

71272Gpreport_02: Policy and Practice Brief

“Using HPV vaccine-specific quality improvement tools to increase immunization coverage in primary care ”

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Executive Summary

To improve human papillomavirus (HPV) vaccination in primary care, we developed HPV vaccine-specific tools that public health departments in three states incorporated into their routine AFIX quality improvement programs. In an evaluation with 225 primary care clinics, we found that these tools were successful for communicating the problem of low HPV vaccination coverage and incentivizing the participation of healthcare providers. Delivering AFIX by webinar cost less than in-person visits, but also reached fewer providers.

Background

HPV vaccination prevents multiple types of cancer, including those of the cervix, head and neck, and anus. Despite having an excellent safety profile, HPV vaccine remains one of the most underused of vaccines routinely administered to children and adolescents. Only 42% of 13- to 17-year-old girls and 28% of boys completed the 3-dose HPV vaccine series by 2015. Furthermore, state-by-state completion rates vary widely, ranging from 68% in Rhode Island to just 24% in Mississippi. The recent transition to a 2-dose schedule for younger adolescents may slightly raise rates of series completion. However, without intervention, national coverage is likely to remain far below the Healthy People 2020 goal of 80% for ages 13-15. The geographic disparities in coverage indicate that state-based approaches to improving coverage may be especially important.

The AFIX Model

One successful approach for increasing immunization coverage is the Centers for Disease Control and Prevention's (CDC) AFIX model. Delivered to primary care providers by state and regional health departments, AFIX is a quality improvement program with four components:

- **Assessment** – An AFIX specialist uses provider records to estimate clinic-level coverage for priority vaccines.
- **Feedback** - The specialist shares these findings with clinicians and offers recommendations about how to improve coverage.
- **Incentives** - The specialist recognizes and rewards the use of immunization best practices.
- **eXchange** - The specialist updates the clinic 6 months after the initial visit to share new vaccination coverage estimates, assess progress toward quality improvement goals, and plan for continued improvement.

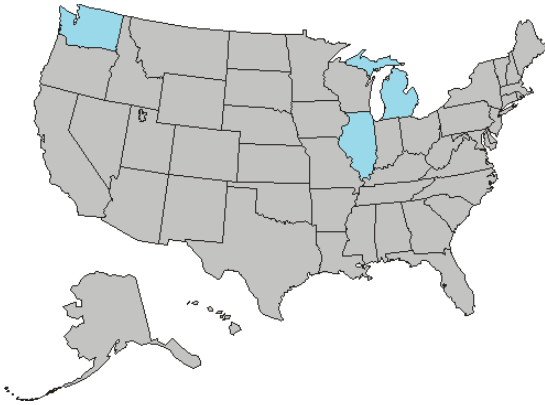


Currently implemented in all 50 states, AFIX is an evidence-based approach to improving early childhood vaccination. However, the evidence for using AFIX to improve adolescent vaccination is less well-established. Further, HPV vaccination presents unique challenges, such as the need to improve healthcare providers' prescribing behaviors, which a standard AFIX approach may not address sufficiently.

Our Study

We developed HPV vaccine-specific quality improvement tools, in partnership with health departments in Illinois, Michigan, and Washington State (Figure 1). These tools included suggested scripts for the AFIX specialists who deliver the consultations, as well as materials such as an Immunization Report Card (Figure 2). In 2015, our state health department partners incorporated our tools into their routine adolescent AFIX programs, and together, we evaluated their efforts using immunization information system (IIS) data. In a 3-arm RCT, we randomly assigned 225 high-volume primary care clinics to receive no AFIX consultation, an in-person AFIX consultation, or a webinar delivered AFIX consultation. These clinics served over 305,000 patients, ages 11-17.

Figure 1. States implementing HPV AFIX



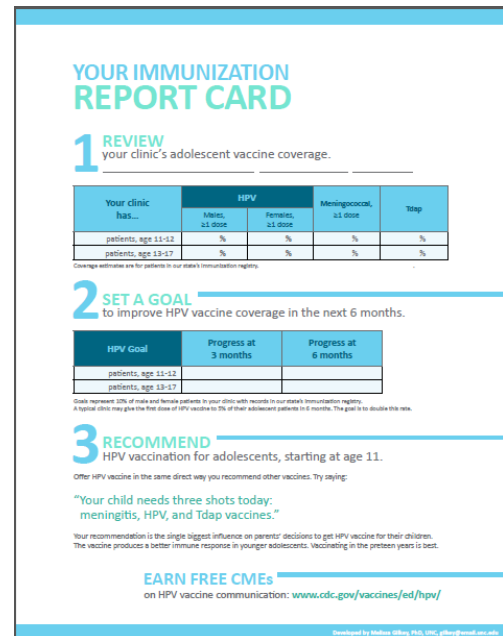
Each intervention clinic received a 60-minute consultation from their state’s AFIX specialist. Both in-person and webinar consultations had four main parts. First, specialists explained the reasons for focusing on HPV vaccination and the consequences of HPV infection. Second, they shared an Immunization Report Card (Figure 2) with clinic staff. The Report Card showed vaccination coverage for three vaccines: HPV, meningococcal, and tetanus, diphtheria, and acellular pertussis (Tdap). These data gave the clinic a baseline that they could use to measure the success of their quality improvement efforts. Third, specialists also used the Report Card to communicate

the measurable goal of increasing HPV

vaccination by 10% in the clinic over a six-month period. Finally, the specialist provided information about immunization best practices and discussed potential areas for improvement. The specialist informed the clinic staff that they would be sending e-mails over the next six months to provide more information about HPV vaccination and follow-up Report Cards to track their progress toward the HPV vaccination goal at 3- and 6-months after the consultation. Providers who participated in AFIX consultations were eligible to claim up to 1.0 hour of continuing medical education (CME) credit.

We assessed provider’s perceptions and practices related to HPV vaccination with an online survey before the consultation, immediately following the consultation, and six months after the consultation. We evaluated the cost of both modes of delivering the intervention (in-person and webinar) using weekly time logs of state health department personnel, salary data (including fringe benefits), and non-staffing expense reports. We used semi-structured interviews with the state immunization specialists to assess their overall experience delivering the in-person and webinar consultations and their plans for future use.

Figure 2. Immunization Report Card

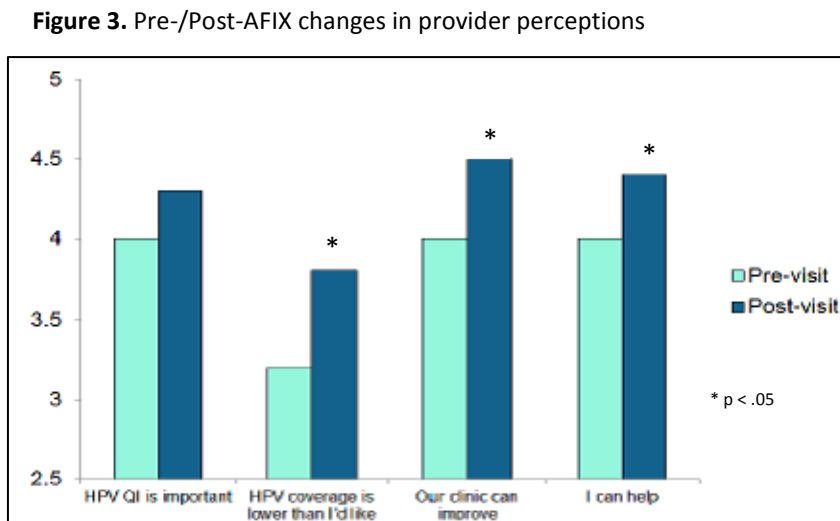


Who participated in AFIX?

We found that our partners achieved a high level of participation; on average, 8 providers per clinic participated in visits, compared to just 1 provider per clinic in a previous trial. Of the subset of 229 participants who completed our post-consultation survey, most were nurses ($n=104$, 45%), although clinic managers ($n=42$, 18%), other office staff ($n=43$, 19%), and physicians ($n=18$, 8%) also participated. Over half (61%) of these participants claimed the CME credit we offered, including 78% of participating physicians and 65% of nurses.

How did AFIX change providers' perceptions?

We found that AFIX improved providers' quality improvement-related perceptions on 3 of 4 key measures (Figure 3). For example, after the AFIX consultation, providers were more often aware that their clinic's low HPV vaccination coverage was a problem and that they could help fix that problem.



How did healthcare providers rate AFIX?

Providers rated AFIX consultations highly on convenience (mean=4.3 of 5), ease of understanding (mean=4.5), and the quality of the visit facilitation (mean=4.4). Providers also gave high ratings to the importance of many parts of the consultations, including reviewing the clinic's coverage rates, discussing the importance of provider recommendations for HPV vaccine, and committing to quality improvement strategies.

How did healthcare providers adopt the Report Card?

The majority of providers (87%) reported disseminating the clinic's Report Card to providers who prescribe or administer adolescent vaccines, clinic managers, or other providers. They also indicated that the Report Card was disseminated through in-person, one-on-one conversations (63%), announcements at a clinic's staff meeting (39%), email communications (18%), or by displaying the report in the clinic (10%).

How did in-person and webinar AFIX compare?

In-person and webinar AFIX were similar in terms of acceptability, but differed on both reach to providers and cost. Healthcare providers in both in-person and webinar consultations expressed the same high level of satisfaction with AFIX. Of those that received an in-person consultation, over three-quarters (83%) indicated that they preferred that mode, while a similar proportion (77%) of participants who received a webinar indicated that they preferred that mode. Webinar delivery was also highly acceptable to state health department staff, who reported experiencing few technical difficulties. Given its convenience, all three health departments planned to continue using webinar. However, staff did note challenges with the delivery mode including: more difficulty scheduling with clinics, greater likelihood that attendees would cancel, difficulty establishing rapport, and smaller attendance compared to in-person consultations. Survey data

confirmed our state partners' perception that webinar AFIX had more limited reach than in-person AFIX. On average, webinar AFIX consultations had 5 participants per clinic. In contrast, in-person AFIX achieved 9 participants per clinic.

Webinar AFIX was considerably less expensive to deliver. After accounting for staff time and travel costs, in-person AFIX consultations cost \$732 per clinic for state health departments to deliver, while webinar consultations cost \$460. Travel costs accounted for almost a third of the cost (\$233 per clinic) and accounts for most of the difference between the two delivery modes.

Policy Implications

The CDC's national AFIX program offers a low-intensity, up-stream approach to improving immunization services for the many adolescents who visit a primary care provider each year. Our study offers policymakers the following guidance for strengthening AFIX programs so as to maximize their impact on vaccination coverage:

1. **Our quality improvement tools communicate the problem of low HPV vaccination coverage.** Our HPV vaccine-specific tools, including our Immunization Report Card, were rated highly by health care providers. Furthermore, our tools achieved statistically significant changes in providers' awareness of low HPV vaccination coverage, as well as their self-efficacy to improve coverage. In these ways, our tools provide a promising complement to health departments' routine adolescent AFIX programs.
2. **The Report Card was easily disseminated to clinics' decision makers.** Most participants shared our Report Card with vaccine providers and clinic's managers. It was also disseminated through several communication channels including clinic staff meetings. These data suggest that our Report Card can be easily adopted into clinics' quality improvement policies and procedures.
3. **CMEs are a promising approach to incentivizing provider participation.** Our study achieved a high level of provider participation in AFIX consultations by offering CMEs. This relatively low-cost incentive was helpful for recruiting clinics to the study, and also raised the number of participants per clinic beyond what we have achieved in prior projects. Our experience suggests that helping health departments certify their AFIX programs for CME credit is one way to strengthen these programs.
4. **Webinar AFIX costs less than in-person AFIX, but may have more limited reach.** We found substantial cost savings associated with webinar delivery, and yet webinars were more difficult to schedule and reached fewer providers per clinic. Given these tradeoffs, forthcoming effectiveness data will be important for understanding how and for whom webinar delivery of AFIX is appropriate.

There is increasing evidence that the CDC's AFIX model for vaccine quality improvement works well for increasing HPV vaccine coverage. Webinar technology could be a promising tool for delivering AFIX. Public health policy and practice should focus on how to overcome the shortcomings of this method, while capitalizing on the cost and time savings and broad acceptability of this approach to vaccine quality improvement.