Serogroup B Meningococcal Vaccine Update

Background
Meningococcal disease is caused by the bacterium Neisseria meningitidis and can involve meningitis, bacteremia, septicaemia, and death.1 The bacteria is spread person-to-person by respiratory droplets through close contact associated with activities like coughing or kissing, or shared living quarters, especially among young people living in the same household or dormitory suite.2 Approximately 10% to 15% of infected people die from the disease; of those that survive, 10% to 20% will suffer lifelong disabilities such as hearing loss, brain damage, amputations, and skin loss requiring skin grafts.2

There are 12 serogroups of N. meningitidis;1 serogroup B accounts for approximately half of all meningococcal cases in persons aged 17–22 years in the United States and has caused several recent outbreaks in college settings.1 Until 2013, most meningococcal disease in Alaska was caused by serogroup B.3 There have been outbreaks of meningococcal disease caused by serogroup B in the United States, including the meningococcal disease outbreak in U.S. Food and Drug Administration (FDA) to protect against serogroup B meningococcal disease, MenB-FHbp (Trumenba, Pfizer, Inc.) and MenB-4C (Bexsero, GlaxoSmithKline Biologicals, Inc.). The Advisory Committee on Immunization Practices (ACIP) has not offered a preferential recommendation for either vaccine; however, they are not interchangeable, and the same product must be used for all doses in a series. In 2016, ACIP updated their guidelines for vaccination against serogroup B meningococcal disease. The new guidance lists specific recommendations for different groups based on risk of serious meningococcal disease. Category A recommendations are made for persons in an age- or risk-factor-based group, while Category B recommendations are considered “permissive” and rely on clinical decision-making.2

Category A recommendation:2 vaccinate all persons aged ≥16 years who are at increased risk for serogroup B meningococcal disease, including the following:

- anyone at increased risk because of a serogroup B meningococcal disease outbreak;
- anyone with persistent complement component deficiency;
- anyone taking the prescription drug eculizumab (Soliris®);
- microbiologists who are exposed routinely to isolates of Neisseria meningitidis; and
- anyone with anatomic or functional asplenia.

Category B recommendation:1 persons aged 16–23 years who are not at increased risk for meningococcal B infection may be vaccinated to provide short-term protection against most strains of serogroup B meningococcal disease. The preferred age of vaccination is 16–18 years.

Guidance for Use1,2

- ACIP Category A Dosage Recommendation
  - Bexsero is a 2-dose series for persons aged ≥16 years who are at increased risk for meningococcal disease, with doses administered at 0 and 1 month.
  - Trumenba is a 3-dose series for persons aged ≥16 years who are at increased risk for meningococcal disease, with doses administered at 0, 1, and 2 months.
- ACIP Category B Dosage Recommendation
  - Bexsero is a 2-dose series for persons aged 16–23 years, with doses administered at 0 and 1 month.
  - Trumenba is a 2-dose series when given to healthy persons aged 16–23 years who are not at increased risk for meningococcal B disease, with doses administered at least 6 months apart.

- Trumenba or Bexsero may be administered concomitantly with other vaccines indicated for this age, but at a different anatomical site, if feasible.
- Vaccination should be deferred in women known to be pregnant or lactating unless the woman is at increased risk for serogroup B meningococcal disease, and, after consultation with her health care provider to determine whether the benefits outweigh the potential risks.

Vaccine Effectiveness
Vaccine effectiveness was inferred based on an immunologic marker of protective immune response. Immunogenicity was assessed as the proportion of subjects who achieved a fourfold or greater increase in serum bactericidal activity using human complement (hSBA) for each of the serogroup B strains tested.4 The vaccine produces an immune response that is protective against multiple serogroup B strains.5

Contraindications
Vaccination is not recommended if the patient has experienced a severe allergic reaction to a previous dose of serogroup B meningococcal vaccine, or to a component of the vaccine.1 Serogroup B meningococcal vaccine should be used during pregnancy only if clearly needed.1 Additionally, the tip caps of the Bexsero prefilled syringes contain natural rubber latex, which may cause allergic reactions in latex-sensitive persons.6 Before administering serogroup B meningococcal vaccines, health care providers should consult the package inserts for precautions, warnings, and contraindications.3 Adverse events occurring after administration of any vaccine should be reported to the Vaccine Adverse Event Reporting System (VAERS). Additional information about VAERS is available by phone at 1–800–822–7967 or online (https://vaers.hhs.gov).

State-Supplied Vaccine
The Alaska Immunization Program offers Bexsero on its pediatric formulary and its adult formulary (for adults aged 19 and 20 years). Health care providers who are enrolled to receive state-supplied vaccines may now order Bexsero; single dose syringes are available for order as a 10-pack or a 1-pack. Clinicians should screen patients for eligibility at each vaccination visit using guidance from the Alaska Immunization Program, and accurately document administration data into VaccTrAK, Alaska’s immunization information system.

References
1. CDC. Serogroup B Meningococcal (MenB) VIS. Available at http://www.cdc.gov/vaccines/hcp/vis/vis-statements/mening-serogroup.html.
3. CDC. Use of serogroup B meningococcal vaccines in adolescents and young adults: Recommendations of the Advisory Committee on Immunization Practices. MMWR 2015;64(41):1171. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6441a3.htm.
6. CDC. Serogroup B Meningococcal (MenB) VIS. Available at: http://www.cdc.gov/vaccines/hcp/vis/vis-statements/mening-serogroup.html.

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