

Improving Adolescent Immunization Rates through a Performance Improvement CME Activity

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Introduction

Immunizations represent one of the most significant public health achievements of the 20th century.¹ Still, many severe illnesses and deaths in the United States can be attributed to vaccine-preventable diseases. Despite the availability of numerous vaccines approved for use across the age spectrum by the Food and Drug Administration and detailed recommendations by the Advisory Committee on Immunization Practices (ACIP),² significant clinician performance and patient health gaps persist in the area of immunizations. Supporting awareness of the currently recommended vaccines, ensuring recommended and appropriate use, and providing accurate information on vaccine safety and efficacy represents a critical unmet need and educational opportunity.

Design

PROTECT (suPorting appROpRIate immunizaTIons across the agE speCTrum) is a curriculum to improve clinician performance and patient health associated with immunizations. It includes a performance improvement CME (PI-CME) platform, with modules focused on childhood, adolescent, and high-risk adult immunizations. The PROTECT modules follow the AMA's PI-CME 3-stage process:

- Stage A – clinicians self-assess their current practice patterns and performance
- Stage B – physicians participate in educational and quality improvement interventions to improve performance in specified areas
- Stage C – physicians reevaluate their performance

The modules are eligible for *AMA PRA Category 1 Credits*TM and maintenance of certification (MOC) part 4 credits (childhood and adolescent, American Board of Pediatrics and American Board of Family Medicine; adult, American Board of Internal Medicine and American Board of Family Medicine).

The overarching goal of the adolescent PI-CME module was to provide education, resources, and tools to help clinicians improve immunization rates in the adolescent patient population. The chart review/ performance measures were based on those included in the 2010 Healthcare Effectiveness Data and Information Set (HEDIS[®]) and the recommendations of the Advisory Committee on Immunization Practices (ACIP)^{4,5} and include:

- NCQA's HEDIS Adolescent Immunization Measure:⁴ the percentage of adolescents (age 13) who received one dose of meningococcal vaccine (MCV4) and either one tetanus, diphtheria toxoids and acellular pertussis vaccine (Tdap) or one tetanus, diphtheria toxoids vaccine (Td) by their 13th birthday (individual rates by vaccine and the combination rate)
- Influenza for Adolescents Measure is based on the ACIP recommendations,⁵ and reflects the percentage of adolescents (age 13) who have received at least one influenza vaccine during the past 12 months
- HPV for Adolescents Measure is based on the ACIP recommendations,⁵ and reflects the percentage of adolescents (age 13) who have received the recommended three doses of HPV vaccine by their 13th birthday. [Note that this PI-CME activity was launched in August 2011, prior to the ACIP recommendation for HPV in males. The module was updated in early 2013 to expand the HPV measure to include adolescent males. Measure results are reported separately for female and male patients].

Stage B interventions consist of a mix of media (CME-certified webinars, peer-to-peer dialogs, and simulated patient-clinician videos) and links to point of care tools and resources including systems-based approaches to help address common barriers to improve immunization rates. These educational interventions align with the clinical gaps and learning objectives that serve as the framework for the overall initiative and focus on the issues and challenges relevant to the adolescent patient population.

The activity was developed on the CE City web-based, HIPAA-compliant, LifetimeTM platform. The current analysis includes data for physicians who completed Stages A, B, and C between August 1, 2011 and June 30, 2014. Deidentified Stage A and Stage C aggregate data were compared using the Chi-Square Goodness of Fit Test, and differences were considered significant with $P < 0.05$.

Outcomes

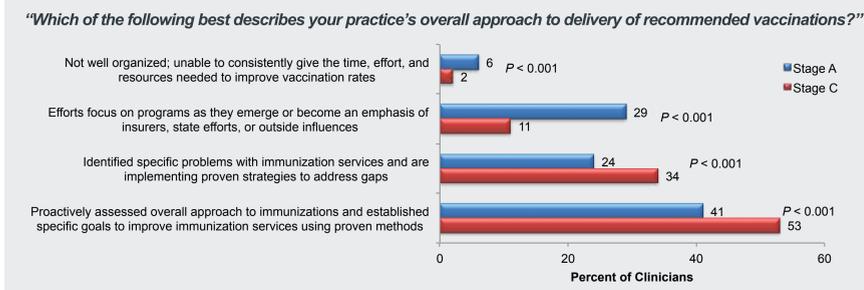
A total of 143 clinicians completed the adolescent PI-CME module; 94% MD, 6% DO; 96% ABP certified; and 97% indicating Pediatrics as their specialty. Results are based on data from 2867 patient charts in Stage A and 2878 charts in Stage C. The Stage B action plan shows that clinicians incorporated a range of systems-based strategies for improving immunization rates in their practice environments during this performance improvement activity.

Table 1: Immunization Strategies Included in Stage B Action Plans

Strategies for Improving Immunization Rates	Included in Action Plan (% of Clinicians)
Make it a priority that every patient is knowledgeable about and has the opportunity to receive recommended vaccinations	71
Address concerns and barriers with patients, families, and caregivers	59
Establish ready access to information and resources to educate patients/parents about vaccines and the risks and benefits of recommended vaccinations	53
Improve access to current immunization information, schedules, and recommendations for staff and clinicians	52
Improve documentation of vaccinations	41
Create clinician reminders about vaccinations within medical records	41
Establish a reminder system for patients who are due for vaccinations	41
Participate in an Immunization Information System (Registry)	40
Establish a performance feedback process to routinely monitor immunization rates	35
Improve patient access to recommended vaccinations (expanded hours, drop-in)	35
Establish a recall system for patients who are past due for vaccinations	32
Implement the use of standing orders	30

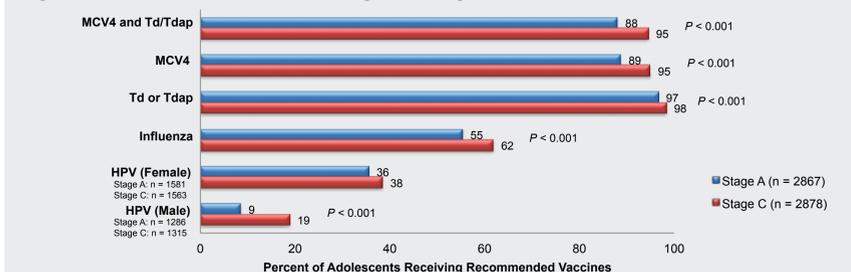
The self-assessment survey also indicated a change in the delivery of recommended vaccines between Stage A and Stage C.

Figure 1: Change in Approach to Delivery of Recommended Vaccines (Self-Assessment Survey)



Stage C chart review results indicated a significant improvement over Stage A for each of the adolescent performance measures, except HPV for females.

Figure 2: Adolescent Immunization Rates: Stage A and Stage C



The following responses on Stage C evaluation questions illustrate the impact of this PI-CME activity:

- *"Although our clinic has always focused on the immunization status of our patients, this project enhanced our efforts. It was a team building experience that included screening at triage by our medical assistants and nurses, and improved communication with providers using an 'immunization status' sheet for every visit."*
- *"I have learned we must communicate better to patients in regard to the influenza and HPV vaccines. We must also inform the parents that the myths with vaccines are inaccurate."*
- *"I was surprised to find that our rates of vaccinations could increase so dramatically so fast with just our personal recommendations."*
- *"I think I became more aware of the big picture challenges and barriers to immunization—it's not just noncompliant parents or uninformed physicians, it's about educating physicians and parents, making office workflows easier and more efficient, having a good follow-up process in place, and consistent execution and follow thru with improvement plans and ideas."*

Conclusions

The PROTECT PI-CME MOC activity is directly applicable and clinically relevant for pediatric/ adolescent practices. The outcomes associated with this module demonstrate the success that can follow from practice assessment. The following quote from a learner highlights the need for self-reflection; *"I was initially skeptical about the value ... viewed it as more busy work that had to be completed for recertification for my boards. Yet I found this to be very useful and valuable both in increasing my knowledge for the recertification exam and in providing a basis for improving immunization practices in my office. I have already recommended this to my partners who are embarking on their recertification process."*

Our results showed the value of implementing systems-based changes so critical toward improving the clinical care of patients. Nearly 80% of clinicians indicated that participation in this PI-CME activity enabled them to implement strategies to improve immunization rates. Through engagement of staff and the entire health care team, immunization barriers were identified and addressed, point of care access to immunization schedules and recommendations was improved, immunization documentation and reminder systems were improved, and patient/ caregiver immunization education to address vaccine concerns was implemented. Furthermore, an unintended consequence of "team building" was noted by participants such as, *"... this project enhanced our [immunization] efforts. It was a team building experience that included screening at triage by our medical assistants and nurses, and improved communication with providers using an 'immunization status' sheet for every visit."*

¹ CDC. Ten Great Public Health Achievements—United States, 1900-1999. *MMWR Wkly Rep.* 1999;48(12):241-243.

² CDC. <http://www.cdc.gov/vaccines/schedules/>. Accessed March 2015.

³ Kahn N, Bagley B, Tyler S. Performance improvement CME: core of the new CME. *CPPD Report.* 2007;22:1-6.

⁴ NCQA. *The State of Health Care Quality.* 2010.

⁵ CDC. Recommended immunization schedules for persons aged 0 through 18 years—United States, 2011. *MMWR Wkly Rep.* 2011;60(5):1-4.

⁶ CDC. Recommendations on the use of quadrivalent human papillomavirus vaccine in males—advisory committee on immunization practices (ACIP), 2011. *MMWR.* 2011;60(50):1705-1708.