



ELSEVIER

 JOURNAL OF
**ADOLESCENT
 HEALTH**

www.jahonline.org

Position Statement

Meningococcal Vaccine: A Position Statement of the Society for Adolescent Health and Medicine

Although rates of meningococcal disease have remained low in the United States since 2000, the severity of the disease, rapidity with which it strikes, and significant sequelae remain compelling reasons to employ all means possible to prevent it. Meningococcal disease has a bimodal peak distribution in the United States with its highest incidence rates in infants and adolescents aged 16 years and older. The 2005 recommendations from the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention were intended to protect youth entering adolescence including individuals 16–21 years of age, the ages at which meningococcal disease rates peak for children and young adults. Administration of the quadrivalent (serogroups A, C, Y, and W-135) meningococcal conjugate vaccine (MCV4) was recommended at preventive care visits for persons aged 11–12 years. Although duration of protection of the vaccine was unknown, it was assumed that the conjugate vaccine would confer protection lasting through the young adult years.

In the years after its licensure, additional data on vaccine effectiveness and bactericidal antibody persistence revealed that the vaccine may not confer protection for > 5 years. Because disease caused by *Neisseria meningitidis* can result in injury and death so quickly, experts believe antibody persistence (not immune memory) is more important in protecting the host. Thus, one vaccine dose administered at age 11–12 years will protect youth during early adolescence, but may not adequately protect those aged 16–21 years during the peak risk for meningococcal disease for youth.

Based on this information, in October 2010, the ACIP recommended that a quadrivalent meningococcal vaccine should be administered as both a primary dose at age 11–12 years and a booster dose at age 16 years [1]. For adolescents who received their first meningococcal conjugate vaccination at the age of 13–15 years, the booster dose may be administered between ages 16–18 years. For individuals who received their first dose of vaccine at or after age 16 years, a second dose is not recommended. Routine vaccination of healthy young adults who are

not at increased risk for *Neisseria meningitidis* exposure/disease is not indicated after age 21 years. For those going to college, if the primary dose of MCV4 was administered before the age of 16 years, a booster dose should be administered before enrollment so that the adolescent experiences optimal protection throughout the college years.

ACIP has further recommended that adolescents at increased risk of disease, that is, persons who are functionally or anatomically asplenic or have persistent complement component deficiencies receive a two-dose primary series of MCV4 vaccine at least 2 months apart and receive a booster dose every 5 years as indicated for persistent risk. HIV-infected adolescents aged 11–18 years should receive the two-dose primary series (or a booster dose if they have received one dose of vaccine previously). Individuals at risk for exposure to meningococcal disease, such as microbiologists working with *N. meningitidis* and travelers to endemic regions, should receive a single dose of vaccine followed by a booster dose 5 years later as indicated for persistent risk.

The CDC also undertook a cost analysis evaluation of different MCV4 immunization models. They compared three options: (1) one vaccine at 11–12 years, (2) moving the dose from age 11–12 years to 14–15 years, and (3) vaccinating at 11–12 years, and providing a booster dose at age 16. The results indicated that administering a booster dose has a cost per quality-adjusted life year similar to that of a single dose at age 11 or age 15, but is estimated to prevent two times the number of cases and deaths.

The Society for Adolescent Health and Medicine strongly supports these recommendations to further protect adolescents. In addition, providers may wish to consider a booster dose in any patient 16–21 years of age who has received only one dose of vaccine to further assure bactericidal antibody persistence throughout the period of relatively heightened disease risk.

Acknowledgment

The authors gratefully acknowledge the valuable input from the members of the Society for Adolescent Health and Medicine Vaccination Committee.

Policy statement approved by the Society for Adolescent Health and Medicine Board of Directors, October 2011.

Author Disclosures

Research grant funding was provided to the institution of Amy B. Middleman, MD, M.P.H., from Sanofi Pasteur, MedImmune, and Novartis.

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Reference

- [1] CDC. Updated recommendations for use of meningococcal conjugate vaccines—advisory committee on immunization practices ACIP, 2010. *MMWR* 2011;60:72–6.