnancy Leave Moms, Babies Unprotected (cdc.gov)
3. Flu & Pregnancy | CDC

Influenza Vaccination Administration

SCREENING FOR VACCINATION

EGG ALLERGY

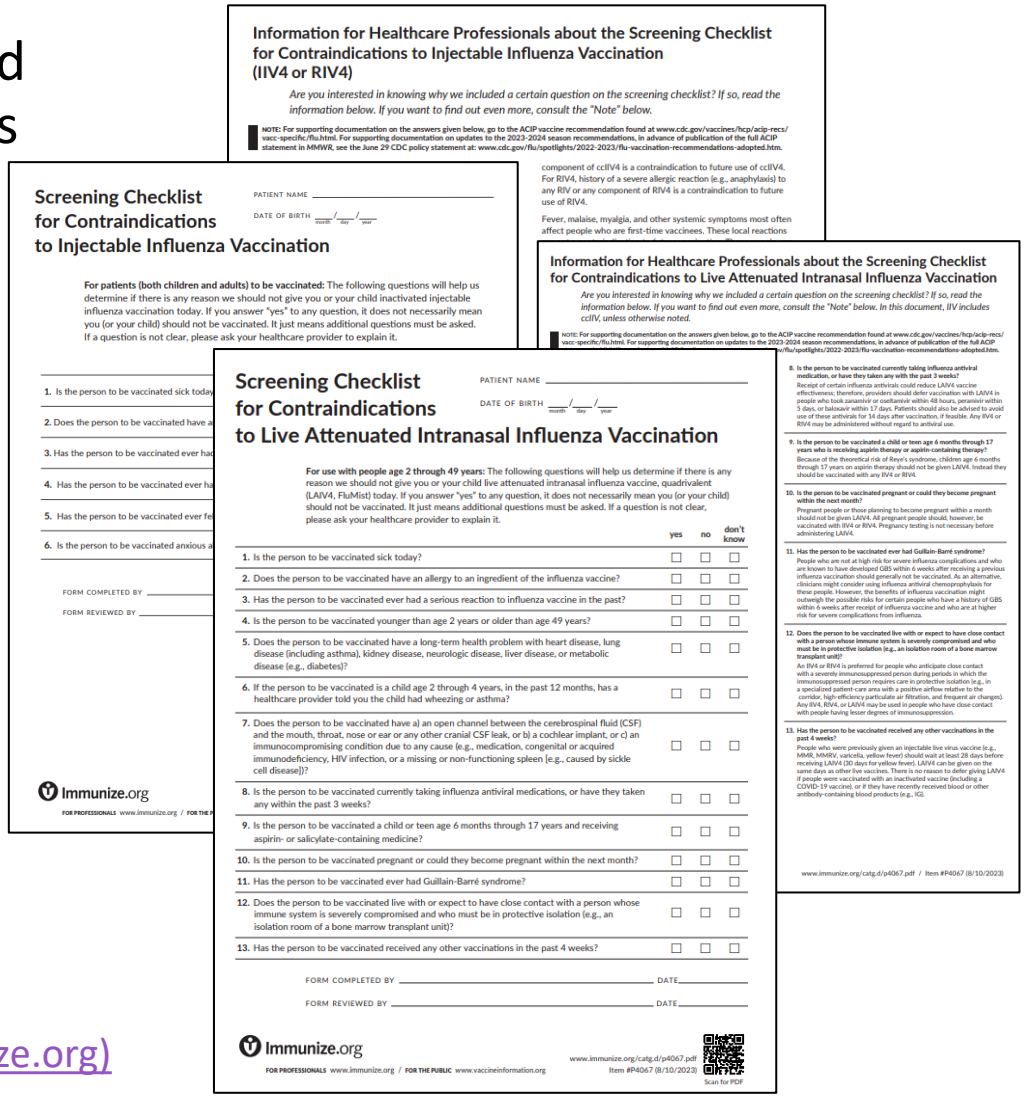
VACCINE ADMINISTRATION

COADMINISTRATION

Screening for Contraindications and Precautions

- Screen for contraindications and precautions every time vaccines are indicated
- Use a standardized form
- Help prevent vaccine errors
- Follow only valid contraindications and precautions
- Document any permanent or temporary contraindications/precautions in the chart/EMR

[Screening Checklists about Vaccine Contraindications and Precautions (immunize.org)]



Information for Healthcare Professionals about the Screening Checklist for Contraindications to Injectable Influenza Vaccination (IIV4 or RIV4)

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the "Note" below.

NOTE: For supporting documentation on the answers given below, go to the ACIP vaccine recommendation found at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html. For supporting documentation on updates to the 2023-2024 season recommendations, in advance of publication of the full ACIP statement in MMWR, see the June 29 CDC policy statement at: www.cdc.gov/flu/spotlights/2022-2023/flu-vaccination-recommendations-adopted.htm.

component of cclIV4 is a contraindication to future use of cclIV4. For RIV4, history of a severe allergic reaction (e.g., anaphylaxis) to any RIV or any component of RIV4 is a contraindication to future use of RIV4.

Fever, malaise, myalgia, and other systemic symptoms most often affect people who are first-time vaccinees. These local reactions

Screening Checklist for Contraindications to Injectable Influenza Vaccination

PATIENT NAME

DATE OF BIRTH ___/___/___ (month / day / year)

For patients (both children and adults) to be vaccinated: The following questions will help us determine if there is any reason we should not give you or your child inactivated injectable influenza vaccination today. If you answer "yes" to any question, it does not necessarily mean you (or your child) should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

1. Is the person to be vaccinated sick today?
2. Does the person to be vaccinated have a
3. Has the person to be vaccinated ever ha
4. Has the person to be vaccinated ever ha
5. Has the person to be vaccinated ever fe
6. Is the person to be vaccinated anxious a

FORM COMPLETED BY

FORM REVIEWED BY

Immunize.org

FOR PROFESSIONALS www.immunize.org / FOR THE

Information for Healthcare Professionals about the Screening Checklist for Contraindications to Live Attenuated Intranasal Influenza Vaccination

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the "Note" below. In this document, IIV includes cclIV, unless otherwise noted.

NOTE: For supporting documentation on the answers given below, go to the ACIP vaccine recommendation found at www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html. For supporting documentation on updates to the 2023-2024 season recommendations, in advance of publication of the full ACIP

/flu/spotlights/2022-2023/flu-vaccination-recommendations-adopted.htm.

8. **Is the person to be vaccinated currently taking influenza antiviral medication, or have they taken any with the past 3 weeks?**
Receipt of certain influenza antivirals could reduce LAIV4 vaccine effectiveness; therefore, providers should defer vaccination with LAIV4 in people who took zanamivir or oseltamivir within 48 hours, peramivir within 5 days, or baloxavir within 17 days. Patients should also be advised to avoid use of these antivirals for 14 days after vaccination, if feasible. Any IIV4 or RIV4 may be administered without regard to antiviral use.

9. **Is the person to be vaccinated a child or teen age 6 months through 17 years who is receiving aspirin therapy or aspirin-containing therapy?**
Because of the theoretical risk of Reye's syndrome, children age 6 months through 17 years on aspirin therapy should not be given LAIV4. Instead they should be vaccinated with any IIV4 or RIV4.

10. **Is the person to be vaccinated pregnant or could they become pregnant within the next month?**
Pregnant people or those planning to become pregnant within a month should not be given LAIV4. All pregnant people should, however, be vaccinated with IIV4 or RIV4. Pregnancy testing is not necessary before administering LAIV4.

11. **Has the person to be vaccinated ever had Guillain-Barré syndrome?**
People who are not at high risk for severe influenza complications and who are known to have developed GBS within 6 weeks after receiving a previous influenza vaccination should generally not be vaccinated. As an alternative, clinicians might consider using influenza antiviral chemoprophylaxis for these people. However, the benefits of influenza vaccination might outweigh the possible risks for certain people who have a history of GBS within 6 weeks after receipt of influenza vaccine and who are at higher risk for severe complications from influenza.

12. **Does the person to be vaccinated live with or expect to have close contact with a person whose immune system is severely compromised and who must be in protective isolation (e.g., an isolation room of a bone marrow transplant unit)?**
An IIV4 or RIV4 is preferred for people who anticipate close contact with a severely immunosuppressed person during periods in which the immunosuppressed person requires care in protective isolation (e.g., in a specialized patient-care area with a positive airflow relative to the corridor, high-efficiency particulate air filtration, and frequent air changes). Any IIV4, RIV4, or LAIV4 may be used in people who have close contact with people having lesser degrees of immunosuppression.

13. **Has the person to be vaccinated received any other vaccinations in the past 4 weeks?**
People who were previously given an injectable live virus vaccine (e.g., MMR, MMRV, varicella, yellow fever) should wait at least 28 days before receiving LAIV4 (30 days for yellow fever). LAIV4 can be given on the same days as other live vaccines. There is no reason to defer giving LAIV4 if people were vaccinated with an inactivated vaccine (including a COVID-19 vaccine), or if they have recently received blood or other antibody-containing blood products (e.g., IG).

www.immunize.org/catg.d/p4067.pdf / Item #P4067 (8/10/2023)

Screening Checklist for Contraindications to Live Attenuated Intranasal Influenza Vaccination

PATIENT NAME

DATE OF BIRTH ___/___/___ (month / day / year)

For use with people age 2 through 49 years: The following questions will help us determine if there is any reason we should not give you or your child live attenuated intranasal influenza vaccine, quadrivalent (LAIV4, FluMist) today. If you answer "yes" to any question, it does not necessarily mean you (or your child) should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is the person to be vaccinated sick today?	☐	☐	☐
2. Does the person to be vaccinated have an allergy to an ingredient of the influenza vaccine?	☐	☐	☐
3. Has the person to be vaccinated ever had a serious reaction to influenza vaccine in the past?	☐	☐	☐
4. Is the person to be vaccinated younger than age 2 years or older than age 49 years?	☐	☐	☐
5. Does the person to be vaccinated have a long-term health problem with heart disease, lung disease (including asthma), kidney disease, neurologic disease, liver disease, or metabolic disease (e.g., diabetes)?	☐	☐	☐
6. If the person to be vaccinated is a child age 2 through 4 years, in the past 12 months, has a healthcare provider told you the child had wheezing or asthma?	☐	☐	☐
7. Does the person to be vaccinated have a) an open channel between the cerebrospinal fluid (CSF) and the mouth, throat, nose or ear or any other cranial CSF leak, or b) a cochlear implant, or c) an immunocompromising condition due to any cause (e.g., medication, congenital or acquired immunodeficiency, HIV infection, or a missing or non-functioning spleen [e.g., caused by sickle cell disease])?	☐	☐	☐
8. Is the person to be vaccinated currently taking influenza antiviral medications, or have they taken any within the past 3 weeks?	☐	☐	☐
9. Is the person to be vaccinated a child or teen age 6 months through 17 years and receiving aspirin- or salicylate-containing medicine?	☐	☐	☐
10. Is the person to be vaccinated pregnant or could they become pregnant within the next month?	☐	☐	☐
11. Has the person to be vaccinated ever had Guillain-Barré syndrome?	☐	☐	☐
12. Does the person to be vaccinated live with or expect to have close contact with a person whose immune system is severely compromised and who must be in protective isolation (e.g., an isolation room of a bone marrow transplant unit)?	☐	☐	☐
13. Has the person to be vaccinated received any other vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____

FORM REVIEWED BY _____ DATE _____

Immunize.org

FOR PROFESSIONALS www.immunize.org / FOR THE PUBLIC www.vaccineinformation.org

www.immunize.org/catg.d/p4067.pdf
Item #P4067 (8/10/2023)

Scan for PDF

Contraindications to Flu Vaccine

- IIV4/LAIV4: History of severe allergic reaction to any component of the vaccine* or to a previous dose of any influenza vaccine (i.e., any egg-based IIV, ccIIV, RIV, or LAIV)
- **ccIIV4: History of severe allergic reaction to a previous dose of any ccIIV or any component of ccIIV4**
- **RIV4: History of severe allergic reaction to a previous dose of any RIV or any component of RIV4**
- LAIV4:
  - Concomitant aspirin- or salicylate-containing therapy (children and adolescents)
  - Children aged 2-4 years with a history of asthma or documented wheezing episode in the past 12 months
  - Immunocompromised due to any cause, including immunosuppression caused by medications, congenital or acquired immunodeficiency states, HIV infection, anatomic asplenia, or functional asplenia (e.g., sickle cell anemia)
  - Close contacts/caregivers of severely immunosuppressed persons who require a protected environment
  - Pregnancy
  - Active communication between CSF and oropharynx, nasopharynx, nose, or ear or any other cranial CSF leak
  - Cochlear implants
  - Receipt of flu antivirals within previous 48 hours (oseltamivir, zanamivir), previous 5 days (peramivir), previous 17 days (baloxavir)

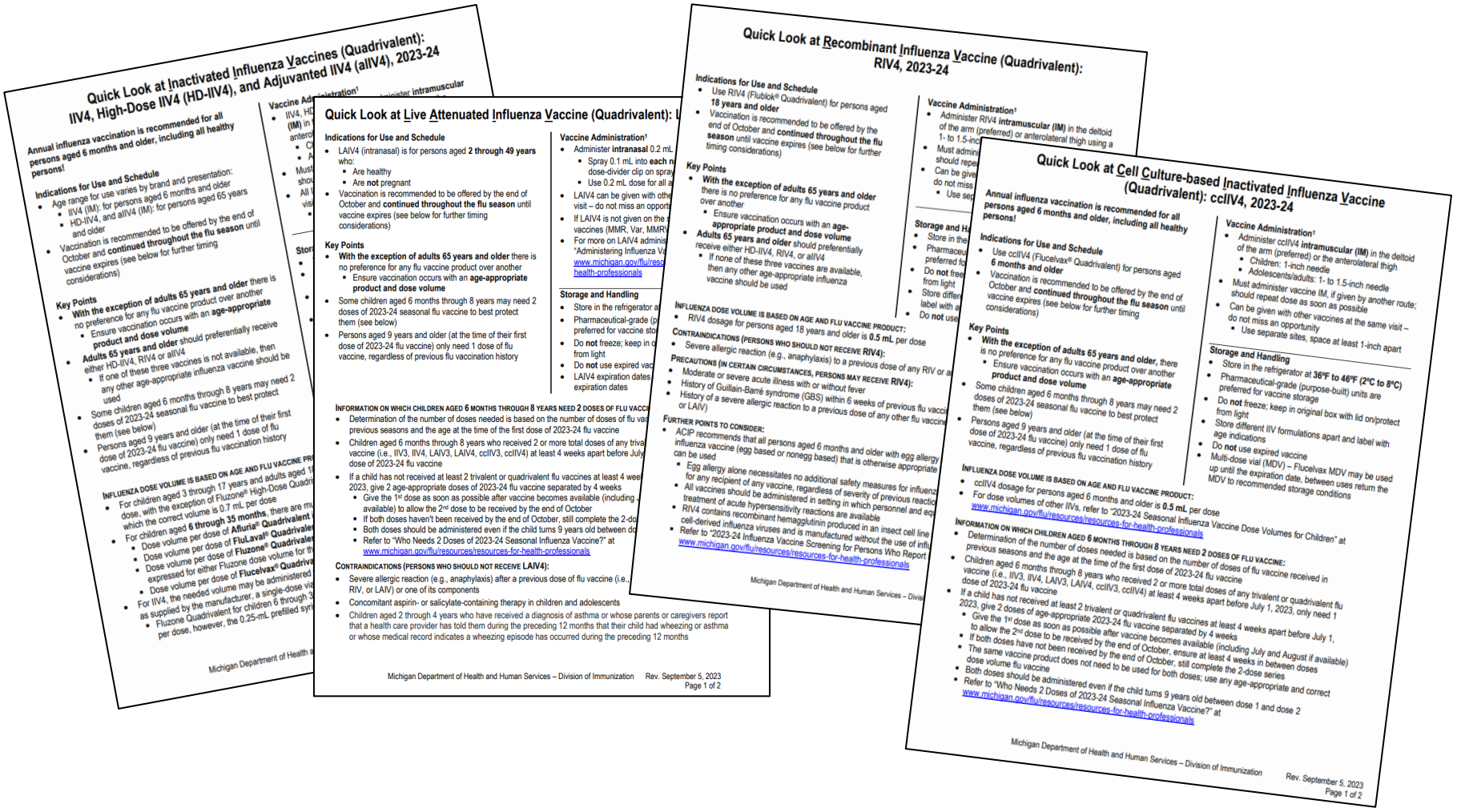
*However, ACIP recommends that persons with history of egg allergy may receive any flu vaccine otherwise appropriate for their age/health status

Precautions to Flu Vaccine

- IIV4/ccIIV4/RIV4/LAIV4: Moderate or severe acute illness with or without fever and history of Guillain-Barré syndrome within 6 weeks of previous flu vaccine
- **ccIIV4: History of severe allergic reaction to a previous dose of any other influenza vaccine (i.e., any egg-based IIV, RIV, or LAIV)***
- **RIV4: History of severe allergic reaction to a previous dose of any other influenza vaccine (i.e., any egg-based IIV, ccIIV, or LAIV)***
- LAIV4:
  - Asthma in persons aged 5 years and older
  - Other underlying medical conditions that might predispose to complications after wild-type influenza infection (e.g., chronic pulmonary, cardiovascular [excluding isolated hypertension], renal, hepatic, neurologic, hematologic, or metabolic disorders [including diabetes mellitus])

*If administered, vaccination should occur in a medical setting and should be supervised by a health care provider who can recognize and manage severe allergic reactions. Providers can consider consultation with an allergist in such cases, to assist in identification of the component responsible for the allergic reaction

Quick Looks at Using IIV4, ccIIV4, RIV4, and LAIV4



www.michigan.gov/flu → Resources → Resources for Health Professionals

www.michigan.gov/VaccineQuickLooks

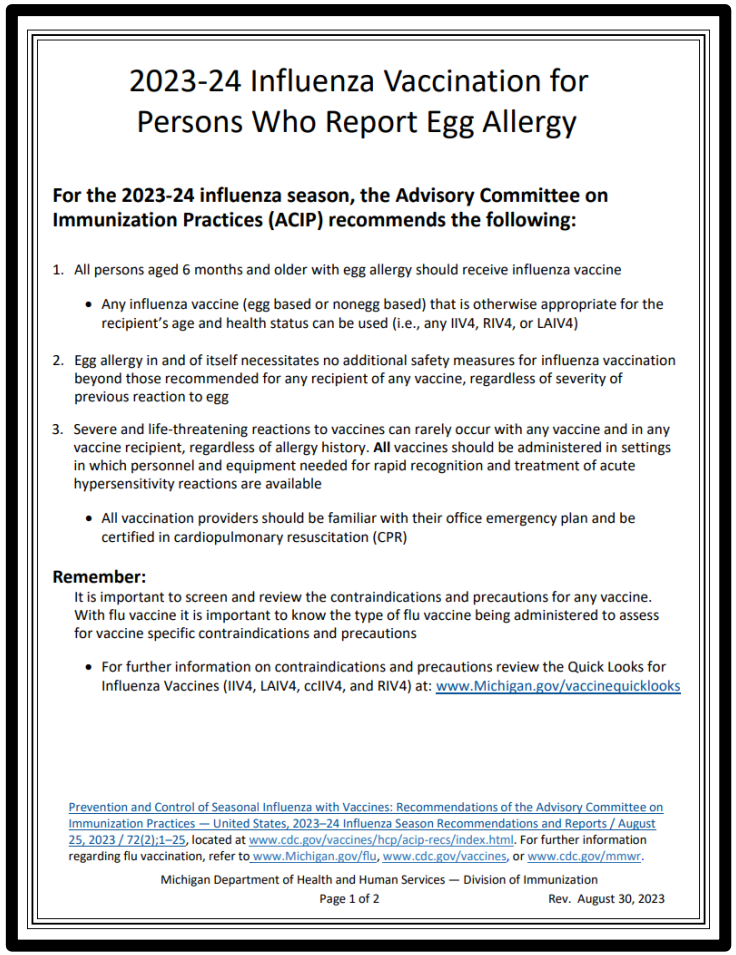
Flu Vaccination for Persons with Egg Allergy

- All persons aged 6 months and older with egg allergy should receive influenza vaccine unless a contraindication exists. Any influenza vaccine that is otherwise appropriate for the recipient's age and health status can be used (egg based or non-egg based)
- Egg allergy in and of itself necessitates no additional safety measures for influenza vaccination beyond those recommended for any recipient of any vaccine, regardless of severity of previous reaction to egg
- Severe and life-threatening reactions to vaccines can rarely occur with any vaccine and in any vaccine recipient, regardless of allergy history. Providers are reminded that all vaccines should be administered in settings in which personnel and equipment needed for rapid recognition and treatment of acute hypersensitivity reactions are available. All vaccination providers should be familiar with their office emergency plan and be CPR certified

www.michigan.gov/flu → Resources → Resources for Health Professionals

Flu Vaccine & Egg Allergy, Cont.

- For persons who report egg allergy, it is not recommended to administer divided doses of flu vaccine or to do skin testing with the vaccine before administration
- No post-vaccination observation period is recommended specifically for egg-allergic persons
- Reminder: Screen and review vaccine specific contraindications and precautions



2023-24 Influenza Vaccination for Persons Who Report Egg Allergy

For the 2023-24 influenza season, the Advisory Committee on Immunization Practices (ACIP) recommends the following:

1. All persons aged 6 months and older with egg allergy should receive influenza vaccine
   - Any influenza vaccine (egg based or nonegg based) that is otherwise appropriate for the recipient's age and health status can be used (i.e., any IIV4, RIV4, or LAIV4)
2. Egg allergy in and of itself necessitates no additional safety measures for influenza vaccination beyond those recommended for any recipient of any vaccine, regardless of severity of previous reaction to egg
3. Severe and life-threatening reactions to vaccines can rarely occur with any vaccine and in any vaccine recipient, regardless of allergy history. **All** vaccines should be administered in settings in which personnel and equipment needed for rapid recognition and treatment of acute hypersensitivity reactions are available
   - All vaccination providers should be familiar with their office emergency plan and be certified in cardiopulmonary resuscitation (CPR)

Remember:

It is important to screen and review the contraindications and precautions for any vaccine. With flu vaccine it is important to know the type of flu vaccine being administered to assess for vaccine specific contraindications and precautions

- For further information on contraindications and precautions review the Quick Looks for Influenza Vaccines (IIV4, LAIV4, ccIIV4, and RIV4) at: www.Michigan.gov/vaccinequicklooks

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season Recommendations and Reports / August 25, 2023 / 72(2);1–25, located at www.cdc.gov/vaccines/hcp/acip-recs/index.html. For further information regarding flu vaccination, refer to www.Michigan.gov/flu, www.cdc.gov/vaccines, or www.cdc.gov/mmwr.

Michigan Department of Health and Human Services — Division of Immunization

Page 1 of 2 Rev. August 30, 2023

www.michigan.gov/flu → Resources → Resources for Health Professionals

Flu Vaccine Administration

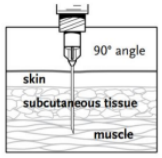
- Covers intramuscular (IM) and intranasal (NAS) administration techniques
- Do skills check-offs for staff in your office

Administering Influenza Vaccines: Intramuscular and Intranasal

Intramuscular (IM) Injection

Inactivated Influenza Vaccines
(aIIV4, HD-IIV4, IIV4, ccIIV4, RIV4)

1. Use a needle long enough to reach deep into the muscle. For infants 6 months and older, use a 1" needle. For adolescents and adults, a 1-1 ½" needle should be used.[1]
2. Choose the appropriate site.[1] With your non-dominant hand, spread the skin taut between the thumb and forefinger, isolating the muscle.
3. With your dominant hand, insert the needle at a 90° angle to the skin with a quick thrust.
4. Push down on the plunger and inject the entire contents of the syringe. There is no need to aspirate.



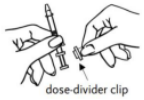
5. Remove the needle or activate the retraction, if using a retractable safety needle/syringe, then apply light pressure to the injection site for several seconds with a dry cotton ball or gauze pad.
6. Cover the injection site with a bandage.
7. Put the used needle and syringe in a sharps container.

Intranasal (NAS) Administration

Live Attenuated Influenza Vaccine (LAIV4)

1. FluMist® (LAIV4) is for intranasal administration only. Do not inject!
2. Remove the rubber tip protector. Do not remove the dose-divider clip at the other end of the sprayer.
3. With the patient in an upright position, place the tip just inside the nostril to ensure LAIV4 is delivered into the nose. The patient should breathe normally.

4. With a single motion, depress the plunger as rapidly as possible until the dose-divider clip prevents you from going further. Remove from nostril.
5. Pinch and remove the dose-divider clip from the plunger.



6. Place the tip just inside the other nostril, and with a single motion, depress plunger as rapidly as possible to deliver the remaining vaccine (if the person sneezes after administration, the dose can be counted as valid).
7. Put the applicator in a sharps container.

[1]Use professional judgment when determining needle size and injection site. Visit: https://www.immunize.org/catg.d/p3085.pdf.
For more information regarding flu and flu vaccination, refer to www.Michigan.gov/flu, www.cdc.gov/vaccines, or www.cdc.gov/mmwr.

Michigan Department of Health and Human Services – Division of Immunization Rev. August 29, 2023

www.michigan.gov/flu → Resources → Resources for Health Professionals

Improper IM Injection Technique

- Inflammatory reaction resulting from incorrect administration of a vaccine intended for IM injection in deltoid, into/around the underlying bursa of the shoulder
- Causes shoulder pain and limited range of motion

Images courtesy of CDC

Skills Checklist for Vaccine Administration (immunize.org)

Proper IM Injection Technique:

- Administer in thickest, most central part of the muscle
- Use needle length based on patient's age and weight
- Insert the needle into the muscle at a 90° angle

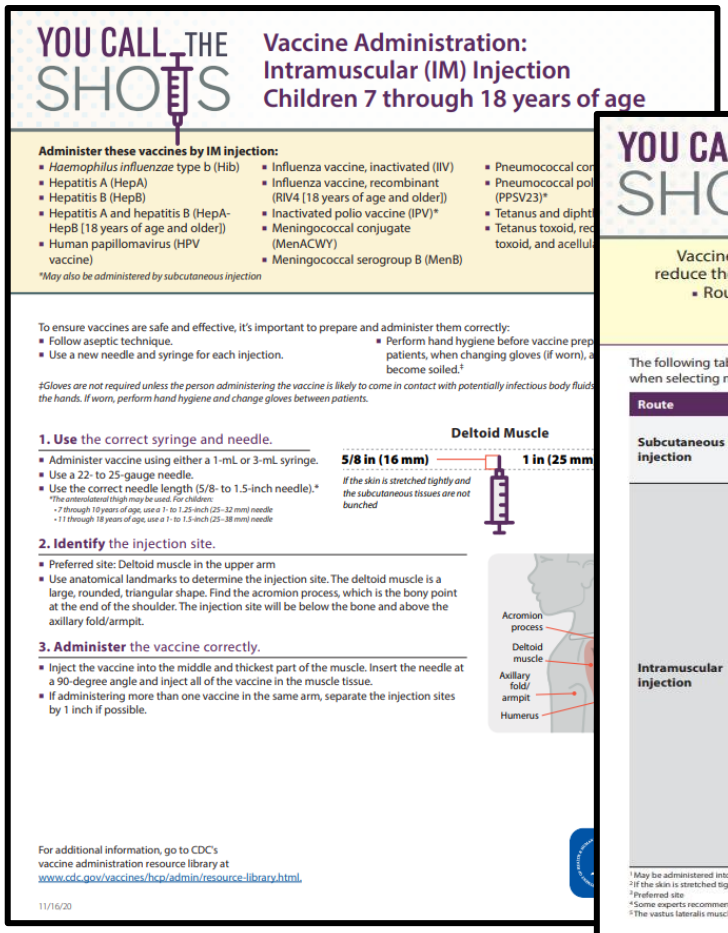
Image Courtesy of CDC

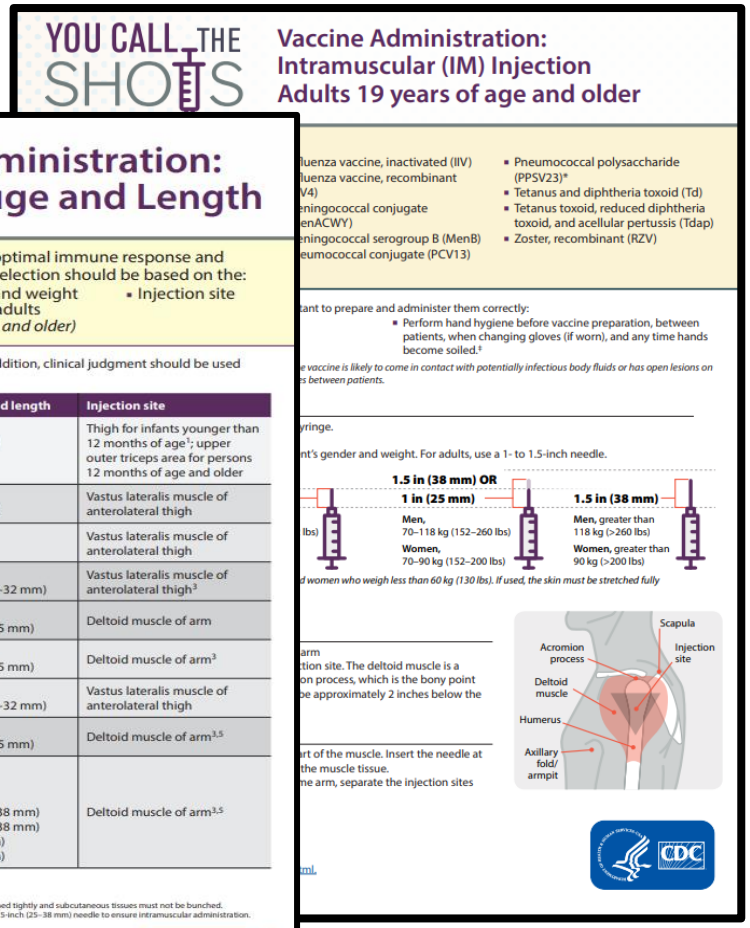
Vaccine Administration: Needle Gauge and Length (cdc.gov)

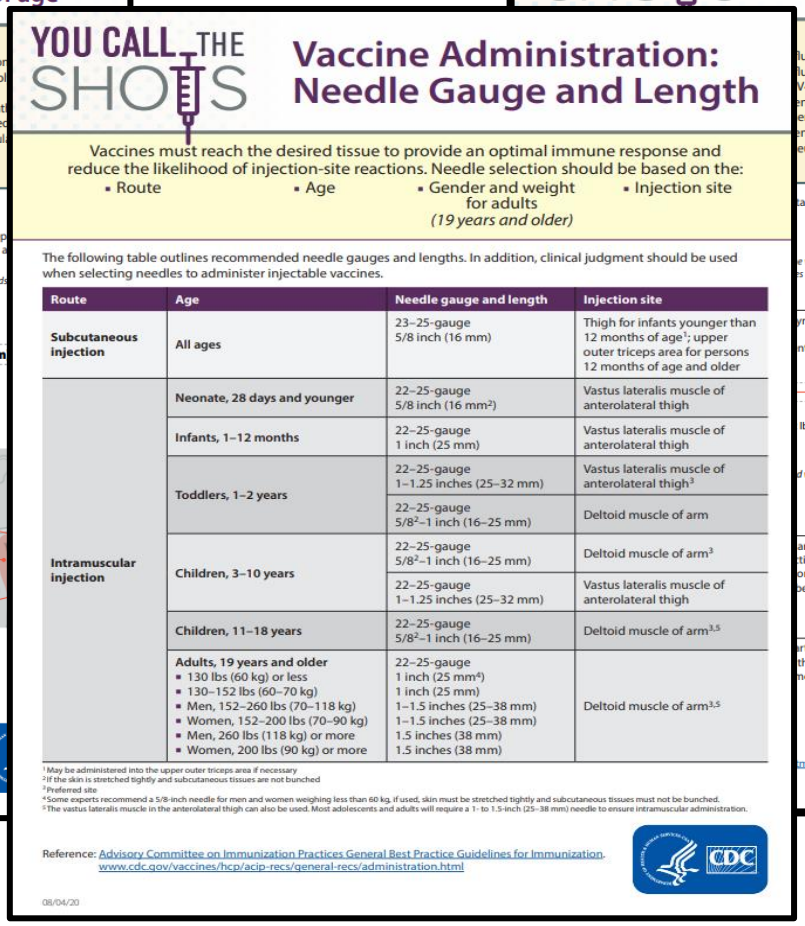
Coadministration

- IIV4s and RIV4 can be administered simultaneously or sequentially with other inactivated vaccines or live vaccines
  - Injectable vaccines that are given simultaneously should be administered at separate anatomic sites
  - When administering more than one vaccine at the same clinical visit, providers should separate injection sites by at least 1 inch if possible and consider administering vaccines that are associated with an enhanced local reaction in separate limbs
- LAIV4 can be administered simultaneously with other live or inactivated vaccines
  - However, if two live vaccines are not given simultaneously, at least 4 weeks should pass after administration of one live vaccine (such as LAIV4) before another live vaccine is administered

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2023–24 Influenza Season | MMWR (cdc.gov)



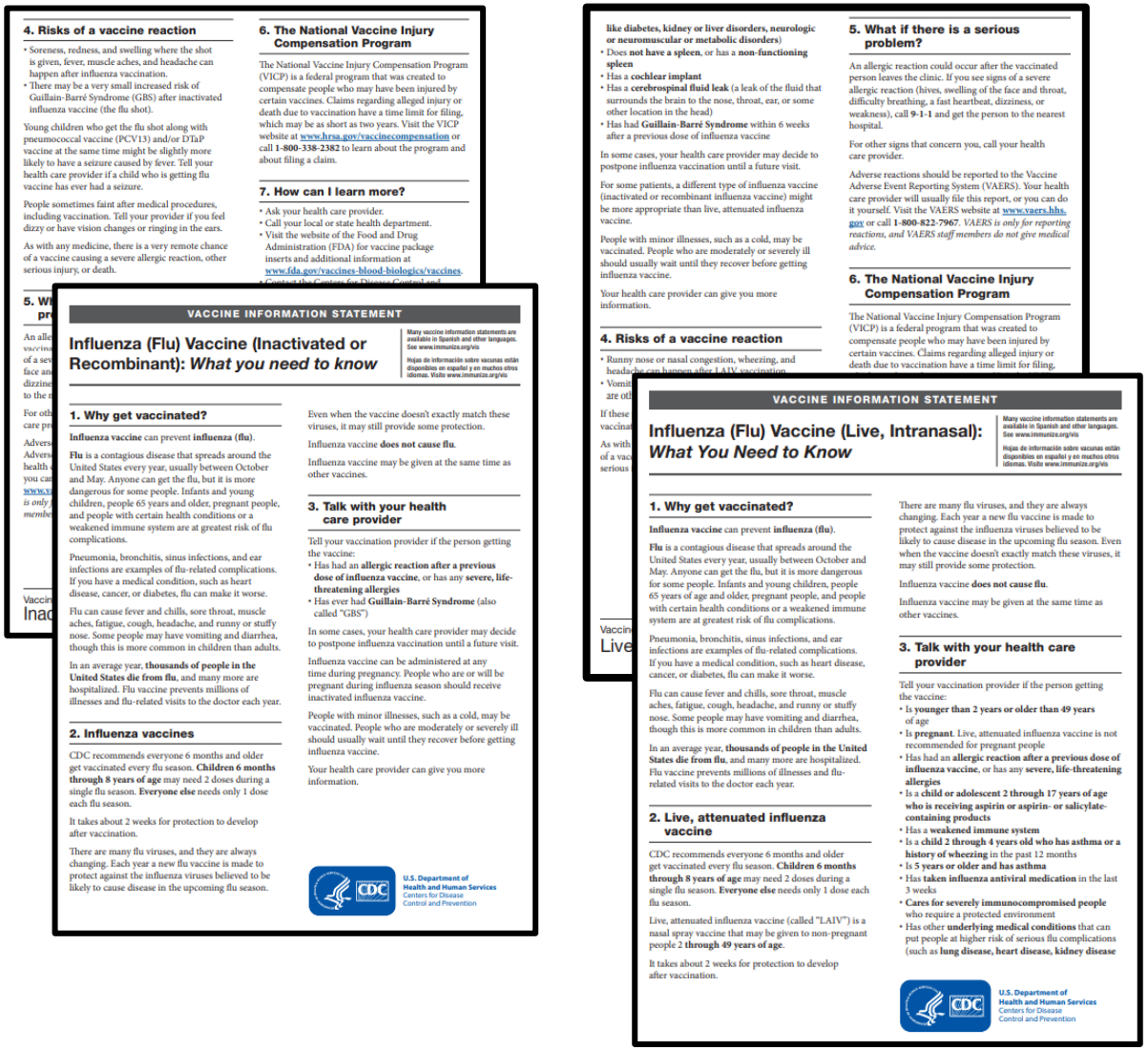




CDC Vaccine Administration Job Aides

Vaccine Administration Resource Library | CDC

Flu Vaccine Information Statements (VIS)



VACCINE INFORMATION STATEMENT

Influenza (Flu) Vaccine (Inactivated or Recombinant): *What you need to know*

Many vaccine information statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1. Why get vaccinated?

Influenza vaccine can prevent **influenza (flu)**.

Flu is a contagious disease that spreads around the United States every year, usually between October and May. Anyone can get the flu, but it is more dangerous for some people. Infants and young children, people 65 years and older, pregnant people, and people with certain health conditions or a weakened immune system are at greatest risk of flu complications.

Pneumonia, bronchitis, sinus infections, and ear infections are examples of flu-related complications. If you have a medical condition, such as heart disease, cancer, or diabetes, flu can make it worse.

Flu can cause fever and chills, sore throat, muscle aches, fatigue, cough, headache, and runny or stuffy nose. Some people may have vomiting and diarrhea, though this is more common in children than adults.

In an average year, **thousands of people in the United States die from flu**, and many more are hospitalized. Flu vaccine prevents millions of illnesses and flu-related visits to the doctor each year.

2. Influenza vaccines

CDC recommends everyone 6 months and older get vaccinated every flu season. **Children 6 months through 8 years of age** may need 2 doses during a single flu season. **Everyone else** needs only 1 dose each flu season.

It takes about 2 weeks for protection to develop after vaccination.

There are many flu viruses, and they are always changing. Each year a new flu vaccine is made to protect against the influenza viruses believed to be likely to cause disease in the upcoming flu season.

Even when the vaccine doesn't exactly match these viruses, it may still provide some protection.

Influenza vaccine **does not cause flu**.

Influenza vaccine may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Has had an **allergic reaction after a previous dose of influenza vaccine**, or has any **severe, life-threatening allergies**
- Has ever had **Guillain-Barré Syndrome** (also called "GBS")

In some cases, your health care provider may decide to postpone influenza vaccination until a future visit.

Influenza vaccine can be administered at any time during pregnancy. People who are or will be pregnant during influenza season should receive inactivated influenza vaccine.

People with minor illnesses, such as a cold, may be vaccinated. People who are moderately or severely ill should usually wait until they recover before getting influenza vaccine.

Your health care provider can give you more information.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

4. Risks of a vaccine reaction

- Soreness, redness, and swelling where the shot is given, fever, muscle aches, and headache can happen after influenza vaccination.
- There may be a very small increased risk of Guillain-Barré Syndrome (GBS) after inactivated influenza vaccine (the flu shot).

Young children who get the flu shot along with pneumococcal vaccine (PCV13) and/or DTaP vaccine at the same time might be slightly more likely to have a seizure caused by fever. Tell your health care provider if a child who is getting flu vaccine has ever had a seizure.

People sometimes faint after medical procedures, including vaccination. Tell your provider if you feel dizzy or have vision changes or ringing in the ears.

As with any medicine, there is a very remote chance of a vaccine causing a severe allergic reaction, other serious injury, or death.

5. What if there is a serious problem?

An allergic reaction could occur after the vaccinated person leaves the clinic. If you see signs of a severe allergic reaction (hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, or weakness), call **9-1-1** and get the person to the nearest hospital.

For other signs that concern you, call your health care provider.

Adverse reactions should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your health care provider will usually file this report, or you can do it yourself. Visit the VAERS website at www.vaers.hhs.gov or call **1-800-822-7967**. *VAERS is only for reporting reactions, and VAERS staff members do not give medical advice.*

6. The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines. Claims regarding alleged injury or death due to vaccination have a time limit for filing, which may be as short as two years. Visit the VICP website at www.hrsa.gov/vaccinecompensation or call **1-800-338-2382** to learn about the program and about filing a claim.

7. How can I learn more?

- Ask your health care provider.
- Call your local or state health department.
- Visit the website of the Food and Drug Administration (FDA) for vaccine package inserts and additional information at www.fda.gov/vaccines-blood-biologics/vaccines.

VACCINE INFORMATION STATEMENT

Influenza (Flu) Vaccine (Live, Intranasal): *What You Need to Know*

Many vaccine information statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1. Why get vaccinated?

Influenza vaccine can prevent **influenza (flu)**.

Flu is a contagious disease that spreads around the United States every year, usually between October and May. Anyone can get the flu, but it is more dangerous for some people. Infants and young children, people 65 years of age and older, pregnant people, and people with certain health conditions or a weakened immune system are at greatest risk of flu complications.

Pneumonia, bronchitis, sinus infections, and ear infections are examples of flu-related complications. If you have a medical condition, such as heart disease, cancer, or diabetes, flu can make it worse.

Flu can cause fever and chills, sore throat, muscle aches, fatigue, cough, headache, and runny or stuffy nose. Some people may have vomiting and diarrhea, though this is more common in children than adults.

In an average year, **thousands of people in the United States die from flu**, and many more are hospitalized. Flu vaccine prevents millions of illnesses and flu-related visits to the doctor each year.

2. Live, attenuated influenza vaccine

CDC recommends everyone 6 months and older get vaccinated every flu season. **Children 6 months through 8 years of age** may need 2 doses during a single flu season. **Everyone else** needs only 1 dose each flu season.

Live, attenuated influenza vaccine (called "LAIV") is a nasal spray vaccine that may be given to non-pregnant people **2 through 49 years of age**.

It takes about 2 weeks for protection to develop after vaccination.

There are many flu viruses, and they are always changing. Each year a new flu vaccine is made to protect against the influenza viruses believed to be likely to cause disease in the upcoming flu season. Even when the vaccine doesn't exactly match these viruses, it may still provide some protection.

Influenza vaccine **does not cause flu**.

Influenza vaccine may be given at the same time as other vaccines.

3. Talk with your health care provider

Tell your vaccination provider if the person getting the vaccine:

- Is **younger than 2 years or older than 49 years** of age
- Is **pregnant**. Live, attenuated influenza vaccine is not recommended for pregnant people
- Has had an **allergic reaction after a previous dose of influenza vaccine**, or has any **severe, life-threatening allergies**
- Is a **child or adolescent 2 through 17 years of age who is receiving aspirin or aspirin- or salicylate-containing products**
- Has a **weakened immune system**
- Is a **child 2 through 4 years old who has asthma or a history of wheezing** in the past 12 months
- Is **5 years or older and has asthma**
- Has **taken influenza antiviral medication** in the last 3 weeks
- **Cares for severely immunocompromised people** who require a protected environment
- Has other **underlying medical conditions** that can put people at higher risk of serious flu complications (such as **lung disease, heart disease, kidney disease**

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

- Current IIV/RIV and LAIV VIS edition dates: 8/6/2021
- To access Michigan VISs (includes language on MCIR), go to www.michigan.gov/VIS

Treatment of Influenza

TREATING CASES OF INFLUENZA

PRESCRIBING ANTIVIRALS

Treatment for Patients with Influenza

- Antiviral treatment is recommended as soon as possible for any patient with suspected or confirmed flu who:
  - Is hospitalized
  - Has severe, complicated, or progressive illness
  - Is at higher risk for flu complications
- Decision to start antiviral treatment should **not** wait for lab confirmation of flu
- Clinical benefit is greatest when treatment is administered early, within 48 hours of illness onset
  - Antivirals can be prescribed to persons with illness onset greater than 48 hours
- A history of flu vaccination does not rule out the possibility of influenza infection or the need to use antivirals to treat flu

Influenza Antiviral Medications: Summary for Clinicians | CDC

Who Should Be Treated with Flu Antivirals?

- Children younger than 2 years, adults 65 years and older
- Persons with chronic pulmonary, cardiovascular, renal, hepatic, hematological, and metabolic disorders, or neurologic and neurodevelopment conditions
- Persons with immunosuppression due to disease or medications
- Persons who are pregnant or postpartum (within 2 weeks of delivery)
- Younger than 19 years on long-term aspirin or salicylate therapy
- Non-Hispanic Black, Hispanic or Latino, and American Indian or Alaska Native
- People who have had a stroke
- BMI of 40 or greater
- Residents of nursing homes and other long term care facilities

Influenza Antiviral Medications: Summary for Clinicians | CDC

Antiviral Medications

ANTIVIRAL AGENT	USE	RECOMMENDED FOR	NOT RECOMMENDED FOR USE IN
Oseltamivir/Tamiflu® (oral)	Treatment	Any age	N/A
	Chemoprophylaxis	3 months & older	N/A
Zanamivir/Relenza® (inhaled)	Treatment	7 years & older	People with underlying respiratory disease (e.g., asthma, COPD)
	Chemoprophylaxis	5 years & older	People with underlying respiratory disease (e.g., asthma, COPD)
Peramivir/Rapivab® (IV)	Treatment	6 months & older	N/A
	Chemoprophylaxis	Not recommended	N/A
Baloxavir/Xofluza® (oral)	Treatment	5 years & older	N/A
	Chemoprophylaxis	Approved for post-exposure prophylaxis in persons 5 years and older	N/A

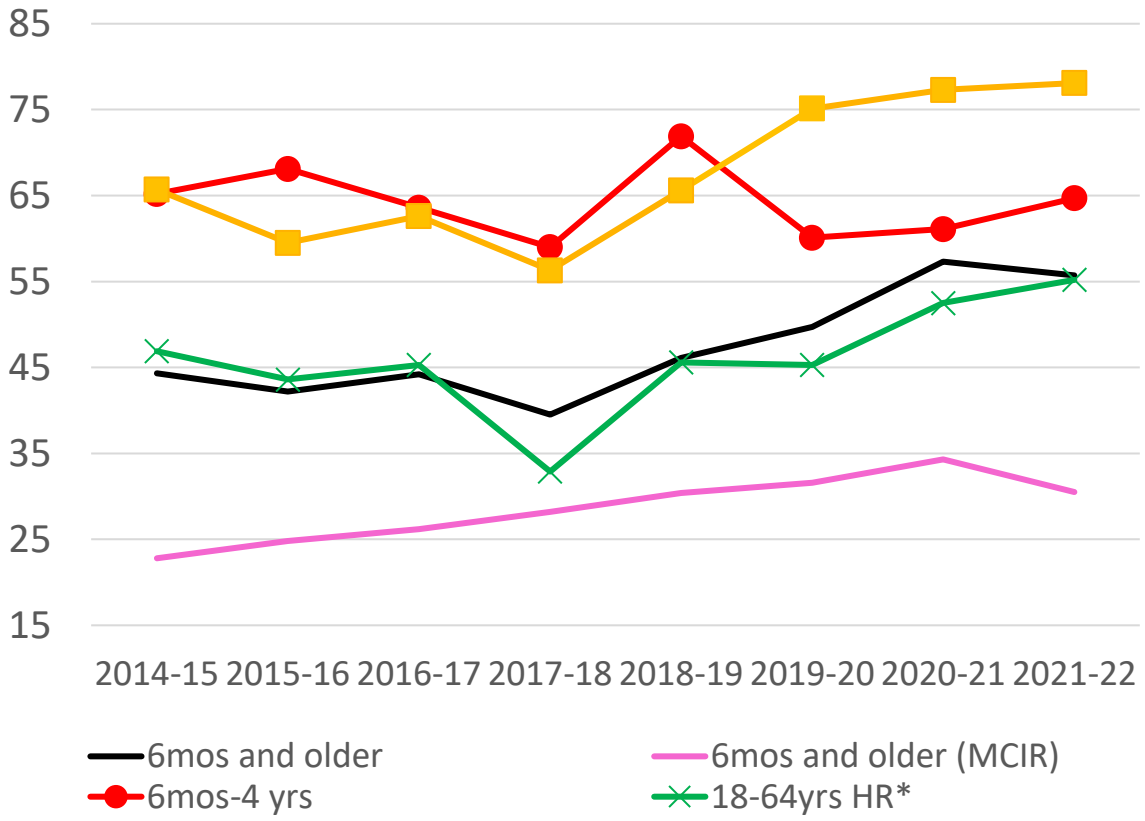
Influenza Antiviral Medications: Summary for Clinicians | CDC

Influenza Vaccination

COVERAGE LEVELS

STRATEGIES TO INCREASE COVERAGE

Michigan Influenza Vaccination Coverage, Select Ages, According to National Surveys and MCIR, 2013-2021



- Minimal improvement over 8 seasons
- "Everyone, every year"
  - Overall MCIR coverage remains < 60%
  - National Estimates ~55%
- Healthy People 2030 goals
  - 70% for healthy adults (18+ years) and children 6 months through 17 years of age
- MCIR estimates below national estimates for MI coverage

*HR = High Risk; data available at: www.cdc.gov/flu/fluvaxview/reportshtml/trends/index.html

Focus Area #1: 2-Dose Coverage

- 2022-23 coverage levels in Michigan children, MCIR data
- Children 6 months through 8 years of age complete (1 or 2 doses)
  - Only 23.9% complete for the season (1 or 2 doses) (246,934/1,034,109)
- Of the 550,288 children recommended 2 doses
  - 7.4% (40,759) received both doses

Methods to Improve Flu Coverage in Young Children

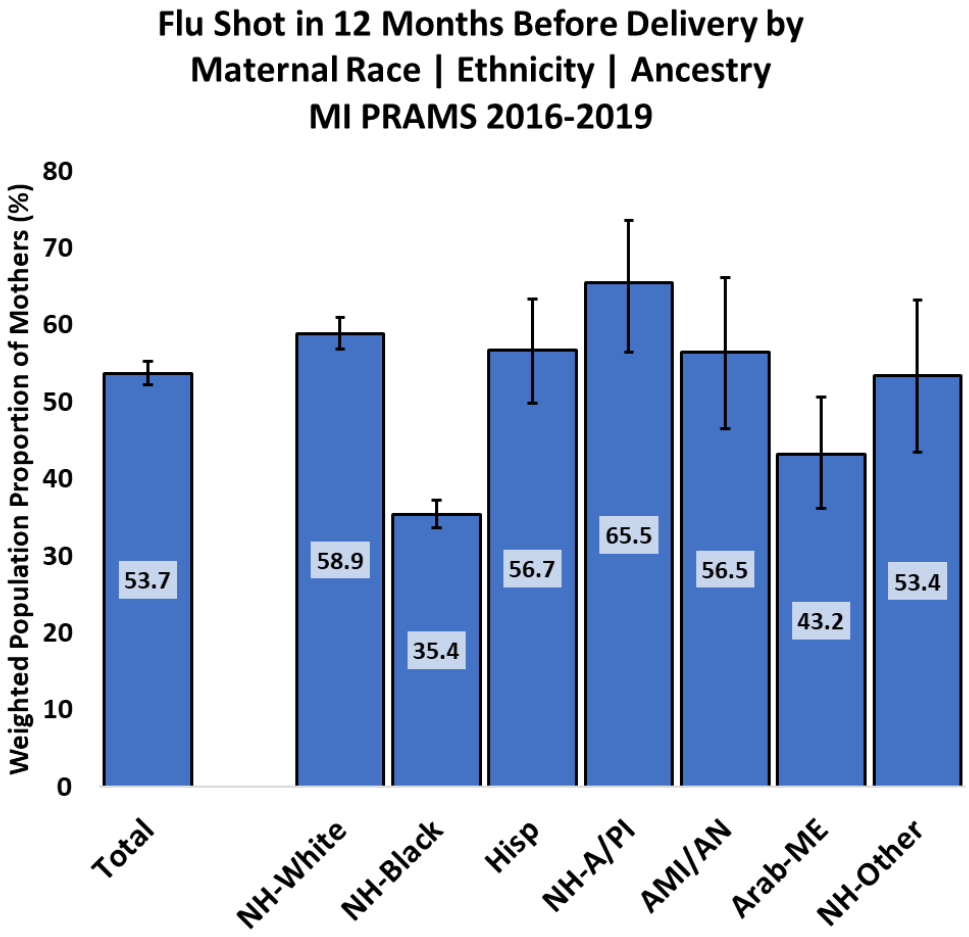
- Routine vaccination hesitancy[1]: 6%
- Hesitancy for flu vaccine: 26%
- Parent hesitation[2]:
  - Perceived low vaccine effectiveness
  - Safety concerns
  - Perception that flu vaccine causes the flu

1. Kempe, A. et al., Pediatrics, 2020 Retrieved from https://doi.org/10.1542/peds.2019-3852
2. De St. Maurice, A. et al., Pediatrics, 2020 Retrieved from https://doi.org/10.1542/peds.2020-1770
3. MDHHS Clearinghouse: www.healthymichigan.com

- Initiate the conversation with parents/patients about the importance of flu vaccine
  - Tell a personal story
  - Alana's Foundation: www.alanasfoundation.org/
  - Families Fighting Flu: www.familiesfightingflu.org/
- Ensure children who need 2 doses get their first dose early
- No missed opportunities
  - Assess patients during every visit
  - Provide a strong recommendation and offer flu vaccine to every patient

Focus Area #2: Pregnant People

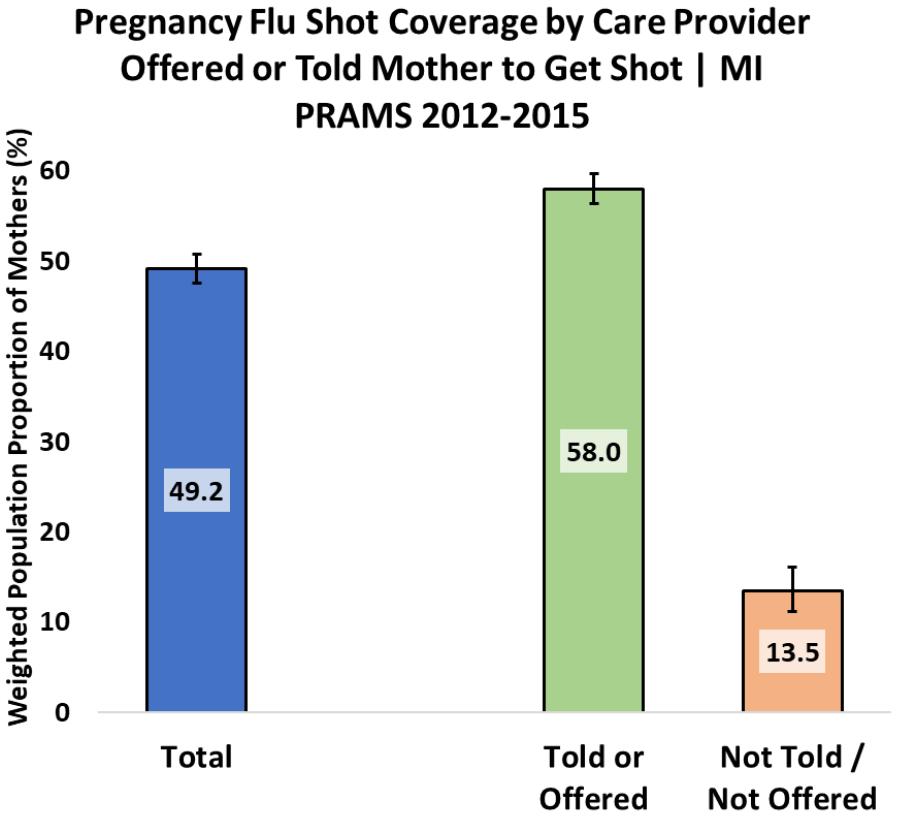
- Among persons pregnant anytime during August 2022-March 2023, 48.9% reported receiving a dose of flu vaccine
- Pregnancy Risk Assessment Monitoring System (PRAMS)
  - 53.7% coverage Michigan[2]
  - 35.4% among NH-Black individuals
  - 58.9% among NH-White individuals



1. www.cdc.gov/flu/fluvaxview/dashboard/vaccination-coverage-pregnant.html
2. PRAMS data provided by P.I- Peterson Haak, MDHHS

Methods to Improve Coverage in Pregnant People

- Assure you are giving a strong recommendation
- SHARE Method[2]:
  - **Share**: the tailored reasons why the recommended vaccine is right for the patient
  - **Highlight**: positive experiences with vaccines (personal or in your practice)
  - **Address**: patient questions and any concerns about the vaccine
  - **Remind**: patients that vaccines protect them and their loved ones
  - **Explain**: potential costs of getting the disease, including serious health effects, time lost, and financial costs



1. PRAMS data provided by P.I for the study, Peterson Haak, MDHHS
2. Make a Strong Influenza Vaccine Recommendation | CDC

Protect yourself and your baby. Get your flu and Tdap vaccine during each pregnancy.

Vaccines given during pregnancy can help protect your baby from serious diseases during the first few months after birth!

Flu vaccine can be given at any time during pregnancy.

Tdap vaccine should be given in the early part of the 3rd trimester.

Talk to your health care provider today!

MDHHS
Michigan Department of Health & Human Services

Protect Yourself and Your Baby. Get Your Flu Vaccine!

Flu is a serious disease for infants and pregnant women

Pregnant women who get the flu are at an increased risk of hospitalizations and having premature labor and delivery.

Flu vaccine offers the best protection against seasonal flu

Your flu vaccine helps protect your baby against the flu for up to 6 months after birth.

Infants of mothers vaccinated against influenza are up to 48 percent less likely to be hospitalized with flu-related complications compared to infants of mothers who were not vaccinated against flu*.

*Poehling et al. American Journal of Obstetrics and Gynecology. (2005)

Vaccines during pregnancy are safe and effective

Flu vaccine is the single best way to prevent the flu.

You can get a flu shot at any time during your pregnancy, and it is covered by insurance.

A recent study found that the flu shot can reduce the risk of influenza-associated hospitalizations during pregnancy by 40 percent*.

*Thompson et al. Clinical Infectious Diseases. (2019)

Surround your baby with vaccinated people

Infants cannot get the flu vaccine until they are 6 months old.

The best way to protect infants is to vaccinate those around them including parents, siblings, grandparents, child care workers, and health care personnel.

MDHHS

Only 50 percent of pregnant women get their flu shot each year - time to bump it up!

Talk to your healthcare provider today about all vaccines needed during pregnancy to protect you and your baby.

For more information visit:

- michigan.gov/flu
- cdc.gov/flu
- immunizationforwomen.org
- ivaccinate.org

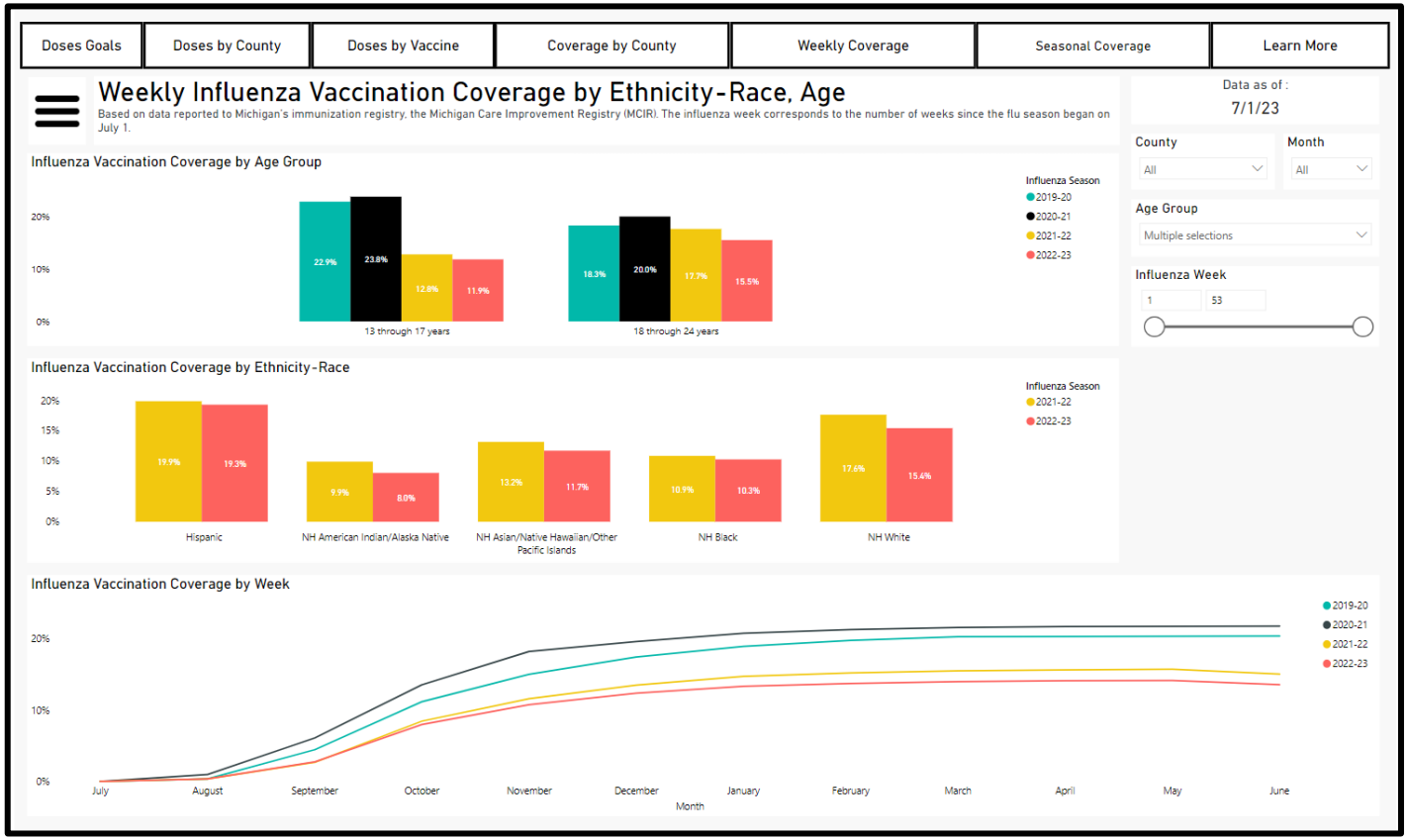
Revised June 2019

Order FREE at: www.healthymichigan.com

Focus Area #3: Adolescent and Young Adult Vaccination Coverage

Flu Vaccination Coverage 2022-23 flu season:

- Adolescents aged 13-17 years: 11.9%
- Young adults aged 18-24 years: 15.5%

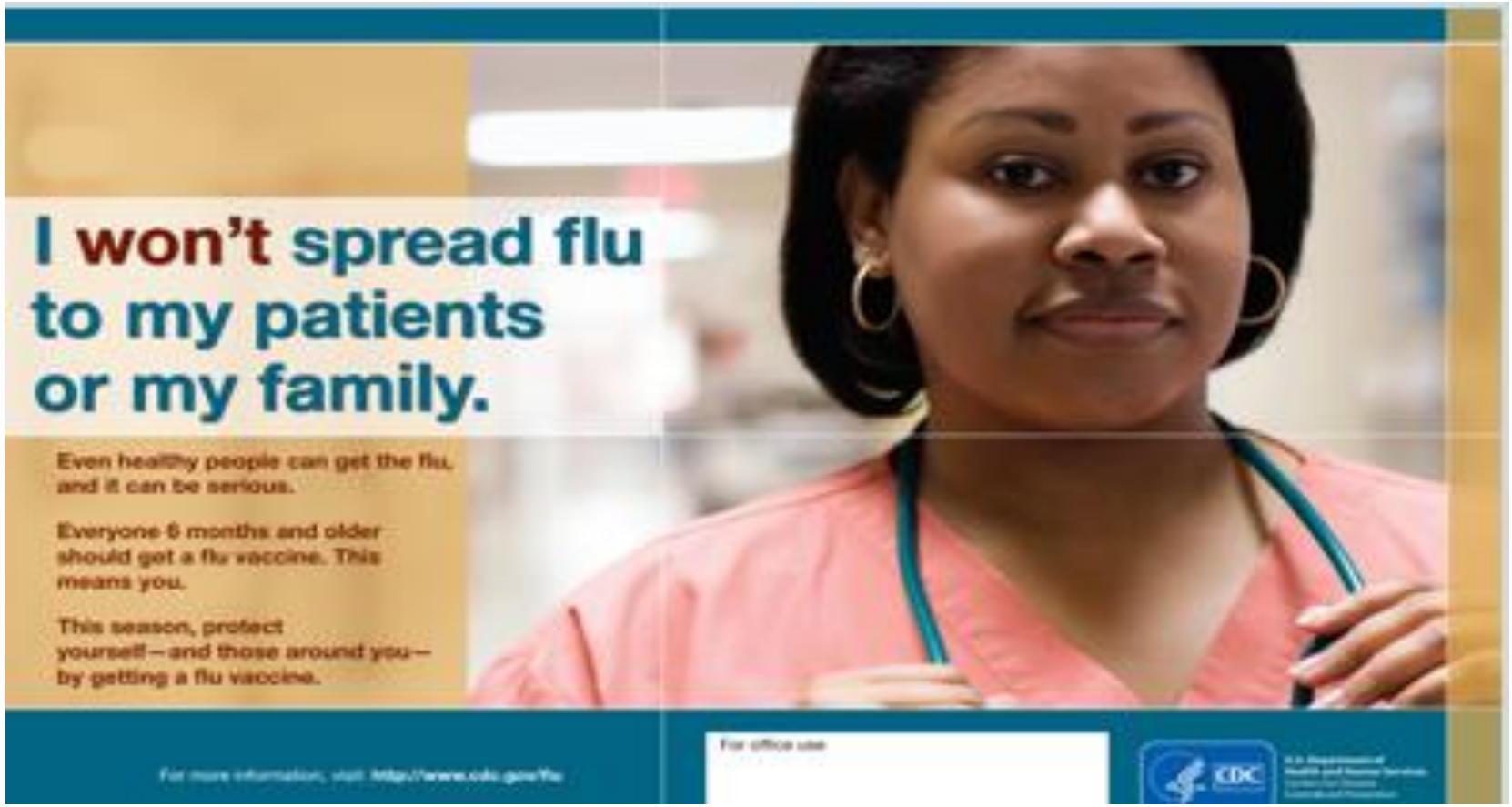


Flu Dashboard (michigan.gov)

Addressing Vaccination Disparities

- Disparities result from individual attitudes and beliefs, social norms, and health care practices[1]
  - Engagement is critical
  - Tailor messages to your audience
  - Leverage local capacity
  - Translated materials
  - Culturally appropriate education
- HCP Toolkit[2]
- Quality Improvement Strategies[3]
  - Schedule next vaccination visit before patient leaves the provider location
  - Leverage immunization information system functionality to improve immunization practice
  - Give a strong vaccine recommendation (include HPV vaccine if provider has adolescent patients)
  - Strengthen vaccination communications

1. www.ncbi.nlm.nih.gov/pubmed/28933619
2. www.cdc.gov/flu/professionals/vaccination/prepare-practice-tools.htm
3. www.cdc.gov/vaccines/programs/iqip/at-a-glance.html

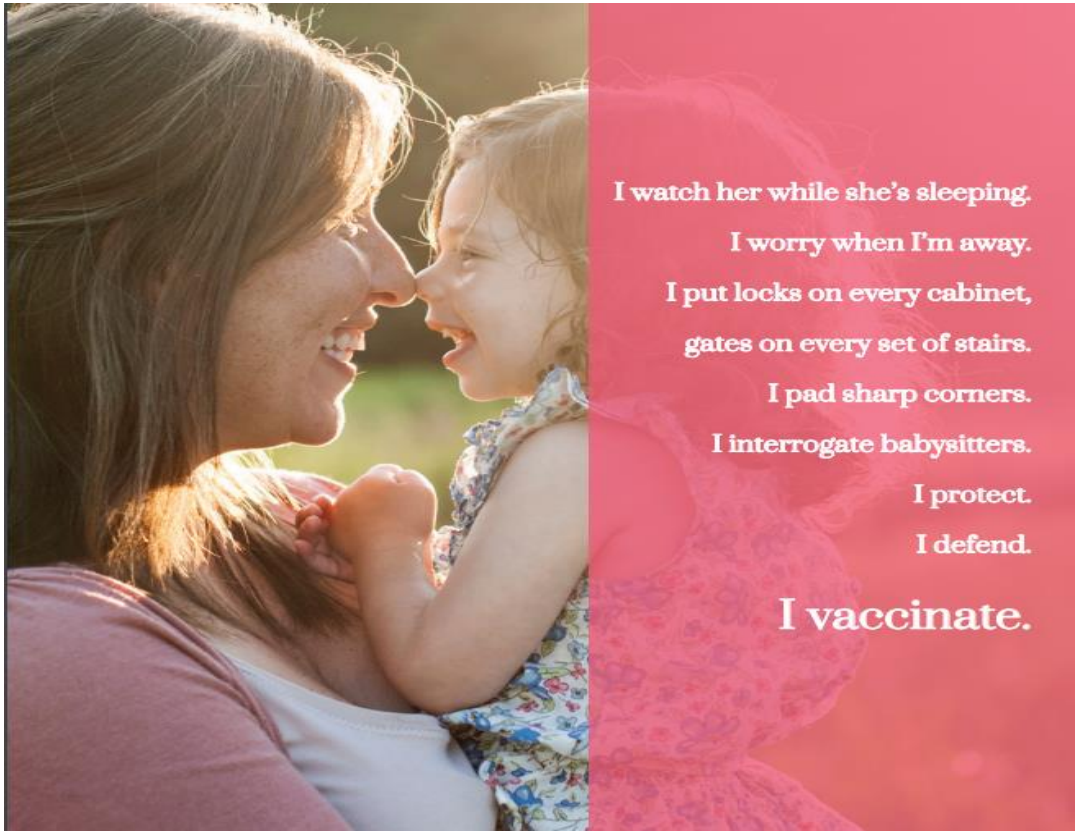


And Remember

Stay Up-To-Date on Immunization Recommendations

- Stay up-to-date by joining the MDHHS Listserv and receive email updates
- To sign up email Dara Barrera at djbarrera@msms.org and ask to be added to the MDHHS Immunization Listserv

Questions?



Thank You!