MINNESOTA DEPARTMENT OF HEALTH

DISEASE CONTROL NEWSLETTER

Volume 28, Number 2 (pages 9-16) March/April 2000

Recommended Childhood Immunization Schedule - Minnesota, 2000

The *Recommended Childhood Immunization Schedule – Minnesota, 2000,* which is based on recommendations issued jointly by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP)[1] and endorsed by the Immunization Practices Task Force of the Minnesota Department of Health (MDH), can be found on pages 11-12. As in past years, all Minnesota clinics were also mailed a colored version of the schedule and accompanying materials in late March. Please note the following changes from the 1999 Minnesota schedule:

- In October 1999, the ACIP withdrew its recommendation for vaccination of infants with rotavirus vaccine due to an association between vaccination and intussusception.[2] Rotavirus vaccine has been eliminated from the charts and footnotes.
- Global eradication efforts have reduced the risk for importation of wild-type polio into the United States. To eliminate the risk of vaccine-associated paralytic polio (VAPP), the ACIP recommended an all-inactivated polio vaccine (IPV) schedule for routine childhood vaccination in June 1999.[3] All references to polio vaccine in the charts have been changed to read "IPV," and the footnotes have been rewritten to reflect the all-IPV schedule.

Clarification of vaccine issues:

- **IPV and hepatitis B vaccine (HBV) dose intervals:** Note that the 2000 "catch up" tables on page 12 no longer suggest that intervals longer than the minimum are preferred between HBV-2 and HBV-3 or IPV-2 and IPV-3.

- **Use of remaining stock of oral polio vaccine (OPV):** Due to the change in polio vaccination policy in the U.S., Wyeth-Ayerst Laboratories (WAL) no longer manufactures OPV. While providers should consult WAL concerning return policies, the AAP has issued guidelines for those who wish to use remaining supplies of OPV. These guidelines state that OPV may be used for children whose parents object to an additional injection but only for the 3rd or 4th doses and only after the risk of VAPP has been discussed with the parent or caregiver.[3] After expiration, any remaining OPV supplied through the Minnesota Vaccines for Children (MnVFC) program should be returned to MDH. For vaccine purchased through other sources, check with the manufacturer or distributor.

- **Thimerosal as a preservative:** Providers should continue to provide HBV at birth to infants born to mothers who are HBsAg-positive, whose HBsAg status is unknown, or who are from a hepatitis B endemic country. If available, thimerosal-free (T-free) vaccine is preferred. Infants born to HBsAg-negative mothers may receive T-free vaccine at birth or, if their 1st dose is given at 2 months of age, they may receive either T-containing or T-free vaccine.[4]

- **Combination vaccines:** When administering a vaccine comprised of multiple antigens (e.g., DTaP-Hib, Hib-HBV, etc.), observe the following rules to determine the minimum age and/or interval between doses: *1) the minimum age is equal to the oldest age for any of the individual antigens;* and*, 2) the minimum interval between doses is equal to the longest interval for any of the individual antigens.*

continued...

Inside:

Recommendations for pneumococcal conjugate vaccine

The attached 2000 schedule does not incorporate recommendations for routine vaccination of children with the newly licensed 7-valent pneumococcal conjugate vaccine (PCV) – Prevnar™. That vaccine was licensed on February 17, after the 2000 schedule had been finalized. On the same day, the ACIP approved recommendations for its use. They are expected to be published this summer and will include:

- Routine vaccination of all healthy children <24 months of age.
- Vaccination of high-risk, 24- to 59-month-olds including those with sickle cell disease, HIV infection, chronic disease, or compromised immune systems; and those of American Indian, Alaskan Native, and African American descent.
- Consideration for vaccination of other children <59 months of age with priority given to documented high-risk groups including those who attend group child care, have had frequent or complicated acute otitis media during the previous year, or are economically or socially disadvantaged.

When the final ACIP statement is published, it and other ACIP recommendations can be found at http://www.cdc.gov/nip/publications/ACIP-list.htm .

New polio Vaccine Information Statements (VISs) available

Due to the change to an all-IPV schedule, new federally-required VISs have been developed. Providers should begin using these revised VISs when administering IPV and/or OPV as soon as possible and no later than July 1, 2000. Federal law (42 U.S.C. § 300aa-26) requires providers to give the most current VIS to the parent or authorized representative of the pediatric patient, or to the vaccinee if an adult patient, each time a dose of vaccine is administered. Translated versions of all current VISs can be found on the MDH Web site or by calling the Minnesota Immunization Hotline (Table 1).

Table 1. Current versions of required Vaccine Information Statements

Vaccine	Date of Current Version	Vaccine	Date of Current Version
• DTP/DTaP	8/15/97	• MMR	12/16/98
• Hepatitis A	8/25/98	• Pneumococcal	7/29/97
• Hepatitis B	12/16/98	• Polio (2)	1/1/00
• Hib	12/16/98	• Td	6/10/94
• Influenza	7/1/98	• Varicella	12/16/98

To obtain camera-ready copies of VISs:

- Call CDC's National Immunization Program at 800/232-2522.
- Call the Minnesota Immunization Hotline at 612/676-5100 or 800/657-3970.
- Download them from the Internet at:
  - √ http://www.cdc.gov/nip/publications/VIS/
  - √ http://www.health.state.mn.us/divs/dpc/adps/translte.htm

School law requires hepatitis B vaccination, 2000-01

Amendments to the state's School Immunization Law require HBV for kindergartners in the fall of 2000 and for 7th graders in the fall of 2001. As with other requirements, children who have a medical contraindication to the vaccine or whose parents conscientiously oppose immunization may receive a legal exemption. Implementing the kindergarten requirement likely will be easier than implementing the 7th grade requirement. National immunization survey (NIS) results for Minnesota indicate that 77% of children due to enter kindergarten in the fall of 2000 had finished their three-dose series by 2 years of age. However, special efforts are still needed to reach the remaining unvaccinated children, especially older children and adolescents. Settings such as physical examinations for school sports or camps are excellent opportunities to vaccinate pre-adolescents.

Varicella update

Vaccination against varicella likely will become mandatory for children in child care facilities and for entrance to schools. Varicella remains the most serious vaccine-preventable disease in children. A review of death certificates from 1994 to 1997 found that complications due to varicella caused an average of three deaths per year in children and adults in Minnesota. Although varicella vaccine was licensed in March of 1995, NIS results indicated that only 54% of Minnesota children born between August 1995 and November 1997 were vaccinated. The transmission of natural disease in childhood has diminished with vaccine use; however, if at least 90% of infants and children are not vaccinated, the number of susceptible adults and their risk for serious varicella disease will increase.[5]

References:

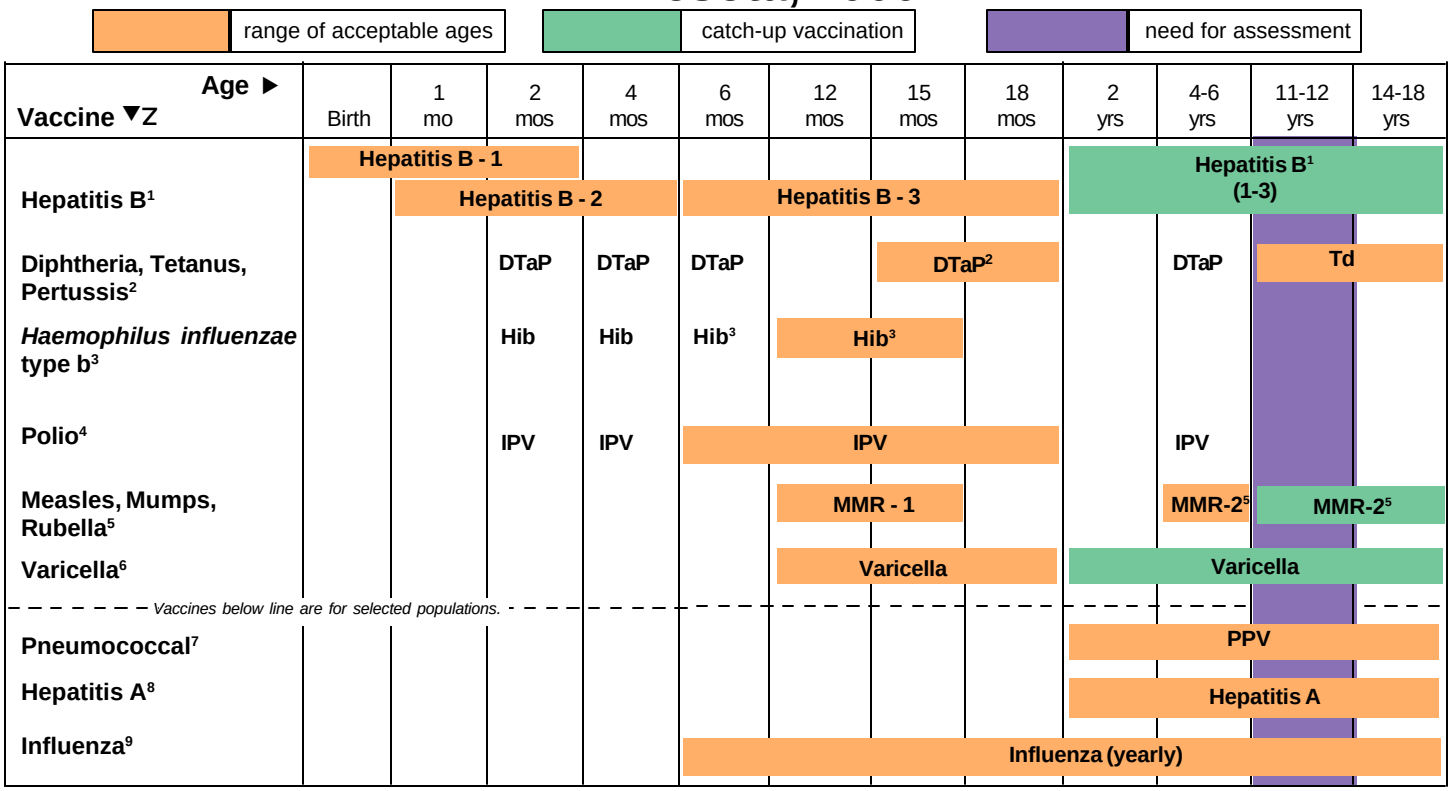
1. CDC. Recommended childhood immunization schedule – United States, 2000. MMWR 2000; 49:35-38,47.
2. CDC. Withdrawal of rotavirus vaccine recommendation. MMWR 1999; 48:1007.
3. American Academy of Pediatrics, Committee on Infectious Diseases. Prevention of poliomyelitis: Recommendations for use of only inactivated poliovirus vaccine for routine immunization. Pediatrics 1999; 104:1404-1406.
4. CDC. Recommendations regarding the use of vaccines that contain thimerosal as a preservative. MMWR 1999; 48:996-998.
5. American Academy of Pediatrics, Committee on Infectious Diseases. Varicella vaccine update. Pediatrics 2000; 105:136-141.

Invasive *Streptococcus pneumoniae* Infections in Children in the Minneapolis-St. Paul Metropolitan Area

A new vaccine to prevent *Streptococcus pneumoniae* invasive disease in children was approved by the Food and Drug Administration in February 2000. This is a conjugate vaccine designed to prevent infections from the seven pneumococcal serotypes (14, 18C, 6B, 23F, 19F, 4, and 9V) most often seen in

continued on page 13...

Recommended Childhood Immunization Schedule
Minnesota, 2000



1. Hepatitis B (HBV): Infants born to HBsAg-negative mothers should receive HBV-1 by age 2 mos. Give HBV-2 ≥4 wks after 1st dose and HBV-3 ≥8 wks after HBV-2 (provided it is ≥4 mos since HBV-1 and no earlier than 6 mos of age). Infants born to HBsAg-positive mothers should receive 0.5 mL hepatitis B immune globulin (HBIG) within 12 hrs of birth and HBV-1 at a separate site. The 2nd dose of HBV is recommended at 1 mo of age and the 3rd dose at 6 mos of age. Infants born to mothers whose HBsAg status is unknownshould receive HBV-1 within 12 hours of birth. Maternal blood should be drawn at the time of delivery 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 1 wk of age). HBV-2 is recommended at 1 mo of age and HBV-3 at 6 mos of age. Children and adolescents who have not previously received all 3 doses of HBV should complete the series with minimum intervals of 4 wks between HBV-1 and HBV-2, and 8 wks between HBV-2 and HBV-3 (and 4 mos between HBV-1 and HBV-3).
2. Diphtheria, tetanus, and acellular pertussis (DTaP): Children who have a true contraindication to pertussis vaccine should receive DT (for pediatric use) and not DTaP or DTP. DTaP-4 may be given as early as 12 mos of age if at least 6 mos have passed since DTaP-3 and if the child is considered unlikely to return at 15-18 mos of age. Td (tetanus and diphtheria toxoids, adsorbed, for adult use) is recommended at 11-12 of age if at least 5 yrs have passed since the last dose of DTP, DTaP, or DT. Subsequent *routine* Td boosters are recommended every 10 yrs.
3. *Haemophilus influenzae* type b (Hib): Three Hib conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB or COMVAX from Merck) is given at 2 and 4 mos of age, a dose at 6 mos is not required. DTaP/Hib combination products should not be used for the first 3 doses (primary series). Any Hib conjugate vaccine may be used as a booster.
4. Polio: A 4-dose schedule of inactivated polio vaccine (IPV) is recommended for routine vaccination of children. OPV is no longer recommended for routine use in order to further reduce the risk of vaccine-associated paralytic polio (VAPP). If available, OPV may be used only for the following special circumstances: for unvaccinated children who will be travelling in less than 4 wks to areas where polio is endemic or epidemic or whenever parents decline extra injections for 3rd and/or 4th doses only. During the transition to an all-IPV schedule, providers may use remaining supplies of OPV for children 4-6 yrs of age receiving their 4th dose of vaccine and, if necessary, as the 3rd dose. Whenever giving OPV, discuss the risk of VAPP with the child's parents or caregivers.
5. Measles, mumps, rubella (MMR): MMR-2 is recommended at 4-6 yrs of age, but may be given during any visit, provided ≥4 wks have elapsed since the 1st dose and both doses are given at ≥12 mos of age.
6. Varicella: Administer varicella vaccine to all susceptible children at 12-18 mos of age. Unvaccinated children ≥18 mos of age who lack a reliable history of chickenpox should also be vaccinated. Children ≤12 yrs of age should receive 1 dose; those ≥13 yrs of age should receive 2 doses 4-8 wks apart.
7. Pneumococcal: Administer pneumococcal polysaccharide vaccine (PPV) to children ≥2 yrs of age at increased risk of acquiring systemic pneumococcal infections or increased risk of serious disease if they become infected. Give a 2nd dose to children at highest risk of serious pneumococcal infection, as defined by ACIP*. For those ≤10 yrs of age, give 2nd dose ≥3 yrs from 1st dose; for those >10 yrs of age, give 2nd dose ≥5 yrs from 1st dose.
8. Hepatitis A: Administer hepatitis A vaccine to children and adolescents who are at increased risk of infection, as defined by ACIP*, and consider vaccine for all other persons ≥2 yrs of age wishing to obtain immunity. Give a booster ≥6 mos after the initial dose.
9. Influenza: Administer influenza vaccine annually to children ≥6 mos of age who have specific risk factors, as defined by ACIP*, and consider vaccine for all others wishing to obtain immunity. Children ≤12 yrs of age should receive split virus vaccine in a dosage appropriate for their age (0.25 mL if 6-35 mos of age or 0.5 mL if ≥3 yrs of age). Children <9 yrs of age who are receiving influenza vaccine for the first time should receive 2 doses separated by at least 4 wks.

Based on recommendations of the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP), and endorsed by the Immunization Practices Task Force of the Minnesota Department of Health (MDH).

* For current ACIP recommendations or other questions, call the Minnesota Immunization Hotline at (612) 676-5100 or toll-free (800) 657-3970.

Web site: www.health.state.mn.us/divs/dpc/adps/adps.htm

Minnesota Department of Health, March 2000 IC# 141-0188

For Children Who Start Late or Who Are >1 Month Behind

For any vaccine given in a series, it is not necessary to start over. Refer to the tables below for the recommended "catch-up" schedule and minimum intervals between doses. Determine the number of previous doses of each vaccine received, find that number in the first column, and read across to the appropriate column for the next dose(s) and minimum interval(s).

Table 1. Catch-up schedule for children 4 months through 6 years of age

Number of previous doses of each vaccine	Doses to be given and *minimum* intervals				
	First dose	**Second dose**	**Third dose**	**Fourth dose**	**Fifth dose**
None	**DTaP** **IPV**[1] **HBV** **Hib**[2] **MMR**[3] **Varicella**[4]	DTaP: 4 wks after 1st dose IPV: 4 wks after 1st dose HBV: 4 wks after 1st dose Hib: 4 wks if 1st dose given at <12 mos of age; 8 wks (as final dose) if 1st dose given 12-14 mos of age; no more doses are needed if 1st dose given ≥15 mos of age. MMR[3]: 4 wks after 1st dose	DTaP: 4 wks after 2nd dose IPV: 4 wks after 2nd dose HBV: 8 wks after 2nd dose and 4 mos after 1st dose. Hib: If current age <12 mos, 4 wks after 2nd dose (exception: see #6 below). If current age 12 mos to <5 yrs & 2nd dose given either (a) <12 mos, give final dose 8 wks after 2nd dose or (b) ≥12 mos of age, no more doses are needed.	DTaP: 6 mos after 3rd dose IPV: 4 wks after 3rd dose[5] Hib[6]: Only necessary for children age 12 mos to <5 yrs who received 3 doses <12 mos of age.	DTaP[7]: 6 mos after 4th dose
One					
Two					
Three					
Four					

Table 2. Catch-up schedule for children 7 through 18 years of age

Number of previous doses of each vaccine	Doses to be given and *minimum* intervals			
	First dose	**Second dose**	**Third dose**	**Booster dose**
None	**Td** **IPV**[1,8] **HBV** **MMR** **Varicella**[4]	Td: 4 wks after 1st dose IPV: 4 wks after 1st dose HBV: 4 wks after 1st dose MMR: 4 wks after 1st dose Varicella[4]: 4 wks after 1st dose	Td: 6 mos after 2nd dose IPV: 4 wks after 2nd dose HBV: 8 wks after 2nd dose and 4 mos after 1st dose.	Td: 6 mos if 3rd dose given <7 yrs of age and current age 7-10 yrs; 5 yrs if 3rd dose given <7 yrs and current age ≥11 yrs; 10 yrs if 3rd dose given ≥7 yrs IPV[5]
One				
Two				
Three				

1. Polio: Unvaccinated children who will be traveling in <4 wks may receive OPV. In addition, children of parents who reject an additional injection may be given OPV for the 3rd and/or 4th dose, and only after the risk of vaccine-associated paralytic poliomyelitis is discussed with the parent(s) or caregiver(s).
2. Hib: Vaccine is not generally recommended for children ≥5 yrs of age.
3. MMR: Do not administer MMR vaccine before 12 mos of age. Administer 2nd dose of MMR routinely at 4-6 yrs or earlier, if desired.
4. Varicella: Do not administer varicella vaccine before 12 mos of age. Give 2-dose series to all susceptible adolescents ≥13 yrs of age.
5. Polio: The 4th dose is not necessary if the 3rd dose was given after the 4th birthday.
6. Hib: If PRP-OMP was given for the first 2 doses, no more than 3 doses are needed, with the final dose given at 12-15 mos of age and at least 8 wks after the previous dose. If a 3rd dose of HbOC or PRP-T is given at ≥12 mos of age, a 4th dose is not needed.
7. DTaP: The 5th dose is not necessary if the 4th dose was given after the 4th birthday.
8. Polio: Vaccine is not generally recommended for persons ≥18 yrs of age.

Special Notes on Immunization

Children who present with a mild acute illness, with or without fever, should not be deferred for vaccination. Only true contraindications to vaccination should be followed. (See MDH *Guide to Contraindications*.)

There are no contraindications to simultaneous administration of vaccines recommended for routine use in children. For children 12-18 mos of age, multiple vaccines may be administered over 1 or 2 visits, but are strongly encouraged in 1 visit for children who have fallen behind.

Adults need immunizations, too. Use every encounter to assess adult vaccination status. (See MDH *Recommended Schedule for Adult Immunization*.)

Reporting adverse reactions: Report adverse reactions to vaccines through the federal Vaccine Adverse Event Reporting System. For information on reporting reactions following vaccines administered by private clinics, call the 24-hour national toll-free information line at (800) 822-7967. Report reactions to vaccine administered in public clinics to the Minnesota Department of Health at (612) 676-5414 or toll-free (877) 676-5414.

Disease reporting: Report suspect cases of vaccine-preventable diseases to the local health department or to the Minnesota Department of Health, 717 Delaware Street S.E., Minneapolis, MN 55440, (612) 676-5414 or toll-free (877) 676-5414.

children in the U.S. It is indicated for use in infants at 2, 4, and 6 months of age with a booster at 12-15 months of age. Approval of this vaccine makes it appropriate to review Minnesota Department of Health (MDH) findings on clinical and epidemiologic aspects of invasive pneumococcal disease in children ≤5 years of age from the Twin Cities metropolitan area.

Surveillance for pneumococcus and several other bacterial pathogens is conducted by MDH Active Bacterial Core surveillance through the Centers for Disease Control and Prevention Emerging Infections Program. MDH conducts active surveillance for invasive pneumococcal disease *(S. pneumoniae* isolated from blood or another normally sterile site) in the seven-county Twin Cities metropolitan area. Isolates are submitted to the MDH Public Health Laboratory for serotyping and susceptibility testing by broth microdilution.

From April 1995 through December 1998, 744 cases of invasive pneumococcal disease among Twin Cities area children ≤5 years of age were identified. Ninety percent of these cases had isolates submitted to MDH. Mean annual incidence rates, disease categories, and fatalities are shown in Table 1. Rates varied considerably for four age groups. Bacteremia without a known source of infection was the most common type of infection; meningitis was more common in infants. The overall case fatality rate was 1%, and it was unrelated to age, type of infection, or to penicillin non-susceptibility or resistance.

An increase in penicillin non-susceptibility and penicillin-resistance was seen starting in 1997 and continued in 1998. In children ≤5 years of age, the proportion of penicillin-resistant isolates (with MIC's ≥2 μg/ml) increased from 10% in 1995-96 to 16% in 1997-98. The proportion of penicillin non-susceptible isolates in this group (including both intermediate and resistant categories - MIC's ≥0.12 μg/ml) increased from 17% in 1995-96 to 27% in 1997-98. Isolates that were non-susceptible to penicillin often were non-susceptible to other antimicrobial agents as well. The proportion of isolates non-susceptible to two or three drug classes increased during 1997-1998 (Table 2).

Table 1. Invasive pneumococcal disease in children ≤5 years of age: rates, type of disease and mortality by age, Twin Cities metropolitan area, April 1995-December 1998.

	Mean Annual Rates (per 100,000)		*Type of Disease and Mortality No. Deaths/No. Cases*			
Age group	**Rate**	**(95% CI*)**	**Bacteremia^**	**Pneumonia**	**Meningitis**	**Other**
< 1 Year	179	(158-203)	3/161	1/32	0/21	0/30
1 Year	241	(216-269)	2/238	0/46	0/9	0/29
2 Years	76	(63-93)	0/64	1/27	0/3	0/7
3-5 Years	19	(15-24)	0/45	0/19	0/3	0/10
Total	92	(86-100)	5/508	2/124	0/36	0/76

* Confidence interval
^ Bacteremia without another known source of infection.

Table 2. Susceptibility results for *S. pneumoniae* invasive isolates from children ≤5 years of age, Twin Cities metropolitan area, 1995-1998.

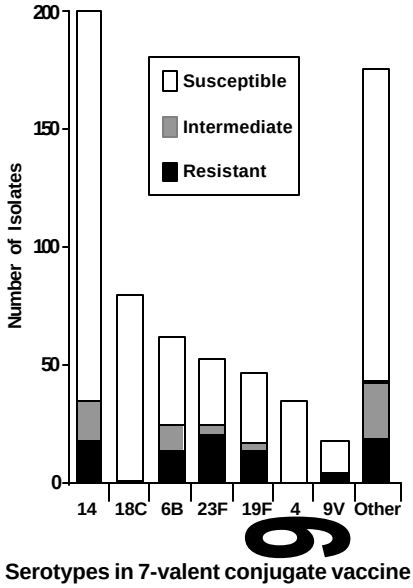
	1995[1]-1996 No. %	**1997-1998 No. %**	**1995[1]-1998 No. %**
Susceptible to all agents	194 (66)	220 (59)	414 (62)
Non-susceptible[2] to:			
1 drug class	43 (15)	58 (15)	101 (15)
2-3 drug classes	41 (14)	72 (19)	113 (17)
4-6 drug classes	18 (6)	25 (7)	43 (6)
Total	296	375	671

[1]April-December 1995
[2]Multiple non-susceptibility to different drug classes was assessed based on MIC results for ten different antimicrobial classes or drugs: B-lactams-carbapenems (NS to penicillin, amoxicillin, cefuroxime, cefotaxime, or meropenem), flouroquinolones (NS to ofloxacin, levofloxacin or trovafloxacin), erythromycin, clindamycin, vancomycin, trimethoprim/sulfamethoxazole, tetracycline, chloramphenicol, rifampin, and quinpristin/dalfopristin.

Figure 1 shows the distribution of invasive pneumococcal isolates by serotype and penicillin susceptibility. Of 670 isolates available for both serotyping and susceptibility testing, 495 (74%) were serotypes that are included in the seven-valent vaccine. Penicillin non-susceptibility and resistance is limited to a few commonly occurring serotypes. Of the 90 penicillin-resistant isolates from children ≤5 years of age, 79% were serotypes included in the seven-valent vaccine. These data suggest that the newly licensed conjugate vaccine is very promising. Monitoring the distribution of serotypes of strains causing invasive infections will be particularly important once the vaccine is in use.

Recent antibiotic use is a risk factor for resistant pneumococcal infection; clinicians should emphasize the judicious use of antibiotics.

Figure 1. *S. pneumoniae* isolates from invasive infections in children ≤5 years old, by serotype and penicillin susceptibility, Twin Cities Area, April 1995-December 1998.



Antimicrobial Susceptibilities of Selected Pathogens, 1999

MINNESOTA MDH DEPARTMENT OF HEALTH

Sampling Methodology

† all isolates tested
* ~ 20% sample of statewide isolates received at MDH
▲ ~10% sample of statewide isolates received at MDH
** all isolates tested from 7-county metropolitan area
✔ isolates from a normally sterile site

	Campylobacter spp. [1] *	*Salmonella typhimurium* [2] †	Other *Salmonella* spp. (non-typhoidal) [2] ▲	*Shigella* spp. ▲	*Neisseria gonorrhoeae* [3]	*Neisseria meningitidis* [4] †✔	Group A streptococci [5] †✔	Group B streptococci [6] ✔	*Streptococcus pneumoniae* [7] **✔	*Mycobacterium tuberculosis* [8] †
No. of Isolates Tested	131	160	43	20	250	55	162	192	559	163
	% Susceptible									
β-lactam antibiotics: ampicillin		60	86	15			100	100		
β-lactam antibiotics: penicillin						98	100	100	76	
β-lactam antibiotics: cefuroxime sodium					100				81	
β-lactam antibiotics: cefotaxime						100	100	100	83	
β-lactam antibiotics: ceftriaxone		100	95	100	100	100				
β-lactam antibiotics: meropenem						100			83	
Other antibiotics: levofloxacin									100	
Other antibiotics: ciprofloxacin	82	100	100	100	100	100				
Other antibiotics: chloramphenicol		75	95	80		100			98	
Other antibiotics: clindamycin							100	87	98	
Other antibiotics: erythromycin	100						95	79	78	
Other antibiotics: gentamicin	98									
Other antibiotics: tetracycline	48								91	
Other antibiotics: trimethoprim/sulfamethoxazole		96	100	75		56			67	
Other antibiotics: vancomycin							100	100	100	
TB antibiotics: ethambutol										98
TB antibiotics: isoniazid										88
TB antibiotics: pyrazinamide										99
TB antibiotics: rifampin						100				98
TB antibiotics: streptomycin										89

	Trends, Comments and Other Pathogens	
1	***Campylobacter* spp.**	< 20% of isolates from patients returning from foreign travel were susceptible to quinolones. Susceptibilities were determined using 1999 NCCLS breakpoints for *Enterobacteriaceae*. Susceptibility for erythromycin was based on an MIC ≤4 µg/ml.
2	***Salmonella* spp.**	Antibiotic treatment for enteric salmonellosis generally is not recommended. 2/43 *Salmonella* spp. isolates were intermediate to ceftriaxone.
3	***Neisseria gonorrhoeae***	250 isolates comprise 8.8% of total (2,835) cases reported. Also, all isolates tested were susceptible to cefpodoxime, cefixime and spectinomycin.
4	***Neisseria meningitidis***	Provisional breakpoints from CDC. MIC ≤0.06 to penicillin considered susceptible. One isolate had a MIC of 0.12, which is considered intermediate to penicillin.
5	**Group A streptococci**	Susceptibility testing was also done on 514 pharyngeal (non-invasive) GAS isolates from five clinical labs (three were in metro area). 100% were susceptible to clindamycin and 98% were susceptible to erythromycin.
6	**Group B streptococci (GBS)**	83% early-onset and late-onset infant cases, invasive maternal cases, and 84% of other invasive GBS cases tested. 86% (38/44) of infant and maternal isolates were susceptible to clindamycin and 80% (35/44) were susceptible to erythromycin.
7	***Streptococcus pneumoniae***	8% had intermediate-level and 16% had high-level resistance to penicillin; 13% had intermediate-level and 4% had high-level resistance to cefotaxime.
8	***Mycobacterium tuberculosis* (TB)**	National guidelines recommend initial 4-drug therapy where resistance to isoniazid (INH) exceeds 4% . In Minnesota, 12% of *M. tuberculosis* isolates were INH-resistant. Four cases of multi-drug resistant TB (i.e., resistant to INH and rifampin) were identified.
	Bordetella pertussis	The first erythromycin-resistant *B. pertussis* in MN was identified in 1999. The remaining 80 isolates were susceptible to erythromycin by provisional CDC breakpoints. Erythromycin remains the drug of choice for treatment and prophylaxis of pertussis.
	***Escherichia coli* O157:H7**	Antibiotic treatment for *E. coli* O157:H7 infection is not recommended.
	Methicillin-resistant *Staphylococcus aureus* (MRSA)	MRSA isolates were submitted in 1999 from sentinel hospitals. No vancomycin resistance has been identified. Community-acquired MRSA infections have been observed; isolates were generally susceptible to many antibiotic classes except beta-lactams/cephalosporins, and many were non-susceptible to erythromycin. Serious cases of community-acquired MRSA should be reported to MDH.

The MDH Antibiogram is available on the MDH Web site (http://www.health.state.mn.us). Laminated copies can be ordered from: Antibiogram, Minnesota Dept. of Health, Acute Disease Epidemiology Section, 717 Delaware St. SE, Minneapolis, MN 55414.

Subject Index for the *Disease Control Newsletter*, 1999

New Lead Screening Recommendations

The Minnesota Department of Health (MDH) released new Blood Lead Screening Guidelines on March 31, 2000. The guidelines are the product of 1 year's work by the Blood Lead Screening Work Group (BLSWG), a diverse group of professionals representing health care, health policy, and housing issues in Minnesota. The BLSWG was asked to discuss potential blood lead screening guidelines for Minnesota and to recommend guidelines to the MDH.

The outcome of these discussions was a set of screening guidelines for health care providers with instructions on screening children for elevated blood lead levels. The guidelines are largely self explanatory and include instructions for ordering a blood lead test based on exposure criteria. They reflect the best information currently available regarding lead exposure in children, and they have been tailored to the unique needs of Minnesota's population. The guidelines are designed to be flexible and generally can be administered quickly with a risk questionnaire developed by the MDH. The BLSWG recommends screening children at ages 12 months and 24 months. Children also should be screened at any time from 3-6 years of age if not previously screened.

For additional information, a copy of the Blood Lead Screening Guidelines and Risk Questionnaire, the work group's final report, or a listing of free lead poisoning educational materials, contact Becky Krueger at (651) 215-0785, or becky.krueger@health.state.mn.us . The guidelines also are available at http://www.health.state.mn.us/divs/eh/profinfo.html . For information about lead surveillance or epidemiology, contact Myron Falken at (651) 215-0877 or myron.falken@health.state.mn.us .

Continuing Medical Education Conference: Chemical and Biological Terrorism

A 1-day conference entitled "Chemical and Biological Terrorism," sponsored by the Minnesota Department of Health and the Hennepin Regional Poison Center, will be held on May 19, 2000 at the Sheraton Airport Hotel, Bloomington. This conference is targeted to physicians, veterinarians, pharmacists, and nurses. Speakers will include international bioterrorism expert LTC Theodore Cieslak, M.D., from the U.S. Army Medical Research Institute of Infectious Diseases; Gregory Bogdan, Ph.D., from the Rocky Mountain Poison and Drug Information Center in Denver; and others from the local medical and veterinary community. Topics will include recognition and treatment of diseases caused by specific chemical and biological agents, use of animals as human health sentinels, the scope of domestic terrorism, and local and national response strategies. Application for continuing education credits have been submitted. For more information, contact Carl S. Hornfeldt, Ph.D., R.Ph., Program Chair, Hennepin Regional Poison Center, (612) 347-2108.

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