

Public Health Opportunities to Improve Late-Adolescent Immunization

Sarah J. Clark, MPH; Anne E. Cowan, MPH; Katelyn B. Wells, PhD

ABSTRACT

Seven state/local immunization program managers were convened to discuss how public health immunization programs could enhance their efforts to promote adolescent vaccination, with an emphasis on late adolescence (ages 16-18 years). The Centers for Disease Control and Prevention's revised childhood immunization schedule for 2017 and a recently proposed preventive care platform at 16 years of age provide a unique opportunity to focus on increasing adolescent immunization rates in this population. Public health officials discussed challenges to immunizing this population and suggested key strategies for supporting late-adolescent immunization, including partnerships between public health and immunization providers; nationally supported public information campaigns; and using immunization data specific to this population to track progress.

KEY WORDS: adolescents, immunization, preventive care, public health programs

Vaccination rates for several adolescent vaccines are below national targets,¹ reflecting challenges for both health care providers and public health officials. In February 2017, the Centers for Disease Control and Prevention (CDC) released an updated childhood/adolescent vaccination schedule.² The same week, a group of immunization program managers, representing 7 city/state public health programs, was convened to discuss how public health immunization programs could enhance their efforts to promote adolescent vaccination, with an emphasis on late adolescence (ages 16-18 years).

The in-person roundtable was held in February 2017 following the annual leadership conference of the Association of Immunization Managers (AIM).

Author Affiliations: Child Health Evaluation and Research (CHEAR) Center, University of Michigan, Ann Arbor, Michigan (Mss Clark and Cowan); and Association of Immunization Managers, Rockville, Maryland (Dr Wells).

The roundtable was financially supported by an educational grant from Sanofi Pasteur to the Association of Immunization Managers.

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

The authors have indicated they have no potential conflicts of interest to disclose.

Correspondence: Sarah J. Clark, MPH, CHEAR Center, University of Michigan, 300 N. Ingalls St, Rm 6E06, Ann Arbor, MI 48109 (saclark@umich.edu).

Copyright © 2018 The Authors. Published by Wolters Kluwer Health, Inc.

DOI: 10.1097/PHH.0000000000000792

The convenience sample of participants had been invited by AIM staff and represented a range of experience as program manager, as well as geographic diversity. One of the authors (S.J.C.) facilitated the 2-hour discussion, using a general guide of questions developed prior to the roundtable. All participants agreed to audiotaping of the discussion to enable accurate reporting. The audiotape was transcribed, and the authors reviewed the transcript to summarize key observations.

Clarification of Late-Adolescent Vaccine Recommendations

One suggestion to promote adolescent vaccination pertained to ensuring that providers accurately interpret the immunization schedule. Immunization program managers offered anecdotes describing provider confusion about the timing of vaccination in late adolescence, such as belief among many primary care providers that the second dose of quadrivalent (serogroups A, C, W, and Y) meningococcal conjugate (MenACWY) vaccine should not be given until just before college. This interpretation could be consistent with earlier versions of the CDC vaccination schedule that showed only a combined column for 16 to 18 years, without differentiation of a specific age.³ In contrast, the 2017 schedule includes a separate column for 16 years, clearly identifying it as the recommended age for MenACWY vaccine and labeling it as “2nd dose” rather than the previous “booster”

terminology. The age-16 column also defines the initial consideration of meningococcal B vaccine for non-high-risk persons. Immunization program managers felt that the visual change to the schedule format would help clarify the recommended timing of late-adolescent vaccination for providers.

Challenge of Establishing a Late-Adolescent Platform

With the greater specificity of immunization recommendations at 16 years of age, some groups are seeking to establish a late-adolescent preventive care platform, where the full complement of vaccines (eg, catchup doses of human papillomavirus [HPV], varicella, hepatitis A and B, and seasonal influenza vaccines) would be reviewed and administered, as needed, along with delivery of other elements of preventive care and assessment.^{4,5} This mirrors the existing platform at 11 to 12 years of age that encourages vaccination to be coordinated with routine well-child visits at middle school entry; this platform was established in 1996⁶ and supported with subsequent recommendations for tetanus-diphtheria-acellular pertussis (Tdap), MenACWY, and HPV vaccines at 11 to 12 years of age.

Immunization program managers noted several challenges to establishing a late-adolescent platform. Rates of well-child visits are low for older adolescents,⁷ and there is not a common experience that would prompt parents to schedule a health care visit, as there is with entry into middle school for the 11 to 12 years of age platform. School requirements were described as a double-edged sword. For example, while many adolescents are required to get a sports physical, 4 in 10 parents believe that any qualified provider can perform the sports physical.⁸ Many families utilize alternate settings (eg, walk-in clinics, school-organized physical nights) for sports physicals, but these settings often do not offer a full review of immunization needs.

Program managers also noted that school immunization requirements often lead parents and providers to a focus solely on the vaccines required for school, which for adolescents would typically be Tdap and often the first dose of MenACWY, with little or no emphasis on other recommended vaccines (eg, HPV, meningococcal B).

Immunization program managers described strategies that could serve to even out the demand around school requirements. These strategies include broad and early information dissemination about immunization requirements and sending recall notices for overdue immunizations throughout the year, rather than only in the springtime, to allow ample time for

parents to schedule a comprehensive well-child visit for the adolescent. To counter the problem of parents and providers being too narrowly focused on adolescent vaccines required for school, some immunization programs send immunization reminder notices that list *all* recommended vaccines to establish the expectation that the adolescent should receive the full complement of vaccines.

Strategies to Promote Late-Adolescent Immunization

Immunization program managers articulated several ideas to promote late-adolescent vaccination. First, public health immunization programs have strong ties with child health practices in their jurisdiction that participate in the Vaccines for Children (VFC) program,⁹ as well as frequent collaborations with state chapters of professional organizations such as the American Academy of Pediatrics and the American Academy of Family Practice. These relationships could be leveraged to launch the concept of a comprehensive visit at 16 years of age (ie, a late-adolescent platform). In this type of collaboration, immunization programs could offer provider education to support the late-adolescence platform (eg, scientific basis for giving the second dose of MenACWY at 16 years of age), as well as practical strategies to help providers link vaccines with other preventive care services for late adolescents (eg, HPV and hepatitis vaccines with risk assessment, prevention, and testing for sexually transmitted infections). Professional organizations could provide technical support around establishing business practices to ease the time crunch related to sports physicals and school immunization requirements and spearhead efforts to maximize reimbursement for a comprehensive immunization review in late adolescence.

Second, immunization program managers described the potential benefit of expanding the cadre of adolescent immunization providers to address access problems. Pharmacies, walk-in clinics, school-based health centers, and local public health departments can be encouraged to offer vaccines that the primary care provider does not stock. When families seek immunization-only services to meet school requirements, providers at these sites could be trained to review the immunization history and offer all recommended vaccines, not just those required for school. They could also be trained to encourage parents to schedule a comprehensive primary care visit, although the vaccine requirement has been met. A necessary first step would be to convene a meeting with primary care and alternate-site providers to discuss potential strategies to improve adolescent vaccination and

ensure that the perspectives of all constituencies are represented.

Third, immunization program managers described a need for promotional campaigns to support late-adolescent immunization. For example, they noted that a common reason adolescents do not complete multidose adolescent vaccine series (eg, HPV, MenACWY) is because parents did not know another dose was due, which is supported by recent research.¹⁰ Immunization officials discussed potential areas for promoting a late-adolescent platform among parents, such as through materials linked to driver licensing, high school activity participation, and initial preparations for college. Although a limited amount of adolescent vaccine promotion can be found on television or in other media, it typically has a single-product focus. There is a need for a national public information campaign to promote a consistent message around the late-adolescent platform as a comprehensive wellness visit that includes a full review of immunization needs. Immunization officials emphasized that individual city/state public health programs do not have sufficient funding for extensive media campaigns, so partnerships will be essential.

Fourth, immunization programs must continue their efforts to ensure that immunization providers have access to complete and accurate immunization history for adolescents. This includes not only maintaining the public health immunization information systems (IISs) that exist in many jurisdictions but also coordinating bidirectional data sharing with electronic health records (EHRs) at the practice level. As EHRs occupy an increasingly prominent role in managing clinical care, immunization officials expressed concern that providers will rely on their practice EHR, rather than the public health IIS, to determine which vaccines are due. The potential downsides are that the EHRs may not have the most up-to-date adolescent vaccine recommendations programmed into the forecasting algorithm and may not include doses given at other locations. Immunization program managers emphasized the need to work closely with providers across settings to support strong immunization data systems.

Finally, immunization program managers emphasized the importance of data being available to track progress around late-adolescent vaccination and to measure performance over time. The current methods of estimating teen vaccination rates through the CDC's National Immunization Survey–Teen would likely need to be modified to differentiate between vaccines recommended early in adolescence (eg, first dose of MenACWY at 11–12 years of age) and those recommended later in adolescence (eg, second dose of MenACWY at 16 years of age). In addition,

Implications for Policy & Practice

- A small group of state/city immunization program managers was convened to discuss ideas for and challenges to promoting adolescent vaccination, particularly for older adolescents.
- The CDC's revised childhood immunization schedule for 2017 and a proposed preventive care platform at 16 years of age provide a unique opportunity to increase adolescent immunization rates.
- Key strategies discussed for promoting a late-adolescent platform included:
 - Partnerships between public health and immunization providers, including medical professional organizations, to educate providers on the new platform and explore options for expanded vaccination settings;
 - National public information campaigns on late-adolescent immunization; and
 - Ensuring the availability of data for tracking progress on late-adolescent immunization rates.

collaborations with health plans and health systems could lead to the development of a new quality measure for primary care providers, potentially incorporating both the immunization and wellness visit components of the late-adolescent platform.

In sum, the CDC's new immunization schedule and the proposed late-adolescent platform provide a unique opportunity to increase adolescent immunization rates in the context of expanded preventive care. Partnerships between public health and immunization providers across settings, public information campaigns, and using data to track progress were described as key strategies for promoting the new platform.

References

1. Walker TY, Elam-Evans LD, Singleton JA, et al. National, regional, state, and selected local area vaccination coverage among adolescents aged 13–17 years—United States, 2016. *MMWR Morb Mortal Wkly Rep*. 2017;66(33):874–882.
2. Robinson CL, Romero JR, Kempe A, Pellegrini C; Advisory Committee on Immunization Practices (ACIP) Child/Adolescent Immunization Work Group. Advisory Committee on Immunization Practices recommended immunization schedule for children and adolescents aged 18 years or younger—United States, 2017. *MMWR Morb Mortal Wkly Rep*. 2017;66(5):134–135.
3. Centers for Disease Control and Prevention. Recommended immunization schedules for persons aged 0 through 18 years, United States, 2016. <https://www.cdc.gov/vaccines/schedules/downloads/past/2016-child.pdf>. Accessed November 28, 2017.
4. National Foundation for Infectious Diseases. Call to action: addressing new and ongoing adolescent vaccination challenges. <http://www.adolescentvaccination.org/resources/call-to-action-adolescent-vaccination-challenges.pdf>. Published March 2016. Accessed November 28, 2017.

5. Society for Adolescent Health and Medicine. Position statement: establishing an immunization platform for 16-year-olds in the United States. *J Adolesc Health*. 2017;60(4):475–476.
6. Centers for Disease Control and Prevention. Immunization of adolescents: recommendations of the Advisory Committee on Immunization Practices, the American Academy of Pediatrics, the American Academy of Family Physicians, and the American Medical Association. *MMWR Recomm Rep*. 1996;45(RR-13): 1–16.
7. Tsai Y, Zhou F, Wortley P, Shefer A, Stokley S. Trends and characteristics of preventive care visits among commercially insured adolescents, 2003-2010. *J Pediatr*. 2014;164(3):625–630.
8. Clark SJ, Kauffman AD, Singer DC, Gebremariam A, Davis MM. Sports physicals: convenient versus comprehensive? In: *Mott Children's Hospital National Poll on Children's Health*. Vol 21(3). Ann Arbor, MI: University of Michigan; 2014. <http://mottnpch.org/reports-surveys/sports-physicals-convenient-versus-comprehensive>. Accessed November 28, 2017.
9. Centers for Disease Control and Prevention. Vaccines for Children (VFC) program, the VFC program: at a glance. <https://www.cdc.gov/vaccines/programs/vfc/about/index.html>. Updated February 14, 2014. Accessed January 10, 2018.
10. Clark SJ, Gebremariam A, Singer DC, Kauffman AD, Schultz SL, Freed GL. Parents not keeping up with teen vaccines. In: *C.S. Mott Children's Hospital National Poll on Children's Health*. Vol 29(4). Ann Arbor, MI: University of Michigan; 2017. <http://mottnpch.org/reports-surveys/parents-not-keeping-teen-vaccines>. Accessed November 28, 2017.