State of Alaska Epidemiology **Bulletin**

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Correction - Update on Three Vaccines: Meningococcal Conjugate (MCV4), Hepatitis A, and MMRV

As shown in the 2006 Alaska Immunization Recommendations, Epidemiology *Bulletin* No. 2, January 10, 2006, several new vaccines/vaccine indications are being implemented in Alaska. More detailed information about these changes is provided below and in Epidemiology *Bulletin* No. 3, January 11, 2006. Please be aware that, **UNTIL THE SUPPLIES FOR THESE VACCINES BECOME STABILIZED OVER THE NEXT FEW MONTHS, PROVIDER ORDERS MAY BE ONLY PARTIALLY FILLED.**

MENINGOCOCCAL DISEASE AND VACCINE

Background

Meningococcal disease is the most common cause of bacterial meningitis among toddlers, adolescents and young adults in the United States. The disease is relatively uncommon in the United States, with an annual incidence of 1.3 cases per 100,000 persons. The case-fatality rate is 10–14%, even with appropriate therapy.[1]

The mode of transmission is through direct contact with respiratory droplets from the nose and throat of infected persons. Symptoms may include high fever, headache, stiff neck, confusion, nausea, vomiting, exhaustion, and rash. Factors thought to contribute to the disease include direct contact with an infected person (e.g., exchanging saliva, often through kissing), crowded living conditions (e.g., dormitories), and active or passive smoking. Vaccination is the best method of preventing meningococcal disease.[2]

There are at least 13 known serogroups of *Neisseria meningitidis*. Serogroups B, C, and Y are the major causes of meningococcal disease in the United States, each being responsible for approximately one-third of the cases.[1] In Alaska, a greater proportion (>56%) of reported cases are attributable to serogroup B.[3]

Comparison of Available Meningococcal Vaccines

Currently two vaccines (both manufactured by sanofi pasteur) are available for protection against meningococcal disease. **Meningococcal polysaccharide vaccine (MPSV4, *Menomune*®)** has been licensed in the United States since 1978. In 2005 a **conjugate vaccine (MCV4, *Menactra*®)** received approval from the U.S. Food and Drug Administration (FDA). Both MPSV4 and MCV4 provide protection against the same four serogroups: A, C, Y, and W-135. Neither vaccine protects against serogroup B, the most common serogroup reported in Alaska. There are at least two advantages to use of the conjugate vaccine. MCV4 induces a long-lasting (perhaps lifelong) response, and it reduces asymptomatic carriage, thus reducing transmission.

Meningococcal Tetravalent Conjugate Vaccine (MCV4, *Menactra*®)

A single 0.5 mL dose of MCV4 contains 4 µg each of capsular polysaccharide from serogroups A, C, Y, and W-135 conjugated to 48 µg of diphtheria toxoid. MCV4 is available only in single-dose vials. MCV4 is administered intramuscularly as a single 0.5 mL dose. It may be administered concomitantly with other vaccines.

Indications for Use

Vaccine provided by the Alaska Immunization Program is restricted for use in two cohorts only:

- **Persons 15 years of age** *or*
- **College freshmen (≤18 years of age) living in dormitories**

The two groups listed above were chosen based upon their potential increased risk for meningococcal disease. Although MCV4 is recommended for additional groups and is licensed for use in a wider age range (i.e., 11–55 years of age),[2] vaccine availability is limited at this time. An announcement will be made via a future Epidemiology *Bulletin* if vaccine supplies allow expansion to additional groups.

Contraindications and Precautions

MCV4 is an inactivated vaccine. As with all inactivated vaccines, MCV4 may be administered to persons with a minor acute illness, but vaccination should be deferred for persons with moderate or severe acute illness until the person's condition improves. Vaccination is contraindicated among persons known to have a severe allergic reaction to any component of the vaccine (including diphtheria toxoid) or to dry natural rubber latex. MCV4 may be administered to persons who are immunosuppressed as a result of disease or medications, but the vaccine response may be less than optimal. No data are available on the safety of vaccine use during pregnancy. As noted in Epidemiology *Bulletin* No. 3, January 11, 2006, MCV4 is conjugated to a diphtheria protein. Persons who recently received one diphtheria toxoid-containing vaccine (e.g., Td or Tdap) might have increased rates of adverse reactions, primarily localized injection site reactions, after a subsequent diphtheria toxoid-containing vaccine when diphtheria toxoid antibody titers remain elevated from the previous vaccination.

MCV4 and Guillain-Barré Syndrome

As of December 19, 2005 the national Vaccine Adverse Event Reporting System (VAERS) had received seven reports of Guillain-Barré Syndrome (GBS) in adolescents after receipt of MCV4 vaccination. All reported cases occurred among persons 17–18 years of age who were vaccinated during June, July, or November 2005 and whose symptom onset began 11–31 days after MCV4 vaccination. Since the number of cases of GBS in adolescents who received MCV4 is not greater than would be expected in an unvaccinated adolescent population, CDC recommends continuation of current vaccination strategies;[4] however, CDC epidemiologists are continuing to investigate the possibility of a causal relationship between MCV4 and GBS.[4] Therefore, CDC recommends that adolescents and their caregivers be informed of this ongoing investigation as part of the consent process for vaccination. An updated (10/17/2005) Meningococcal Vaccine Information Statement should be used.[5] Alaska providers are requested to contact the Section of Epidemiology if they diagnose a patient with GBS within six weeks of receipt of meningococcal vaccine.

Revaccination

Revaccination with MCV4 might be indicated for persons previously vaccinated with MPSV4 who remain at increased risk for infection. Although the need for revaccination among adults and older children after receiving MPSV4 has not been determined, antibody levels decline rapidly after 2–3 years, and, if indications still exist for vaccination, revaccination might be considered after 5 years.[1] It is expected that MCV4 will provide longer protection than MPSV4; however, additional studies are needed to confirm this assumption. More data will likely become available within the next 5 years to guide recommendations on revaccination for persons who were previously vaccinated with MCV4.

HEPATITIS A VACCINE – EXPANDED AGE INDICATION

The FDA has issued product approvals allowing administration of hepatitis A vaccine (*Havrix*®, GlaxoSmithKline and *VAQTA*®, Merck) at one year of age. Provisional recommendations released by the ACIP indicate that all children should receive hepatitis A vaccine between 12–24 months of age. Previously, hepatitis A vaccine was licensed for use only after two years of age. An updated (1/9/2006) Hepatitis A Vaccine Information Statement should be used.[6] With this expanded indication, a history of hepatitis A vaccine given on or after the first birthday is now acceptable for compliance with school and childcare regulations. However, a child will be in compliance as long as the first dose is received by 25 months of age.

MMRV – NOT AVAILABLE THRU IMMUNIZATION PROGRAM

In September 2005 the FDA licensed a combined live attenuated measles, mumps, rubella, and varicella (MMRV) vaccine (*ProQuad*®, Merck & Co.) for use in children 12 months to 12 years of age. Because the storage and handling requirements for this vaccine preclude its use in many parts of Alaska, the Alaska Immunization Program will NOT supply MMRV for Alaska providers at this time.

References:

1 Prevention and Control of Meningococcal Disease. Centers for Disease Control and Prevention, *MMWR Recommendations and Reports*, May 27, 2005/ 54(RR07); 1-21. Available at: http://www.cdc.gov/mmwr/PDF/rr/rr5407.pdf

2 AAP Endorses New Meningococcal Vaccine Guidelines, American Academy of Pediatrics, May 25, 2005. Available at: http://www.aap.org/advocacy/releases/may05mv.htm.

3 Unpublished data. Notifiable disease case reports, 1999 – 2004. Alaska Section of Epidemiology.

4 Guillain-Barré Syndrome Among Adolescents Who Received Meningococcal Conjugate Vaccine, Fact Sheet for Health Professionals. CDC. December 20, 2005. Available at: http://www.cdc.gov/nip/vacsafe/concerns/gbs/gbs-menactra-facts.pdf

5 Meningococcal Vaccine VIS. Available at: http://www.cdc.gov/nip/publications/VIS/vis-mening.pdf

6 Hepatitis A Vaccine VIS. Available at: http://www.cdc.gov/nip/publications/VIS/vis-hep-a.pdf

Errata: Epidemiology *Bulletin* No. 4 January 12, 2006 contained an error. Under **Meningococcal Tetravalent Conjugate Vaccine (MCV4, *Menactra*®):** **MCV4 is administered intramuscularly as a single 0.5 mL dose.**