

# Pharmacist Guide

## for Influenza Vaccine Selection



### INFLUENZA VACCINES FOR THE 2021–22 FLU SEASON

There are 9 U.S. brands of influenza vaccines available on the market for the 2021–22 flu season; they are produced using a variety of manufacturing processes such as egg-based, cell culture–based, and recombinant.<sup>1</sup> These vaccines are quadrivalent and include updated type A influenza strains. For egg-based vaccines: A/Victoria/2570/2019 (H1N1)pdm09-like virus and A/Cambodia/e0826360/2020 (H3N2)-like virus. For non-egg-based vaccines, A/Wisconsin/588/2019 (H1N1)pdm09-like virus and A/Cambodia/e0826360/2020 (H3N2)-like virus. All influenza vaccines contain two B strains: B/Washington/02/2019 (Victoria lineage)-like virus and B/Phuket/3073/2013 (Yamagata lineage)-like virus. Table 1 describes the influenza vaccines available for the 2021–22 season.

**TABLE 1. Influenza Vaccines by Age Indication.<sup>1</sup>**

Vaccine Type		0 through 6 months	6 through 23 months	2 through 17 years	18 through 49 years	50 through 64 years	≥ 65 years
IIV4	Standard-dose, unadjuvanted inactivated (IIV4)				Afluria Quadrivalent Fluarix Quadrivalent FluLaval Quadrivalent Fluzone Quadrivalent		
	Cell culture–based inactivated (ccIIV4)			Flucelvax Quadrivalent			
	Adjuvanted inactivated (aIIV4)						Fluad Quadrivalent
	High-dose inactivated (HD-IIV4)						Fluzone High-Dose Quadrivalent
RIV4	Recombinant (RIV4)			Flublok Quadrivalent			
LAIV4	Live attenuated (LAIV4)			FluMist Quadrivalent			

**aIIV4** = adjuvanted quadrivalent inactivated influenza vaccine; **ccIIV4** = cell culture–based quadrivalent inactivated influenza vaccine; **HD-IIV4** = high-dose quadrivalent inactivated influenza vaccine; **IIV4** = quadrivalent inactivated influenza vaccine; **LAIV4** = quadrivalent live attenuated influenza vaccine; **RIV4** = recombinant quadrivalent influenza vaccine.

Not approved for age group

Not egg-based

Egg-based

New for the 2021–22 flu season is a change in indication approved in March 2021 for the cell culture–based quadrivalent inactivated influenza vaccine (ccIIV4—Flucelvax); ccIIV4 is approved for use in persons 2 years of age and older (previously ccIIV4 was indicated for persons 4 years of age and older).<sup>1</sup> Most of the brands of influenza vaccine contain 15 µg of hemagglutinin antigen for each viral component in a 0.5 mL dose.<sup>1</sup> The quadrivalent recombinant influenza vaccine (RIV4) contains 45 µg and the high-dose quadrivalent inactivated influenza vaccine (HD-IIV4) contains 60 µg. The quadrivalent live attenuated influenza vaccine (LAIV4) is available as 106.5–7.5 fluorescent focus units per 0.2 mL dose.<sup>1</sup> Prefilled syringes that are free from preservatives are available for most influenza vaccines. Some brands are also available as multidose vials that contain approximately 25 µg of thimerosal preservative per 0.5 mL dose. All vaccines are administered intramuscularly except for LAIV4, which is administered intranasally.<sup>1</sup>

### SELECTING AMONG INFLUENZA VACCINE FORMULATIONS

The Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommends annual influenza vaccination for all persons aged 6 months and older who do not have contraindications.<sup>1</sup> There is no preferential recommendation for one influenza vaccine



# PHARMACIST GUIDE FOR INFLUENZA VACCINE SELECTION

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product over another in patients for whom more than one licensed, recommended, and appropriate product is available.

Providers may choose to administer any licensed, age-appropriate, influenza vaccine and have the ability to select among a variety of formulations such as: quadrivalent inactivated influenza vaccine (IIV4), quadrivalent live attenuated influenza vaccine (LAIV4), cell culture-based quadrivalent inactivated influenza vaccine (ccIIV4), recombinant quadrivalent influenza vaccine (RIV4), adjuvanted quadrivalent inactivated influenza vaccine (aIIV4), and high-dose quadrivalent inactivated influenza vaccine (HD-IIV4).<sup>1</sup>

Select considerations should be kept in mind when choosing among influenza vaccine formulations. As shown in Table 2, the adjuvanted and high-dose formulations have been designed to provide a more robust immune response and are indicated for older patients (i.e., persons aged 65 years and older).<sup>2,3</sup> If patients request an egg-free option, then the recombinant or cell culture-based formulations can be selected. LAIV4 may be an ideal option for age-appropriate patients (i.e., persons 2–49 years of age without contraindications) who prefer a needle-free option.

**TABLE 2. Influenza Vaccine Characteristics<sup>1-3</sup>**

Quadrivalent	High-dose
<ul style="list-style-type: none"> <li>All influenza vaccines are quadrivalent (4 component strains)</li> <li>Multiple vaccines with varying age indications; age-appropriate vaccines are available for people 6 months of age and older</li> </ul>	<ul style="list-style-type: none"> <li>Designed to deliver a stronger immune response</li> <li>Indicated for adults 65 years of age and older</li> </ul>
Adjuvanted	Recombinant
<ul style="list-style-type: none"> <li>Designed to deliver a stronger immune response</li> <li>Indicated for adults 65 years of age and older</li> </ul>	<ul style="list-style-type: none"> <li>Produced using a method that does not require an egg-grown virus</li> <li>Indicated for adults 18 years of age and older</li> </ul>
Live attenuated influenza vaccine (LAIV)	Cell culture-based
<ul style="list-style-type: none"> <li>Administered by intranasal spray</li> <li>Recommended for non-pregnant individuals, 2 years through 49 years of age</li> </ul>	<ul style="list-style-type: none"> <li>Produced with flu viruses grown in cultured cells of mammalian origin instead of in hens' eggs; developed as an alternative to the egg-based manufacturing process</li> </ul>

### CDC SHARE MODEL

The CDC suggests using the SHARE model to make a strong vaccine recommendation and provide important information to help patients make informed decisions about vaccinations. In this approach, the pharmacist should:<sup>3</sup>

- **Share** the reasons why the influenza vaccine is right for the patient given that person's age, health status, lifestyle, occupation, or other risk factors.
- **Highlight** positive experiences with influenza vaccines, as appropriate, to reinforce the benefits and strengthen confidence

in influenza vaccination.

- **Address** patient questions and any concerns about the influenza vaccine, including side effects, safety, and vaccine effectiveness in plain and understandable language.
- **Remind** patients that influenza vaccines protect them and their loved ones from serious influenza illness and influenza-related complications.
- **Explain** the potential costs of getting influenza, including serious health effects, time lost (such as missing work or family obligations), and financial costs.

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### REFERENCES

1. Grohskopf LA, Alyanak E, Ferdinands JM, et al. Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices, United States, 2021–22 Influenza Season. *MMWR Recomm Rep* 2021;70(No. RR-5):1–28. DOI: <http://dx.doi.org/10.15585/mmwr.rr7005a1>.
2. Centers for Disease Control and Prevention. Protect Your Patients This Flu Season: Pharmacist Guide and Talking Points. August 2020. Available at: <https://www.cdc.gov/flu/pdf/professionals/vaccination/protect-your-patients.pdf>. Accessed September 18, 2020
3. Centers for Disease Control and Prevention. Make a Strong Flu Vaccine Recommendation. May 2021. Available at: <https://www.cdc.gov/flu/professionals/vaccination/flu-vaccine-recommendation.htm>. Accessed August 3, 2021.



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