

**OREGON STATE PUBLIC HEALTH DIVISION, DHS
IMMUNIZATION PROGRAM**

**INFLUENZA
TRIVALENT INACTIVATED VACCINE (TIV)***

2007-2008 Influenza Season updates based on ACIP recommendations issued in July 13, 2007 MMWR:

- All children ≥ 6 months but < 9 years of age who have not previously received any influenza vaccine should receive 2 doses of vaccine the first year they are vaccinated. Those who receive TIV should have these 2 doses separated by ≥ 4 weeks. (Section IV – footnote 6)
- All children ≥ 6 months but < 9 years of age who receive only 1 dose in their 1st year of influenza vaccine should receive 2 doses the following year; then a single annual dose thereafter. (Section IV – footnote 6)
- Highlighting previous recommendation that all persons, including school-aged children, who want to reduce the risk of influenza disease or transmitting it to others, should be vaccinated (Section III – p 3)

I. ORDER:

1. Screen for contraindications.
2. Provide the current Vaccine Information Statement (VIS), answering any questions.
3. Obtain a signed Vaccine Administration Record (VAR).
4. Give the dosage of influenza vaccine recommended for the recipient's age **intramuscularly** (IM).
 - a. May be given simultaneously with pneumococcal vaccine and all other routine adult and childhood immunizations according to age and immunization status of recipient.

*This order does not include FluMist® (live attenuated influenza vaccine), for which there is a separate standing order.

Signature

Health Officer or Medical Provider

Date

September 2007

II. U.S. Licensed Inactivated Trivalent Influenza Vaccines (Types A and B) 2007-2008			
Product Name	Vaccine Components	Acceptable Age Ranges	Thimerosal as a Preservative
Fluzone® (Sanofi)	A/Wisconsin/67/2005 (H3N2)-like, A/Solomon Islands/3/2006 (H1N1), and B/Malaysia/2506/2004-like antigens	≥6 months	Yes (multi-dose vial; 25 µg Hg/0.5 ml)
Fluzone® (Sanofi)	As above	6–35 months Pediatric dose	No (pre-filled 0.25-ml syringe)
		≥36 months	No (0.5-ml pre-filled syringe or vial)
Fluvirin™ (Novartis)	As above	≥4 years	No (0.5-ml pre-filled syringe)
Fluvirin™ (Novartis)	As above	≥4 years	Yes (multi-dose vial; 24.5 µ Hg/0.5 ml)
Fluarix™ (GSK)	As above	≥18 years	No (0.5-ml pre-filled syringe)
FluLaval™ (GSK)	As above	≥18 years	Yes (multi-dose vial; 25 µg Hg/0.5 ml)

III. RECOMMENDATIONS FOR USE

Persons for whom annual vaccination is recommended

- All persons, including school-aged children, who want to reduce the risk of becoming ill with influenza or of transmitting it to others
- Children aged 6-59 months¹;
- Women who will be pregnant during the influenza season²;
- Persons aged ≥ 50 years³;
- Children and adolescents (aged 6 months–18 years) receiving long-term aspirin therapy⁴;
- Persons with chronic disorders of the pulmonary or cardiovascular systems, including asthma (hypertension is not considered a high-risk condition);
- Persons with chronic metabolic diseases such as diabetes, renal dysfunction, or hemoglobinopathies;
- Persons with immunodeficiency (including immunodeficiency caused by medications or HIV);
- Persons with any condition (e.g., cognitive dysfunction, spinal cord injuries, seizure disorders, or other neuromuscular disorders) that can compromise respiratory function or the handling of respiratory secretions, or that can increase the risk for aspiration;
- Residents of nursing homes and other chronic-care facilities;
- Healthcare workers⁵
- Persons who live with or care for persons at high risk for influenza-related complications, including healthy household contacts and caregivers of children 0–59 months of age⁵

¹ Children aged 6–23 months are at increased risk for influenza-related hospitalizations, and children aged 24–59 months are at increased risk for influenza-related clinic and emergency department visits.

² Case reports and limited studies indicate that pregnancy can increase the risk for serious medical complications of influenza.

³ 50–64 –year-olds have an increased prevalence of high-risk conditions.

⁴ Might be at risk for experiencing Reye syndrome if they contract influenza.

⁵ Persons clinically or asymptotically infected can transmit influenza virus to persons at high risk for complications from this disease.

IV. VACCINE SCHEDULE

Trivalent Influenza Vaccine (TIV) Schedule for the 2007–2008 Flu Season ¹			
Age ²	Dose	No. of Doses	Route ³
6–35 months ⁴	0.25 ml	1 or 2 ⁶	Intramuscular
3–8 years	0.5 ml ⁵	1 or 2 ⁶	Intramuscular
≥9 years	0.5 ml ⁵	1	Intramuscular

¹ Contains 3 strains of influenza viruses. Specific strains change yearly.

² Split-virus and subunit inactivated vaccines (only type available in United States) are recommended for children aged <13 years. Split vaccines are associated with fewer adverse reactions among children than the previously produced whole-virus vaccines.

³ Recommended site of intramuscular injection is the deltoid for adults and older children and the anterolateral aspect of the thigh for infants and young children.

⁴ DO NOT vaccinate infants who are less than 6 months of age.

⁵ The 0.25 ml pre-filled syringe dose can be administered at two different anatomical sites to equal one 0.5 ml dose of inactivated influenza vaccine for person's ≥3 years of age.

⁶ Two doses administered ≥28 days apart are recommended for children <9 years of age who are receiving influenza vaccine for the first time. Ideally, both doses should be administered before December. The dose volume is determined by the child's age at the time of each dose. If a child <9 years of age receives vaccine for the first time and does not receive a 2nd dose of vaccine within the same season, 2 doses of vaccine should be administered the following season. Children who are in their third or more year of being vaccinated and who received only 1 dose of influenza vaccine in each of their first 2 years of being vaccinated should continue receiving a single annual dose.

V. SUPPLY AND TIMING RECOMMENDATIONS OF TIV VACCINE

1. Healthcare providers should begin offering vaccination to all patients, both high-risk and healthy, as soon after vaccine becomes available, and if possible by October.^{1, 2, 3}
2. To avoid missed opportunities for vaccination, providers should offer vaccination during routine health-care visits or during hospitalizations whenever vaccine is available.
3. Children aged 6 months–8 years who are recommended to receive two influenza vaccine doses this season should receive their first dose as soon after vaccine becomes available as is feasible, so both doses can be administered before the onset of influenza activity.
4. Vaccination efforts should continue throughout the season, because the duration of the influenza season varies, and influenza might not appear in certain communities until February or March.

¹ **Do not defer vaccination of any person who requests influenza vaccine unless vaccine supplies dictate otherwise.**

² Vaccination before October should typically be avoided for elderly patients in chronic-care facilities, because antibody levels in such persons can begin to decline more rapidly after vaccination

³ Adults have peak antibody protection against influenza virus 2 weeks after vaccination.

<p>VI. CONTRAINDICATIONS</p> <p>A. Persons who have experienced a severe allergic reaction to a previous dose of influenza vaccine.</p> <p>B. Inactivated influenza vaccine should not be administered to persons known to have anaphylactic hypersensitivity to eggs, the preservative thimerosal (in multi-dose vials only), or to other components of the influenza vaccine, without first consulting a physician.</p> <p>C. Delay the immunization of FluLaval™ in a person with an acute evolving, neurologic disorder until stabilized.</p>	<p>VII. PRECAUTIONS</p> <p>A. Persons with moderate or severe illnesses with or without fever should delay immunization until illness has resolved. However, minor illnesses with or without fever do not contraindicate use of influenza vaccine; e.g., children with mild URI or allergic rhinitis.</p> <p>B. Persons with a history of Guillain-Barré syndrome (GBS) following influenza vaccination have a substantially greater likelihood of subsequently developing GBS than persons without such a history. Whether influenza vaccination might be causally associated with this risk for recurrence is not known. Consult with an individual's health care provider and consider avoiding a subsequent influenza vaccination in persons known to have developed GBS within 6 weeks of a previous influenza vaccination. Experts believe that the benefits of influenza vaccination justify yearly vaccination for most persons who have a history of GBS and who are at risk for severe complications from influenza.</p> <p>C. Individuals with bleeding disorders at risk of hematoma following IM injection of FluLaval™</p>
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VIII. SIDE EFFECTS AND ADVERSE REACTIONS

Inactivated Influenza Vaccine Adverse Reactions	
Local reactions	15% – 20%
Fever, Malaise	Not Common
Allergic reactions	rare
Neurological reactions	very rare

Source: 10th Edition "Pink Book" January 2007 p. 247

IX. OTHER CONSIDERATIONS

A. Antiviral agents for Influenza:

1 Chemoprophylaxis is not a substitute for vaccination.

2. Zanamivir and oseltamivir are neuraminidase inhibitors that have activity against both influenza A and B viruses. Both are approved for the treatment of uncomplicated influenza infection. Zanamivir is approved for chemoprophylaxis of children aged ≥ 5 years.

Oseltamivir is approved for treatment for persons aged ≥ 1 year, and for chemoprophylaxis of persons aged ≥ 13 years.

For more information, consult package inserts or MMWR 2006; 55(RR-10):26–9.

3. Although the antiviral agents amantadine and rimantadine are available in the U.S., the ACIP recommended in 2006 that neither be used for treatment or chemoprophylaxis of influenza A until susceptibility to these antiviral medications has been re-established among circulating influenza A viruses.

B. Foreign travelers: Indications for influenza vaccination should be reviewed before travel. Any person, especially those at high risk for flu complications, who wants to reduce the risk for influenza infection should be vaccinated at least 2 weeks before departure.

C. Breast-feeding mothers: TIV is safe for mothers who are breastfeeding and their infants. Breastfeeding does not adversely affect the immune response and is not a contraindication for vaccination.

D. Persons infected with HIV: Since influenza can result in serious illness and complications, vaccination is prudent and will result in protective antibody levels in many recipients. However, the antibody response to vaccine may be low in persons with advanced HIV-related illnesses.

E. For someone with a history of fainting with injections, a 15-minute observation period is recommended after vaccination.

X. ADVERSE EVENTS REPORTING

Adverse events following immunization **should be reported by public providers to the Oregon State Public Health Immunization Program**, using a Vaccine Adverse Events Reporting System (VAERS) form, according to state guidelines. Private providers report all adverse events directly to VAERS.

VAERS phone number: (800) 822-7967, and the website address is: <http://www.vaers.org>

XI. REFERENCES

1. CDC. Prevention and Control of Influenza, MMWR 2007; 56(RR-6). Available at: <http://www.cdc.gov/mmwr/PDF/rr5606.pdf>.
2. Influenza. In: *Epidemiology and Prevention of Vaccine-Preventable Diseases* (“Pink Book”). Atkinson W, Hamborsky J, Wolfe S, eds. 10th ed. Washington, DC: Public Health Foundation, 2007:235–54. Available at: <http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm>
3. Influenza. In: Pickering LK, ed. *Red Book: 2006 Report of the Committee on Infectious Diseases*. 27th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2006:401–10.
4. Vaccine product inserts.

For more information and to clarify any part of the above order, consult with your health officer or contact the Oregon State Public Health Division Immunization Program at (971) 673-0300.

To download this order visit our website at
<http://oregon.gov/dhs/ph/imm/provider/stdgorder.shtml>
To request this material in an alternate format (e.g., braille),
please call (971) 673-0300.