

Immunization Pearls

Dane County Immunization Coalition

March, 2005

VARICELLA REQUIREMENT: PRE-K THROUGH GRADE 12

For fall 2005, all 2 to 4 year olds in day care and students in kindergarten through grade 12th grade will be required to meet the varicella requirement of the state immunization law. This means they must have a history of disease or receive the varicella immunization. Students who receive the first dose of vaccine at age 13 or older need two doses to complete the series.

Currently, there are about 1400 students in high school in the Madison Metropolitan School District who do not meet the requirement. Many of these students have likely had varicella disease. As you see children ages

1 through 18, make sure they have had varicella vaccine or disease history. If the child has had the disease, enter that into your immunization database and add it to the parent copy of the record. If the child has not had varicella disease, it is time to vaccinate.



2005 IMMUNIZATION SCHEDULES

Enclosed in this issue of Pearls are the 2005 Childhood and Adolescent Immunization Schedule and the 2005 "Catch-Up Schedule".

These schedules are unchanged from the 2004 schedules. They have been approved by the Advisory Committee on Immunization Practices, the American Academy of Family Physicians, and the American Academy of Pediatrics.

The web address is:

www.cdc.gov/nip/recs/child-schedule-fourpages.pdf



PERTUSSIS-CONTAINING VACCINES FOR ADOLESCENTS AND ADULTS

Two acellular pertussis vaccines combined with diphtheria and tetanus toxoid, Boostrix and Adacel, were simultaneously submitted to the FDA last summer with the hope for a summer 2005 release. Boostrix (GSK) is for patients 11 thru 19 years old and would be primarily targeted as a booster for middle schoolers 11-12 years of age. It has the same 3 acellular pertussis antigenic components found in GSK's Infanrix. Aventis is seeking approval for their Adacel to be used in patients 11 thru 64 years old and uses the same five acellular components contained in their Daptacel vaccine. Both vaccines have a reduced strength diphtheria toxoid in them to reduce vaccine side effects; therefore they are designated dTaP with the little "d". Neither vaccine will be approved for primary doses; they are meant to be given only for patients previously primed with either DTaP or DTwP vaccines. The intent would be to give a dTaP booster every 10 years, starting in middle school.

PERTUSSIS IN WISCONSIN

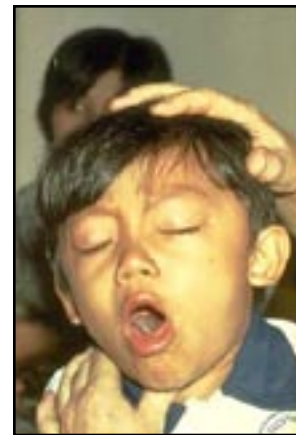
The total number of pertussis cases identified in Wisconsin for all of 2004 now totals over 5000. Southern Wisconsin (including Dane County) has had the most intense activity (123 cases / 100,000 population) in the whole state. Incidence was greatest in infants under 6 months of age at 525 / 100,000, with a secondary peak in children 10 to 14 years of age at 310 / 100,000. Over 110 patients in Wisconsin required hospitalization for pertussis complications; this is more than 5 times greater than an average year and confirms that the increase in cases is not a testing artifact due to using the more sensitive PCR technique. Pertussis PCR was determined to be 94% sensitive compared to less than 50% for culture.

Only children under 1 year of age were more likely to have a history of a “whoop” than not. Coughing leading to a sleep disturbance was found in the majority of patients in all age groups. School and household settings accounted for 75% of transmission. 72% of pertussis cases under 1 year of age had been given three doses of DTaP, the rest had only two doses. 62% of pertussis cases age 1 to 2 years old had not received the required 4 doses given on time. Adolescents continue to be a significant reservoir of infection in the community. Improved physician recognition of cases in teens without “classic” symptoms contributed to better case identification.

National data suggests that between 1 and 3 million new cases of pertussis would be expected to occur in the United States. This makes pertussis a particularly ubiquitous infection during peak cycles that continue to occur every 2 to 4 years despite widespread pertussis immunization of young children. The State of Wisconsin followed strict 2004 CDC guidelines when forming state policy for pertussis control. This resulted in a maximal effort to find cases by public health

nurses and practitioners that strained their ability to sustain it and often at the expense of other prevention programs.

DHFS convened an expert panel on February 2, 2005 to re-examine Wisconsin’s overall approach to pertussis control should a pertussis outbreak recur in 2005-06. Practitioners want more clinical discretion when making treatment decisions regarding suspect cases. They would rather focus on contacts of infants under a year of age where the consequences of transmission are likely to be severe.



The subsequent massive use of macrolide antibiotics have raised serious concerns about pertussis prophylaxis and treatment contributing to increasing the problem of antimicrobial resistance. WARN (Wisconsin Antibiotic Resistance Network) has published a set of judicious antibiotic guidelines during pertussis outbreaks on their website www.warnwisconsin.org that may help in decision making about who to treat and isolate when patients present with pertussis symptoms.

Wisconsin Adult Immunization Coalition Statewide Immunization Conference

April 21, 2005

Kalahari Resort & Convention Center
Wisconsin Dells

Information & registration at: www.metastar.com

Keynote Speakers:

William Atkinson, MD, MPH; CDC
Greg Poland, ND, FACP; Mayo Clinic

TWO ARTICLES WORTH READING

- Fatal Case of Pertussis in an Infant – West Virginia
www.cdc.gov/mmwr/preview/mmwrhtml/mm5403a4.htm
- Outbreaks of Pertussis Associated with Hospitals – KY, PA, OR, 2003
www.cdc.gov/mmwr/preview/mmwrhtml/mm5403a3.htm

NEW MENINGOCOCCAL CONJUGATE VACCINE

The FDA gave approval for the quadrivalent (A, C, Y, W 135) conjugated vaccine (MCV4 Menactra®) in February. Recent release of recommendations for the control of meningococcal disease in the USA by the CDC (ACIP) includes the routine vaccination of all children 11-12 years of age as a part of the regularly recommended health maintenance visit for middle schoolers. There has been a reluctance to extend the recommendation for catch up vaccination with MCV4 for those 13 to 18 years of age because of concerns for a limited vaccine supply and the high overall cost of the MCV4 vaccine (\$82). Should vaccine supplies be sufficient, students 15 years of age who are entering high school and college freshmen living in dormitories and residence halls should be offered MCV4 because of their increased risk of contracting this disease and their higher mortality rates compared to younger patients. The manufacturer anticipates making 5 million doses of MCV4 available in 2005. Wisconsin Law 61 currently does not require college freshmen in our state to be vaccinated for the prevention of meningococcal disease, just that students be informed about it and told there is a vaccine available potentially to prevent it.

MCV4 manifests all the more desirable characteristics of conjugated vaccines (HiB, PCV7) we are more familiar with. In contrast to the old meningococcal polysaccharide (MPSV4) vaccine, MCV4 induces T- cell cellular

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www.immunizationed.org/anypage.aspx?pagename=shotspalm



immunity that produces brisk anamnestic responses on future encounters with the meningococcal strains contained in the vaccine. There is a good booster response without signs of the hypo-responsiveness (tolerance) characteristic of MPSV4 when previous recipients of either MCV4 or MPSV4 receive MCV4 later. MCV4 gives longer term protection than MPSV4 which contributes to the herd immunity necessary for true outbreak control. Lastly, only MCV4 reduces nasal carriage of meningococcal strains which is important for reducing spread in close quarters like dorm rooms and households.

The cost / benefit profile for MCV4 is still poor, but ACIP has decided that the performance of MCV4 in preventing a rare but devastating infection is worth the cost to society. The dollars spent on MCV4 per case prevented in

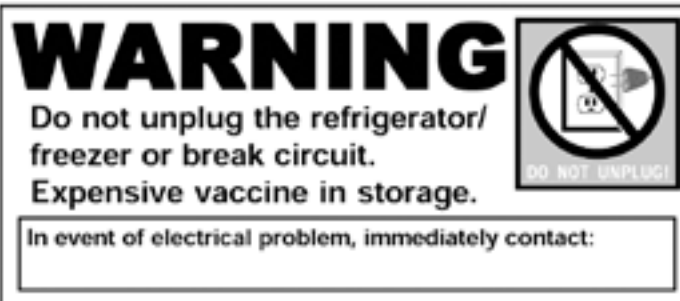
college freshmen living in dorms is around \$1.5 million and per death averted \$15 million. Money spent on MCV4 to prevent a case of meningococemia in a 11 year old is about \$1 million and to prevent a death \$5 million in the same age group. MCV4 recipients have a bit more injection site swelling and post vaccination headache compared to MPSV4.

It is expected that the Vaccines For Children (VFC) program will eventually include MCV4 for eligible 11-12 year old children sometime this year. Vaccine supplies should be adequate for immunizing all 11 -12 year olds plus college freshmen but questionable for groups beyond that. The published national immunization schedule may be modified this summer to reflect the addition of MCV4 on the purple adolescent bar.

PROTECT YOUR VACCINE

Signs to help protect your vaccine are available online at:

www.cdc.gov/nip/publications/pink/appendices/D/unplug.pdf



INFLUENZA VACCINE TASK FORCE, 2004

The October 2004 announcement that Chiron's Fluvirion vaccine would not be available began the annual influenza vaccine adventure.

Madison Department of Public Health's Director, Kate Vedder, MD, and Dane County Division of Public Health's Administrator, Gareth Johnson, called together a Task Force of local providers. This Task Force was composed of 29 individuals representing 14 provider entities.

The Task Force met by phone conference 7 times to coordinate vaccine supplies, assure standard use of priority guidelines, and otherwise assist one another in meeting the challenges of the year. Task Force members were kept updated by email regarding State and Federal flu teleconferences, changing priorities and guidance, and other relevant issues.

Much time and energy was put into efforts to link nursing homes who had no vaccine with providers that did have vaccine. Home Health United put all of its corporate programs on hold and, instead, increased their service to community clinic sites such as community-based residential facilities and elderly residential sites. Large employers in Dane County were surveyed to assure that, if they had planned flu programs, that they adhered to the priority guidelines.

Some providers were turning away their patients who fell within the Influenza Vaccine Interim Guidelines. In particular, health care workers, including emergency medical services staff, were being denied vaccine. To overcome this problem, the Task Force sent out a letter authorizing access to the vaccine to such individuals.

The 2004-2005 Influenza Vaccine Task Force was a useful collaborative approach to help assure that limited supplies of vaccine reached those most at risk and that Dane County health organizations and providers spoke with one voice about who should get vaccine.

INFLUENZA AND VACCINE

The State DHFS Division of Public Health recommends continued immunization of any person 6 months and older throughout the flu season and until the vaccine expires. Most, if not all, of flu vaccine for this season expires in June 2005. Although there are early signs that the Influenza A virus may be starting to decline, the Influenza B season typically peaks later in the winter/early spring. So continuing to offer and encourage people to get a flu shot is a good thing, even as late as May! This is particularly true for children who have not had a flu shot before. By getting a flu vaccine this year, they will not need two shots for next year's flu season and therefore will have full protection sooner.

What will be next year's flu vaccine recommendations? Although we don't know with certainty, Dr Thomas Saari, chair of the Wisconsin Council of Immunization Practices, believes that ACIP/CDC will continue to move toward universal annual influenza immunization in order to have the entire population prepped for mass flu immunization in the event of a flu pandemic.

Will there be adequate vaccine? There are at least two US manufacturers beginning the process of preparing vaccine for the coming flu season, according to Dr Saari. That is hopeful news, but only time will tell.

So, keep offering that vaccine! If you need more vaccine, call Julie Halvorsen, Dane County Division of Public Health at 242-6487 or Judy Aubey at Madison Department of Public Health at 294-5316.

DANE COUNTY IMMUNIZATION COALITION

www.cityofmadison.com/health/coalitions/dcic.html

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Recommended Childhood and Adolescent Immunization Schedule UNITED STATES • 2005

Vaccine ▼	Age ▶	Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	24 months	4-6 years	11-12 years	13-18 years
Hepatitis B ¹		HepB #1	HepB #2		HepB #3			HepB Series					
Diphtheria, Tetanus, Pertussis ²			DTaP	DTaP	DTaP	DTaP				DTaP	Td	Td	
<i>Haemophilus influenzae</i> type b ³			Hib	Hib	Hib	Hib							
Inactivated Poliovirus			IPV	IPV	IPV					IPV			
Measles, Mumps, Rubella ⁴						MMR #1				MMR #2	MMR #2		
Varicella ⁵						Varicella			Varicella				
Pneumococcal ⁶			PCV	PCV	PCV	PCV			PCV	PPV			
Influenza ⁷					Influenza (Yearly)			Influenza (Yearly)					
----- Vaccines below red line are for selected populations -----													
Hepatitis A ⁸										Hepatitis A Series			

This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2004, 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. Providers should consult the manufacturers' package inserts 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 are available at www.vaers.org or by telephone, 800-822-7967.

- Range of recommended ages
- Preadolescent assessment
- Only if mother HBsAg(-)
- Catch-up immunization

Footnotes

Recommended Childhood and Adolescent Immunization Schedule

UNITED STATES • 2005

- 1. Hepatitis B (HepB) vaccine.** All infants should receive the first dose of HepB vaccine soon after birth and before hospital discharge; the first dose may also be administered by age 2 months if the mother is hepatitis B surface antigen (HBsAg) negative. Only monovalent HepB may be used for the birth dose. Monovalent or combination vaccine containing HepB may be used to complete the series. Four doses of vaccine may be administered when a birth dose is given. The second dose should be administered at least 4 weeks after the first dose, except for combination vaccines which cannot be administered before age 6 weeks. The third dose should be given at least 16 weeks after the first dose and at least 8 weeks after the second dose. The last dose in the vaccination series (third or fourth dose) should not be administered before age 24 weeks.

Infants born to HBsAg-positive mothers should receive HepB and 0.5 mL of hepatitis B immune globulin (HBIG) at separate sites within 12 hours of birth. The second dose is recommended at age 1–2 months. The final dose in the immunization series should not be administered before age 24 weeks. These infants should be tested for HBsAg and antibody to HBsAg (anti-HBs) at age 9–15 months.

Infants born to mothers whose HBsAg status is unknown should receive the first dose of the HepB series within 12 hours of birth. Maternal blood should be drawn as soon as possible to determine the mother's HBsAg status; if the HBsAg test is positive, the infant should receive HBIG as soon as possible (no later than age 1 week). The second dose is recommended at age 1–2 months. The last dose in the immunization series should not be administered before age 24 weeks.
- 2. Diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine.** 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 (Td)** is recommended at age 11–12 years if at least 5 years have elapsed since the last dose of tetanus and diphtheria toxoid-containing vaccine. Subsequent routine Td boosters are recommended every 10 years.
- 3. Haemophilus influenzae type b (Hib) conjugate vaccine.** 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.
- 5. 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. 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.
- 7. 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], and diabetes), healthcare workers, and other persons (including household members) in close contact with persons in groups at high risk (see *MMWR* 2004;53[RR-6]:1-40). In addition, healthy children aged 6–23 months and close contacts of healthy children aged 0–23 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* 2004;53(RR-6):1-40. 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).
- 8. Hepatitis A vaccine.** Hepatitis A vaccine is recommended for children and adolescents in selected states and regions and for certain high-risk groups; consult your local public health authority. Children and adolescents in these states, regions, and high-risk groups who have not been immunized against hepatitis A can begin the hepatitis A immunization series during any visit. The 2 doses in the series should be administered at least 6 months apart. See *MMWR* 1999;48(RR-12):1-37.

Recommended Immunization Schedule for Children and Adolescents Who Start Late or Who Are More Than 1 Month Behind UNITED STATES • 2005

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 months¹
Inactivated Poliovirus	6 wks	4 weeks	4 weeks	4 weeks²	
Hepatitis B ³	Birth	4 weeks	8 weeks (and 16 weeks after first dose)		
Measles, Mumps, Rubella	12 mo	4 weeks⁴			
Varicella	12 mo				
<i>Haemophilus influenzae</i> type b ⁵	6 wks	4 weeks if first dose given at age <12 months	4 weeks⁶ if current age <12 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	
		8 weeks (as final dose) if first dose given at age 12-14 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 first dose given at age ≥15 months	No further doses needed if previous dose given at age ≥15 mo		
Pneumococcal ⁷	6 wks	4 weeks if first dose given at age <12 months and current age <24 months	4 weeks if current age <12 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	
		8 weeks (as final dose) if first dose given at age ≥12 months or current age 24–59 months	8 weeks (as final dose) if current age ≥12 months		
		No further doses needed for healthy children if first dose given at age ≥24 months	No further doses needed for healthy children if previous dose given at age ≥24 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	4 weeks	6 months	6 months⁸ if first dose given at age <12 months and current age <11 years 5 years⁸ if first dose given at age ≥12 months and third dose given at age <7 years and current age ≥11 years 10 years⁸ if third dose given at age ≥7 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		

Footnotes

Children and Adolescents Catch-up Schedules

UNITED STATES • 2005

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.** All children and adolescents who have not been immunized against hepatitis B should begin the HepB immunization series during any visit. Providers should make special efforts to immunize children who were born in, or whose parents were born in, areas of the world where hepatitis B virus infection is moderately or highly endemic.
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.** For children aged 7–10 years, the interval between the third and booster dose is determined by the age when the first dose was administered. For adolescents aged 11–18 years, the interval is determined by the age when the third dose was given.
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.org 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 Web site at www.cdc.gov/nip or call the National Immunization Information Hotline at 800-232-2522 (English) or 800-232-0233 (Spanish).