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CD SUMMARY
February 17, 2006
Vol. 55, No. 3

PERIODICALS
POSTAGE
PAID
Portland, Oregon

INFLUENZA UPDATE

THE 25TH WEEK of our current season expired on Saturday, March 25. During that week, RT-PCR testing or culture identified 26 cases of influenza, of which 11 (42%) were type B. Cumulative counts for the season now comprise 487 type A (93%) and 34 (7%) type B. Last season at this time found us with 622 positive reports, 33% of which were type B. Our current seasonal peak week of laboratory-confirmed influenza was the third week of December 2005 (which ended on the 24th), during which 74 (54%) of 138 specimens submitted to "rule out flu" were found to contain influenza virions.

A secondary wave began during the 4th week of February when we experienced a steady influx of type B virions in Oregon as well as an increase in cases of type A . The secondary wave is undoubtedly the result of the arrival of strains more akin to A/Wisconsin/67/2005 (H3N2) and B/Victoria/2/87. We project that community transmission of influenza will continue to middle of April, if not beyond.

VACCINE COMPOSITION FOR 2006–07

WHO has recommended that the 2006–07 trivalent influenza vaccine for the Northern Hemisphere contain A/New Caledonia/20/99-like (H1N1), A/Wisconsin/67/2005-like (H3N2), and B/Malaysia/2506/2004-like viruses. The influenza A (H3N2) and the influenza B components have been changed from those of the 2005–06 season vaccine. A/Wisconsin/67/2005 is an antigenic variant of the current vaccine strain A/California/07/2004. Influenza B viruses currently circulating can be divided into two antigenically distinct lineages represented by B/Yamagata/16/88 and B/Victoria/2/87 viruses. The updating of the influenza B component to B/Ohio/1/2005 (which is antigenically equivalent to B/Malaysia/2506/2004) represents a change to the B/Victoria lineage. This recommendation was based on antigenic analyses of recently isolated influenza viruses, epidemiologic data, and post-vaccination serologic studies in humans.

The FDA Vaccines and Related Biological Products Advisory Committee met on February 17 of this year and selected the same components recommended by the WHO. An interesting future meeting will debate the merits of producing a quadrivalent vaccine comprising equal numbers of types A and B strains, given the continuing seasonal appearance of both the B/Victoria and B/Yamagata lineages. Recent type B isolates studied by CDC have shown approximately equal numbers of both lineages.

ACIP RECOMMENDATIONS FOR 2006–07

The CDC Advisory Committee on Immunization Practices recommended adding another age grouping to the listing for prioritizing the distribution of vaccine to lessen the burden of influenza. The new grouping includes all children ⩾2 but <5 years of age. It is currently recommended that all children from 6 months of age up to 5 years of age now receive influenza vaccine. In addition, all household contacts of these children and others spending significant time with them, including care givers, are recommended for routine vaccination.

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THE 2006 CHILDHOOD AND ADOLESCENT IMMUNIZATION SCHEDULES

EACH YEAR, CDC produces a schedule of recommended immunizations for children. This year's schedule reflects the latest disquisition by CDC's Advisory Committee on Immunization Practices (ACIP), in which it addressed new vaccines for whooping cough and meningococcal disease and revised existing recommendations for a handful of other vaccines. [1]

Changes from last year's childhood and adolescent schedules are as follows:

TDAP APPROVED

A new tetanus, diphtheria, and acellular pertussis vaccine (Tdap) was approved for use in adolescents by the Food and Drug Administration (FDA) in May 2005.

Teens 11–12 years of age should get a booster with Tdap after completing their recommended childhood DTaP series.

If the adolescent misses the Tdap booster at the 11–12-year-old visit, it can be administered anytime between 13 and 18 years of age.

The catch-up schedule for persons aged 7–18 years has been changed for Td; Tdap may be substituted for any one dose in a primary catch-up series or as a booster for persons age-appropriate for Tdap. A 5-year interval from the last Td dose is encouraged when Tdap is used as a booster dose. This schedule can be found at *http://www.cdc.gov/nip/recs/child-schedule.htm.*

This new booster vaccine should go a long way toward reducing the acute, infectious cough of pertussis that has remained endemic in the United States for the past 50 years despite routine childhood pertussis vaccinations.[2] Look for a more detailed discussion of this exciting new vaccine in an upcoming issue of the CD Summary.

MENINGOCOCCAL CONJUGATE VACCINE

The new quadrivalent meningococcal conjugate vaccine (MCV4, Menactra™) was approved by FDA on January 14, 2005.

Because adolescents and young adults are at increased risk for contracting meningococcal disease, ACIP recommends that this vaccine, which protects against meningococci of serogroups A, C, Y, and W-135, be routinely administered to all children at age 11–12 years as well as to unvaccinated adolescents at high-school entry (i.e., at about age 15 years).

All college freshmen living in dormitories should also be vaccinated with MCV4. Children aged 2–10 years in certain high-risk groups should continue to receive quadrivalent meningococcal *polysaccharide* vaccine (MPSV4, Menomune®).[3]

HEP B VACCINE AT BIRTH

The 2006 schedule recommends that neonates routinely get their first dose of hepatitis B vaccine at birth , a strategy that provides a "safety net" for the prevention of perinatal HBV infections.

Hepatitis B vaccination at birth should be deferred only in rare instances, and only if a copy of the lab report assuring the mother's negative HBsAg status during this pregnancy and a physician's order to withhold the birth dose are documented in the infant's medical record.

Administering four doses of hep B vaccine is permissible (e.g., when combination vaccines are administered after the birth dose).

Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg after completion of the vaccine series, at age 9–18 months (generally at the next well-child visit after completion of the vaccine series).

HEP A VACCINE AT AGE 1

Hepatitis A vaccine, initially licensed for those 2 and above, is now recommended for all children beginning at age 1 year (i.e., 12–23 months). The 2 doses in the series should be administered at least 6 months apart.

FLU RECS BROADENED

Although this schedule shows influenza vaccine as recommended only for children aged ⩾6 months with certain risk factors, ACIP voted on February 22 to recommend that **all children ⩾6 months and <5 years of age should be vaccinated against influenza** starting in the 2006/07 flu season (i.e., this fall). Vaccine supply issues may make implementation of this recommendation tricky. Look for a more detailed discussion of this new recommendation in an upcoming issue of the *MMWR.*

For the most up-to-date model standing immunization orders for Oregon, check our Immunization Program's web site at *http://oregon.gov/dhs/ph/imm/index.shtml.*

Detailed recommendations for vaccines are also available in the manufacturers' package inserts, ACIP statements on specific vaccines, and the American Academy of Pediatrics Committee on Infectious Diseases.[5]

REFERENCES

1. CDC. Recommended childhood and adolescent immunization schedule-United States, 2006. MMWR 2006;54:Q1-4.
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4. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2005;54(No. RR–8).
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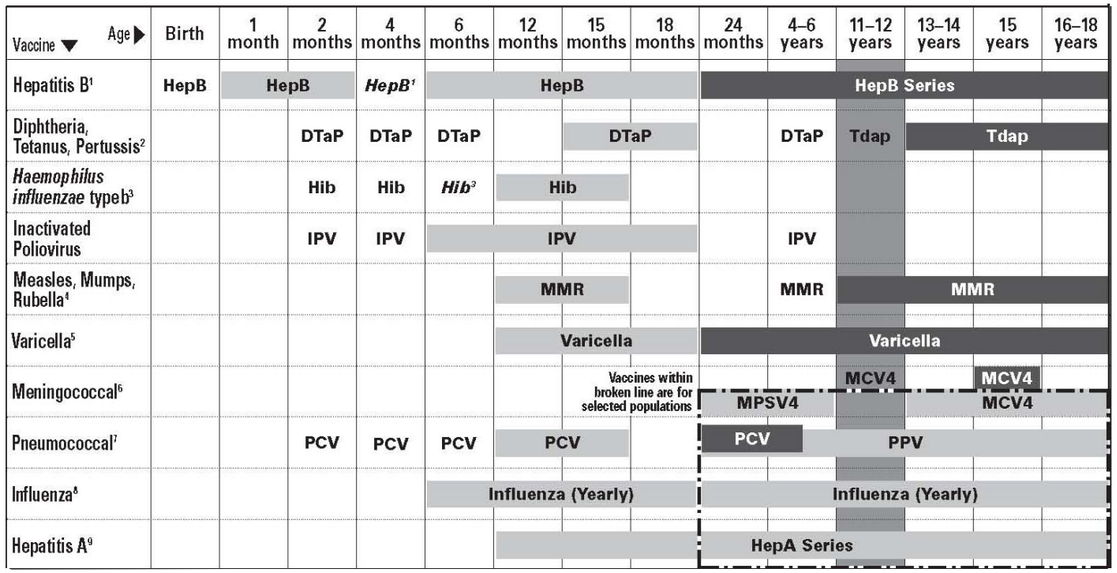
RECOMMENDED CHILDHOOD AND ADOLESCENT IMMUNIZATION SCHEDULE UNITED STATES • 2006



This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2005, for children through age 18 years. Any dose not administered at the recommended age should be administered at any subsequent visit when indicated and feasible. ■ Indicates age groups that warrant special effort to administer those vaccines not previously administered. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective ACIP statement for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at **www.vaers.hhs.gov** or by telephone, **800-822-7967**.

Range of recommended ages ■ Catch-up immunization ■ 11–12 year old assessment

1. Hepatitis B vaccine (HepB). ***AT BIRTH:*** **All newborns** should receive monovalent HepB soon after birth and before hospital discharge. **Infants born to mothers who are HBsAg-positive** should receive HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth. **Infants born to mothers whose HBsAg status is unknown** should receive HepB within 12 hours of birth. The mother should have blood drawn as soon as possible to determine her HBsAg status; if HBsAg-positive, the infant should receive HBIG as soon as possible (no later than age 1 week). **For infants born to HBsAg-negative mothers,** the birth dose can be delayed in rare circumstances but only if a physician's order to withhold the vaccine and a copy of the mother's original HBsAg-negative laboratory report are documented in the infant's medical record. ***FOLLOWING THE BIRTHDOSE:*** The HepB series should be completed with either monovalent HepB or a combination vaccine containing HepB. The second dose should be administered at age 1–2 months. The final dose should be administered at age ≥24 weeks. It is permissible to administer 4 doses of HepB (e.g., when combination vaccines are given after the birth dose); however, if monovalent HepB is used, a dose at age 4 months is not needed. **Infants born to HBsAgpositive mothers** should be tested for HBsAg and antibody to HBsAg after completion of the HepB series, at age 9–18 months (generally at the next well-child visit after completion of the vaccine series).

2. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP). The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at age 15–18 months. The final dose in the series should be given at age ≥4 years.

Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap – adolescent preparation) is recommended at age 11–12 years for those who have completed the recommended childhood DTP/DTaP vaccination series and have not received a Td booster dose. Adolescents 13–18 years who missed the 11–12-year Td/Tdap booster dose should also receive a single dose of Tdap if they have completed the recommended childhood DTP/DTaP vaccination series. Subsequent **tetanus and diphtheria toxoids (Td)** are recommended every 10 years.

3. *Haemophilus influenzae* type b conjugate vaccine (Hib). Three Hib conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB® or ComVax® [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required. DTaP/Hib combination products should not be used for primary immunization in infants at ages 2, 4 or 6 months but can be used as boosters after any Hib vaccine. The final dose in the series should be administered at age ≥12 months.

4. Measles, mumps, and rubella vaccine (MMR). The second dose of MMR is recommended routinely at age 4–6 years but may be administered during any visit, provided at least 4 weeks have elapsed since the first dose and both doses are administered beginning at or after age 12 months. Those who have not previously received the second dose should complete the schedule by age 11–12 years.

Varicella vaccine. Varicella vaccine is recommended at any visit at or after age 12 months for susceptible children (i.e., those who lack a reliable history of chickenpox). Susceptible persons aged ≥13 years should receive 2 doses administered at least 4 weeks apart.

6. Meningococcal vaccine (MCV4). Meningococcal conjugate vaccine (MCV4) should be given to all children at the 11–12 year old visit as well as to unvaccinated adolescents at high school entry (15 years of age). Other adolescents who wish to decrease their risk for meningococcal disease may also be vaccinated. All college freshmen living in dormitories should also be vaccinated, preferably with MCV4, although **meningococcal polysaccharide vaccine (MPSV4)** is an acceptable alternative. Vaccination against invasive meningococcal disease is recommended for children and adolescents aged ≥2 years with terminal complement deficiencies or anatomic or functional asplenia and certain other high risk groups (see *MMWR* 2005;54 [RR-7]:1-21); use MPSV4 for children aged 2–10 years and MCV4 for older children, although MPSV4 is an acceptable alternative.

7. Pneumococcal vaccine. The heptavalent **pneumococcal conjugate vaccine (PCV)** is recommended for all children aged 2–23 months and for certain children aged 24–59 months. The final dose in the series should be given at age ≥12 months. **Pneumococcal polysaccharide vaccine (PPV)** is recommended in addition to PCV for certain high-risk groups. See *MMWR* 2000; 49(RR-9):1-35.

8. Influenza vaccine. Influenza vaccine is recommended annually for children aged ≥6 months with certain risk factors (including, but not limited to, asthma, cardiac disease, sickle cell disease, human immunodeficiency virus [HIV], diabetes, and conditions that can compromise respiratory function or handling of respiratory secretions or that can increase the risk for aspiration), healthcare workers, and other persons (including household members) in close contact with persons in groups at high risk (see *MMWR* 2005;54[RR-8]:1-55). In addition, healthy children aged 6–23 months and close contacts of healthy children aged 0–5 months are recommended to receive influenza vaccine because children in this age group are at substantially increased risk for influenza-related hospitalizations. For healthy persons aged 5–49 years, the intranasally administered, live, attenuated influenza vaccine (LAIV) is an acceptable alternative to the intramuscular trivalent inactivated influenza vaccine (TIV). See *MMWR* 2005;54(RR-8):1-55. Children receiving TIV should be administered a dosage appropriate for their age (0.25 mL if aged 6–35 months or 0.5 mL if aged ≥3 years). Children aged ≤8 years who are receiving influenza vaccine for the first time should receive 2 doses (separated by at least 4 weeks for TIV and at least 6 weeks for LAIV).

9. Hepatitis A vaccine (HepA). HepA is recommended for all children at 1 year of age (i.e.,12–23 months). The 2 doses in the series should be administered at least 6 months apart. States, counties, and communities with existing HepA vaccination programs for children 2–18 years of age are encouraged to maintain these programs. In these areas, new efforts focused on routine vaccination of 1-year-old children should enhance, not replace, ongoing programs directed at a broader population of children. HepA is also recommended for certain high risk groups (see *MMWR* 1999; 48[RR-12]1-37).

The Childhood and Adolescent Immunization Schedule is approved by:

Advisory Committee on Immunization Practices www.cdc.gov/nip/acip • American Academy of Pediatrics www.aap.org • American Academy of Family Physicians www.aafp.org

FOR CHILDREN AND ADOLESCENTS WHO START LATE OR WHO ARE MORE THAN 1 MONTH BEHIND

The tables below give catch-up schedules and minimum intervals between doses for children who have delayed immunizations. There is no need to restart a vaccine series regardless of the time that has elapsed between doses. Use the chart appropriate for the child's age.

CATCH-UP SCHEDULE FOR CHILDREN AGED 4 MONTHS THROUGH 6 YEARS

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Diphtheria, Tetanus, Pertussis	6 wks	4 weeks	4 weeks	6 months	6 months[1]
Inactivated Poliovirus	6 wks	4 weeks	4 weeks	4 weeks[2]	
Hepatitis B[3]	Birth	4 weeks	8 weeks (and 16 weeks after first dose)		
Measles, Mumps, Rubella	12 mo	4 weeks[4]			
Varicella	12 mo				
Haemophilus influenzae type b[5]	6 wks	4 weeks if first dose given at age <12 months 8 weeks (as final dose) if first dose given at age12-14 months No further doses needed if first dose given at age ≥15 months	4 weeks[6] if current age <12 months 8 weeks (as final dose)[6] if current age ≥12 months and second dose given at age <15 months No further doses needed if previous dose given at age ≥15 mo	8 weeks (as final dose) This dose only necessary for children aged 12 months–5 years who received 3 doses before age 12 months	
Pneumococcal[7]	6 wks	4 weeks if first dose given at age <12 months and current age <24 months 8 weeks (as final dose) if first dose given at age ≥12 months or current age 24–59 months No further doses needed for healthy children if first dose given at age ≥24 months	4 weeks if current age <12 months 8 weeks (as final dose) if current age ≥12 months No further doses needed for healthy children if previous dose given at age ≥24 months	8 weeks (as final dose) This dose only necessary for children aged 12 months–5 years who received 3 doses before age 12 months	

CATCH-UP SCHEDULE FOR CHILDREN AGED 7 YEARS THROUGH 18 YEARS

Vaccine	Minimum Interval Between Doses		
	Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Booster Dose
Tetanus, Diphtheria[8]	4 weeks	6 months	6 months if first dose given at age <12 months and current age <11 years; otherwise 5 years
Inactivated Poliovirus[9]	4 weeks	4 weeks	IPV[2,9]
Hepatitis B	4 weeks	8 weeks (and 16 weeks after first dose)	
Measles, Mumps, Rubella	4 weeks		
Varicella[10]	4 weeks		

1. DTaP. The fifth dose is not necessary if the fourth dose was administered after the fourth birthday.

2. IPV. For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if third dose was administered at age ≥4 years. If both OPV and IPV were administered as part of a series, a total of 4 doses should be given, regardless of the child's current age.

3. HepB. Administer the 3-dose series to all children and adolescents <19 years of age if they were not previously vaccinated.

4. MMR. The second dose of MMR is recommended routinely at age 4–6 years but may be administered earlier if desired.

5. Hib. Vaccine is not generally recommended for children aged ≥5 years.

6. Hib. If current age <12 months and the first 2 doses were PRP-OMP (PedvaxHIB® or ComVax® [Merck]), the third (and final) dose should be administered at age 12–15 months and at least 8 weeks after the second dose.

7. PCV. Vaccine is not generally recommended for children aged ≥5 years.

8. Td. Adolescent tetanus, diphtheria, and pertussis vaccine (Tdap) may be substituted for any dose in a primary catch-up series or as a booster if age appropriate for Tdap. A fiveyear interval from the last Td dose is encouraged when Tdap is used as a booster dose. See ACIP recommendations for further information.

9. IPV. Vaccine is not generally recommended for persons aged ≥18 years.

10. Varicella. Administer the 2-dose series to all susceptible adolescents aged ≥13 years.

Report adverse reactions to vaccines through the federal Vaccine Adverse Event Reporting System. For information on reporting reactions following immunization, please visit www.vaers.hhs.gov or call the 24-hour national toll-free information line 800-822-7967. Report suspected cases of vaccine-preventable diseases to your state or local health department.

For additional information about vaccines, including precautions and contraindications for immunization and vaccine shortages, please visit the National Immunization Program Website at www.cdc.gov/nip or contact 800-CDC-INFO (800-232-4636)

(In English, En Español — 24/7)