PEDIATRIC AND ADULT INFLUENZA WEBINAR: 2022-2023 FLU SEASON SEPTEMBER 7, 2022

PRESENTERS:

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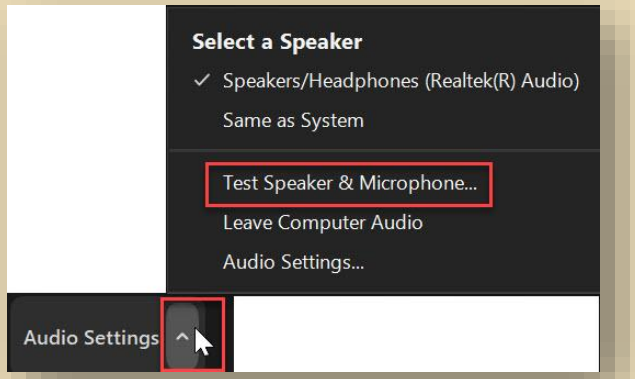
MDHHS
Michigan Department of Health & Human Services

INSTRUCTIONS FOR WEBINAR PARTICIPATION

- The webinar will start at 12:00 PM EDT
- Audio is through your computer speakers or headset – you may not hear sound until the webinar begins
- Audio check - use Audio Settings to test speaker or headset



- This webinar is being recorded and a link will be provided to registrants within 48 hours

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2. A box will open where you can type in questions, comments, indicate sound problems, etc.
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SPEAKER DISCLOSURES

- Speakers for today's webinar:
  - Andrea Becker, BSN, RN, Immunization Nurse Educator, MDHHS
  - Shelly Doebler, MPH, Influenza Epidemiologist, MDHHS
- All faculty presenters have nothing to disclose.
- No commercial support was provided for this CME/PCE activity.

CME INFORMATION

- This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of MSU and MDHHS. MSU is accredited by the ACCME to provide continuing education for physicians.
- Michigan State University designates this live activity for a maximum of 1.0 AMA PRA Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

PCE INFORMATION

- This activity has been approved to meet knowledge-based educational needs and 1.0 Pharmacy Continuing Education (PCE) Credit will be awarded to participants by the Michigan Pharmacists Association (MPA).
- Michigan Pharmacists Association is accredited by the Accreditation Council for Pharmacy Education (ACPE) as a provider of continuing pharmacy education.

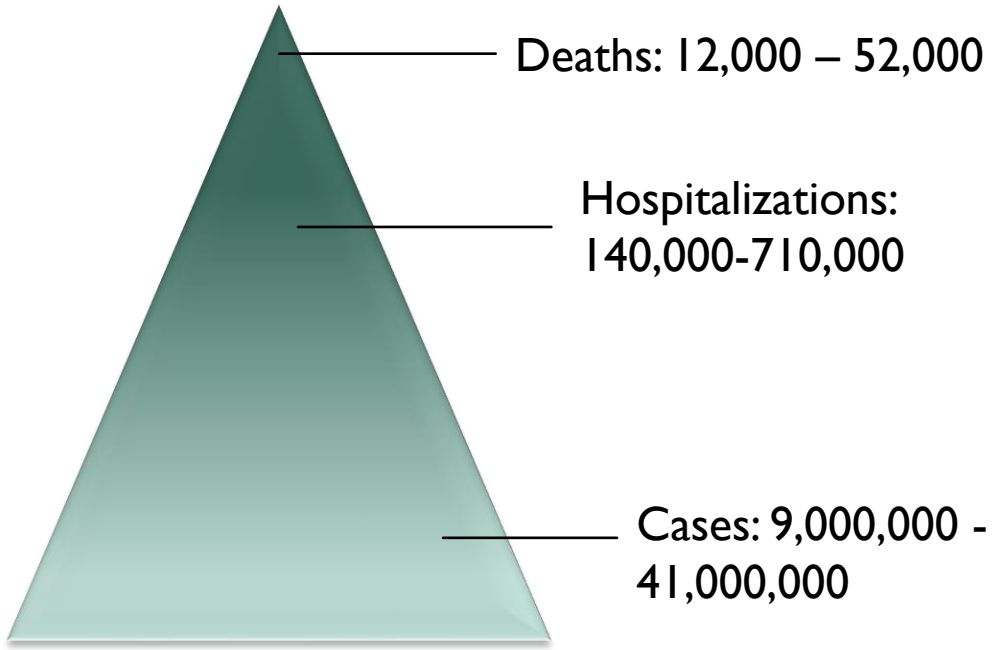
PEDIATRIC AND ADULT INFLUENZA WEBINAR OBJECTIVES

- 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 greatest in:
  - Persons aged 65 years and older
  - Children <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]



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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
- 2021-2022: 33 flu-associated pediatric deaths reported
- 2019-2020 flu season: 199 pediatric deaths
- "Influenza-Associated Pediatric Deaths in the United States, 2010–2016[2]"
  - Published February 2018
  - Average annual number: 113
    - Highest incident rate among children < 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 had received any flu vaccinations

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

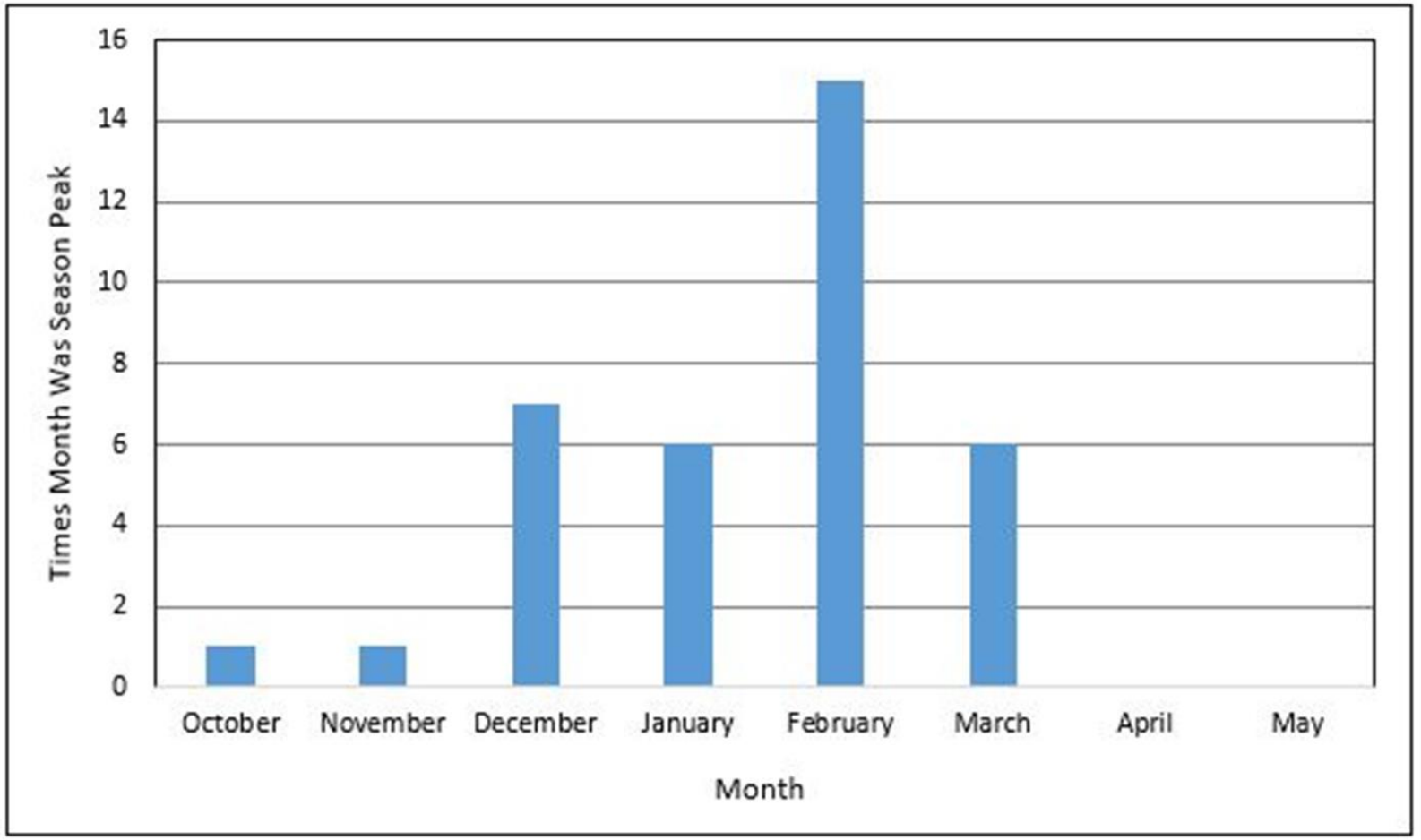
2022-2023 INFLUENZA VACCINATION STRAINS

- Egg-based vaccines will include:
  - an A/Victoria/2570/2019 (H1N1)pdm09-like virus;
  - an A/Darwin/9/2021 (H3N2)-like virus (NEW);
  - a B/Austria/1359417/2021 (B/Victoria lineage)-like virus (NEW);
  - a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus (Quadrivalent only)
- Quadrivalent cell- or recombinant-based vaccines will include:
  - an A/Wisconsin/588/2019 (H1N1)pdm09-like virus;
  - an A/Darwin/6/2021 (H3N2)-like virus (NEW);
  - a B/Austria/1359417/2021 (B/Victoria lineage)-like virus (NEW);
  - a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus

www.who.int/news/item/25-02-2022-recommendations-announced-for-influenza-vaccine-composition-for-the-2022-2023-northern-hemisphere-influenza-season

FLU SEASON TIMING

Flu activity peak months in the U.S. from the 1982-1983 through 2019-2020 flu seasons



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

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Don’t forget to submit your questions in the Questions and Answers box!

2022-23 SEASONAL INFLUENZA VACCINE RECOMMENDATIONS

ACIP RECOMMENDATIONS

FLU VACCINE TIMING

INFLUENZA VACCINE PRODUCTS

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INFLUENZA RECOMMENDATIONS

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2022–23 Influenza Season | MMWR (cdc.gov)

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2022–23 Influenza Season

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Summary

This report updates the 2021–22 recommendations of the Advisory Committee on Immunization Practices (ACIP) concerning the use of seasonal influenza vaccines in the United States (MMWR Recomm Rep 2021;70[No. RR-5]:1–24). *Routine annual influenza vaccination is recommended for all persons aged ≥6 months who do not have contraindications. For each recipient, a licensed and age-appropriate vaccine should be used. 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. All seasonal influenza vaccines expected to be available in the United States for the 2022–23 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. Trivalent influenza vaccines are no longer available, but data that involve these vaccines are included for reference.*

Influenza vaccines might be available as early as July or August, but 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. 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 if vaccine is available during those months.

Updates described in this report reflect discussions during public meetings of ACIP that were held on October 20, 2021; January 12, 2022; February 23, 2022; and June 22, 2022. Primary updates to this report include the following three topics: 1) the composition of 2022–23 U.S. seasonal influenza vaccines; 2) updates to the description of influenza vaccines expected to be available for the 2022–23 season, including one influenza vaccine labeling change that occurred after the publication of the 2021–22 ACIP influenza recommendations; and 3) updates to the recommendations concerning vaccination of adults aged ≥65 years. First, the composition of 2022–23 U.S. influenza vaccines includes updates to the influenza A(H3N2) and influenza B/Victoria lineage components. U.S.-licensed influenza vaccines will contain HA derived from an influenza A/Victoria/2570/2019 (H1N1)pdm09-like virus (for egg-based vaccines) or an influenza A/Wisconsin/588/2019 (H1N1)pdm09-like virus (for cell culture–based or recombinant vaccines); 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 or recombinant vaccines); an influenza B/Austria/1359417/2021 (Victoria lineage)-like virus; and an influenza B/Phuket/3073/2013 (Yamagata lineage)-like virus. Second, the approved age indication for the cell culture–based inactivated influenza vaccine, Flucelvax Quadrivalent (ccIIV4), was changed in October 2021 from ≥2 years to ≥6 months. Third, recommendations for vaccination of adults aged ≥65 years have been modified. 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.

This report focuses on recommendations for the use of vaccines for the prevention and control of seasonal influenza during the

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CORE INFLUENZA VACCINE RECOMMENDATION

- Routine annual flu vaccination is recommended for ALL persons 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

TIMING OF FLU VACCINATION

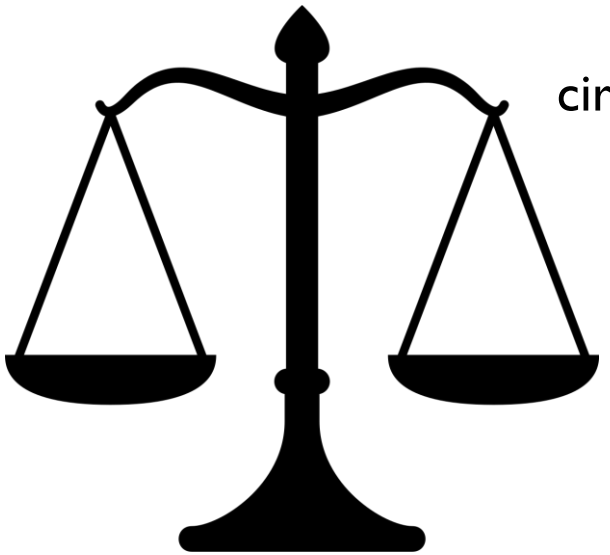
- ACIP recommends that flu vaccination be offered by the end of October
- Children aged 6 months through 8 years who need 2 doses should receive their 1st dose ASAP after vaccine becomes available to allow the 2nd dose to be received ideally by the end of October
  - Minimum interval: 4 weeks
  - If 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'D.

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 2022-23 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 2022-2023 season are expected to be quadrivalent

A LOOK AT IIV4

IIV4
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

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	

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	

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)

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

INFLUENZA VACCINATION FOR PERSONS 65 YEARS AND OLDER

- **NEW!** 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, 2022–23 Influenza Season | MMWR (cdc.gov)

2022-23 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 2022-2023

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 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 "2022-23 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 is 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 2022-23 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 ACIP—U.S., 2022-23 Influenza Season," MMWR Recomm Rep 2022;-71(1); 1-28, 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. September 6, 2022

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FLU VACCINE GUIDANCE FOR USE IN CHILDREN

PEDIATRIC DOSE VOLUMES

NUMBER OF DOSES NEEDED IN 2022-23 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

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

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INFLUENZA VACCINE DOSE VOLUMES, CONT'D.

- For IIV4, the needed volume for a child 6-35 months may be administered from a manufacturer supplied prefilled syringe, a single-dose vial, or a multi-dose vial

Further Guidance for Fluzone Quadrivalent:

- Single-dose 0.5 mL vials of Fluzone Quadrivalent should be used for only 1 dose. 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
- Vaccine Administration Error Case Study:
- A 6-month-old was inadvertently given a 0.25 mL dose of FluLaval (or Fluarix or Flucelvax) rather than the recommended 0.5 mL dose. What do you do?
  - If you recognize the error that same day, give a second 0.25 mL dose of the product that was used. This equals a full dose for this child. If the error is not discovered until the next day, the 6-month-old needs to be revaccinated with a full dose of IIV4 ASAP (this will be the 1st dose of this infant's 2-dose series)

2022-23 FLU VACCINE DOSE VOLUMES FOR CHILDREN

- Prevent flu vaccine administration errors in children
- Covers pediatric dosage by vaccine, how to correct common vaccine administration errors

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

2022-23 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] A study in 2016 found that flu vaccine was most frequently involved in reported vaccine errors (20%) and was the most common type of vaccine implicated in age-related vaccine errors.[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 (see footnote 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 2022-23 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 per dose.
- The 0.25-mL prefilled syringe of Fluzone Quadrivalent is not available for the 2022–23 season. If a prefilled syringe of Fluzone Quadrivalent is used for a child in this age group, the dose volume will be 0.5 mL per dose.

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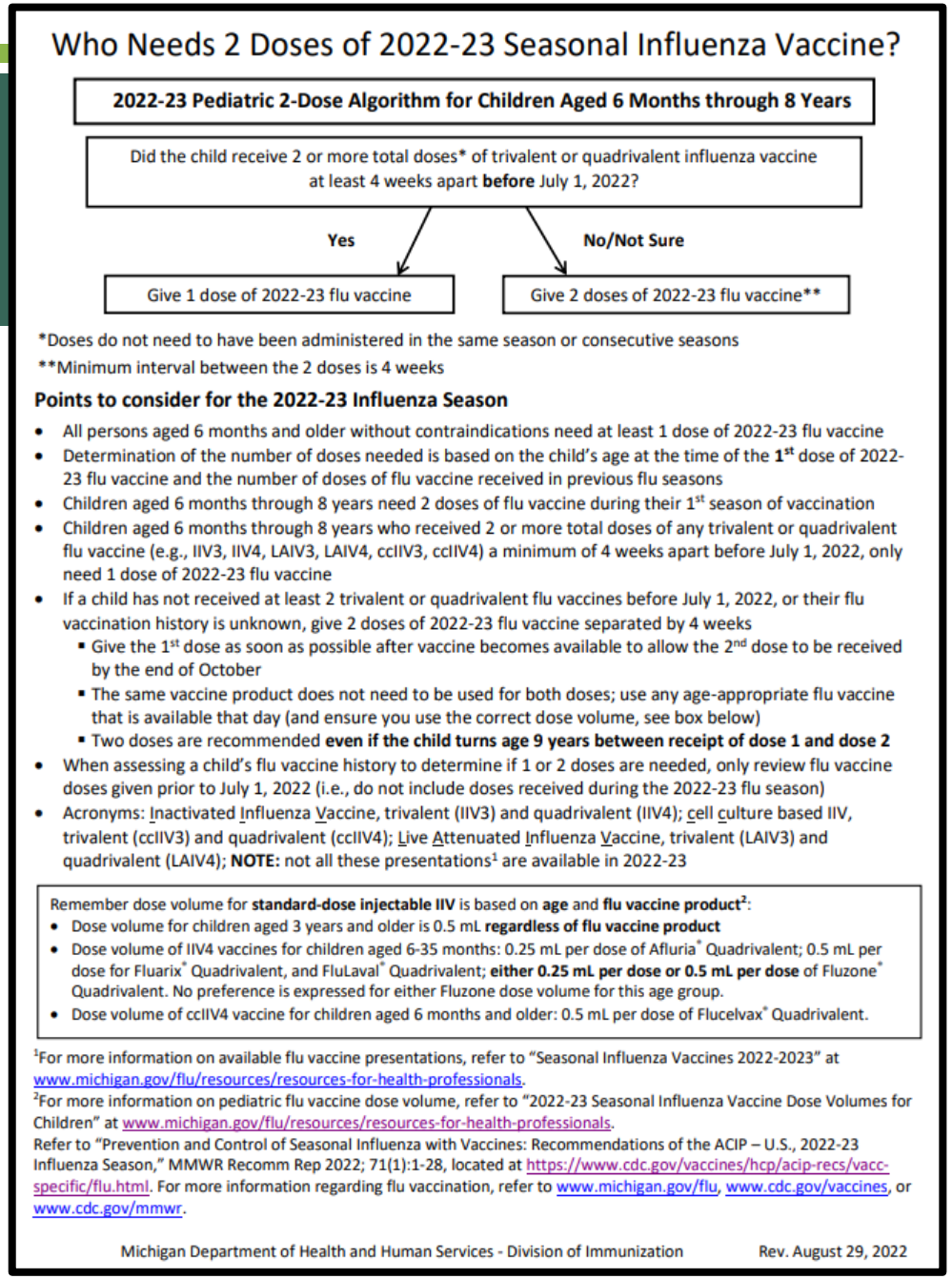
2-DOSE RECOMMENDATION: 6 MONTHS-8 YEARS

- # of doses needed is based on child's age at time of 1st dose of 2022-23 flu vaccine and # of doses of flu vaccine received in previous seasons
- How many seasonal (i.e., trivalent, quadrivalent) flu vaccines received before 7/1/2022
  - 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, 2nd dose by end of October
- If the child turns 9 years between dose 1 and dose 2, still give dose 2

MCIR is programmed for 2-dose assessment. Make sure to use MCIR!
www.michigan.gov/flu → Resources → Resources for Health Professionals



Who Needs 2 Doses of 2022-23 Seasonal Influenza Vaccine?

2022-23 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, 2022?

Yes → Give 1 dose of 2022-23 flu vaccine

No/Not Sure → Give 2 doses of 2022-23 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 2022-23 Influenza Season

- All persons aged 6 months and older without contraindications need at least 1 dose of 2022-23 flu vaccine
- Determination of the number of doses needed is based on the child's age at the time of the **1st** dose of 2022-23 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, 2022, only need 1 dose of 2022-23 flu vaccine
- If a child has not received at least 2 trivalent or quadrivalent flu vaccines before July 1, 2022, or their flu vaccination history is unknown, give 2 doses of 2022-23 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, 2022 (i.e., do not include doses received during the 2022-23 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 2022-23

Remember dose volume for **standard-dose injectable IIV** 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.

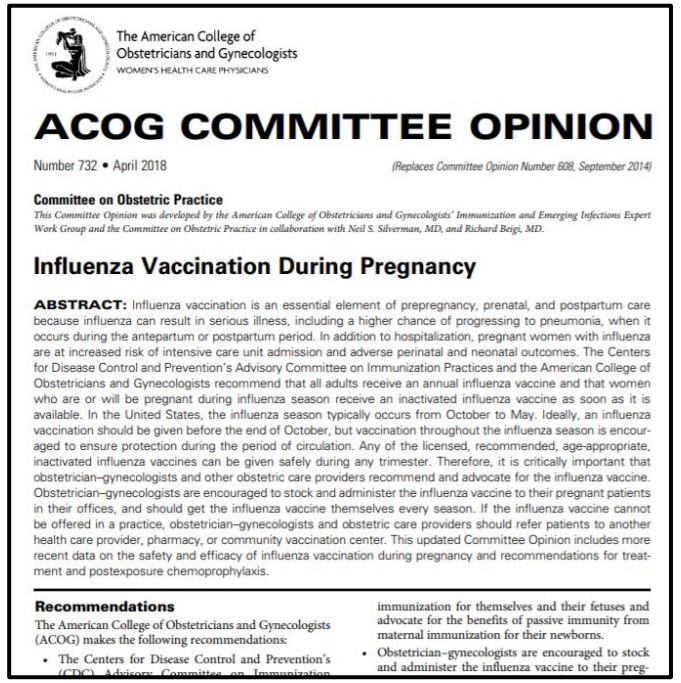
[1]For more information on available flu vaccine presentations, refer to "Seasonal Influenza Vaccines 2022-2023" at www.michigan.gov/flu/resources/resources-for-health-professionals.
[2]For more information on pediatric flu vaccine dose volume, refer to "2022-23 Seasonal Influenza Vaccine Dose Volumes 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 ACIP – U.S., 2022-23 Influenza Season," MMWR Recomm Rep 2022; 71(1):1-28, located at https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html. For more 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 Rev. August 29, 2022

FLU VACCINE & 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 <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. www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Influenza-Vaccination-During-Pregnancy
2. https://www.cdc.gov/media/releases/2019/p1008-vaccination-moms-babies-unprotected.html
3. www.cdc.gov/flu/highrisk/pregnant.htm – Pregnant & Flu Vaccine Studies

MDHHS Michigan Department of Health & Human Services

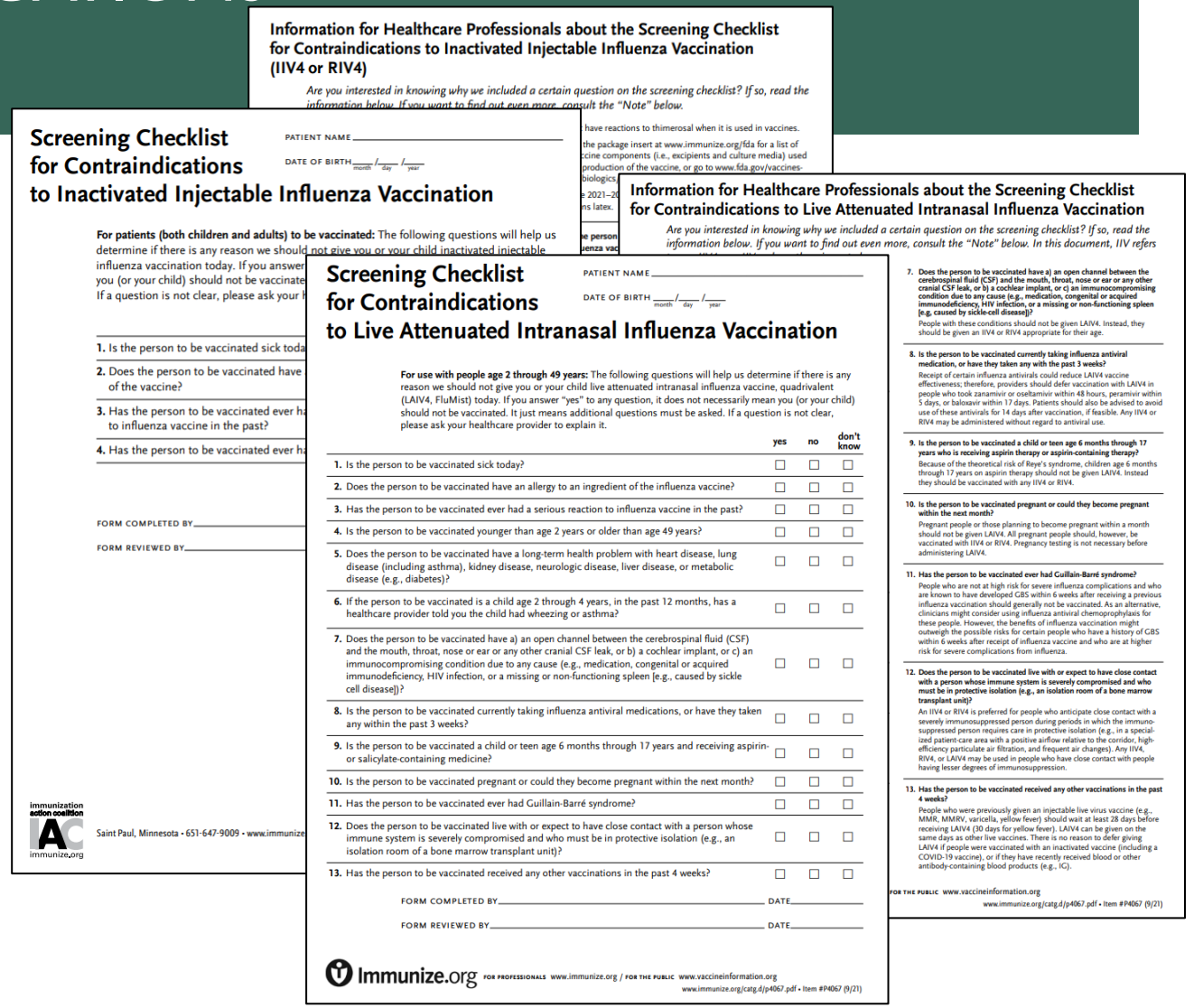
Don’t forget to submit your questions in the Questions and Answers box!

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



www.immunize.org

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)

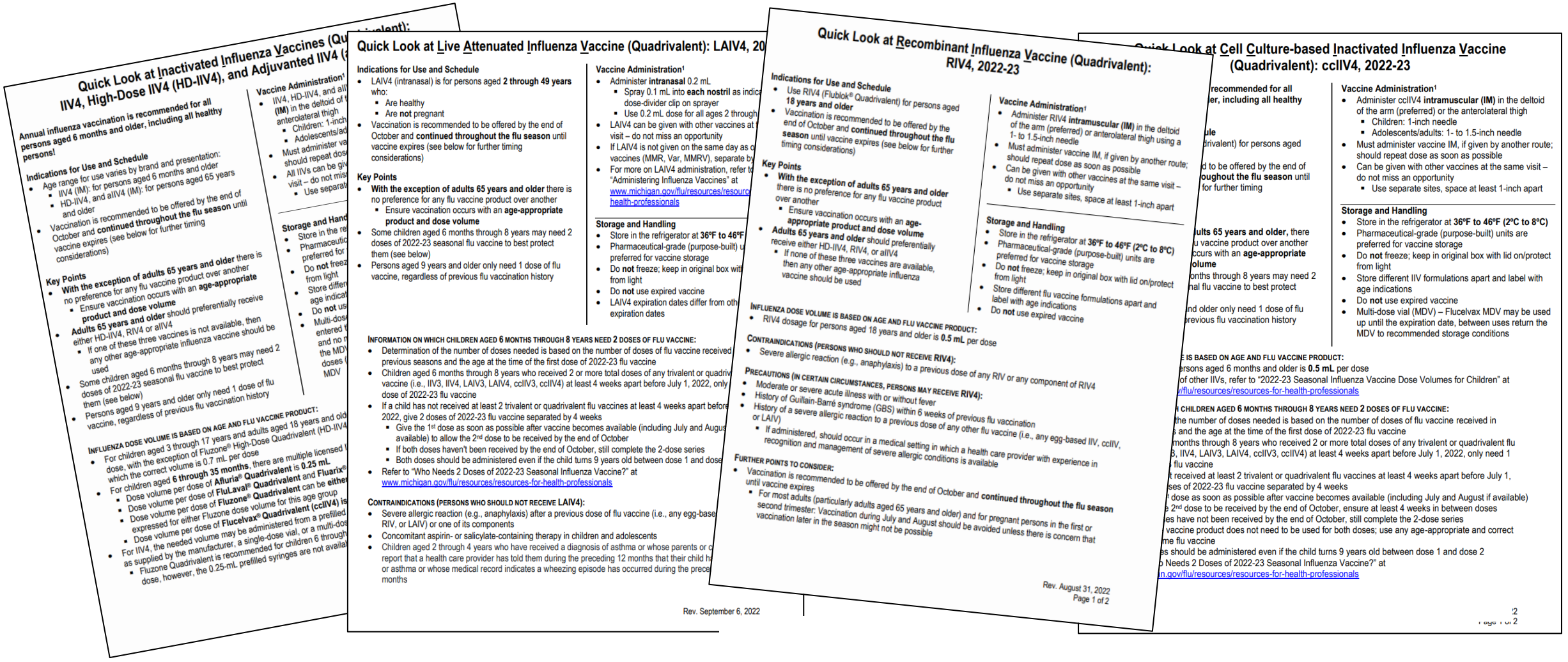
*However, ACIP recommends that persons with history of egg allergy may receive any flu vaccine otherwise appropriate for their age/health status

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



Quick Look at Inactivated Influenza Vaccines (Qu
IIV4, High-Dose IIV4 (HD-IIV4), and Adjuvanted IIV4 (

Annual influenza vaccination is recommended for all persons aged 6 months and older, including all healthy persons!

Indications for Use and Schedule
- Age range for use varies by brand and presentation:
  - IIV4 (IM): for persons aged 6 months and older
  - HD-IIV4, and aIIV4 (IM): for persons aged 65 years and older
- Vaccination is recommended to be offered by the end of October and **continued throughout the flu season** until vaccine expires (see below for further timing considerations)

Key Points
- **With the exception of adults 65 years and older** there is no preference for any flu vaccine product over another
  - Ensure vaccination occurs with an **age-appropriate product and dose volume**
- **Adults 65 years and older** should preferentially receive either HD-IIV4, RIV4 or aIIV4
  - If one of these three vaccines is not available, then any other age-appropriate influenza vaccine should be used
- Some children aged 6 months through 8 years may need 2 doses of 2022-23 seasonal flu vaccine to best protect them (see below)
- Persons aged 9 years and older only need 1 dose of flu vaccine, regardless of previous flu vaccination history

Vaccine Administration[1]
- IIV4, HD-IIV4, and aII
  (IM) in the deltoid of t
  anterolateral thigh
  - Children: 1-inch
  - Adolescents/ad
- Must administer va
  should repeat dos
- All IIVs can be giv
  visit – do not miss
  - Use separat

Storage and Hand
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  preferred for
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INFLUENZA DOSE VOLUME IS BASED ON AGE AND FLU VACCINE PRODUCT:
- For children aged 3 through 17 years and adults aged 18 years and old
  dose, with the exception of Fluzone® High-Dose Quadrivalent (HD-IIV4
  which the correct volume is 0.7 mL per dose
- For children aged **6 through 35 months**, there are multiple licensed
  - Dose volume per dose of **Afluria® Quadrivalent** is **0.25 mL**
  - Dose volume per dose of **FluLaval® Quadrivalent** can be **either**
  - Dose volume per dose of **Fluzone® Quadrivalent** can be **either**
  - Dose volume per dose for this age group expressed for either Fluzone dose volume for this age group
  - Dose volume per dose of **Flucelvax® Quadrivalent (ccIIV4)** is
- For IIV4, the needed volume may be administered from a prefilled
  as supplied by the manufacturer, a single-dose vial, or a multi-dos
  - Fluzone Quadrivalent is recommended for children 6 through
    dose, however, the 0.25-mL prefilled syringes are not availa

Quick Look at Live Attenuated Influenza Vaccine (Quadrivalent): LAIV4, 20

Indications for Use and Schedule
- LAIV4 (intranasal) is for persons aged **2 through 49 years** who:
  - Are healthy
  - Are **not** pregnant
- Vaccination is recommended to be offered by the end of October and **continued throughout the flu season** until vaccine expires (see below for further timing considerations)

Key Points
- **With the exception of adults 65 years and older** there is no preference for any flu vaccine product over another
  - Ensure vaccination occurs with an **age-appropriate product and dose volume**
- Some children aged 6 months through 8 years may need 2 doses of 2022-23 seasonal flu vaccine to best protect them (see below)
- Persons aged 9 years and older only need 1 dose of flu vaccine, regardless of previous flu vaccination history

Vaccine Administration[1]
- Administer **intranasal** 0.2 mL
  - Spray 0.1 mL into **each nostril** as indic
    dose-divider clip on sprayer
  - Use 0.2 mL dose for all ages 2 through
- LAIV4 can be given with other vaccines at t
  visit – do not miss an opportunity
- If LAIV4 is not given on the same day as o
  vaccines (MMR, Var, MMRV), separate by
- For more on LAIV4 administration, refer t
  "Administering Influenza Vaccines" at
  www.michigan.gov/flu/resources/resourc
  health-professionals

Storage and Handling
- Store in the refrigerator at **36°F to 46°F**
- Pharmaceutical-grade (purpose-built) u
  preferred for vaccine storage
- Do **not** freeze; keep in original box wit
  from light
- Do **not** use expired vaccine
- LAIV4 expiration dates differ from oth
  expiration dates

INFORMATION ON WHICH CHILDREN AGED 6 MONTHS THROUGH 8 YEARS NEED 2 DOSES OF FLU VACCINE:
- Determination of the number of doses needed is based on the number of doses of flu vaccine received previous seasons and the age at the time of the first dose of 2022-23 flu vaccine
- Children aged 6 months through 8 years who received 2 or more total doses of any trivalent or quadriv vaccine (i.e., IIV3, IIV4, LAIV3, LAIV4, ccIIV3, ccIIV4) at least 4 weeks apart before July 1, 2022, only dose of 2022-23 flu vaccine
- If a child has not received at least 2 trivalent or quadrivalent flu vaccines at least 4 weeks apart before 2022, give 2 doses of 2022-23 flu vaccine separated by 4 weeks
  - Give the 1st dose as soon as possible after vaccine becomes available (including July and Augus available) to allow the 2nd dose to be received by the end of October
  - If both doses haven't been received by the end of October, still complete the 2-dose series
  - Both doses should be administered even if the child turns 9 years old between dose 1 and dose
- Refer to "Who Needs 2 Doses of 2022-23 Seasonal Influenza Vaccine?" at www.michigan.gov/flu/resources/resources-for-health-professionals

CONTRAINDICATIONS (PERSONS WHO SHOULD NOT RECEIVE LAIV4):
- Severe allergic reaction (e.g., anaphylaxis) after a previous dose of flu vaccine (i.e., any egg-base RIV, or LAIV) or one of its components
- 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 c report that a health care provider has told them during the preceding 12 months that their child h or asthma or whose medical record indicates a wheezing episode has occurred during the prece months

Rev. September 6, 2022

Quick Look at Recombinant Influenza Vaccine (Quadrivalent): RIV4, 2022-23

Indications for Use and Schedule
- Use RIV4 (Flublok® Quadrivalent) for persons aged **18 years and older**
- Vaccination is recommended to be offered by the end of October and **continued throughout the flu season** until vaccine expires (see below for further timing considerations)

Key Points
- **With the exception of adults 65 years and older** there is no preference for any flu vaccine product over another
  - Ensure vaccination occurs with an **age-appropriate product and dose volume**
- **Adults 65 years and older** should preferentially receive either HD-IIV4, RIV4, or aIIV4
  - If none of these three vaccines are available, then any other age-appropriate influenza vaccine should be used

Vaccine Administration[1]
- Administer RIV4 **intramuscular (IM)** in the deltoid of the arm (preferred) or anterolateral thigh using a 1- to 1.5-inch needle
- Must administer vaccine IM, if given by another route; should repeat dose as soon as possible
- Can be given with other vaccines at the same visit – do not miss an opportunity
  - Use separate sites, space at least 1-inch apart

Storage and Handling
- Store in the refrigerator at **36°F to 46°F (2°C to 8°C)**
- Pharmaceutical-grade (purpose-built) units are preferred for vaccine storage
- Do **not** freeze; keep in original box with lid on/protect from light
- Store different flu vaccine formulations apart and label with age indications
- Do **not** use expired vaccine

INFLUENZA DOSE VOLUME IS BASED ON AGE AND FLU VACCINE PRODUCT:
- RIV4 dosage for persons aged 18 years and older is **0.5 mL** per dose

CONTRAINDICATIONS (PERSONS WHO SHOULD NOT RECEIVE RIV4):
- Severe allergic reaction (e.g., anaphylaxis) to a previous dose of any RIV or any component of RIV4

PRECAUTIONS (IN CERTAIN CIRCUMSTANCES, PERSONS MAY RECEIVE RIV4):
- Moderate or severe acute illness with or without fever
- History of Guillain-Barré syndrome (GBS) within 6 weeks of previous flu vaccination
- History of a severe allergic reaction to a previous dose of any other flu vaccine (i.e., any egg-based IIV, ccIIV, or LAIV)
  - If administered, should occur in a medical setting in which a health care provider with experience in recognition and management of severe allergic conditions is available

FURTHER POINTS TO CONSIDER:
- Vaccination is recommended to be offered by the end of October and **continued throughout the flu season** until vaccine expires
  - For most adults (particularly adults aged 65 years and older) 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

Rev. August 31, 2022
Page 1 of 2

Quick Look at Cell Culture-based Inactivated Influenza Vaccine (Quadrivalent): ccIIV4, 2022-23

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nal flu vaccine to best protect

nd older only need 1 dose of flu
previous flu vaccination history

Vaccine Administration[1]
- Administer ccIIV4 **intramuscular (IM)** in the deltoid of the arm (preferred) or the anterolateral thigh
  - Children: 1-inch needle
  - Adolescents/adults: 1- to 1.5-inch needle
- Must administer vaccine IM, if given by another route; should repeat dose as soon as possible
- Can be given with other vaccines at the same visit – do not miss an opportunity
  - Use separate sites, space at least 1-inch apart

Storage and Handling
- Store in the refrigerator at **36°F to 46°F (2°C to 8°C)**
- Pharmaceutical-grade (purpose-built) units are preferred for vaccine storage
- Do **not** freeze; keep in original box with lid on/protect from light
- Store different IIV formulations apart and label with age indications
- Do **not** use expired vaccine
- Multi-dose vial (MDV) – Flucelvax MDV may be used up until the expiration date, between uses return the MDV to recommended storage conditions

E IS BASED ON AGE AND FLU VACCINE PRODUCT:
ersons aged 6 months and older is **0.5 mL** per dose
of other IIVs, refer to "2022-23 Seasonal Influenza Vaccine Dose Volumes for Children" at
/flu/resources/resources-for-health-professionals

N CHILDREN AGED 6 MONTHS THROUGH 8 YEARS NEED 2 DOSES OF FLU VACCINE:
the number of doses needed is based on the number of doses of flu vaccine received in
s and the age at the time of the first dose of 2022-23 flu vaccine
months through 8 years who received 2 or more total doses of any trivalent or quadrivalent flu
3, IIV4, LAIV3, LAIV4, ccIIV3, ccIIV4) at least 4 weeks apart before July 1, 2022, only need 1
flu vaccine
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ses of 2022-23 flu vaccine separated by 4 weeks
dose as soon as possible after vaccine becomes available (including July and August if available)
2nd dose to be received by the end of October, ensure at least 4 weeks in between doses
es have not been received by the end of October, still complete the 2-dose series
vaccine product does not need to be used for both doses; use any age-appropriate and correct
me flu vaccine
s should be administered even if the child turns 9 years old between dose 1 and dose 2
Needs 2 Doses of 2022-23 Seasonal Influenza Vaccine?" at
n.gov/flu/resources/resources-for-health-professionals

Page 1 of 2

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

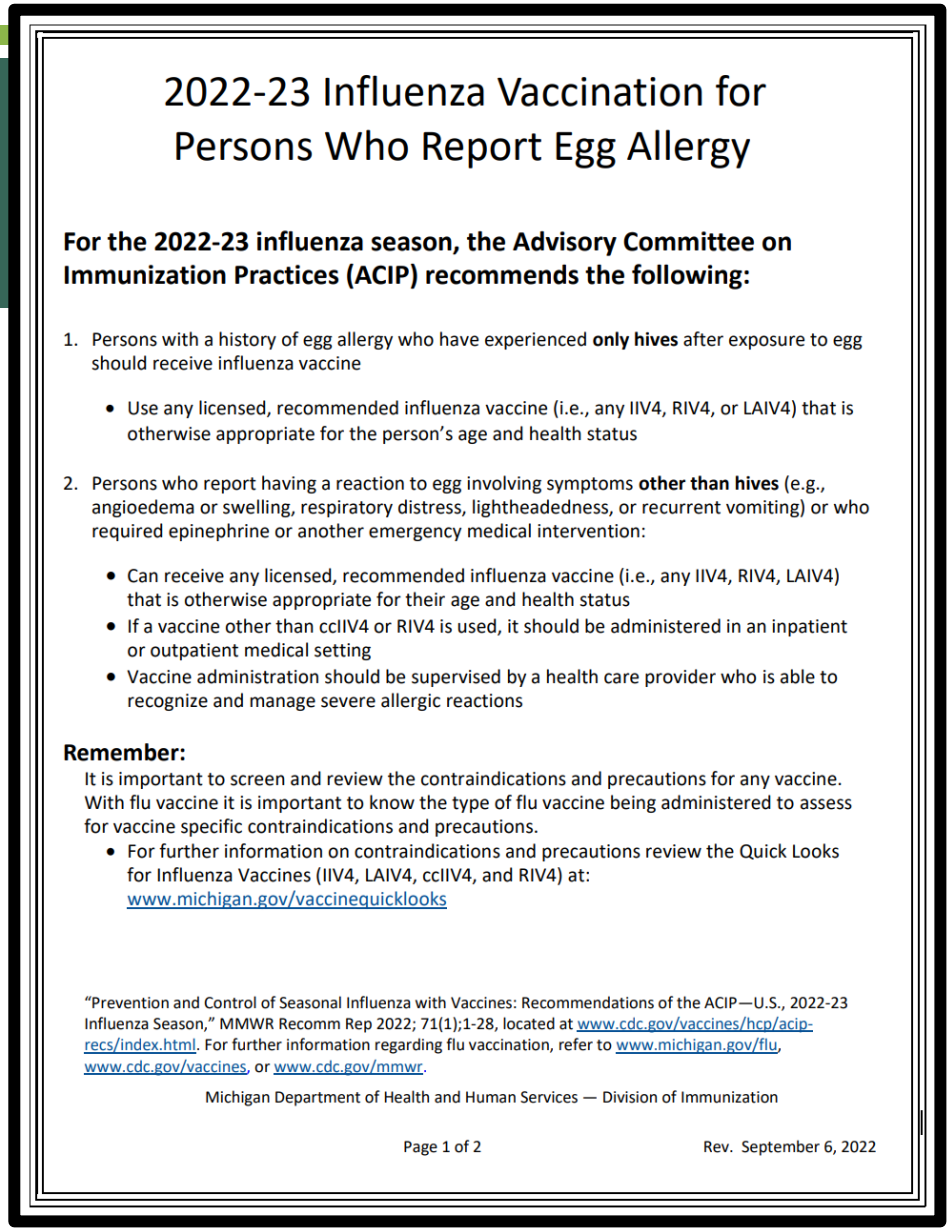
MDHHS Michigan Department of Health & Human Services

FLU VACCINATION FOR PERSONS WITH EGG ALLERGY

- History of egg allergy and only hives after exposure to egg should receive flu vaccine
  - Use any licensed, recommended vaccine (i.e., any IIV4, RIV4, or LAIV4) otherwise appropriate for age/health status
- History of egg allergy and symptoms other than hives (e.g., angioedema or swelling, respiratory distress, lightheadedness, or recurrent vomiting) or required epinephrine/another emergency medical intervention:
  - Can receive any licensed, recommended vaccine (i.e., any IIV4, RIV4, LAIV4) otherwise appropriate for age/health status
  - If a vaccine other than ccIIV4 or RIV4 is used, administer it in an inpatient or outpatient medical setting
  - Supervised by health care provider able to recognize and manage severe allergic reactions

FLU VACCINE & EGG ALLERGY, CONT'D.

- 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



2022-23 Influenza Vaccination for Persons Who Report Egg Allergy

For the 2022-23 influenza season, the Advisory Committee on Immunization Practices (ACIP) recommends the following:

1. Persons with a history of egg allergy who have experienced **only hives** after exposure to egg should receive influenza vaccine
   - Use any licensed, recommended influenza vaccine (i.e., any IIV4, RIV4, or LAIV4) that is otherwise appropriate for the person's age and health status
2. Persons who report having a reaction to egg involving symptoms **other than hives** (e.g., angioedema or swelling, respiratory distress, lightheadedness, or recurrent vomiting) or who required epinephrine or another emergency medical intervention:
   - Can receive any licensed, recommended influenza vaccine (i.e., any IIV4, RIV4, LAIV4) that is otherwise appropriate for their age and health status
   - If a vaccine other than ccIIV4 or RIV4 is used, it should be administered in an inpatient or outpatient medical setting
   - Vaccine administration should be supervised by a health care provider who is able to recognize and manage severe allergic reactions

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 ACIP—U.S., 2022-23 Influenza Season," MMWR Recomm Rep 2022; 71(1);1-28, 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. September 6, 2022

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

FLU VACCINE ADMINISTRATION

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

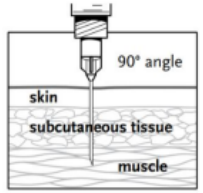
www.michigan.gov/flu → Resources → Resources for Health Professionals

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. 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.



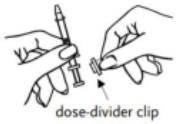
5. Remove the needle or activate the retraction, if using a retractable safety needle/syringe, then apply light pressure to the injection site for several seconds with a dry cotton ball or gauze pad.
6. Cover the injection site with a bandage.
7. Put the used needle and syringe in a sharps container.

Intranasal (IN/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.

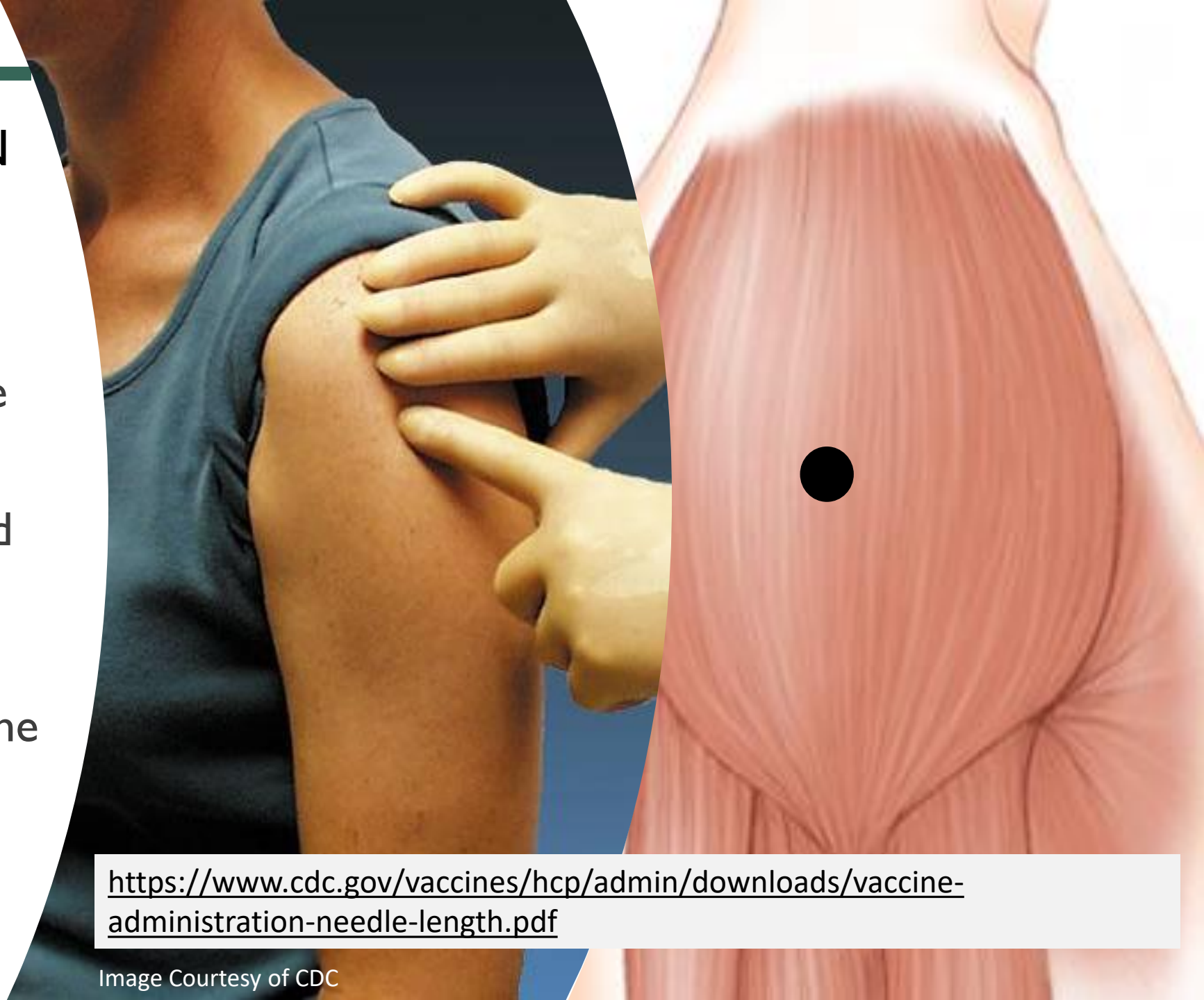
[1] Use professional judgment when determining needle size and injection site. Visit: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html.
For more information regarding flu and flu vaccination, refer to www.michigan.gov/flu, www.cdc.gov/vaccines, or www.cdc.gov/mmwr.

Michigan Department of Health and Human Services – Division of Immunization Rev. August 29, 2022

MDHHS
Michigan Department of Health & Human Services

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



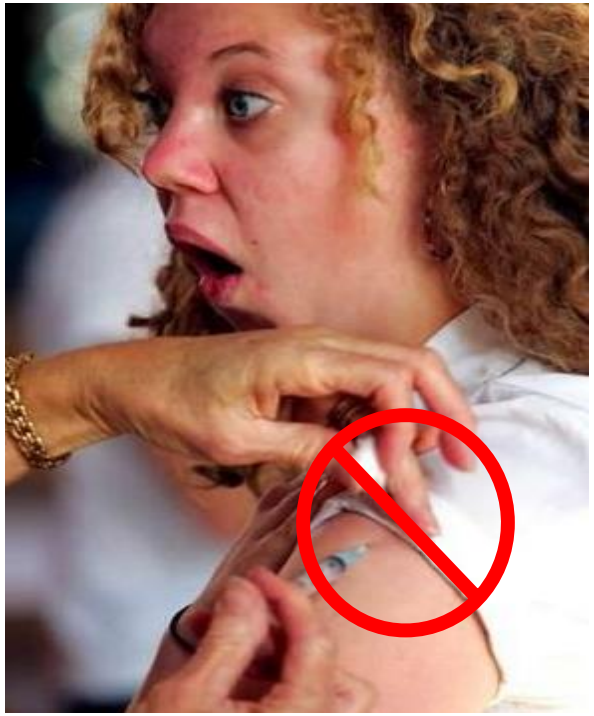
https://www.cdc.gov/vaccines/hcp/admin/downloads/vaccine-administration-needle-length.pdf

Image Courtesy of CDC

MDHHS
Michigan Department of Health & Human Services

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

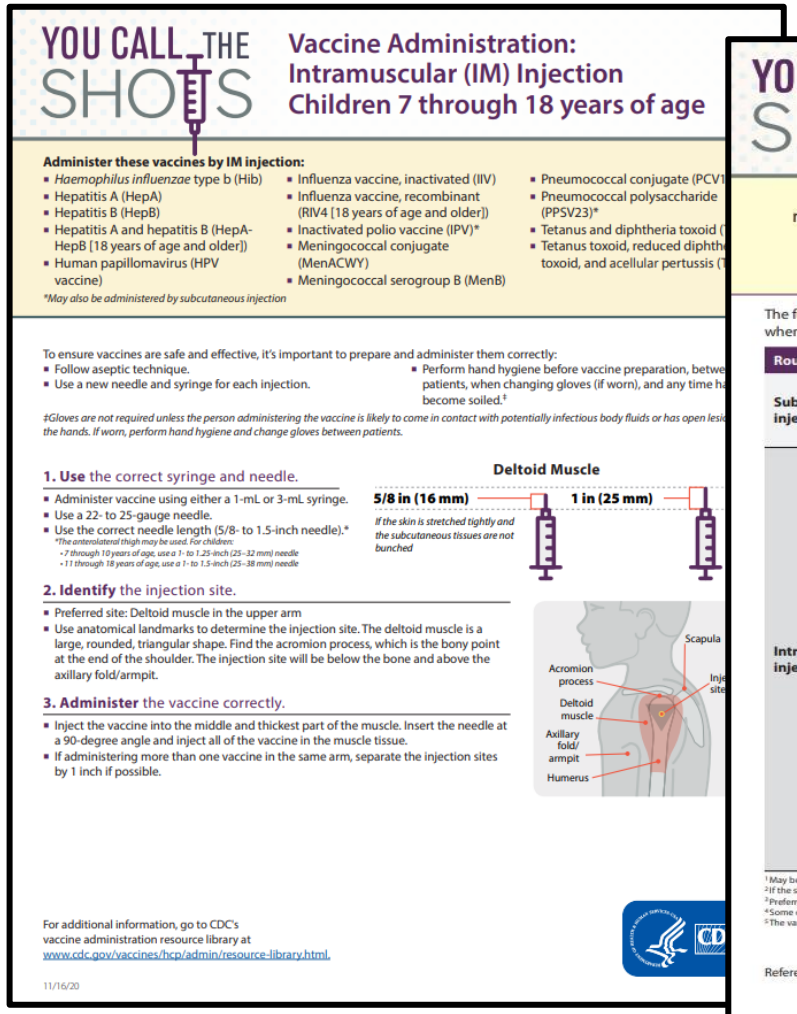
IAC Skills Checklist for Immunization: www.immunize.org/catg.d/p7010.pdf

COADMINISTRATION

- **COVID-19 vaccines and other vaccines (i.e., flu) may be administered without regard to timing**
  - Simultaneous administration of COVID-19 vaccines **on the same day** or at any time before or after another vaccine
- Applicable to **ALL** other vaccines
  - Non-live
  - Live, attenuated

https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html

CDC Vaccine Administration Job Aides



YOU CALL THE SHOTS

Vaccine Administration: Intramuscular (IM) Injection Children 7 through 18 years of age

Administer these vaccines by IM injection:

- *Haemophilus influenzae* type b (Hib)
- Hepatitis A (HepA)
- Hepatitis B (HepB)
- Hepatitis A and hepatitis B (HepA-HepB [18 years of age and older])
- Human papillomavirus (HPV vaccine)
- Influenza vaccine, inactivated (IIV)
- Influenza vaccine, recombinant (RIV4 [18 years of age and older])
- Inactivated polio vaccine (IPV)*
- Meningococcal conjugate (MenACWY)
- Meningococcal serogroup B (MenB)
- Pneumococcal conjugate (PCV1
- Pneumococcal polysaccharide (PPSV23)*
- Tetanus and diphtheria toxoid (
- Tetanus toxoid, reduced diphth toxoid, and acellular pertussis (T

*May also be administered by subcutaneous injection

To ensure vaccines are safe and effective, it's important to prepare and administer them correctly:

- Follow aseptic technique.
- Use a new needle and syringe for each injection.
- Perform hand hygiene before vaccine preparation, betwe patients, when changing gloves (if worn), and any time ha become soiled.‡

‡Gloves are not required unless the person administering the vaccine is likely to come in contact with potentially infectious body fluids or has open lesio the hands. If worn, perform hand hygiene and change gloves between patients.

1. Use the correct syringe and needle.

- Administer vaccine using either a 1-mL or 3-mL syringe.
- Use a 22- to 25-gauge needle.
- Use the correct needle length (5/8- to 1.5-inch needle).*

*The anterolateral thigh may be used. For children:
- 7 through 10 years of age, use a 1- to 1.25-inch (25–32 mm) needle
- 11 through 18 years of age, use a 1- to 1.5-inch (25–38 mm) needle

Deltoid Muscle

5/8 in (16 mm) — 1 in (25 mm)

If the skin is stretched tightly and the subcutaneous tissues are not bunched

2. Identify the injection site.

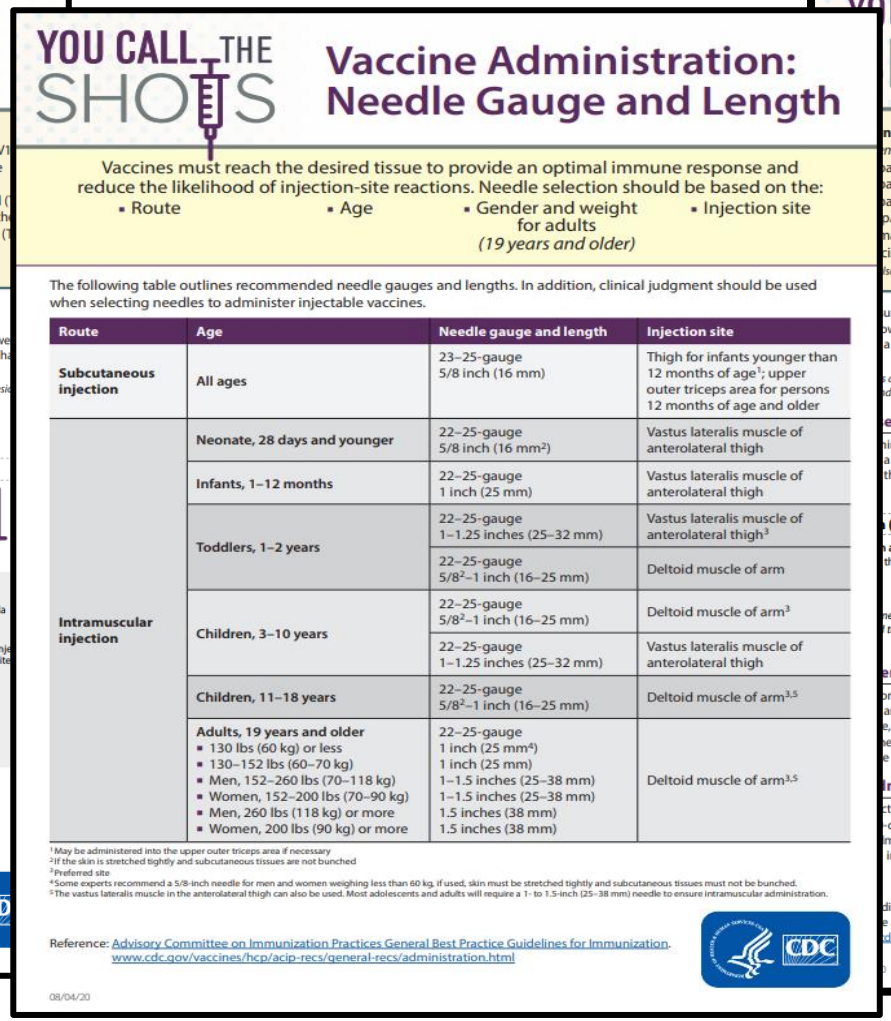
- Preferred site: Deltoid muscle in the upper arm
- Use anatomical landmarks to determine the injection site. The deltoid muscle is a large, rounded, triangular shape. Find the acromion process, which is the bony point at the end of the shoulder. The injection site will be below the bone and above the axillary fold/armpit.

3. Administer the vaccine correctly.

- Inject the vaccine into the middle and thickest part of the muscle. Insert the needle at a 90-degree angle and inject all of the vaccine in the muscle tissue.
- If administering more than one vaccine in the same arm, separate the injection sites by 1 inch if possible.

For additional information, go to CDC's vaccine administration resource library at www.cdc.gov/vaccines/hcp/admin/resource-library.html.

11/16/20



YOU CALL THE SHOTS

Vaccine Administration: Needle Gauge and Length

Vaccines must reach the desired tissue to provide an optimal immune response and reduce the likelihood of injection-site reactions. Needle selection should be based on the:

- Route
- Age
- Gender and weight for adults (19 years and older)
- Injection site

The following table outlines recommended needle gauges and lengths. In addition, clinical judgment should be used when selecting needles to administer injectable vaccines.

Route	Age	Needle gauge and length	Injection site
Subcutaneous injection	**All ages**	23–25-gauge 5/8 inch (16 mm)	Thigh for infants younger than 12 months of age[1]; upper outer triceps area for persons 12 months of age and older
Intramuscular injection	**Neonate, 28 days and younger**	22–25-gauge 5/8 inch (16 mm[2])	Vastus lateralis muscle of anterolateral thigh
	Infants, 1–12 months	22–25-gauge 1 inch (25 mm)	Vastus lateralis muscle of anterolateral thigh
	Toddlers, 1–2 years	22–25-gauge 1–1.25 inches (25–32 mm)	Vastus lateralis muscle of anterolateral thigh[3]
		22–25-gauge 5/8[2]–1 inch (16–25 mm)	Deltoid muscle of arm
	Children, 3–10 years	22–25-gauge 5/8[2]–1 inch (16–25 mm)	Deltoid muscle of arm[3]
		22–25-gauge 1–1.25 inches (25–32 mm)	Vastus lateralis muscle of anterolateral thigh
	Children, 11–18 years	22–25-gauge 5/8[2]–1 inch (16–25 mm)	Deltoid muscle of arm[3,5]
	Adults, 19 years and older ▪ 130 lbs (60 kg) or less ▪ 130–152 lbs (60–70 kg) ▪ Men, 152–260 lbs (70–118 kg) ▪ Women, 152–200 lbs (70–90 kg) ▪ Men, 260 lbs (118 kg) or more ▪ Women, 200 lbs (90 kg) or more	22–25-gauge 1 inch (25 mm[4]) 1 inch (25 mm) 1–1.5 inches (25–38 mm) 1–1.5 inches (25–38 mm) 1.5 inches (38 mm) 1.5 inches (38 mm)	Deltoid muscle of arm[3,5]

[1]May be administered into the upper outer triceps area if necessary
[2]If the skin is stretched tightly and subcutaneous tissues are not bunched
[3]Preferred site
[4]Some experts recommend a 5/8-inch needle for men and women weighing less than 60 kg, if used, skin must be stretched tightly and subcutaneous tissues must not be bunched.
[5]The vastus lateralis muscle in the anterolateral thigh can also be used. Most adolescents and adults will require a 1- to 1.5-inch (25–38 mm) needle to ensure intramuscular administration.

Reference: Advisory Committee on Immunization Practices General Best Practice Guidelines for Immunization. www.cdc.gov/vaccines/hcp/acip-recs/general-recs/administration.html

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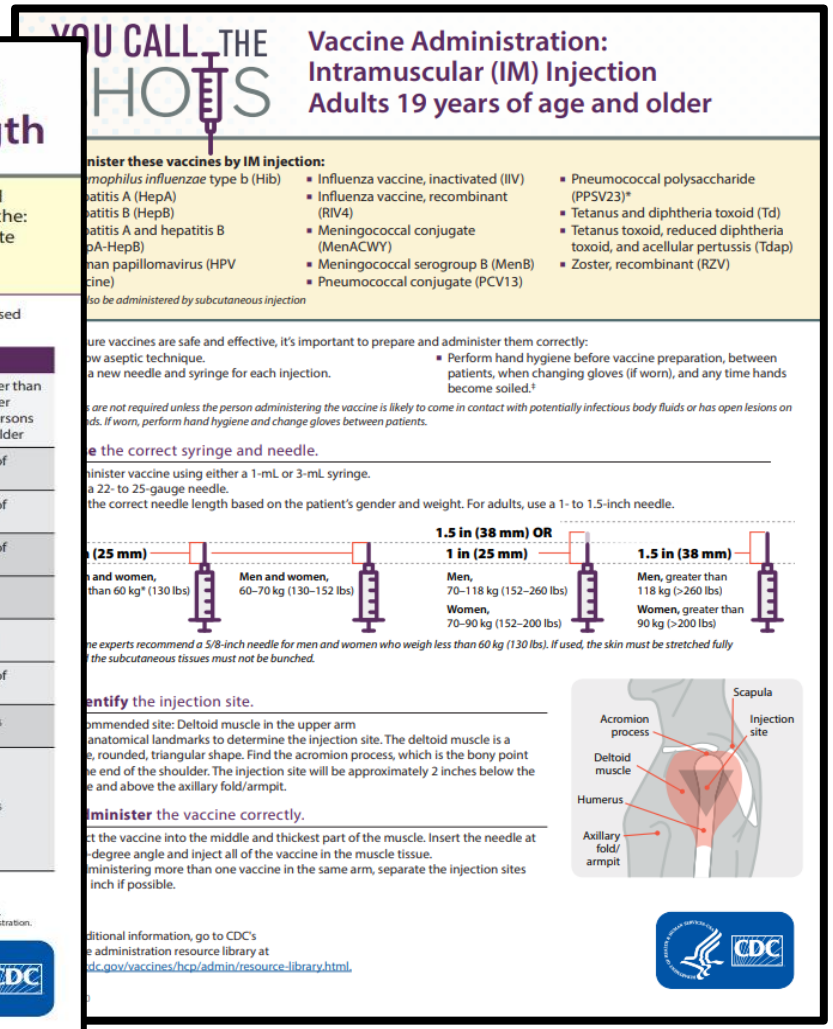

YOU CALL THE SHOTS

Vaccine Administration: Intramuscular (IM) Injection Adults 19 years of age and older

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- patitis B (HepB)
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- nan papillomavirus (HPV cine)
- Influenza vaccine, inactivated (IIV)
- Influenza vaccine, recombinant (RIV4)
- Meningococcal conjugate (MenACWY)
- Meningococcal serogroup B (MenB)
- Pneumococcal conjugate (PCV13)
- Pneumococcal polysaccharide (PPSV23)*
- Tetanus and diphtheria toxoid (Td)
- Tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap)
- Zoster, recombinant (RZV)

so be administered by subcutaneous injection

ure vaccines are safe and effective, it's important to prepare and administer them correctly:

- ow aseptic technique.
- a new needle and syringe for each injection.
- Perform hand hygiene before vaccine preparation, between patients, when changing gloves (if worn), and any time hands become soiled.‡

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(25 mm) — 1.5 in (38 mm) OR 1 in (25 mm) — 1.5 in (38 mm)

and women, than 60 kg* (130 lbs)
Men and women, 60–70 kg (130–152 lbs)
Men, 70–118 kg (152–260 lbs)
Women, 70–90 kg (152–200 lbs)
Men, greater than 118 kg (>260 lbs)
Women, greater than 90 kg (>200 lbs)

e experts recommend a 5/8-inch needle for men and women who weigh less than 60 kg (130 lbs). If used, the skin must be stretched fully f the subcutaneous tissues must not be bunched.

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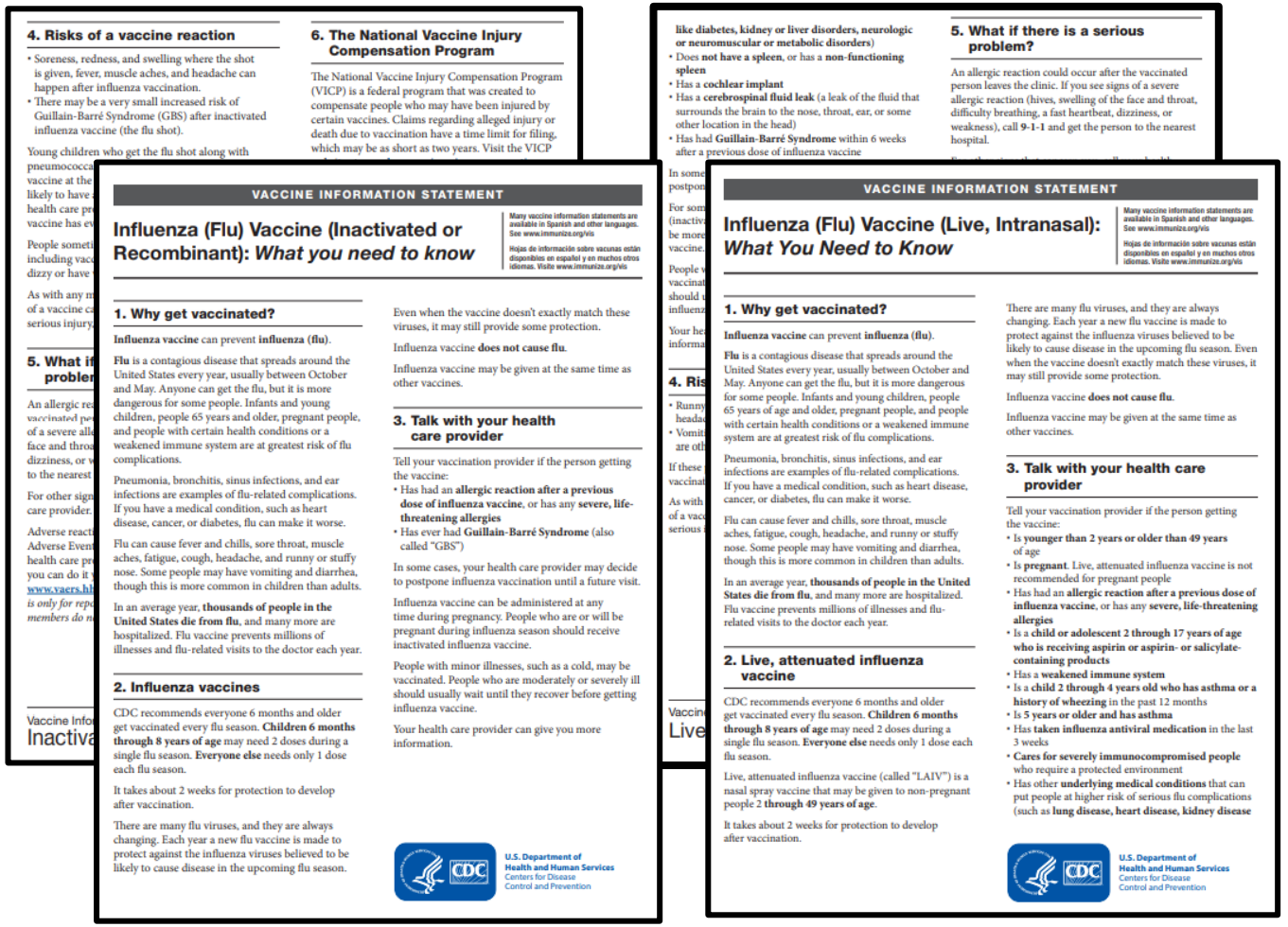
www.cdc.gov/vaccines/hcp/admin/resource-library.html

FLU VACCINE INFORMATION STATEMENTS (VIS)

- Current IIV/RIV and LAIV VIS edition dates: 8/6/21
- To access Michigan VISs (includes language on MCIR), go to www.michigan.gov/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 pneumococca
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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

Vaccine Info
Inactiva

like diabetes, kidney or liver disorders, neurologic or neuromuscular or metabolic disorders)

- Does **not have a spleen**, or has a **non-functioning spleen**
- Has a **cochlear implant**
- Has a **cerebrospinal fluid leak** (a leak of the fluid that surrounds the brain to the nose, throat, ear, or some other location in the head)
- Has had **Guillain-Barré Syndrome** within 6 weeks after a previous dose of influenza vaccine

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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.

VACCINE INFORMATION STATEMENT

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

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

1. Why get vaccinated?

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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**

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Centers for Disease Control and Prevention

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Don’t forget to submit your questions in the Questions and Answers box!

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

www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

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, including caused by medications or HIV infection
- Persons who are pregnant or postpartum (within 2 weeks of delivery)
- Younger than 19 years on long-term aspirin or salicylate therapy
- American Indians and Alaska Natives
- BMI ≥ 40
- Residents of nursing homes and other chronic care facilities

www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

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

MDHHS Michigan Department of Health & Human Services

www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

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FLU VACCINE CONSIDERATIONS DURING COVID-19

Interim Clinical Considerations for Use of COVID-19 Vaccines Currently Approved or Authorized in the United States

Summary of recent changes (last updated August 22, 2022):

- Guidance for primary series vaccination using Novavax COVID-19 Vaccine in adolescents ages 12–17 years
- Reorganization of Janssen COVID-19 Vaccine guidance into an appendix

Reference Materials

- Summary Document for Interim Clinical Considerations (Updated 6/24/2022)
- Interim COVID-19 Immunization Schedule (Updated 6/24/2022)
- At-A-Glance COVID-19 Vaccination Schedule (Updated 8/22/2022)
- Moderna COVID-19 Vaccine for Children who Transition from a Younger to Older Age Group
- Pfizer-BioNTech for Children who Transition from a Younger to Older Age Group

Get Email Updates

Receive email updates about this page.

What's this?

Get Email Updates

COVID-19 Vaccines, Recommendations, and Schedules

- COVID-19 vaccination overview
- People who are **not** immunocompromised
- People who **are** immunocompromised
- Timing, spacing, and interchangeability
- Patient counseling
- Laboratory testing

Safety

- Contraindications and precautions
- Reporting of adverse events
- Safety considerations for mRNA COVID-19 vaccines: Moderna and Pfizer-BioNTech
- Safety considerations for Novavax COVID-19 Vaccine
- COVID-19 vaccination and myocarditis and pericarditis

Special Situations and Populations

- COVID-19 vaccination and SARS-CoV-2 infection
- COVID-19 vaccination and MIS-C and MIS-A
- Pregnancy, lactation, and fertility
- Other special populations

Interim Clinical Considerations for Use of COVID-19 Vaccines | CDC

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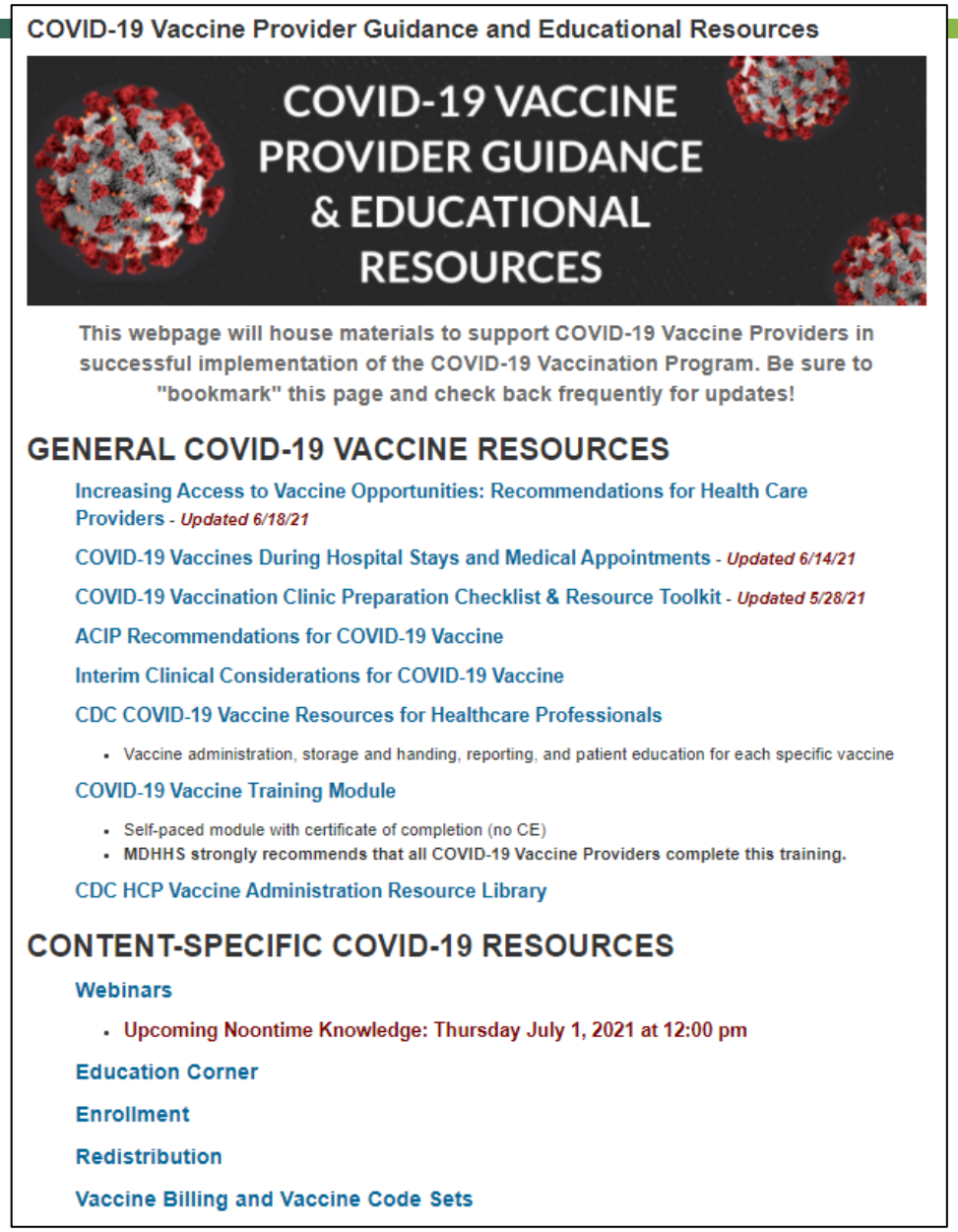
Michigan Department of Health & Human Services



MDHHS COVID-19 Provider Guidance and Education Website

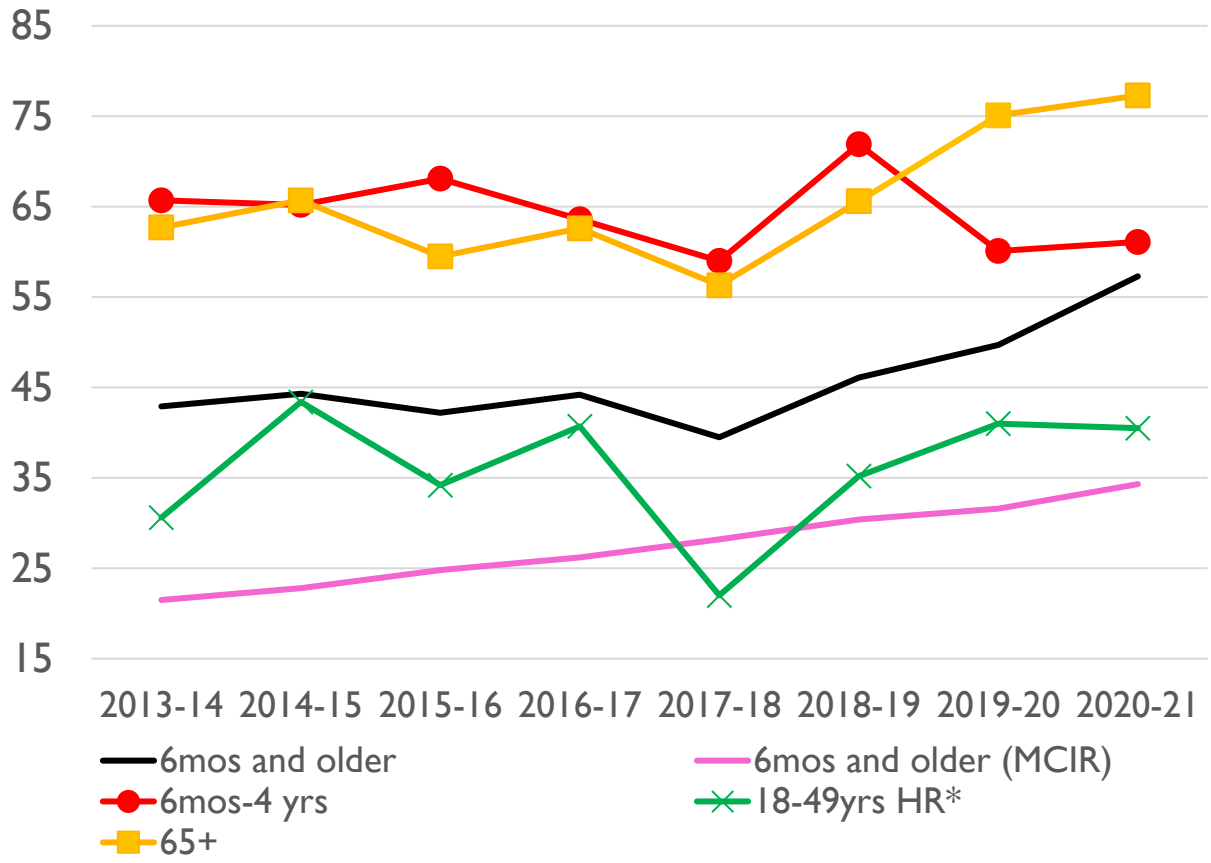
www.michigan.gov/covidvaccineprovider

MDHHS Michigan Department of Health & Human Services

Don't forget to submit your questions in the Questions and Answers box!

INFLUENZA VACCINATION COVERAGE LEVELS AND STRATEGIES TO INCREASE COVERAGE

MICHIGAN INFLUENZA VACCINATION COVERAGE, SELECT AGES, ACCORDING TO NATIONAL SURVEYS AND MCIR, 2013-2021



- Minimal improvement over 8 season
- "Everyone, every year"
  - Overall MCIR coverage remains < 50%
  - National Estimates 57%
- 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

MDHHS Michigan Department of Health & Human Services

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

FOCUS AREA #1:
2-DOSE COVERAGE

- 2021-22 coverage levels in Michigan children, MCIR data
- Children 6 months through 8 years of age complete (1 or 2 doses)
  - Only 26.8% complete for the season (1 or 2 doses) (280,423/1,044,486)
  - County Range: 6.9% - 44.4%
- Of the 541,402 children recommended 2 doses
  - 8.8% (47,844) received both doses
  - County range: 1.2% - 18.1%

METHODS TO IMPROVE FLU COVERAGE IN YOUNG CHILDREN

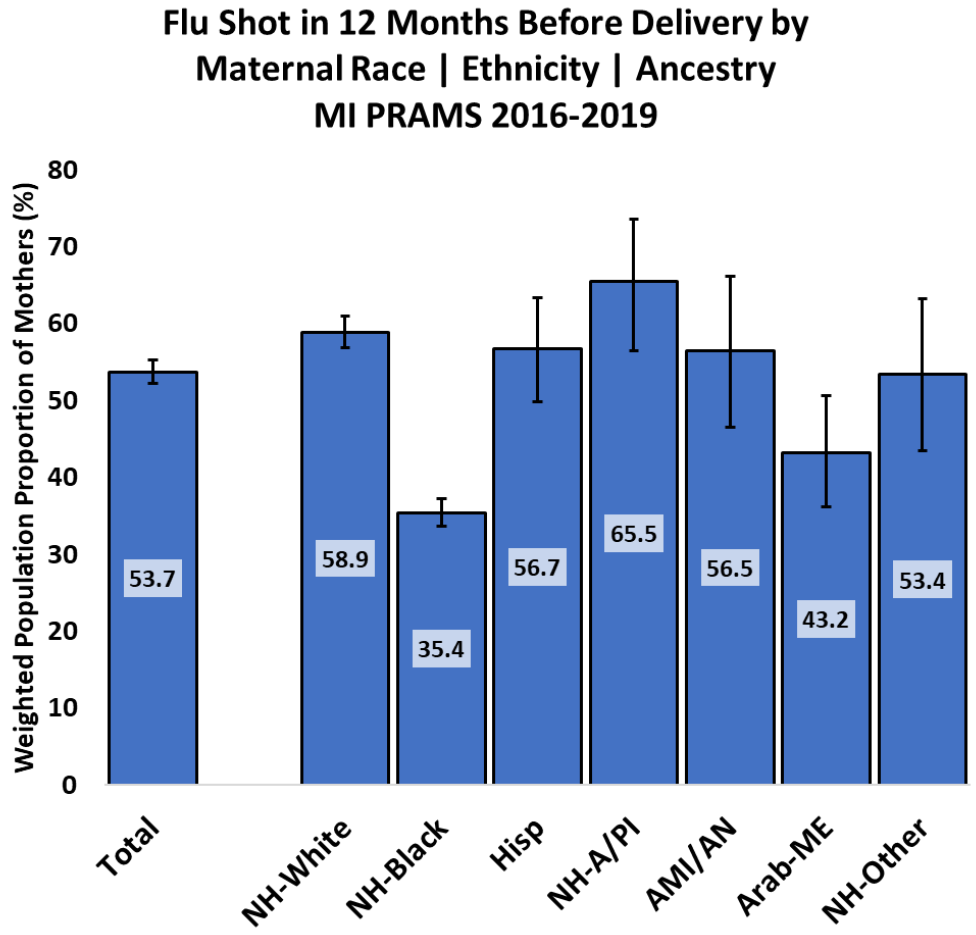
- Initiate the conversation with parents/patients about the importance of flu vaccine
  - Tell a personal story
  - Alana's Foundation: www.alanasfoundation.org/
  - Families Fighting Flu: www.familiesfightingflu.org/
- Ensure children who need 2 doses get their first dose early
- No missed opportunities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

- 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

FOCUS AREA #2: PREGNANT PEOPLE

- Among persons pregnant anytime during October 2020–January 2021, 54.5% reported receiving a dose of flu vaccine since July 1, 2020
- 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/mmwr/volumes/68/wr/mm6840e1.htm
2. PRAMS data provided by P.I- Peterson Haak, MDHHS

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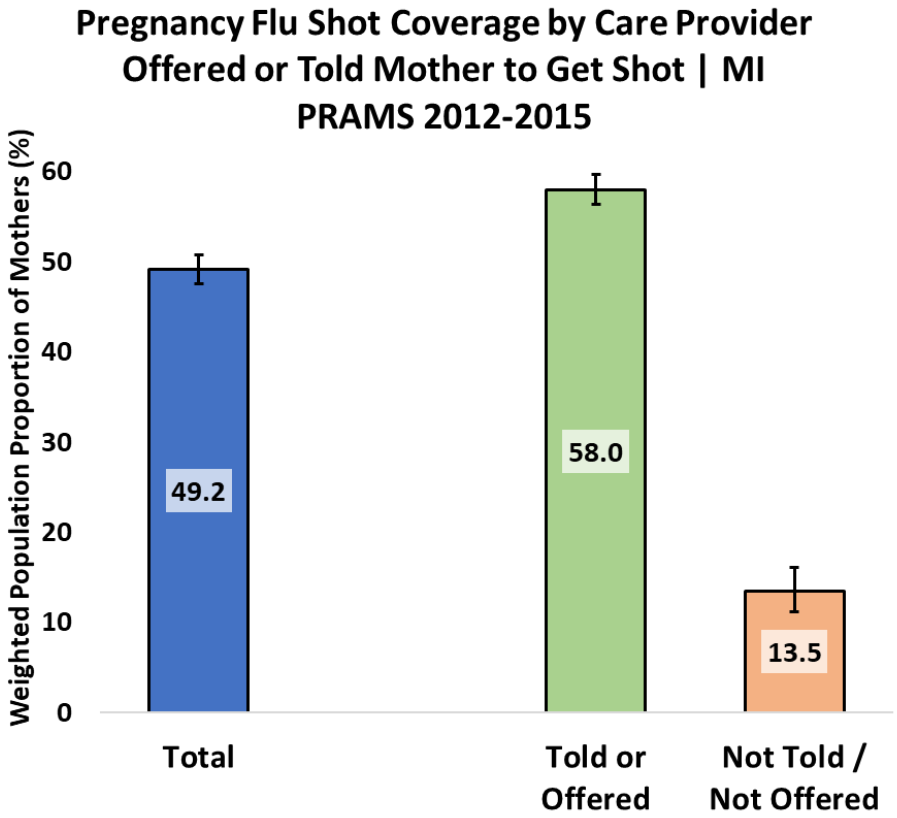
METHODS TO IMPROVE COVERAGE IN PREGNANT PEOPLE

- Assure you are giving a strong recommendation
- AIMS Method[2]:
  - Announce: vaccination will happen, assume they are ready to vaccinate
  - Inquire: seek to understand the person by asking about their concerns
  - Mirror: make sure they know you understand their concerns by mirroring but not repeating and asking questions
  - Secure: consolidate every conversation by securing their trust



1. PRAMS data provided by P.I for the study, Peterson Haak, MDHHS
2. Created by John Parrish-Sprowl- Professor of Communication Studies; Director, Global Health Communication Center, Indiana University

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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!

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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

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Order FREE at: www.healthymichigan.com

FOCUS AREA #3: UNDERLYING MEDICAL CONDITIONS AND RACIAL/ETHNIC DISPARITIES

- Persons of any age
  - Diabetes, asthma, heart disease, neurological conditions, and more[2]
- Racial/ethnic disparities observed in persons with chronic conditions
- American Indian/Alaskan Native (AI/AN) seem to be at higher risk for flu complications

Flu Vaccination Coverage by Race/Ethnicity, Children and Adults, US, MI, 2020-2021 Season[1]

	US Children (6 mos-17 yrs)	US Adults (18+ yrs)	All persons MI (6 mos +)
Non-Hispanic White	60.4	55.5	57.2
Non-Hispanic Black	49.1	40.4	35.9
Hispanic	58.8	38.6	49.4
Asian	69.2	54.5	-
AI/AN	48.3	41.5	-
Other/Multiple	57.8	48.7	51.4

1. www.cdc.gov/flu/fluvaxview/coverage-2021estimates.htm
2. www.cdc.gov/flu/about/disease/high_risk.htm

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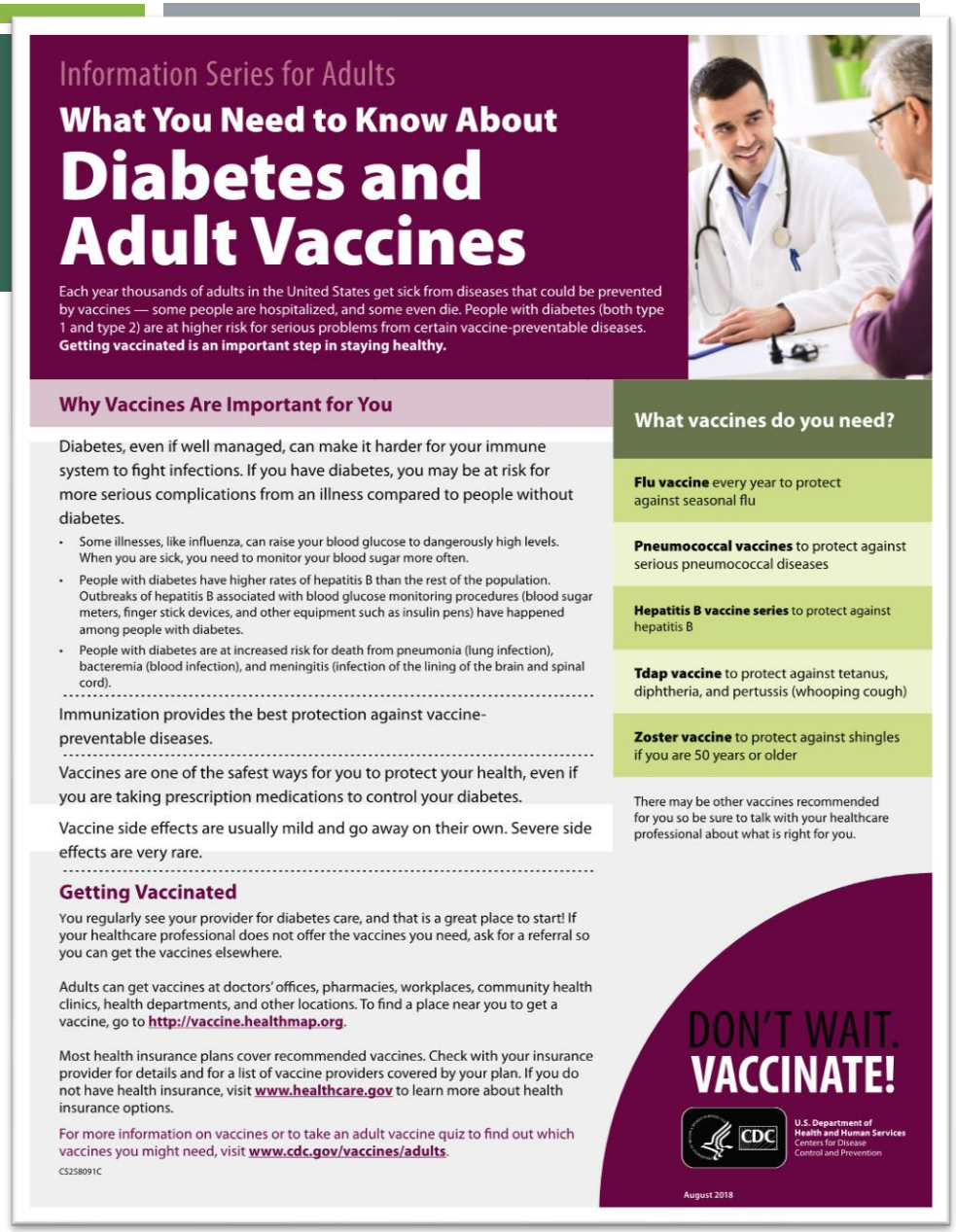
ADDRESSING CHRONIC CONDITIONS AND DISPARITIES

- 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
- CDC materials addressing specific chronic conditions[2]
- HCP Toolkit[3]



Information Series for Adults

What You Need to Know About

Diabetes and Adult Vaccines

Each year thousands of adults in the United States get sick from diseases that could be prevented by vaccines — some people are hospitalized, and some even die. People with diabetes (both type 1 and type 2) are at higher risk for serious problems from certain vaccine-preventable diseases. **Getting vaccinated is an important step in staying healthy.**

Why Vaccines Are Important for You

Diabetes, even if well managed, can make it harder for your immune system to fight infections. If you have diabetes, you may be at risk for more serious complications from an illness compared to people without diabetes.

- Some illnesses, like influenza, can raise your blood glucose to dangerously high levels. When you are sick, you need to monitor your blood sugar more often.
- People with diabetes have higher rates of hepatitis B than the rest of the population. Outbreaks of hepatitis B associated with blood glucose monitoring procedures (blood sugar meters, finger stick devices, and other equipment such as insulin pens) have happened among people with diabetes.
- People with diabetes are at increased risk for death from pneumonia (lung infection), bacteremia (blood infection), and meningitis (infection of the lining of the brain and spinal cord).

Immunization provides the best protection against vaccine-preventable diseases.

Vaccines are one of the safest ways for you to protect your health, even if you are taking prescription medications to control your diabetes.

Vaccine side effects are usually mild and go away on their own. Severe side effects are very rare.

Getting Vaccinated

You regularly see your provider for diabetes care, and that is a great place to start! If your healthcare professional does not offer the vaccines you need, ask for a referral so you can get the vaccines elsewhere.

Adults can get vaccines at doctors' offices, pharmacies, workplaces, community health clinics, health departments, and other locations. To find a place near you to get a vaccine, go to **http://vaccine.healthmap.org**.

Most health insurance plans cover recommended vaccines. Check with your insurance provider for details and for a list of vaccine providers covered by your plan. If you do not have health insurance, visit **www.healthcare.gov** to learn more about health insurance options.

For more information on vaccines or to take an adult vaccine quiz to find out which vaccines you might need, visit **www.cdc.gov/vaccines/adults**.

CS258091C

What vaccines do you need?

Flu vaccine every year to protect against seasonal flu

Pneumococcal vaccines to protect against serious pneumococcal diseases

Hepatitis B vaccine series to protect against hepatitis B

Tdap vaccine to protect against tetanus, diphtheria, and pertussis (whooping cough)

Zoster vaccine to protect against shingles if you are 50 years or older

There may be other vaccines recommended for you so be sure to talk with your healthcare professional about what is right for you.

DON'T WAIT. VACCINATE!

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

August 2018

1. www.ncbi.nlm.nih.gov/pubmed/28933619
2. www.cdc.gov/vaccines/hcp/adults/for-patients/health-conditions.html
3. www.cdc.gov/flu/professionals/vaccination/prepare-practice-tools.htm

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AND REMEMBER

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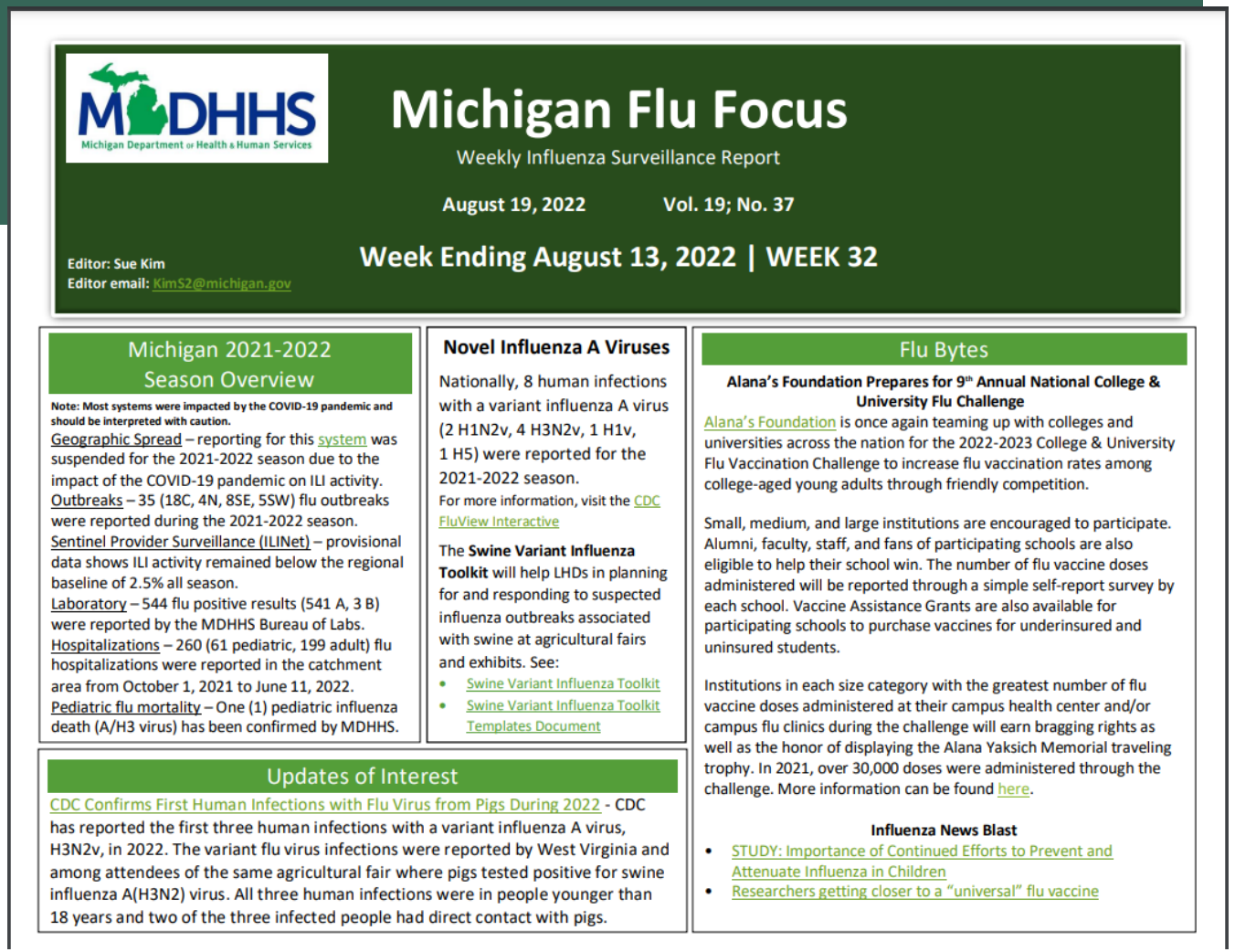
RESOURCES THROUGHOUT THE SEASON

- MI Flu Focus
  - Weekly flu updates during the flu season
  - Includes surveillance system updates, flu updates of interest, flu journal articles, and other flu news
  - To receive MI Flu Focus email Shelly Doebler (DoeblerM@michigan.gov) with the subject line MI Flu Focus
- Seasonal Flu Posters:
  - Order free at: www.healthymichigan.com



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Michigan Flu Focus

Weekly Influenza Surveillance Report

August 19, 2022 Vol. 19; No. 37

Week Ending August 13, 2022 | WEEK 32

Editor: Sue Kim
Editor email: KimS2@michigan.gov

Michigan 2021-2022 Season Overview

Note: Most systems were impacted by the COVID-19 pandemic and should be interpreted with caution.

Geographic Spread – reporting for this system was suspended for the 2021-2022 season due to the impact of the COVID-19 pandemic on ILI activity.
Outbreaks – 35 (18C, 4N, 8SE, 5SW) flu outbreaks were reported during the 2021-2022 season.
Sentinel Provider Surveillance (ILINet) – provisional data shows ILI activity remained below the regional baseline of 2.5% all season.
Laboratory – 544 flu positive results (541 A, 3 B) were reported by the MDHHS Bureau of Labs.
Hospitalizations – 260 (61 pediatric, 199 adult) flu hospitalizations were reported in the catchment area from October 1, 2021 to June 11, 2022.
Pediatric flu mortality – One (1) pediatric influenza death (A/H3 virus) has been confirmed by MDHHS.

Novel Influenza A Viruses

Nationally, 8 human infections with a variant influenza A virus (2 H1N2v, 4 H3N2v, 1 H1v, 1 H5) were reported for the 2021-2022 season.
For more information, visit the CDC FluView Interactive

The **Swine Variant Influenza Toolkit** will help LHDs in planning for and responding to suspected influenza outbreaks associated with swine at agricultural fairs and exhibits. See:

- Swine Variant Influenza Toolkit
- Swine Variant Influenza Toolkit Templates Document

Updates of Interest

CDC Confirms First Human Infections with Flu Virus from Pigs During 2022 - CDC has reported the first three human infections with a variant influenza A virus, H3N2v, in 2022. The variant flu virus infections were reported by West Virginia and among attendees of the same agricultural fair where pigs tested positive for swine influenza A(H3N2) virus. All three human infections were in people younger than 18 years and two of the three infected people had direct contact with pigs.

Flu Bytes

Alana's Foundation Prepares for 9th Annual National College & University Flu Challenge

Alana's Foundation is once again teaming up with colleges and universities across the nation for the 2022-2023 College & University Flu Vaccination Challenge to increase flu vaccination rates among college-aged young adults through friendly competition.

Small, medium, and large institutions are encouraged to participate. Alumni, faculty, staff, and fans of participating schools are also eligible to help their school win. The number of flu vaccine doses administered will be reported through a simple self-report survey by each school. Vaccine Assistance Grants are also available for participating schools to purchase vaccines for underinsured and uninsured students.

Institutions in each size category with the greatest number of flu vaccine doses administered at their campus health center and/or campus flu clinics during the challenge will earn bragging rights as well as the honor of displaying the Alana Yaksich Memorial traveling trophy. In 2021, over 30,000 doses were administered through the challenge. More information can be found here.

Influenza News Blast

- STUDY: Importance of Continued Efforts to Prevent and Attenuate Influenza in Children
- Researchers getting closer to a "universal" flu vaccine

www.michigan.gov/flu/0,6720,7-321-101694---,00.html

Influenza

2022-2023 Flu Vaccine

The best way to protect yourself from the seasonal
state and it is more important than ever to stay he

Flu vaccines are typically available in September a

Doses Goals | Doses by County | Doses by Vaccine | Coverage by County | Weekly Coverage | Seasonal Coverage | Learn More

Weekly Influenza Vaccination Coverage by Age

Based on data reported to Michigan's immunization registry, the Michigan Care Improvement Registry (MCIR). The influenza week corresponds to the number of weeks since the flu season began on July 1.

Data as of :
6/30/22

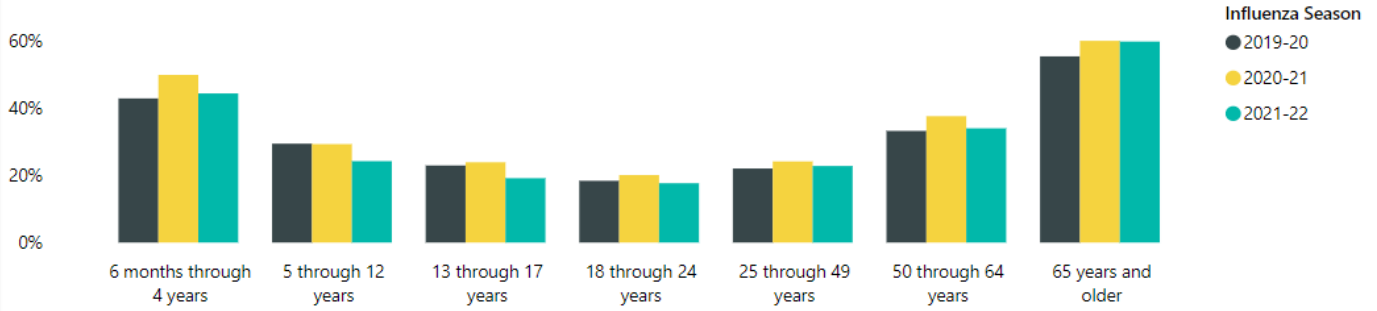
County: All

Month: All

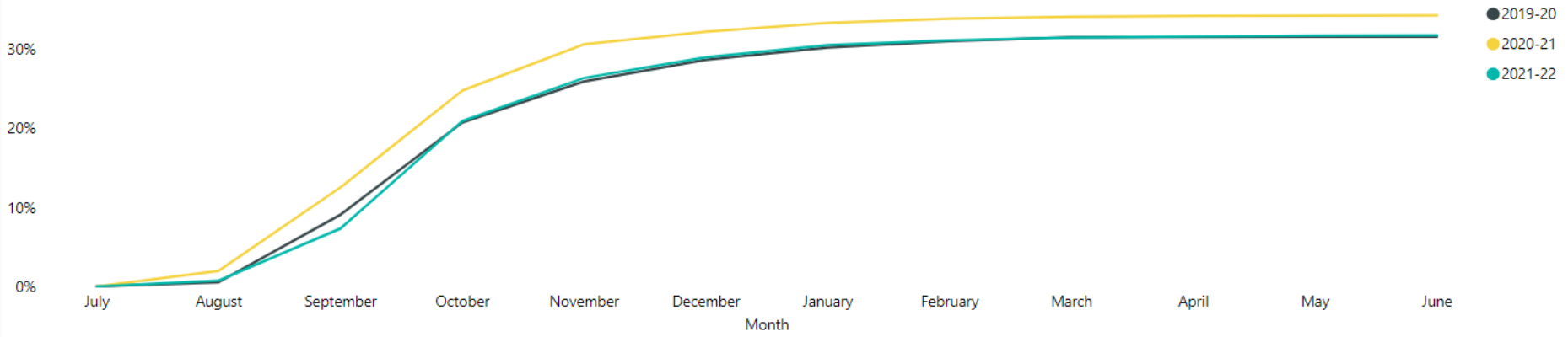
Age Group: All

Influenza Week: 1 – 53

Influenza Vaccination Coverage by Age Group



Influenza Vaccination Coverage by Week



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www.Michigan.gov/flu

HEALTH PROFESSIONAL RESOURCES

2020-21 Influenza Vaccine Updates

- Quick Look at 2020-21 Recombinant Influenza Vaccine (RIV4) **(NEW 8/28/20)**
- Quick Look at 2020-21 Cell Culture-based IIV (ccIIV4) **(NEW 8/28/20)**
- Quick Look at 2020-21 Live Attenuated Influenza Vaccine (LAIV4) **(UPDATED 8/28/20)**
- Quick Look at 2020-21 Inactivated Influenza Vaccines: IIV4, HD-IIV4, aIIV3, allV4 **(UPDATED 8/28/20)**
- Administering 2020-21 Influenza Vaccines: IM and IN **(UPDATED 8/28/20)**
- 2020-21 Seasonal Influenza Vaccine Dose Volumes for Children **(UPDATED 8/28/20)**
- 2020-21 Seasonal Influenza Vaccine Presentation Chart **(UPDATED 8/28/20)**
- Who Needs 2 Doses of 2020-21 Seasonal Influenza Vaccine? **(UPDATED 8/24/20)**
- 2020-21 Vaccines for Children (VFC) Influenza Vaccine **(UPDATED 8/24/20)**
- 2020-21 Flu Vaccine for Persons who Report Egg Allergy **(UPDATED 8/24/20)**
- Influenza Vaccine Frequently Asked Questions (FAQ) (12/4/19)
- 2019-20 LAIV Key Points for Patients (8/29/19)
- 2019-20 LAIV Key Points for Providers (8/29/19)
- Flu and Pregnancy Posters
- Got Flu Vaccine? Posters
- Remember to use Michigan versions of Vaccine Information Statements

*General Public Resources Coming Soon

Go to www.Michigan.gov/flu and click on Resources → Resources for Health Professionals to find all our updated handouts!

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Q AND A SESSION

- Please type your questions in the Questions and Answers Box.

TO OBTAIN MPA CPE CREDIT

- Complete post-test and evaluation by **September 25, 2022,** at https://www.lecturepanda.com/a/PediatricandAdultInfluenzaWebinar2022-2023FluSeason
- Participants must pass the posttest with 70% or higher
- This link will be provided to all pharmacist registrants after the webinar.
- When completing the program evaluations and posttests, you will be required to provide your CPE Monitor ID number. Register at www.MyCPEMonitor.net

THANK YOU FOR YOUR ATTENDANCE!

- A survey link will be sent out to all registrants
- Physicians/nurses, to obtain 1 AMA PRA Category 1 Credit for participating today:
  - Complete the post-test within MSU's evaluation by logging in to https://cmetracker.net/MSU
  - Needs to be completed by **October 6, 2022**
  - If you have any questions, contact Connie DeMars at demars@msu.edu
- If we don't have time to address your questions:
  - Andrea Becker: BeckerA1@Michigan.gov
  - Michelle Doebler: DoeblerM@Michigan.gov

The webinar recording & slides will be posted soon for **2 weeks only** at www.michigan.gov/flu → Resources → Health Professionals Resources. Check that site frequently!

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