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Brief Overview

The goal of the HPV IQ Assessment and Feedback Toolkit is to raise HPV vaccine coverage among adolescents across the United States. This protocol provides state and regional health department staff a step-by-step guide for conducting assessment and feedback sessions with vaccine providers in primary care settings. Developed in consultation with the CDC and several state health departments, this protocol is designed to complement the CDC's AFIX model¹ as well as state health departments' existing programs. Our intent is to give public health practitioners evidence-based tools that are easy to use and adapt to their local needs and resources.

The protocol is divided into five sections. Chapter 1 sets forth the rationale for focusing on HPV vaccine quality improvement. Chapter 2 discusses how to prepare for an assessment and feedback consultation, including instructions for completing the Immunization Report Card using data from state immunization information systems. Chapter 3 provides steps for conducting the initial consultation with providers; the emphasis here is on sharing HPV vaccine coverage estimates as widely as possible and encouraging providers to routinely deliver strong recommendations for HPV vaccination. Chapter 4 describes follow-up activities conducted primarily through email coaching using the Immunization Report Card and ready-to-use email templates. Chapter 5 describes different ways to evaluate the impact of your efforts.

Chapter 1: Background

Why it Matters

Human papillomavirus (HPV) vaccine is one of the most underused vaccines in the United States. Despite national guidelines for routine administration, only 42% of 13- to 17-year old girls and 28% of boys currently receive all three recommended doses.² These low levels of coverage fall far short of what we have achieved for other adolescent vaccines (Figure).³⁻⁷

Our failure to meet national goals for HPV vaccine coverage carries serious consequences. Over the lifetime of today's population of girls 12 and under, we are missing an opportunity to prevent 53,000 cases of cervical cancer alone.⁸ Other preventable HPV-associated diseases, including anal and oral cancers in both sexes, add substantially to the potentially-preventable disease burden.⁷ Given the public health potential of HPV vaccine, improving coverage is a national priority.

What is immunization quality improvement?

Immunization quality improvement is a systematic approach to improving how vaccines are delivered. Key features include:

- A focus on team process. Vaccine delivery requires the coordination of many members of the healthcare team. Immunization quality improvement seeks to improve the way that different providers work together to get the job done.
- A flexible, assets-based approach. Recognizing and building on the unique strengths of each healthcare team is critical to overcoming barriers to vaccine delivery. Rather than prescribed solutions, the idea is to equip providers with the tools they need to evaluate current practice, set goals for improvement, and use data to measure success.
- Ongoing commitment. Because the recommended immunization schedule is dynamic and complex, immunization quality improvement is not a one-time event. Providers are always striving to improve their practice, and the methods described in this protocol can help.

HPV Vaccine: Guidelines for Administration

The CDC's Advisory Committee on Immunization Practices recommends that 11-12 year old adolescents receive 2 doses of HPV vaccine (males and females).

- Teens older than 14 years will need to get 3 doses of the vaccine over a six month period.
- Catch up administration with 3 doses to:
 - o Age 26 for females and men who have sex with men
 - o Age 21 for other males

The two doses of HPV vaccine for younger adolescents should be given six to twelve months apart. Adolescents who get that vaccine less than five months apart will need a third dose. If the vaccine schedule is interrupted, the vaccine series does not need to be restarted.

HPV vaccine can be delivered if the patient:

- Has received other adolescent vaccines during the same healthcare visit
- Has a minor illness
- Has already initiated sexual activity

HPV vaccine should not be delivered if the patient:

- Is pregnant
- Has a moderate or severe illness
- Has had an allergic reaction to a previous dose of HPV vaccine
- Has an allergy to yeast

CHAPTER 2: Preparing to Deliver Assessment and Feedback Consultations

Offer CME incentives

Getting providers to the table is a top priority for vaccine quality improvement. Offering CME credits can be a valuable incentive for this group. You can certify your assessment and feedback program as a CME activity through many professional organizations and universities. The American Association of Family Physicians (AAFP) is one good option.

Schedule feedback sessions

Feedback sessions allow you to learn more about the vaccine administration practices at each clinic. They are also an opportunity for you to provide more information about the vaccine and present clinic-specific vaccination rates to providers. Working together with providers, you can discuss ways to improve HPV vaccine delivery.

Scheduling feedback sessions requires time and persistence. To make sure your efforts have the biggest impact, use your state's Immunization Information System (IIS) to target moderate to large clinics. For example, you might choose to focus on those with ≥ 200 active patients, ages 11 through 17.

Other best practices include:

1. **Schedule feedback sessions in the spring.** Providers deliver many more adolescent vaccine doses in the summer than any other time of year. Engaging providers in immunization quality improvement in the spring will prepare them to meet the summer rush.
2. **Identify whether the clinic has an immunization champion.** Immunization champions are staff who are personally committed to the effort to improve and promote vaccination in a clinic. Leading immunization quality improvement efforts often requires both clinical and administrative knowledge of vaccination. Thus, clinicians are often best-suited for the role. However, immunization champions can have many different jobs in a clinic, and all staff should be encouraged to take part in the QI efforts.
3. **Actively recruit vaccine providers, using incentives.** When scheduling, be explicit that provider participation is preferred in feedback sessions. Offer incentives, such as “lunch and learn” sessions, educational materials, and CME credits, to get providers to the table. Emphasize that QI strategies can help them meet their HEDIS targets.
4. **Separate feedback sessions from Vaccines for Children (VFC) storage and handling assessments.** VFC visits are time-intensive and can involve legal consequences for providers who are non-compliant. To foster a collaborative focus on quality improvement, feedback sessions should ideally occur on a separate day.
5. **Offer a few specific times to schedule the feedback session rather than an open-ended invitation.** Providers are more likely to commit to a feedback session when you offer them the choice of a few pre-determined times.

Consultations are designed to be delivered **in-person**, in face to face interactions with providers, or via **webinar**. When scheduling consultations, offer providers either type of visit. *All intervention materials can be used in either type of consultation.* For webinar consultations, make sure that you have webinar software installed on your computer and are comfortable using its features.

Complete Immunization Report Cards

You will use HPV IQ Immunization Report Cards to structure feedback sessions with providers. The Report Cards show the clinic's coverage for adolescent vaccines, including HPV vaccine.

YOUR IMMUNIZATION REPORT CARD

1 REVIEW

your clinic's adolescent vaccine coverage.

Your clinic has...	HPV		Meningococcal, ≥1 dose	Tdap
	Males, ≥1 dose	Females, ≥1 dose		
patients, age 11-12	%	%	%	%
patients, age 13-17	%	%	%	%

Coverage estimates are for patients in our state's immunization registry.

2 SET A GOAL

to improve HPV vaccine coverage in the next 6 months.

HPV Goal	Progress at 3 months	Progress at 6 months
patients, age 11-12		
patients, age 13-17		

Goals represent 10% of male and female patients in your clinic with records in our state's immunization registry. A typical clinic may give the first dose of HPV vaccine to 5% of their adolescent patients in 6 months. The goal is to double this rate.

3 RECOMMEND

HPV vaccination for adolescents, starting at age 11.

Offer HPV vaccine in the same direct way you recommend other vaccines. Try saying:

"Your child needs three shots today: meningitis, HPV, and Tdap vaccines."

Your recommendation is the single biggest influence on parents' decisions to get HPV vaccine for their children. The vaccine produces a better immune response in younger adolescents. Vaccinating in the preteen years is best.

EARN FREE CMEs

on HPV vaccine communication: www.cdc.gov/vaccines/ed/hpv/

HPV IQ
Immunization Quality Improvement Tool

Developed by Melissa Gilkey, PhD, UNC, gilkey@email.unc.edu

Use IIS data to complete each clinic's Immunization Report Card prior to the assessment and feedback consultation.

- 1. Adolescent immunization coverage.** For the first section of the report card, enter the total number of male and female patients, ages 11 through 12 and 13 through 17, with active registry records. Calculate vaccination coverage with the CDC's "census method," using all active records. Male and female patients will be reported separately for HPV vaccine, but combined for meningococcal and Tdap vaccines.
- 2. QI goal.** For the second section of the report card, enter the HPV vaccine QI goal, which will be 10% of each age group. For example, if a clinic has 868 male and female patients, ages 11-12, the clinic's QI goal will be for 87 patients, ages 11-12, to receive the first dose of HPV vaccine. For the initial visit, leave the boxes for the 3- and 6-month progress reports blank.

CHAPTER 3: Delivering Assessment and Feedback Consultations

This chapter provides a step-by-step guide for conducting an initial assessment and feedback consultation. Consultations are designed to last about 60 minutes. Download the HPV IQ Presentation Slides to guide the conversation, for both in-person and webinar consultations.

Materials

- Immunization Report Card completed using IIS data
- CDC Site Visit Questionnaire
- Action Plan
- HPV IQ Presentation Slides

Step 1: Communicate the rationale for quality improvement (10 minutes)

Purpose

- Introduce the quality improvement approach and explain the focus on HPV vaccination.

Suggested script

- “This is a quality improvement program. Today’s visit is a chance to make a plan for improving adolescent immunization in your clinic. You can think of it as a mini-experiment.”
- “I’m going to share a report that shows how your clinic is currently doing with immunizing its adolescent patient population. Then, we’ll set a goal for improvement. We’ll talk about ways to meet that goal, and I’ll ask you to share our plan with others in the clinic. In a few months, I’ll send you an updated report, and at that point, we can see if the improvement plan worked.”
- “We’ll talk about all three adolescent vaccines today, but we’re going to focus specifically on HPV vaccine. We’re concerned about HPV vaccination because far fewer adolescents get HPV vaccine than Tdap or meningococcal vaccines. We’re missing a really important opportunity to protect kids from cancer. That’s why improving HPV vaccine coverage is a priority for our state.”

Explanation

Clinicians may be unfamiliar with the principles of continuous quality improvement. For this reason, a clear explanation is needed for what the program is meant to accomplish. Participants should understand that they are responsible for conducting quality improvement activities and that you will be providing follow-up coverage estimates. Highlighting low HPV vaccine coverage is also important because not all clinicians understand the extent of the problem or feel urgency about addressing it.

Step 2: Set the context for quality improvement. (10 minutes)

Purpose

- Invite the participant's perspective on the clinic's current adolescent immunization program.

Suggested script

- "Tell me about your clinic's approach to vaccinating adolescents."
- "What are your strengths in this area? What challenges do you face?"

Explanation

The goal of the consultation is to engage clinicians as partners in quality improvement. Beginning the consultation with an open-ended inquiry encourages a two-way conversation. This approach also allows the clinician to share information that may be used to tailor the session. The focus of Step 2 should be on listening and asking clarifying questions; devising a plan for quality improvement will come later.

Step 3: Share the report card. (15 minutes)

Purpose

- Highlight the problem of low HPV vaccine coverage and set a baseline for measuring improvement.

Suggested script

- "This is a report that shows the percentage of adolescents in your clinic who have gotten each of the adolescent vaccines. For example, here we see patients ages 13 through 17, so these are kids who should be up-to-date on all three vaccines. We calculated these estimates using records in our state's immunization registry. We know that registry data are sometimes incomplete, but they can give us a good starting place for understanding which vaccines need the most attention."
- "Do you have any questions about the report? Do these estimates match what you know about adolescent immunization in your clinic?"
- "You can see from the report that your clinic is doing pretty well with Tdap and meningococcal vaccines. You're getting close to the national goal of 80% coverage. But for HPV vaccine, only X% of girls and Y% of boys are vaccinated. We really need to get these numbers up."

Explanation

Communicating that HPV vaccination is a problem is important because some clinicians view low coverage as normal for this vaccine. Sharing coverage estimates also gives clinicians a baseline they can use to measure the success of their quality improvement efforts. The goal of Step 3 is to motivate rather than discourage. Strategies to promote collaboration and avoid blame include: acknowledging limitations in IIS data, inviting reactions and questions about the report, and recognizing high levels of coverage for other vaccines such as Tdap.

Step 4: Set a measurable goal for improving HPV vaccine coverage. (5 minutes)

Purpose

- Motivate improvement efforts by showing clinicians how many adolescent patients they need to vaccinate to improve the clinic's coverage.

Suggested script

- “Over the next 6 months, research suggests that a typical clinic will deliver the first dose of HPV vaccine to about 5% of all 11- to 12-year-old patients in the practice. We'd like you to aim to double this rate by vaccinating 10% of your 11- to 12-year-old and 13- to 17-year-old patients.”
- “We think this goal is achievable. As you can see, the total number of HPV vaccine doses in question is modest. According to the state's vaccine registry, you have [number] of 11- to 12-year-old patients. To reach your quality improvement goal, your clinic would need to deliver the first dose of HPV vaccine to [number] patients in this age range over the next 6 months.”
- “We're going to be using this immunization report card to track your progress. I'll get back in touch with you in 3 months and then again in 6 months to let you know how many of your patients have received the first dose of HPV vaccine since this meeting.”

Explanation

Stating the quality improvement goal in terms of a specific number of patients to be vaccinated will help to personalize the consultation and convey the scope of the plan. Providing early feedback at 3 months gives clinicians an opportunity to adjust or intensify their improvement efforts if they are not making the progress they had expected.

Step 5: Discuss strategies for increasing provider recommendations for HPV vaccine. (15-20 minutes)

Purpose

- Discuss the goal of increasing provider recommendation of HPV vaccine as this project's primary quality improvement strategy.
- Complete the CDC's Site Visit Questionnaire

Suggested script

- "The very best way to increase your clinic's HPV vaccine coverage is for clinicians to recommend the vaccine more often and more effectively. We want to make sure that all 11- and 12-year-old patients get a recommendation. It's important to treat HPV vaccine just like other adolescent vaccines. A brief, straightforward approach for same-day vaccination works best."
- "I would like for you to share this report with all of the vaccine providers in your clinic. Let them know that their recommendation is very important to families and the key to improving HPV vaccine coverage."
- "Now we're going to fill out a questionnaire about immunization best practices. In addition to increasing provider recommendations, we may be able to identify a second strategy to raise your HPV vaccine coverage. The section on reducing missed opportunities is especially important."

Explanation

One of the main reasons HPV vaccine coverage is low is that some healthcare providers do not recommend the vaccine as strongly or consistently as other vaccines. Because HPV vaccine coverage is unlikely to improve substantially until more families receive recommendations, all participants should be encouraged to engage other vaccine providers in the quality improvement process. Participants can select a secondary quality improvement strategy to address challenges specific to their clinic.

Step 6: Select other strategies and create an action plan. (10-20 minutes)

Purpose

- Use the HPV IQ Action Plan to choose secondary quality improvement strategies to meet challenges specific to each clinic.
- Plan to distribute hard copies of the clinic's Immunization Report Cards to clinicians and staff.
- Collect contact information (e.g., email addresses or fax numbers) for all clinicians and staff with a role in vaccine provision.
- Identify other ways to share the report card, goals, and quality improvement strategies with other clinicians and staff in the clinic.

Suggested script

- "To get everyone in your clinic involved in this project, we need to share this report with other clinicians as well as the front office staff. Here are copies of your Immunization Report Card that I'd like you to distribute to all of the clinicians and staff who have a role in adolescent vaccination."
- "I'd also like to collect email addresses and fax numbers for clinicians and staff so that I can help you get the message out."
- "What are other opportunities to share information about the project? For example, making a short presentation at a regularly-scheduled staff meeting is a great way to get the word out."

Explanation

Engaging vaccine providers in the delivery of HPV vaccine recommendations is vital to improving coverage, and these consultations rely primarily on the clinician leading the project to reach out to others in the clinic. Clinicians can share information about the project in forums such as weekly staff meetings, and they can use the report card to convey key points. If email is not a good way to share progress reports, work with the clinician to identify alternative strategies such as fax.

Step 7: Help providers get CME credit or other incentives. (Optional)

Purpose

- Give providers information about how to claim their CME credit.

Explanation

If you have certified your feedback session for CME credit, providers that participated in the entire session are eligible to claim credits. Most CME accrediting organizations require providers to complete an evaluation of the educational session. You can administer this evaluation in writing or through an on-line survey. Whichever you choose, after completing the evaluation, you will need to provide participants with a certificate of completion. Many CME crediting organizations have templates that you can use.

CHAPTER 4: Conducting follow-up activities with primary care clinics

Providing feedback to clinicians on their progress is critical to the success of your quality improvement efforts. This chapter provides a guide for sharing immunization progress reports via quality improvement coaching. Intended recipients include each clinic's project leader, all vaccine providers (i.e., those who prescribe or administer vaccines), clinic managers, and front office staff involved in scheduling or documenting vaccinations.

Purpose

- Share QI tips and progress reports with clinicians and staff via email coaching.
- Maintain an ongoing focus on quality improvement.

Steps

1. Use IIS data to update each clinic's Immunization Report Card at 3 and 6 months after the initial Assessment and Feedback consultation. The progress report should show the number of patients in each age group who have received the first dose of HPV vaccine since the initial assessment.
2. Use email lists created during the consultation to distribute email coaching messages according to the schedule below. Depending on the action plans developed during the consultation, either send messages directly to the provider list or forward messages to project leaders at the appropriate times so that they can email the messages. Download the email templates and the complete package of resources from the HPV IQ website. If email is not a viable option, work with the clinician to establish other avenues of communication, such as fax.
3. If a clinic's 3-month progress report indicates that fewer than half of the target patients have received HPV vaccine, the clinic is not on-track to meet the QI goal. Additional follow-up activities may be necessary. Contact the project leader by phone to identify clinic-specific barriers to QI as well as strategies to address those barriers.
4. Clinics that have not met their QI goal at 6 months should also receive additional follow-up.

Table. Email coaching schedule

Email	Time after visit	Purpose	Attachment
1	1 week	Introduction, project rationale, QI strategies Report card w/ coverage estimates and QI goals	Report card
2	1 month	Provider recommendations: importance + how to deliver	CDC Tip sheet
3	2 months	Parent concerns: most common + how to address	Parent educational materials
4	3 months	Report card w/ final progress report	Report card
5	6 months	Report card w/ final progress report	Report card

CHAPTER 5: Evaluate your efforts

Determining whether or not your QI efforts increased HPV vaccination rates is important. Evaluating other parts of your QI effort, although not required, can provide valuable information about how you should focus your energy and resources in the future.

Consider what information you'd like to learn from an evaluation of your QI efforts, such as:

- Did my QI efforts lead to increased HPV vaccination rates?
- How many people attended my QI session? What were their roles in the clinic?
- What are the barriers that providers face related to HPV vaccination?
- How satisfied were providers with the QI efforts?
- What were the costs of delivering this QI program?

Immunization coverage estimates

In order to determine if your QI efforts increased HPV vaccination rates, you must compare coverage before the intervention to HPV vaccination coverage afterward. Before your consultation, extract the data needed for calculating each clinic's adolescent vaccine coverage (HPV ≥ 1 dose for males and females, HPV 3 doses for males and females, meningococcal, and Tdap) for two age groups (11- to 12-year-olds and 13- to 17-year olds). Use the procedures described in Chapter 2. You will want to keep track of your data in a spreadsheet over time. These data will also be used to complete Immunization Report Cards.

At 3- and 6-month follow-up, extract data needed for calculating each clinic's coverage for HPV vaccine initiation (HPV ≥ 1 dose for males and females) for two age groups (11- to 12-year-olds and 13- to 17-year olds). Enter this data into your spread sheet. These data will also be used to complete the "progress report" sections of Immunization Report Cards. You can use the same method to evaluate the change in HPV vaccination rates at other time points, as well. Compare how vaccination coverage changed in each clinic from before the consultation to time points afterward.

Other evaluation measures

You may also want to evaluate other parts of your QI efforts. For example, you could conduct a cost analysis of your efforts by tracking how much time was spent on all activities related to your QI efforts and the resulting costs (including salary, travel, and material expenses). You could evaluate how providers felt about your QI efforts by asking them key questions after your consultation. Decide what you want to learn about the effects of your QI efforts and design questions to help you get at those answers.

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