AAP reports highlight how to optimize adolescent immunization
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Over the past decade, the AAP-recommended immunization schedule for 11- through 18-year-olds has become more complex due to the introduction of vaccines that protect against serious pathogens such as meningococcus, pertussis and human papillomavirus (HPV) and the recommendation for annual vaccination against influenza.

The Academy has released two clinical reports to consolidate information on these vaccine-preventable diseases and their consequences, and to support pediatricians in achieving high vaccination rates in their adolescent population. The Need to Optimize Adolescent Immunization, available at http://pediatrics.aappublications.org/content/early/2017/02/02/peds.2016-4186, explores the epidemiology of meningococcus, pertussis, HPV and influenza in adolescents. Practical Approaches to Optimize Adolescent Immunization, available at http://pediatrics.aappublications.org/content/early/2017/02/02/peds.2016-4187, details strategies clinicians can use to improve immunization rates and address adolescent vaccine hesitancy or refusal. Both clinical reports will be published in the March issue of Pediatrics.

Following are key points highlighted in the reports.

**Adolescent immunization rates are lower than those for younger children.**

Vaccination rates vary greatly depending on the vaccine and state.

In 2015, the national vaccination rate for tetanus, diphtheria, acellular pertussis (Tdap) vaccine was 86% (range 70%-97%) and 81% (range 55%-98%) for quadrivalent meningococcal conjugate (MenACWY) vaccine. However, completion of the three-dose HPV series was only 42% (range 24%-68%) for females and 28% (range 16%-58%) for males. Similarly, only 46.8% of adolescents ages 13 through 17 received the influenza vaccine in 2015.

Understanding the epidemiology, opportunities and barriers to vaccination can help health care providers create better implementation strategies to enhance coverage.

**Every health care visit is an opportunity to review and update immunization status.**

A complete vaccine history should be reviewed at every health visit. The recommended adolescent immunization schedule includes MenACWY, Tdap, HPV and influenza vaccines.

Meningococcal B vaccine is recommended routinely for those at increased risk; it also is available for healthy adolescents based on individual counseling and provider evaluation (Category B recommendation). Adolescents may require catch-up of recommended immunizations not received at a younger age, such as hepatitis B, hepatitis A, measles-mumps-rubella or varicella.

**A strong recommendation from the health care provider is the most important reason why parents choose to vaccinate their children.**

Providers are parents' most trusted sources of information and offer some of the most important education.

- A lack of recommendation is a major reason for non-receipt of vaccines. In a 2009 survey, 88% and 91% of parents whose children did not receive the Tdap and meningococcal vaccines, respectively, reported not receiving a recommendation. For those who might be vaccine hesitant initially,
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approximately 40% stated that health care provider information and reassurance were major reasons why they changed their minds.

- Other reasons why parents decline a vaccine for their child include the belief that: a) their child was at low risk for acquiring the disease; b) the risks for adverse effects were "too great"; c) there was not enough research on the vaccine; and d) the vaccine had not been on the market "long enough."
- Additional barriers to adolescent immunization include misinformation about vaccines, especially safety, from internet and media sources; racial and ethnic disparities in health care, including immunization coverage; financial difficulties; and inadequate supply of vaccines in offices.

Vaccine hesitancy and refusal in adolescent health care can be challenging.

It is necessary to understand the range of parental attitudes toward vaccines to address potential concerns appropriately. Health care providers should assess for vaccine readiness, ascertain parents' positions and feelings on vaccines, emphasize the benefits of vaccines, clarify any misconceptions, and determine whether there is a lack of understanding or education about a specific vaccine. Ethnic or cultural-specific factors should be considered.

Motivational interviewing is a valuable skill to build rapport with parents and adolescent patients, as well as improve vaccine acceptance and overcome hesitancy. Different strategies may be more effective with different types of vaccine-hesitant parents.

HPV vaccination presents a distinctive set of challenges.

Studies indicate that HPV immunization rates are improved with a strong provider recommendation and when HPV is co-administered with other needed vaccines. Providers should presumptively state that the vaccine is a routine part of the immunization schedule, emphasize its impact on cancer prevention, clarify any misconceptions and underscore the vaccine's safety record.

A 2009 study found that some parents had concerns and misperceptions about increased sexual activity, discomfort toward a new vaccine and vaccine requirements for school. Providers should be prepared to identify and answer these and other parental misconceptions or concerns.

Health care technology can be useful and effective in decreasing missed opportunities for vaccination.

Review of immunization information system records and health care provider prompts are useful and effective ways to reduce missed opportunities in vaccine delivery. The health care provider sees the prompt and identifies whether the adolescent is a candidate for immunization. If the patient is a candidate, the health care provider then should offer the indicated vaccine(s). Prompts for parents also may be useful in ensuring follow-up visits.

Electronic health records and immunization information systems also can run reports listing patients who are due or overdue for immunizations. Delivering reminders or recalls via phone call, text or mail can be a useful way of targeting patients.

Setting up exclusive immunization days or hours is another strategy that can be considered.

Extending care into school-based settings is an alternative strategy that may help improve adolescent immunization rates.

The use of schools as a pathway to educate and vaccinate adolescents could help increase immunization rates.
Other vaccination sites that can facilitate immunizing adolescents include pharmacies, mobile vans, clinics for substance abuse or obstetrics/gynecology care, and shelters. All vaccinations administered in alternate settings should be shared with the adolescent's medical home and documented in the state’s electronic immunization information system.

Dr. Bernstein, associate editor of Red Book Online and an ex-officio member of the AAP Committee on Infectious Diseases (COID), and Dr. Bocchini, former chair of COID, are co-authors of the clinical reports.

Resource

- A panel of experts will discuss a variety of topics pertaining to HPV during a webinar at 1 p.m. ET March 6.