County of San Diego

PHYSICIANS' BULLETIN

Health and Human Services Agency ◆ P.O. Box 85222, San Diego, CA ◆ 92186-5222 www.co.san-diego.ca.us/cnty/cntydepts/health

September 2003 *"Focusing on Families as Our Customers"* No. 444

Influenza Immunization Recommendations Released

Note: Medicare B reimburses for influenza vaccines.

The influenza recommendations for the 2003-2004 season include changed or updated information about: 1) **emphasis on the importance of vaccinating health care workers;** 2) influenza vaccine for children aged 6-23 months; 3) availability of certain influenza vaccine doses with reduced thimerosal content, including single .25mL-dose syringes; 4) the timing of influenza vaccination by age and risk group; 5) the 2003-2004 trivalent vaccine virus strains, which are: A/ Moscow/10/99 (H3N2)-like, A/New Caledonia/20/99 (H1N1)-like, and B/ Hong Kong/330/2001-like antigens; and 6) manufacturers of influenza vaccine for the U.S. market.

Importance of Vaccinating Health Care Workers

Beginning in October each year, health care facilities should offer influenza vaccine to all personnel, including night and weekend staff. Particular emphasis should be placed on providing vaccine for persons who care for members of groups at high risk. Health care personnel should be educated regarding the benefits of vaccination and the potential health consequences of influenza illness for themselves or their patients. Vaccination of health care workers and other persons in close contact with persons at increased risk for severe influenza illness can also reduce transmission of influenza and subsequent complications. Measures should be taken to provide all health care personnel convenient access to influenza vaccine at the work site, free of charge, as part of employee health programs.

Vaccination of Healthy Young Children

Because **children aged 6-23 months are at substantially increased risk for influenza-related hospitalizations,** ACIP, the American Academy of Pediatrics, and the American Academy of Family Physicians continue to **encourage vaccination of all children in this age group when feasible.** The benefits of a full recommendation to vaccinate all children aged 6-23 months will depend on the identification and implementation of practical and efficient annual influenza vaccination strategies for providers of health care to children. While these are developed, the identification of potential strategies for influenza vaccination of children,

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Recommended Influenza Vaccine* Dose By Age, 2003-2004

Age group †	Dose	Number of doses	Route §
6-35 mos.	0.25 mL	1 or 2¶	Intramuscular
3-8 yrs.	0.50 mL	1 or 2¶	Intramuscular
≥9 yrs.	0.50 mL	1	Intramuscular

* Contains 15 mg each of A/Moscow/10/99 (H3N2)-like, A/New Caledonia/ 20/99 (H1Nl)-like, and B/Hong Kong/330/2001-like antigens. For the A/ Moscow/ 10/99 (H3N2)-like antigen, manufacturers will use the antigenically equivalent A/Panama/2007/99 (H3N2) virus. For the B/Hong Kong/33012001-like antigen, manufacturers will use either B/Hong Kong/ 330/2001 or the antigenically equivalent B/Hong Kong/1434/2002. Manufacturers include Aventis Pasteur, Inc. (Fluzone® split); Evans Vaccines, Ltd. (Fluvirin™ purified surface antigen vaccine). Fluzone is Food and Drug Administration-approved for use among persons aged ≥6 months. Fluvirin is approved for use among persons aged ≥4 years. For further product information, call Aventis Pasteur at 800-822-2463, or Evans Vaccine, Ltd., at 800-200-4278.

† Because of their decreased potential for causing febrile reactions, only split-virus vaccines should be used for children aged <13 years. Splitvirus vaccine might be labeled as split, subvirion, or purified-surfaceantigen vaccine. Immunogenicity and side effects of split- and whole-virus vaccines are similar among adults when vaccines are administered at the recommended dosage. Whole-virus vaccine is not available in the United States.

§ 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 ≥1 month apart are recommended for children aged <9 years who are receiving influenza vaccine for the first time.

review of additional data from ongoing studies among children aged 6-23 months receiving influenza vaccine, and efforts to educate parents and providers regarding the impact of influenza and the potential benefits and risks of vaccinating young children will continue. ACIP continues to strongly recommend influenza vaccination of persons aged ≥6 months who have high-risk medical conditions.

The current inactivated influenza vaccine is not approved by FDA for use among children aged <6 months, the pediatric group at greatest risk for influenza-related complications (7). Therefore, **vaccinating their household contacts and out-of-home caretakers might decrease the probability of influenza among these children.**

Beginning in March 2003, the group of **children eligible for influenza vaccine coverage under the Vaccines for Children (VFC) program was expanded to include all VFC-eligible children aged 6-23 months and VFC-eligible children aged 2-18 years who are household contacts** of children aged 0-23 months.

Thimerosal and Influenza Vaccine

Due to the infant recommendations cited above, for the 2003-04 influenza season a **limited number of individually packaged doses** (i.e., single-dose syringes) **of preservative-free influenza vaccine** (<1 mcg mercury/0.5 mL dose) **will be available,** including single-dose vaccine pack-aged in doses of 0.5 mL (dose for persons aged ≥3 years) and 0.25 mL (dose for children 6-35 months). **Reduced thimerosal-content vaccine is available both from Evans Vaccines, Ltd.** (FDA-approved for persons aged ≥4 years) **and from Aventis Pasteur** (FDA-approved for persons aged ≥6 months). Multidose vials and single-dose syringes of influenza vaccine containing approximately 25 mcg thimerosal/0.5 mL dose are also available, as they have been in previous years.

Most influenza vaccine distributed in the U.S. contains thimerosal, a mercury-containing compound, used as a preservative in U.S. vaccines since the 1930s. Although no evidence of harm caused by low levels of thimerosal in vaccines has been reported, the U.S. Public Health Service and other organizations recommended in 1999 that efforts be made to reduce the thimerosal content in vaccines to decrease total mercury exposure, chiefly among infants and pregnant women.

Because of the known risks of severe illness from influenza infection and the benefits of vaccination and because a substantial safety margin has been incorporated into the health guidance values for organic mercury exposure, the benefit of influenza vaccine with reduced or standard thimerosal content outweighs the theoretical risk, if any, from thimerosal (11-12).

2003-2004 Vaccine Composition and Recommendations

The recommended vaccine for the coming flu season contains protection against the same strains as last season. Although the current vaccine can contain one or more antigens used in previous years, immunity declines during the year following vaccination. Therefore, a history of vaccination for the previous season does not preclude the need to be revaccinated. *Also, it is important that vaccine from the last flu season not be used this season, as it will have expired.*

Influenza vaccine is strongly recommended for anyone ≥6 months of age who, because of age or underlying medical condition, is at increased risk for complications of influenza. Health care workers and others (including household members) in close contact with high-risk groups also should be vaccinated. *Due to the possibility of vaccine supply problems, persons who fall into the categories below (***Groups at Increased Risk** and **Groups That Can Transmit Influenza to Persons at High Risk***) should be encouraged to get vaccine in October and earlier, whereas other groups should be considered for vaccine in November or later.*

Groups at Increased Risk

Specifically, the following groups should be encouraged to receive protection, according to the latest CDC guidelines:

1. Persons aged ≥50 years;
2. Residents of nursing homes and other chronic-care facilities that house persons of any age who have chronic medical conditions;
3. Children and adults who have chronic disorders of the cardiovascular or pulmonary systems, including asthma;

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The *Physicians' Bulletin* is published on an as-needed basis by the County of San Diego Health and Human Services Agency to provide updated information on health issues of concern to San Diego County's medical community.

4. Children and adults who have required regular medical follow-up or hospitalization during the preceding year because of chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies (including anemia), or immunosuppression (e.g., caused by medications or human immunodeficiency virus [HIV]);
5. Persons aged 6 months-18 years who are receiving long-term aspirin therapy and therefore might be at risk for developing Reye syndrome after influenza; and
6. Women who will be in the second or third trimester of pregnancy during the influenza season.

Influenza vaccination levels have increased substantially for seniors, however, further improvements are needed, particularly among persons at high risk aged <65 years. The ACIP recommends the use of strategies to improve vaccinations levels, including the use of reminder/recall systems and standing orders programs.

Vaccination of Persons Aged 50-64 Years

Vaccination is recommended for persons aged 50-64 years because this group has an increased prevalence of persons with high-risk conditions. Influenza vaccine has been recommended for this entire age group to increase the low vaccination rates among persons in this age group with high-risk conditions. Persons aged 50-64 years without high-risk conditions also benefit from vaccination in the form of decreased rates of influenza illness, decreased work absenteeism, and decreased need for medical visits and medication, including antibiotics (1-4). Further, 50 years is an age when other preventive services begin and when routine assessment of vaccination and other preventive services has been recommended (5-6).

Groups That Can Transmit Influenza to Persons at High Risk

The following groups also should be encouraged to receive vaccine:

1. Physicians, nurses and other personnel in both hospital and outpatient care settings, including emergency response workers;
2. Employees of nursing homes and chronic-care facilities who have contact with patients or residents;
3. Employees of assisted living and other residences for persons in high-risk groups;
4. Providers of home care to persons at high risk (e.g., visiting nurses, volunteer workers); and,
5. Household members (including children) of persons in high-risk groups.

Side Effects and Adverse Reactions

When educating patients about potential side effects, clinicians should emphasize that: 1) inactivated influenza vaccine contains noninfectious killed viruses and cannot cause influenza; and 2) coincidental respiratory disease unrelated to influenza vaccination can occur after vaccination.

Local Reactions

In placebo-controlled studies among adults, the most frequent side effect of vaccination is soreness at the vaccination site (affecting 10%-64% of patients) that lasts <2 days. These local reactions typically are mild and rarely interfere with the person's ability to conduct usual daily activities. One blinded, randomized crossover study among 1,952 adults and children with asthma demonstrated that only body aches were reported more frequently after inactivated influenza vaccine (25.1%) than placebo-injection (20.8%).

Systemic Reactions

Fever, malaise, myalgia, and other systemic symptoms can occur after vaccination and most often affect persons who have had no prior exposure to the influenza virus antigens in the vaccine (e.g., young children). These reactions begin 6 to 12 hours after vaccination and can persist for 1 or 2 days. Recent placebo controlled trials suggest that among elderly persons and healthy young adults, administration of split-virus influenza vaccine is not associated with higher rates of systemic symptoms (e.g., fever, malaise, myalgia, and headache) when compared with placebo injections.

Immediate, presumably allergic, reactions (such as hives, angioedema, allergic asthma, or systemic anaphylaxis) rarely occur after influenza vaccination. These reactions probably result from hypersensitivity to certain vaccine components, most likely residual egg protein. Protocols have been published for safely administering influenza vaccine to persons with severe egg allergies(8-10).

Timing of Influenza Vaccine Activities

The optimal time to vaccinate persons in groups at high risk is usually during October-November. However, to avoid missed opportunities for vaccination, influenza vaccine should be offered to persons at high risk when they are seen by health-care providers for routine care or are hospitalized in September, provided that vaccine is available. In facilities housing older persons (e.g., nursing homes), vaccination before October typically should be avoided because antibody levels in such persons can begin to decline within a limited time after vaccination. **In addition, health-care providers should also continue to offer vaccine to unvaccinated persons after November and throughout the influenza season even after**

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influenza activity has been documented in the community. In the United States, seasonal influenza activity can begin to increase as early as November or December but has not reached peak levels in the majority of recent seasons until late December through early March. Therefore, although the timing of influenza activity can vary by region, vaccine administered after November is likely to be beneficial in most influenza seasons. Adults develop peak antibody protection against influenza infection 2 weeks after vaccination.

Persons planning substantial organized vaccination campaigns should consider scheduling these events after mid-October because the availability of vaccine in any location cannot be ensured consistently in the early fall. Scheduling campaigns after mid-October will minimize the need for cancellations because vaccine is unavailable. Campaigns conducted before November should focus efforts on vaccination of persons at high risk, health-care workers, and household contacts of persons at high risk to the extent feasible.

Children <9 years of age who have not been vaccinated previously should receive two doses of vaccine at least 1 month apart to maximize the likelihood of a satisfactory antibody response to all three vaccine antigens. The second dose should be administered before December, if possible. Vaccination efforts for all groups should continue into December and later as long as influenza vaccine is available.

Influenza Mortality

Epidemics of influenza typically occur during the winter months and are responsible for an average of approximately 36,000 deaths per year in the U.S during 1990-99 (13). In San Diego County, which contains approximately 1 percent of the U.S. population, it is therefore likely that about 360 deaths from influenza and its complications will occur each year.

Influenza Vaccine Cost-Effectiveness

Influenza vaccination can help prevent at least some of these deaths and also reduce both health-care costs and productivity losses associated with influenza illness. Economic studies of influenza vaccination of persons aged ≥65 years conducted in the U.S. have reported overall societal cost-savings and substantial reductions in hospitalization and death (14, 15, 16). Studies of adults aged <65 years have reported that vaccination can reduce both direct medical costs and indirect costs from work absenteeism. Also, in a study that included all age groups, cost-utility improved with increasing age and among those with chronic medical conditions (17).

Influenza Vaccination and Reduction in Hospitalizations

Despite the fact that influenza and its consequences are well recognized, the number of at-risk individuals for serious sequelae to an influenza infection who receive vaccination remains suboptimal. Perhaps some clinicians remain unconvinced of the efficacy of influenza vaccine to reduce important outcomes. **Nichol and colleagues studied the effect of influenza vaccine in 2 successive flu seasons (1998-1999 and 1999-2000) upon a large cohort** (n=140,000) **of senior citizens aged 65 or older,** which represent pooled data from 3 large managed-care organizations.

In each of these 2 influenza seasons, just over half of the population were immunized (55.5, 59.7%, respectively). Outcomes measured included odds of hospitalization for cerebrovascular disease, cardiac disease, and pneumonia or influenza. All-cause mortality was also assessed.

Influenza vaccination was associated with reductions in all outcomes measures, including 16-23% for cerebrovascular disease, 19% for cardiac disease, and 29-32% for pneumonia or influenza. **Influenza vaccination was associated with a 48-50% reduction in all-cause mortality.**

Only about two-thirds of senior citizens in States received influenza vaccination in 2001, leaving a very substantial gap from the intended current goal of 90% immunization. Perhaps such robust associations of influenza vaccine with favorable outcomes will stimulate clinicians to re-invigorate their energies toward enhanced vaccination.

Source: Nichol KL, et al. *N Engl J Med.* 2003;348:1322-1332.

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Status of Live, Attenuated Intranasal Influenza Vaccine

On June 17, 2003, the Food and Drug Administration (FDA) **approved an intranasal, trivalent, cold-adapted, live, attenuated influenza vaccine** (LAIV) **for use in healthy persons aged 5-49 years to prevent influenza A and B.** Inactivated influenza vaccine continues to be available and is indicated for persons aged 6 months and older, who either are healthy or have chronic medical conditions.

LAIVs are currently being used in Russia and have been under development in the U.S. since the 1960s (17-21). LAIVs consist of live viruses that replicate in the upper respiratory tract, that induce minimal symptoms (i.e., are attenuated) and that replicate poorly at temperatures found in the lower respiratory tract (i.e., are

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temperature-sensitive). Possible advantages of LAIVs are their potential to induce a broad mucosal and systemic immune response, ease of administration, and the acceptability of an intranasal rather than intramuscular route of administration.In a 5-year study that compared trivalent inactivated vaccine and bivalent LAIVs (administered by nose drops) and that used related but different vaccine strains, the two vaccines were determined to be approximately equivalent in terms of effectiveness. However, no study has directly compared the efficacy or effectiveness of trivalent inactivated vaccine and trivalent LAIV.

Antiviral Agents: Amantadine, Rimantadine, Zanamivir and Oseltamivir

Physicians should note that none of the antiviral agents is a substitute for influenza vaccine, although they are critical adjuncts in the prevention and control of influenza.

None of the four antiviral agents has been demonstrated to be effective in preventing serious influenza-related complications (e.g. bacterial or viral pneumonia or exacerbation of chronic diseases). Evidence for the effectiveness of these four antiviral drugs is based principally on studies of patients with uncomplicated influenza. Data are limited and inconclusive concerning the effectiveness of amantadine, rimantadine, zanamivir, and oseltamivir for treatment of influenza among persons at high risk for serious complications of influenza.

When considering the use of influenza antiviral medications (i.e., choice of antiviral drug, dosage, and duration of therapy), clinicians must consider the patient's age, weight, and renal function; presence of other medical conditions; indications for use (i.e., prophylaxis or therapy); and the potential for interaction with other medications.

When determining the timing and duration for administering influenza antiviral medications for prophylaxis, factors related to cost, compliance and potential side effects should be considered. To be maximally effective as prophylaxis, the drug must be taken each day for the duration of influenza activity in the community. However, to be most cost-effective, one study of amantadine or rimantadine prophylaxis reported that the drugs should be taken only during the period of peak influenza activity in a community (22).

Note: The current guidelines for all antiviral agents, including a recommended dosage chart, are in the April 25, 2003 Morbidity and Mortality Weekly Report (MMWR) on influenza (vol. 52, No. RR-8). Please see page 6 of this Bulletin for a copy of the chart, and see web resources listed on pages 7-8.

Amantadine and **rimantadine** are two chemically related drugs which interfere with the replication cycle of **type A (but not type B)** influenza viruses. These drugs do not interfere with the antibody response to influenza vaccine (23). They can be used prophylactically or therapeutically. As with all drugs, they may cause adverse reactions in some persons.

Therapeutic Use: In otherwise healthy adults, amantadine or rimantadine can reduce by approximately one day the duration of signs and symptoms of uncomplicated influenza illness caused by **type A** virus when administered within 48 hours of illness onset.

Prophylactic Use: When administered prophylactically to healthy adults or children before and throughout the epidemic period, both drugs are approximately 70-90 percent effective in preventing illness caused by naturally occurring strains of **type A** influenza viruses. Both have been studied extensively among nursing home populations as a component of influenza outbreak control programs, which can limit the spread of influenza within chronic care institutions (24-28). In addition to the use of antiviral medications, other outbreak control measures include instituting droplet precautions and establishing cohorts of patients with confirmed or suspected influenza, re-offering influenza vaccinations to unvaccinated staff and patients, restricting staff movement between wards or buildings, and restricting contact between ill staff or visitors and patients.

Zanamivir (an inhalant), and **oseltamivir** (a pill), two other prescription antiviral drugs, were approved in 1999 by the FDA for treatment of uncomplicated influenza illness caused by **type A and B** virus. Then, in 2000, oseltamivir was approved for prophylaxis as well as treatment for both **types A and B** virus. Again, as with all drugs, they may cause adverse reactions in some persons.

Therapeutic Use: In otherwise healthy adults, zanamivir and oseltamivir can reduce the duration of signs and symptoms of uncomplicated influenza A and B illness by approximately one day when administered within 48 hours of illness onset.

Note that zanamivir treatment of influenza-like illness among persons with asthma or chronic obstructive pulmonary disease can result in respiratory function deterioration. If physicians decide to prescribe zanamivir to patients with underlying chronic respiratory disease after carefully considering potential risks and benefits, the drug should be used with caution under conditions of proper monitoring and supportive care, including the availability of short-acting bronchodilators. No clear evidence is available regarding the safety or efficacy of zanamivir for persons with underlying respiratory or cardiac disease or for persons with complications of acute influenza.

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Prophylactic Use (oseltamivir only): Community studies of healthy adults indicate that oseltamivir is 82% effective in preventing febrile, laboratory-confirmed influenza illness. One 6-week study of oseltamivir prophylaxis among nursing home residents found a 92% reduction in influenza illness(29, 30).

Again, current guidelines for all antiviral agents can be found on page 6 of this Bulletin and in the April 25, 2003 MMWR on influenza.

It is important to stress to patients that none of these antiviral drugs is a substitute for influenza vaccine. Immunization is the most effective way to prevent the flu.

Influenza Vaccine Campaign Offers Opportunity to Provide Other Needed Adult Vaccines

Seniors and others at high risk of complications from influenza visit medical care providers each fall to receive influenza vaccine. Medical care providers should use this opportunity to evaluate these adults for other needed vaccines as well. Recommended vaccines are listed below.

Pneumococcal polysaccharide vaccine (PPV-23) is effective against the 23 most common strains of *Streptococcus Pneumoniae*, a bacterial pathogen that causes illness and death, especially among the elderly and among persons who have certain medical conditions. *S. pneumoniae* has become increasingly

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Recommended Daily Dosage of Influenza Antiviral Medications for Treatment and Prophylaxis

Antiviral agent	Age group (yrs) 1–6	7–9	10–12	13–64	≥65
Amantadine*					
Treatment, influenza A	5 mg/kg/day up to 150 mg in 2 divided doses†	5 mg/kg/day up to 150 mg in 2 divided doses†	100 mg twice daily§	100 mg twice daily§	≤100 mg/day
Prophylaxis, influenza A	5 mg/kg/day up to 150 mg in 2 divided doses†	5 mg/kg/day up to 150 mg in 2 divided doses†	100 mg twice daily§	100 mg twice daily§	≤100 mg/day
Rimantadine¶					
Treatment,** influenza A	NA††	NA	NA	100 mg twice daily§ §§	100 mg/day
Prophylaxis, influenza A	5 mg/kg/day up to 150 mg in 2 divided doses†	5 mg/kg/day up to 150 mg in 2 divided doses†	100 mg twice daily§	100 mg twice daily§	100 mg/day¶¶
Zanamivir* †††					
Treatment, influenza A and B	NA	10 mg twice daily	10 mg twice daily	10 mg twice daily	10 mg twice daily
Oseltamivir					
Treatment,§§§ influenza A and B	Dose varies by child's weight¶¶¶	Dose varies by child's weight¶¶¶	Dose varies by child's weight¶¶¶	75 mg twice daily	75 mg twice daily
Prophylaxis, influenza A and B	NA	NA	NA	75 mg/day	75 mg/day

NOTE: Amantadine manufacturers include Endo Pharmaceuticals (Symmetrel® — tablet and syrup); Geneva Pharms Tech and Rosemont (Amantadine HCL — capsule); USL Pharma (Amantadine HCL — capsule and tablet); and Alpharma, Copley Pharmaceutical, HiTech Pharma, Mikart, Morton Grove, Carolina Medical, and Pharmaceutical Associates (Amantadine HCL — syrup). Rimantadine is manufactured by Forest Laboratories (Flumadine® — tablet and syrup) and Corepharma, Impax Labs (Rimantadine HCL — tablet), and Amide Pharmaceuticals (Rimantadine ACL — tablet). Zanamivir is manufactured by GlaxoSmithKline (Relenza® — inhaled powder). Oseltamivir is manufactured by Hoffman-LaRoche, Inc. (Tamiflu® — tablet). This information is based on data published by the Food and Drug Administration (FDA), which is available at http://www.fda.gov.

* The drug package insert should be consulted for dosage recommendations for administering amantadine to persons with creatinine clearance ≤50 mL/min/1.73m^2.

† 5 mg/kg of amantadine or rimantadine syrup = 1 tsp/22 lbs.

§ Children aged ≥10 years who weigh <40 kg should be administered amantadine or rimantadine at a dosage of 5 mg/kg/day.

¶ A reduction in dosage to 100 mg/day of rimantadine is recommended for persons who have severe hepatic dysfunction or those with creatinine clearance ≤10 mL/min. Other persons with less severe hepatic or renal dysfunction taking 100 mg/day of rimantadine should be observed closely, and the dosage should be reduced or the drug discontinued, if necessary.

** Only approved by FDA for treatment among adults.

†† Not applicable.

§§ Rimantadine is approved by FDA for treatment among adults. However, certain specialists in the management of influenza consider rimantadine appropriate for treatment among children (see American Academy of Pediatrics. 2000 red book: report of the Committee on Infectious Diseases. 25th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2000).

¶¶ Older nursing-home residents should be administered only 100 mg/day of rimantadine. A reduction in dosage to 100 mg/day should be considered for all persons aged ≥65 years, if they experience possible side effects when taking 200 mg/day.

*** Zanamivir is administered through inhalation by using a plastic device included in the medication package. Patients will benefit from instruction and demonstration of correct use of the device.

††† Zanamivir is not approved for prophylaxis.

§§§ A reduction in the dose of oseltamivir is recommended for persons with creatinine clearance <30 mL/min.

¶¶¶ The dose recommendation for children who weigh ≤15 kg is 30 mg twice a day. For children who weigh >15–23 kg, the dose is 45 mg twice a day. For children who weigh >23–40 kg, the dose is 60 mg twice a day. And, for children who weigh >40 kg, the dose is 75 mg twice a day.

Source: CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2003;52(No. RR-8):20.

resistant to antibiotics. Annual cases of invasive pneumococcal infections in the United States include 500,000 cases of pneumonia, 3000 cases of meningitis and 50,000 cases of bacteremia. The pneumococcal vaccine is recommended for persons age 65 and over. It is also recommended for anyone age 2 years and over with chronic illness, asplenia, or immune compromising conditions. Children 24 months of age and older, who have already received one or more doses of Pneumococcal Conjugate Vaccine 7-valent (PCV-7) and who are at high risk of invasive pneumococcal disease will benefit from the additional serotypes included in PPV-23. Vaccination with PPV-23 should be considered for these high risk children. PPV-23 should be given no sooner than 2 months after the last dose of PCV-7. Complete information on PPV-23 and the "one time revaccination recommendations" are available in the Centers for Disease Control & Prevention's April, 1997 report, *Prevention of Pneumococcal Disease, Recommendations of the Advisory Committee on Immunization Practices (ACIP).* This document is available on the CDC website noted below. While pneumococcal vaccine is not a substitute for the annual flu shot, it can provide protection against a major complication of influenza. Physicians should ensure that their senior and high-risk patients have received this important vaccine protection as an adjunct to their annual flu shot.

Measles, mumps and rubella combination vaccine (MMR) is advised for anyone born since 1957 and two doses are advised for most persons.

Tetanus and diphtheria vaccine (Td) is recommended every 10 years for those adults who have completed a basic Td series. Many persons born before the 1940s have never completed the basic 3-dose series of tetanus- and diphtheria-containing vaccine. These seniors should be given the Td vaccine series.

Varicella vaccine is also advised for those who do not have a history of chickenpox disease. Note, however, that epidemiologic and serologic studies indicate that ≥90% of adults are immune to varicella, including those who do not recall having had chickenpox. As a result, serologic testing prior to vaccination is likely to be cost effective for adults.

Hepatitis B vaccine is recommended for those at risk because of occupation or lifestyle.

Physicians are urged to capitalize on office visits by those at risk for influenza to provide all needed vaccines. To receive a free chart on adult vaccine recommendations, call the Immunization Program at (619) 692-8661.

Influenza and Immunization Resources

The CDC's 2003 report, *Prevention and Control of Influenza, Recommendations of the Advisory Committee on Immunization Practices (ACIP),* (MMWR Volume 52, No. RR-8) includes information on the disease, vaccine, target groups, strategies and the use of antiviral agents in preventing and/or treating influenza. **For a copy of this report, please go to the CDC website noted below or call the Immunization Program at (619) 692-8661.**

The following is a list of World Wide Web sites for accessing information and promotional materials on influenza, influenza vaccine and related topics:

www.cdc.gov/nip/Flu/Provider.htm: This is the CDC National Immunization Program's flu site, and contains information about vaccine supply, flu treatment and management, a weekly flu activity report, and other items. There is a gallery of patient educational materials developed for the 2003-2004 flu season. The gallery contains downloadable black and white master copies suitable for an office photocopier, and color masters intended for reproduction by commercial printers.

www.cdc.gov/ncidod/diseases/flu/fluvirus.htm: In addition to the CDC's influenza reports mentioned above, this site contains pneumococcal vaccine educational materials and weekly influenza surveillance reports beginning in October. This site has a wide variety of links to other sites with fact sheets for providers and patients.

www.cmri-ca.org/healthcare_prevent-immun.html: California Medical Review, Inc., the Medicare quality assurance organization, provides specific information on Medicare billing, including roster billing. "Immunization Tip Sheets for Providers" detail how to organize systems to promote flu and pneumococcal vaccines in different settings. Free postcards (non-postage-paid), pamphlets and posters for California Medicare providers can be ordered online, by phone (877-363-5555) or fax (877-364-5555). There are also many links to other sites with pertinent information.

www.sdchip.org: This site contains information about Community Health Improvement Partners (CHIP), a collaboration of health care organizations, providers and community groups working in San Diego County to increase awareness of and responsiveness to community health needs. This web site will feature a list of more than 300 locations in San Diego County where flu shots will be offered (when vaccine becomes available). Also, the site has downloadable flu and pneumococcal information in English and 7 other languages, and links to other immuni-

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zation-related web sites.

www.immunization-sd.org: The San Diego County Immunization Initiative website contains immunization information specifically for local health care providers, such as flu shot clinic days, times and locations (when that information becomes available, usually in late September). There are also links to other websites, such as the CDC's influenza information site.

www.immunize.org: The Immunization Action Coalition has a wealth of print materials that can be downloaded and reproduced. Included are childhood and adult materials and official Vaccine Information Statements including, *"Influenza Vaccine, What You Need To Know"* in many languages. Note that this last document is to be given to patients to read before flu vaccine is administered. It does NOT contain an area for the patient's signature. Also, note that the California DHS web site has the version of the Vaccine Information Statement, in English and Spanish, with the consent portion attached (**http://www.dhs.ca.gov/ps/dcdc/izgroup/flu.htm**).

www.immunizeseniors.org: This site contains information especially for senior citizens, sponsored by the American Society of Consultant Pharmacists.

www.hcfa.gov/quality/3g.htm: This is the Health Care Financing Administration (HCFA) site about the influenza/pneumococcal campaign. It also contains information on Medicare, Medicaid and other programs, including how they relate to influenza vaccine. This site contains a link to **http://cms.hhs.gov**, the site for the Centers for Medicare and Medicaid Services (CMS). CMS is HCFA's new name.

www.nfid.org: Web site of the National Foundation for Infectious Diseases (NFID), which offers information on various infectious diseases and has an "influenza web presentation."

www.nfid.org/ncai: This part of NFID's site is devoted to the National Coalition for Adult Immunization. It offers adult immunization standards, schedules, recommendations, fact sheets and more. The Coalition promotes National Adult Immunization Awareness Week each October (Oct. 12-18 in 2003) and has reproducible materials available.

http://www2.sdcounty.ca.gov/hhsa/ServiceCategory Details.asp?ServiceAreaID=29: This is the County of San Diego Health and Human Services Agency website, which has location and contact information for clinics which provide low-cost childhood and adult immunizations. *(Please note that influenza immunization clinic information will probably not be available at this site until early October, when the specifics of the flu shot clinics are finalized.)*

2003-2004 Influenza Vaccine Manufacturers/Distributors

Aventis-Pasteur, Inc. (*Fluzone*®)
1-800-VACCINE (1-800-822-2463)

Evans Vaccine, Ltd. (***Fluvirin***®)
1-800-200-4278

Source Notes

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