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1. World Meningitis Day – April 24, 2011

April 24th will mark the third annual World Meningitis Day, established to raise awareness about meningitis and septicemia and to encourage the prevention of these potentially life-threatening diseases through immunization when vaccines are available.

Meningitis is the inflammation of the meninges, the tissues and fluid covering the brain and spinal cord. Septicemia (sepsis) or bacteremia is the infection of the blood stream by bacteria. A person can have either meningitis or septicemia, or both at the same time.

Meningitis is usually caused by a virus or a bacterium. Viral meningitis is more common and usually less severe than bacterial meningitis. Patients generally recover from viral meningitis without receiving any treatment and have little or no long-term consequences. Bacterial meningitis is less common but generally more severe than viral meningitis. It may lead to permanent injury (e.g., brain damage, hearing loss) or death. Bacterial meningitis can be treated with antibiotics to prevent severe disease and to reduce the risk of transmission of the bacteria to other people.

Before the *Haemophilus influenzae* type b (Hib) vaccine was introduced as part of routine childhood immunizations in 1990, Hib disease was the most common cause of bacterial meningitis in children younger than 5 years. Currently, the leading causes of bacterial meningitis are *Neisseria meningitidis* (also called meningococcus) and *Streptococcus pneumoniae* (also called pneumococcus). The meningococcal vaccine protects against 4 of the 5 most common strains of *Neisseria meningitidis*, and the newest pneumococcal vaccine protects against 13 strains of *Streptococcus pneumoniae*. The Hib and pneumococcal vaccines are part of the routine childhood immunization schedule, and the meningococcal vaccine is recommended for adolescents aged 11-12 years, with a booster at age 16 years.

For more information on meningitis and how to help prevent this serious illness, please visit the Centers for Disease Control and Prevention (CDC) website: <http://www.cdc.gov/meningitis/index.html>.

World Meningitis Day is coordinated by the Confederation of Meningitis Organisations (CoMO), whose members are from all around the world. Learn about World Meningitis Day by visiting the CoMO website: <http://comoonline.org/>.

2. Fee-exempt Rabies Testing Policy Should Not Delay Submissions

There has been some recent misunderstanding about the fee-exempt policy for performing rabies testing at the Wisconsin State Laboratory of Hygiene (SLH). With spring approaching and the concurrent increase in animal bites as the weather improves, this is a good time to remind readers of what this policy entails.

Specimens submitted to the SLH for rabies testing are fee-exempt if:

1. the specimen is from a mammalian species that has a reasonable risk of rabies transmission, AND
2. the specimen is from an animal that:
 - 2.1. has exposed a human OR
 - 2.2. has exposed a domestic animal, OR

2.3. is a domestic animal that is exhibiting signs of rabies

The first criterion above generally excludes the fee-exempt testing of small rodents and rabbits unless the circumstances of the exposure were unusual (e.g., animal acting bizarrely or exhibiting signs of rabies). One common misconception about the policy is that testing an animal that has exposed a domestic animal does not qualify for the fee exemption, when in fact such a specimen is exempt.

The local health department (LHD) acts as the gatekeeper for this policy. **However, this does not mean that the LHD must approve each individual specimen prior to submission for rabies testing in order to obtain the fee exemption.** It should be noted that the cost of the test is not paid for by the local jurisdiction, but rather the LHD acts to administer the fee exemption, the cost of which is borne by the State. Typically, the LHD informs likely submitters (primarily veterinary clinics) about the policy, and intervenes only if inappropriate specimens are being submitted. We do not recommend that LHDs require prior approval before a submitter can send a specimen for rabies testing. Doing so may slow the process and result in an unacceptable delay in obtaining test results. If desired, the LHD may ask submitters to notify them when a rabies specimen has been submitted; such a request would not delay submission.

In the event of a disagreement about the fee-exempt status of a specimen, the office of the State Epidemiologist serves as the final arbiter of the dispute. The current cost of rabies testing at the SLH is \$185.

Questions about fee-exempt rabies testing or about animal bite management in general can be directed to Jim Kazmierczak, State Public Health Veterinarian, at 608/266-2154. Questions about the logistics of specimen submission should be addressed to the rabies unit of the SLH at 608/262-7323.

3. Summary of invasive meningococcal disease, Wisconsin, 1996-2010, and updated ACIP recommendations for meningococcal conjugate vaccines

Meningococcal Conjugate Vaccine Recommendations

In October 2010, the Advisory Committee on Immunization Practices (ACIP) updated the recommendations for the quadrivalent meningococcal conjugate vaccines (MCV4). Recommendations added a booster dose for adolescents and a 2-dose primary series for persons 2-54 years of age with certain underlying conditions (i.e., people who have a persistent complement component deficiency, asplenia, or HIV-infected adolescents).

Currently, two meningococcal conjugate vaccines are licensed in the United States: Menactra®, Sanofi Pasteur (approved since January 2005) and Menveo®, Novartis (approved since February 2010). The vaccines protect against *Neisseria meningitidis* serogroups A, C, Y, and W-135. No vaccines are currently offered in the U.S. for the prevention of serogroup B strains. Both vaccines are licensed for use among persons aged 2 through 55 years, but are routinely recommended for 11-12 year-olds.

Based on the available data at the time of the 2005 ACIP recommendations, the assumption was that MCV4 would offer protection for 10 years against meningococcal disease caused by serogroups A, C, Y, and W-135. The objective of the ACIP recommendation was to provide protection for adolescents through ages 16-21 years, when incidence peaks. However, serologic data and recent data from CDC-coordinated studies evaluating the effectiveness of MCV4 (Menactra®) indicate that immunity declines rapidly 5 years post vaccination. One of these studies is a national case-control study that began in January 2006. Wisconsin is among the states participating in this study, which covers about 54% of the U.S. population. Although rates of meningococcal disease remain at historic lows, ACIP approved the booster dose due to the severity of the disease and the vaccine's waning protection.

The 2010 guidelines recommend that children vaccinated at age 11-12 years should receive a one-time booster dose at age 16 years. If vaccinated at age 13-15 years, a one-time booster dose should be given at age 16-18 years. No booster is needed if the primary dose is given at age 16 years or older.

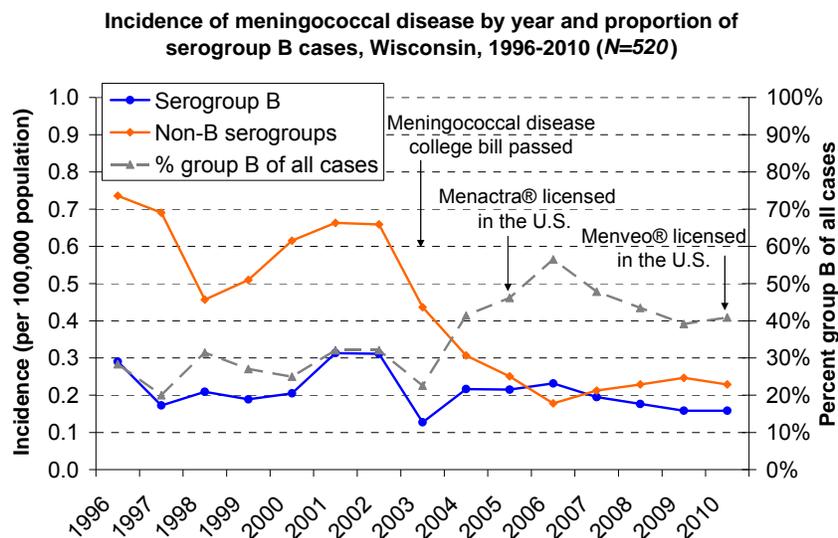
The ACIP also recommends a 2-dose primary series for persons aged 2-54 years who have certain medical conditions that lead to a reduced immune response. People with complement component deficiencies (e.g., C5-C9, properdin, factors H or D), persons with asplenia (functional or anatomic) and 11-18 year-olds with HIV infection are recommended to receive a 2-dose primary series at least 2 months apart. Persons with a complement deficiency or asplenia should continue to receive a booster dose every 5 years. Travelers to or residents of countries where meningococcal disease is epidemic or highly endemic, and microbiologists who work with *Neisseria meningitidis* should also receive a booster dose after 5 years if these higher risk exposures continue.

These new ACIP recommendations, which include the adolescent booster dose, ensure the greatest number of meningococcal disease cases prevented and are considered more cost-effective than the previous recommendation. The updated recommendations are available in the January 28th issue of the Morbidity and Mortality Weekly Report at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6003a3.htm>.

The State of Wisconsin provides both Menactra® and Menveo® vaccines for children through 18 years of age. Contact the Wisconsin Immunization Program for more information by telephone: (608) 267-9959.

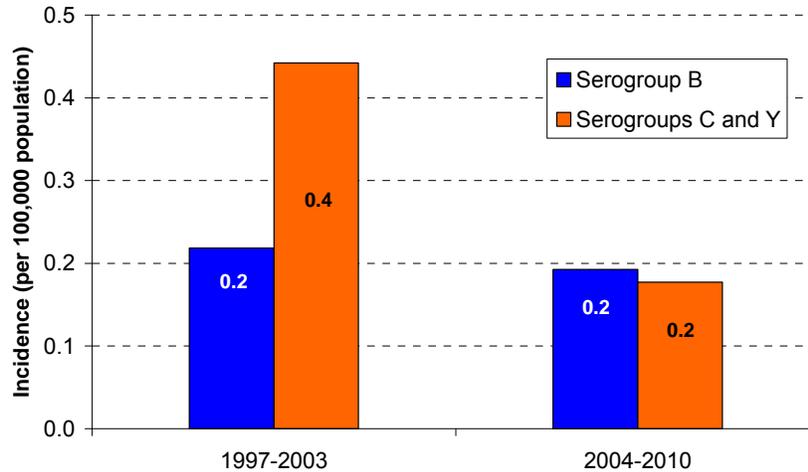
Invasive Meningococcal Disease in Wisconsin, 1996-2010

Nationally, meningococcal disease (*Neisseria meningitidis*) has been decreasing since 2000 and is currently at historic lows. During 2009, 850 cases of invasive meningococcal disease were reported in the United States (0.3 cases per 100,000 population). In Wisconsin, the incidence of meningococcal disease decreased during 2002-2006 and has remained low, with 22 cases reported in 2010 (0.4 cases per 100,000). The decrease has been primarily due to the decline in *N. meningitidis* serogroups C and Y, representing the majority of vaccine-preventable cases. Meningococcal disease due to serogroup B has not increased, but since 2004 serogroup B has comprised a higher proportion of cases (see Figure below).



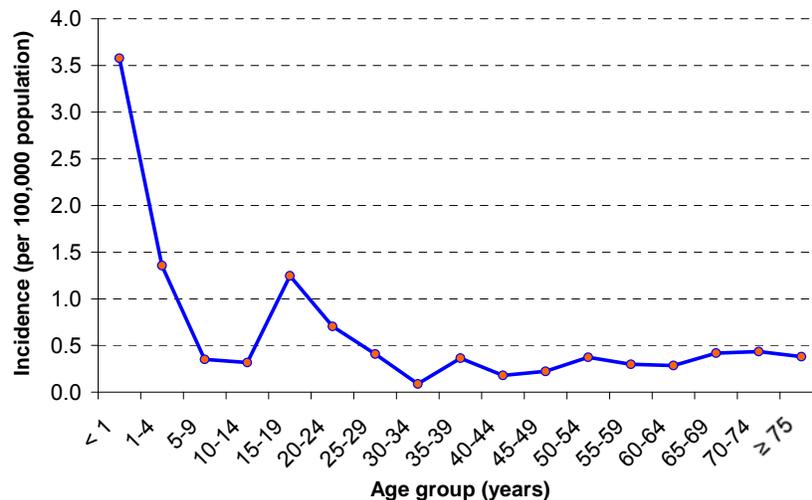
In 2003, a bill was passed in Wisconsin requiring college students to be informed about meningococcal disease and the availability of the meningococcal polysaccharide vaccine. In January 2005, the meningococcal conjugate vaccine Menactra® was approved for use in the United States. Subsequently, between 2004 and 2010, the average annual incidence rates for serogroups C and Y decreased from 0.4 per 100,000 during 1997-2003 to 0.2 per 100,000 during 2004-2010 ($p \leq 0.01$). In contrast, serogroup B incidence remained stable at 0.2 per 100,000 (see Figure below).

Average annual incidence of meningococcal disease by serogroup, Wisconsin, 1997-2010



Despite the decrease in disease due to serogroups included in the vaccine, meningococcal disease is still a burden for young children and adolescents. In the United States and in Wisconsin, meningococcal disease rates are highest among infants < 1 year of age and those ages 16 to 21 years (see Figure below). Children under the age of 1 year are too young to be vaccinated against meningococcal disease. In addition, the majority of cases among babies are caused by serogroup B, a non-vaccine-preventable strain. From 2001-2010 in Wisconsin, almost 70% (17) of cases aged less than 1 year were due to serogroup B strains versus 30% (16) of 15-19 year-old cases.

Average annual incidence of meningococcal disease by age group, Wisconsin, 2001-2010 (N=306)



In summary, meningococcal disease has significantly declined and is at historic lows in Wisconsin and in the United States. However, even after recommendations in 2005 to routinely vaccinate adolescents, relatively high incidence rates persist among adolescents and young adults. In addition, meningococcal disease due to serogroup B remains a burden, especially among children under the age of 1 year.

***Please note: For the management of confirmed or suspected cases of invasive *Neisseria meningitidis* (meningococcal disease), please refer to protocol available in the Provider Resources section of the CDES website:

<http://www.dhs.wisconsin.gov/communicable/resources/Mening/MeningProtocol.pdf>

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