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Important questions before flu season

How to provide maximum protection for our patients and ourselves

Influenza season is upon us. If this year is typical, 5% to 20 % of the US population will contract influenza. Of these, 200,000 people will be hospitalized and 36,000 will die. To minimize the effects of seasonal influenza, family physicians rely on annual influenza vaccine and antiviral therapy and prophylaxis. Every year at this time, we need to ask ourselves important questions as we prepare to provide maximum protection for our patients, our communities, and ourselves.

Who should receive an influenza vaccine?—an addition this year

The list of those who should receive an annual influenza vaccine (**TABLE 1**) is the same as last year, with 1 addition; children between ages 24 and 59 months and their household contacts and out-of-home caregivers.[1–2] There are 2 types of vaccines available; trivalent inactivated influenza vaccine (TIA) and live attenuated influenza vaccine (LAIV). The TIA vaccine is administered intramuscularly, the LAIV by nasal spray. The vaccine products available and the ages for which they are licensed are listed in **TABLE 2**.[3]

The LAIV can be used for healthy people between the ages of 5 and 49 years; it should not be used for those who are pregnant, have a chronic illness, are caregivers to someone severely immune suppressed, are on chronic aspirin therapy, or have a history of Guillain-Barré syndrome. Neither vaccine should be used for anyone with an anaphylactic hypersensitivity to eggs or has had a severe allergic reaction to a previous vaccine. Vaccine should be postponed for anyone with a moderate-to-severe acute illness.

There are several other considerations for LAIV. Vaccination should be postponed for anyone with nasal congestion since it is not clear the vaccine can be administered correctly. Since LAIV is a live virus vaccine, it should be administered concurrently with, or 4 weeks after, any other live virus vaccines. It should also not be administered concurrently or within 2 weeks of receiving influenza antiviral agents. Finally, it needs to be stored at –15°C or below.

What issues are specific to ages 6 months to <9 years?

A child being immunized against influenza for the first time before his or her ninth birthday should receive 2 doses—4 weeks apart for TIV, 6 weeks apart for LAIV. The doses can be 2 of either TIV or LAIV or 1 of each. If a child received only 1 dose the prior year and it was their first time to receive the vaccine, they only need 1 dose the current year.

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The supply of vaccine for this age group can be problematic, especially for age 3, for whom there is only 1 product licensed. Four of the products available for children contain trace amounts of thimerosal (**TABLE 2**), with the highest amounts being in multidose vials.[3] There have been no proven harmful effects of these amounts of thimerosal, and both the Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) continue to recommend these products. Some parents, however, may insist on a thimerosal-free product, and a few states have taken action to limit the use of thimerosal-containing vaccines.

When should we immunize?

Immunization of those at high risk should begin in September (if vaccine is available) or October. This is particularly important for children who need 2 doses for protection. Vaccination in nursing homes is best started in October—early enough to provide protection throughout the season but late enough to provide more assurance immunity will last throughout a late season. Vaccination of all those at risk should continue throughout the whole season, or as long as vaccine supplies last.

Will there be an adequate supply of vaccine?

There will be between 100 million and 120 million doses of vaccine available this year. Based on prior years, this should be an adequate supply.

Information is available on the American Academy of Family Physicians (AAFP) Web site on current vaccine supply issues and how to purchase influenza vaccine (available at: www.aafp.org/online/en/home/clinical/immunizations/flu06/ordering.html). The AAFP Web site will also contain information on vaccine prioritization should a shortage develop.

TABLE 1

Who should receive influenza vaccine

People at high risk for complications from the flu, including:

Children aged 6–59 months
Pregnant women
People aged 50 years and older
People who live in nursing homes and other long-term care facilities
People of any age with the following chronic medical conditions:
- –Below age 18 years on chronic aspirin therapy
- –Chronic heart disease
- –Chronic lung disease (including asthma)
- –Diabetes
- –Renal disease
- –Hemoglobinopathies
- –Immune deficiencies
- –Neurological disorders that compromise respiratory function or secretion clearing

People who live with or care for those at high risk for complications from flu, including:

Household contacts of persons at high risk for complications from the flu (see above)
Household contacts and out of home caregivers of children less than 6 months of age (these children are too young to be vaccinated)
Healthcare workers

What is the role of antiviral medications?

The CDC currently recommends that the adamantanes (amantadine [Symmetrel] and rimantadine [Flumadine]) not be used for treatment or prophylaxis of influenza A because of a high rate of resistance documented last flu season. This situation could change as the current influenza season progresses. The remaining antivirals are both neuraminidase inhibitors; oseltamivir (Tamiflu—licensed for use in treatment and prophylaxis beginning at age 1 year) and zanamivir (Relenza—licensed for treatment beginning at age 5 years and prophylaxis at age 7 years).

Chemoprophylaxis is most useful in those whom the vaccine is contraindicated; in the 2 weeks after receipt of a vaccine, which is the time needed for it to be effective (2 weeks after the second dose in children receiving the vaccine for the first time); when the circulating virus does not

FAST TRACK

Children aged 6–59 months should receive influenza vaccination

TABLE 2

Vaccine products available

VACCINE	TRADE NAME (MANUFACTURER)	DOSE/ PRESENTATION	THIMEROSAL MERCURY CONTENT (MCG/HG/0.5-ML DOSE)	AGE GROUP	NO. OF DOSES	ROUTE
Inactivated						
TIV	Fluzone (Sanofi Pasteur)	0.25-mL prefilled syringe	0	6–35 mos	1 or 2*	IM†
		0.5-mL prefilled syringe	0	≥36 mos	1 or 2*	IM†
		0.5-mL vial	0	≥36 mos	1 or 2*	IM†
		5.0-mL multi-dose vial	25	≥6 mos	1 or 2*	IM†
TIV	Fluvirin	0.5-mL prefilled syringe	<1.0	≥4 years	1 or 2*	IM†
		5.0-mL multi-dose vial	24.5	≥4 years	1 or 2*	IM†
TIV	FLUARIX (Glaxo-SmithKline)	0.5-mL prefilled syringe	<1.25	≥18 years	1	IM†
Live, attenuated						
LAIV	FluMist (Medimmune)	0.5-mL sprayer	0	5–49 years	1 or 2‡	Intranasal**

* Two doses administered at least 1 month apart are recommended for children aged 6 months to <9 years who are receiving influenza vaccine for the first time.
† For adults and older children, the recommended site of vaccination is the deltoid muscle. The preferred site for infants and young children is the anterolateral aspect of the thigh.
‡ Two doses administered at least 6 weeks apart are recommended for children aged 5 to <9 years who are receiving influenza vaccine for the first time.
** One dose equals 0.5 mL, divided equally between each nostril.

match the vaccine; in those who are immune-suppressed and may have an inadequate response to the vaccine; and in nursing homes where there is an outbreak, when it should be used for everyone regardless of their vaccine status.

Treatment of those with influenza A can shorten the illness and reduce its severity if started within 2 days of symptoms. Details on antiviral recommendations and doses for treatment and prophylaxis can be found in the annual CDC influenza recommendations.[3]

Are rapid office lab tests useful?

The gold standard for laboratory confirmation of influenza is viral culture from a nasopharyngeal swab or washing. The time needed for this creates some difficulty initiating antiviral therapy within the two day window. Rapid, office-based tests are available and are listed in **TABLE 3**.[5] Some of these tests are specific for influenza A, others for influenza B, and some are for both. The sensitivities and specificities for each product vary. A negative test in a highly suspicious patient should not rule out the disease, especially in a high prevalence situation. In a low prevalence situation a positive test is more likely to be a false positive than when the virus is causing an outbreak in the community. ■

RESOURCES

1. American Academy of Family Physicians Web site. Clinical Care & Research. Immunization resources. Available at: www.aafp.org/online/en/home/clinical/

TABLE 3

Rapid (<30-minute) laboratory tests available for influenza

RAPID DIAGNOSTIC TESTS	INFLUENZA TYPE	APPLICATION METHODS
Directigen Flu A* (Becton-Dickinson)	A	NP swab, throat swab, nasal wash, nasal aspirate
Directigen Flu A+B* (Becton-Dickinson)	A and B†	NP swab, throat swab, nasal wash, nasal aspirate
Directigen EZ Flu A+B* (Becton-Dickinson)	A and B†	Throat swab, nasal wash, nasal aspirate
FLU OIA* (Thermo Electron)	A and B‡	NP swab, throat swab, nasal aspirate, sputum
FLU OIA A/B* (Thermo Electron)	A and B†	NP swab, throat swab, nasal aspirate, sputum
XPECT Flu A&B* (Remel)	A and B†	Nasal wash, NP swab, throat swab
NOW Influenza A & B* (Binax)	A and B†	Nasal wash, NP swab
QuickVue Influenza Test** (Quidel)	A and B‡	NP swab, nasal wash, nasal aspirate
QuickVue Influenza A+B Test** (Quidel)	A and B‡	NP swab, nasal wash, nasal aspirate
SAS Influenza A Test*	A†	NP wash, NP aspirate
SAS Influenza B Test*	A†	NP wash, NP aspirate
ZstatFlu† (ZymeTx)	A and B‡	Throat swab

Table may not include all test kits approved by the US Food and Drug Administration.
NP, nasopharyngeal

* Moderately complex test—requires specific laboratory certification.
† Distinguishes between influenza A and B virus infections.
‡ Does not distinguish between influenza A and B virus infections.
** CLIA-waived test. Can be used in any office setting. Requires a certificate of waiver or higher laboratory certification

Source: Centers for Disease Control and Prevention.[5]

immunizations.html. Accessed on September 21, 2006. Current immunization recommendations, information on ordering influenza vaccine and steps to take should there be a vaccine shortage.

2. Centers for Disease Control and Prevention (CDC) Web site. Influenza (flu). Available at: www.cdc.gov/flu/. Accessed on September 21, 2006. Information for health professionals and consumers on all aspects of influenza.
3. CDC. Prevention and control of influenza. *MMWR Recomm Rep* 2006; 55:(RR-10):1-42. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/rr5510a1.htm. Accessed on September 21, 2006. Annual update on recommendations for physicians on influenza diagnosis, treatment and prevention.
4. CDC Web site. Infection guidance for the prevention and control of influenza in acute care facilities. Available at: www.cdc.gov/flu/professionals/infectioncontrol/healthcarefacilities.htm. Accessed on September 21, 2006. Information on how to protect staff and patients from the spread of influenza in the office setting.
5. CDC. Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep* 2005; 54(RR-8):1–40. Available at: www.cdc.gov/flu/professionals/labdiagnosis.htm. Accessed on September 21, 2006.

FAST TRACK

Vaccination in nursing homes is best started in October to maximize the chance that protection will last for the whole flu season