

# HPV@9 Quality Improvement Project Cohort 4 Report February - July 2025

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## 1. Introduction

Timely HPV (Human Papillomavirus) vaccination of preteens can prevent over 90% of HPV-related cancers. For optimal protection, completion of the 2-dose HPV series is recommended before the 13<sup>th</sup> birthday, an age when the immune response is most robust and imminent risk of exposure to HPV infection is low. Despite its effectiveness, HPV vaccination rates remain suboptimal, leaving many youths unprotected.

Starting HPV vaccination at age 9 (rather than routinely waiting until ages 11–12) is an emerging best practice to help support on-time HPV vaccination. Children who receive the first dose at ages 9–10 are more likely to complete the series on time than those who start later. Additional programmatic benefits of early initiation include easier conversations with parents, more flexibility in spacing adolescent vaccines, and increased opportunities to vaccinate. Starting at age 9 is endorsed by the American Academy of Pediatrics, National HPV Vaccination Roundtable, the American Cancer Society and Washington State Department of Health among others; and fits within recommendations from CDC’s Advisory Committee on Immunization Practices (ACIP).

In January 2023, the Washington State Immunization Information System (WAIS) updated its forecaster to shift the age when HPV vaccine is due to start at age 9 instead of 11. Since this update, HPV doses administered at ages 9–10 have increased statewide but still remain below the number given at ages 11–12.

To support the shift, the Washington Chapter of the American Academy of Pediatrics (WCAAP) launched the HPV@9 Quality Improvement Project to help pediatric and family medicine clinics implement workflows that promote HPV vaccination starting at age 9. Since its inception, four cohorts have participated. Cohort 1 began in February 2023 to align with the WAIS forecaster update.

This report outlines the methodology, results, challenges, and successes of Cohort 4, which ran from February to July 2025.

## 2. Objectives

The global aim of the HPV@9 project is to increase HPV vaccination rates among preteens (ages 9–12) in Washington State by initiating vaccination at age 9.

### 2.1 Specific Aims

- Increase HPV vaccine coverage rates at ages 9–10.
- Improve provider confidence and skills in making effective HPV vaccine recommendations at ages 9–10.

### 2.2 SMART Aims

Increase HPV vaccination coverage among patients aged 9–10 at participating clinics:

- Achieve a 5–10 percentage point increase within 5 months, by July 1, 2025.
- Achieve a 20–30 percentage point increase within 1 year, by February 1, 2026.
- Reach the Immunize Washington Award level of  $\geq 25\%$  within 1 year.

Increase provider confidence in recommending HPV vaccine at age 9–10:

- $\geq 90\%$  of providers report high confidence in making an effective recommendation.

## 3. Methodology

### 3.1 Clinic Recruitment

- Direct outreach to clinics affiliated with WCAAP's Vaccine Committee
- Invitations to clinics within the same networks as previous cohorts
- Broad promotion through partner newsletters (WCAAP, Washington Academy of Family Physicians, Immunity Community–WithinReach, Vaccine Blurbs, and WAIS)

### 3.2 Incentives

- Free continuing education credits (CME, CNE, CE) for providers and staff.
- Maintenance of Certification (MOC) credits for physicians through the American Board of Pediatrics and the American Board of Family Medicine.

### 3.3 Multi-level Interventions

- Staff and provider training, including Announcement Approach training
- Printed materials (posters, cue cards, stickers).
- Workflow implementation to initiate HPV vaccination at age 9.
- Optional interventions such as EHR optimization, standing orders, and outreach.
- Monthly meetings for clinic leaders.
- Expert coaching via Zoom, email, and phone.

### 3.4 Project Leadership

Each clinic identified at least two leaders (minimum: one provider and one staff member) responsible for:

- Implementing interventions.
- Managing the project at the clinic level.
- Participating in three cohort meetings (February, April, June) and two coaching meetings (March, May).
- Hosting at least three internal team meetings to review data, track progress, and address challenges. Clinic specific slide decks and speaking notes were provided.

### 3.5 Storytelling Component

To enhance engagement, HPV cancer survivor stories were integrated into training:

- Survivor videos were embedded in two modules.
- A live presentation by a cervical cancer survivor (Cervivor) during the final cohort meeting inspired clinic leaders, several of whom expressed interest in inviting her to future clinic events.

### 3.6 Data Sources

- HPV coverage rates, panel sizes, and dose administration reports from WAHS.
- Clinic leader surveys to capture clinic size, provider specialties, EHR systems, baseline workflows, and language needs.
- Surveys of participating staff and providers, both pre- and post-project.

### 3.7 Analysis

Excel was used for analysis and visualization of coverage rates and survey results.

## 4. Cohort Characteristics

Nine Clinics:

- 6 pediatric clinics in Spokane County
- 1 pediatric clinic in Snohomish County
- 1 family medicine clinic in Thurston County
- 1 primary care clinic (pediatrics + family medicine) in Kitsap County

Providers (physicians, nurse practitioners-NPs, and physician assistants-PAs):

- 48 providers participated in trainings, out of total 54 providers
- 3 to 15 providers per clinic, median 4 per clinic

Patient Panels:

- 9–10-year-olds: total 5,283 (median: 446, range: 138-2027 per clinic)
- 11–12-year-olds: total 5,020 (median: 406, range: 159-2141 per clinic)

## 5. Interventions

### 5.1 eLearning Modules

Four eLearning modules were developed by WCAAP and Cardea Learning Services prior to the beginning of Cohort 4. They are accredited for continuing education (CME, CNE, CE) through January 2027. Topics include:

- *The Announcement Approach* – Making effective HPV vaccine recommendations starting at age 9 (0.5 hr CME, CNE; 1 hr CE for MAs)
- *HPV Basics* – Overview of HPV cancers, vaccine safety and efficacy, and rationale for starting at age 9 (1 hr CME, CNE, CE)
- *Effective Implementation* – Evidence-based strategies and tools to improve HPV vaccination rates (1 hr CME, CNE, CE)
- *Rural Disparities and Addressing HPV Vaccine Hesitancy* – Strategies for addressing HPV vaccine hesitancy and rural access barriers (1 hr CME, CNE, CE)

#### Participation Requirements:

- Physicians seeking MOC credit were required to complete all four modules.
- Other providers and staff were encouraged to complete 1–4 modules based on role and clinic expectations.

#### Training Participation: 150 total

- Providers: 48 (34 MD/DO, 11 NPs, 3 PAs)
- Nursing staff: 76 (53 MAs, 23 nurses)
- Office staff: 26 (19 front desk, 5 supervisors, 2 social workers)

#### eLearning Module Completions: 448

- *The Announcement Approach*: 148
- *HPV Basics*: 109
- *Effective Implementation*: 100
- *Rural Disparities and Addressing HPV Vaccine Hesitancy*: 91

### 5.2 Printed Materials for Clinics

- HPV Cue Cards and Announcement Approach Tools
- Promotional stickers: “HPV vaccination starts at age 9”
- Laminated posters for exam rooms and lobbies:
  - Poster 1: American Cancer Society-branded, promoting HPV vaccination as cancer prevention. English posters for all clinics; Spanish posters for most clinics upon request.
  - Poster 2: Clinic-branded immunization schedule featuring HPV at age 9–10. Seven of nine clinics received take-home immunization schedule postcards for families. Providers and staff reported these were useful and appreciated.

### 5.3 Optional Strategies

Clinics were introduced to a variety of optional strategies to support HPV vaccination at age 9, depending on their capacity and organizational constraints. These included:

- *EHR Provider Prompts*: Request change of HPV prompts from age 11 to age 9.
  - No clinics were able to implement an EHR prompt for HPV at age 9 due to system-level constraints
  - Most clinics began scrubbing schedules to flag charts:
    - “HPV vaccine due”
    - using EPIC pink dot to indicate “Age 9–10”
- *EHR Order Sets*: Streamlining the vaccination process using order sets to promote HPV vaccination starting at age 9.
  - No clinics implemented Order Sets
- *Outreach*: Notifying parents of annual well-child visits or due HPV vaccinations.
  - Several clinics initiated or began plans for outreach for ages 9-12
    - Phone calls
    - MyChart messages with immunization schedule screenshots
    - One clinic planned to use a new texting program
- *Standing Orders*: Implementing or modifying standing orders to initiate HPV vaccination at age 9.
  - Pre-existing at 2 clinics
  - Newly implemented at 6 clinics (May 2025)
- *Patient/Parent Education Flyers*: Providing HPV information to parents.
  - Clinics given links to print flyers (multiple languages available)

## 6. Vaccination Results

### 6.1 Age 9-10, HPV Doses Administered (Feb 1 – June 30, 2025)

- Total doses administered to 9–10-year-olds: 715
- Range: 17–266 doses per clinic
- Median: 57 doses per clinic

### 6.2 Age 9-10, HPV Coverage Rate (≥1 dose) at age 9–10

Cohort Coverage Rate (all 9 clinics combined), age 9-10:

- Feb 1, 2025: 4% (205 out of 5,283 patients, ages 9-10)
- July 1, 2025: 14% (716 out of 5,221 patients, ages 9-10)

Clinic Coverage Rates, age 9-10:

- Feb 1, 2025: median 1% (range 0–11%)
- July 1, 2025: median 13% (range 5–21%)
- Median increase: +8 percentage points (range +5 to +18)

**All 9 clinics met goal of increasing HPV coverage at ages 9–10 by ≥5 percentage points.**

HPV Initiation ( $\geq 1$ ) Coverage Rate Percent, age 9-10; source WAIS					
	Total patients, age 9-10 years as of Feb 1, 2025	1-Feb-25	1-Jul-25	Percentage point increase during Cohort 4	HPV doses administered at age 9-10 (Feb 1-June 30, 2025)
Clinic 1	929	3%	13%	10	114
Clinic 2	640	1%	13%	12	57
Clinic 3	472	3%	21%	18	97
Clinic 4	446	0%	5%	5	59
Clinic 5	296	1%	7%	6	37
Clinic 6	141	1%	14%	13	46
Clinic 7	194	1%	8%	7	17
Clinic 8	138	11%	19%	8	22
Clinic 9	2027	7%	15%	8	266
<b>Cohort Total</b>	<b>5283</b>	<b>4%</b>	<b>14%</b>		<b>715</b>
Clinic Summary		median 1% range: 0-11%	median 13% range: 5-21%	median increase +8 range: 5-18	median 57 doses per clinic
State Average		17	18	1	

### 6.3 Age 11-12, HPV coverage rate ( $\geq 1$ dose at age 11-12)

Cohort Coverage Rate (all 9 clinics combined), age 11-12:

- Feb 1, 2025: 43% (2180 out of 5,020 patients, ages 11-12)
- July 1, 2025: 44% (2260 out of 5,080 patients, ages 11-12)

Clinic Coverage Rates, age 11-12:

- Feb 1, 2025: median 41% (range 25-66%)
- July 1, 2025: median 44% (range 26-64%)
- Median increase: +1 percentage points (range -6 to +5)

## 7. Survey Results and Highlights

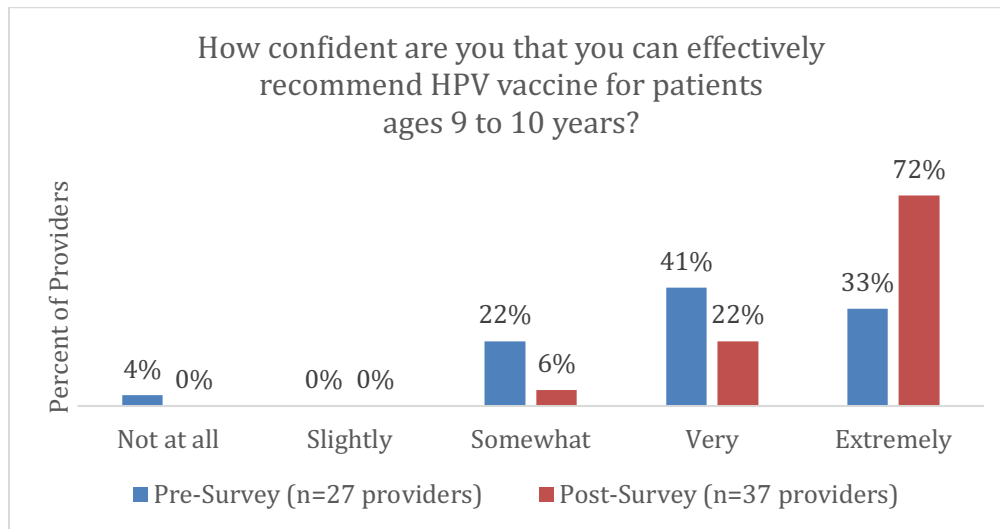
Pre-project survey: 61 responses (out of 150 learners); some incomplete surveys

- 29 providers (23 physicians, 5 NPs, 1 PA); 56% provider response rate
- 19 nursing staff (nurses and MAs)
- 13 office staff or administrators

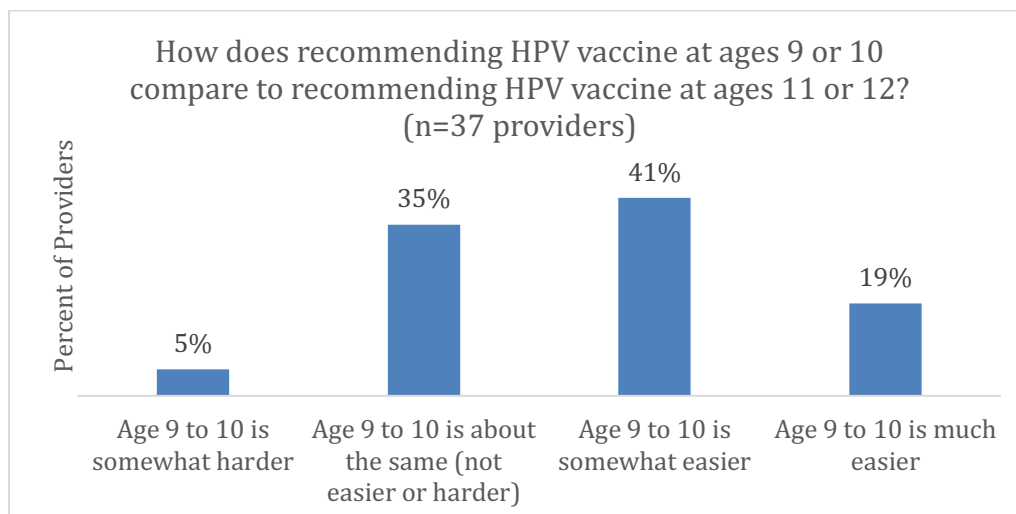
Post-project survey: 56 responses

- 37 providers (31 physicians, 4 NPs, 2 PAs); 77% provider response rate
- 13 nursing staff (nurses and MAs)
- 6 office staff or supervisors

**Confidence** in making effective recommendations for HPV at ages 9-10: 94% of providers are extremely or very confident (up from 74% pre-project)



**Ease of recommendation** at age 9-10 compared to age 11-12: the majority (60%) of providers find recommending HPV vaccine at age 9-10 somewhat or much easier.



## Provider & Staff Post-project Surveys, Exemplar Responses:

### Learnings:

- “Offering HPV vaccines starting age 9 as a standard has been easier than expected” – physician
- “New ways to phrase or explain the rationale. Better understanding of presenting the vaccine to prevent cancers” - physician
- “As a mother of an 11 year old boy, I personally had hesitation and reservations about HPV vaccinations. Now that I have completed this training, my own beliefs have changed & I now feel comfortable having my son vaccinated. Although we missed the HPV at 9 cutoff, I know this will help keep him safe.” – nurse
- “I was happy to learn how enthusiastic our team was and how easy, critically important and FUN this project actually was. And .... How eager the kids are to get the vaccine especially if you say words like "penis cancer"!!!!!!” – physician assistant
- “This was super easy and I think the staff (MA's and front desk) probably had more to do with its success because they marked the schedule for kids that need HPV and asked before we even entered the room, including non wcc appts. - physician

### Changes:

- “The information from the modules was very informative to make this change to recommend at 9+” – physician
- “I went from 0% at age 9 to offering it 80-90% of the time.” – physician
- “In addition to recommending HPV vaccine to 9yr olds, I also spent more time at 8yr old WCC's discussing upcoming HPV vaccine at 9yr WCC. It was a good way of introducing HPV vaccine.” - nurse practitioner
- “We sent out a mass MyChart message announcing the change and why which I think helped get parents thinking and talking about this before the appt”- medical assistant

### Sustainability:

- “Easy. It's in our culture now. We've had success, we always ask, posters are doing some of the heavy lifting. We're all set!” – physician assistant
- “I think the changes were simple enough that we are easily able to sustain changes. We have posters, educational materials. Staff is confident about promoting the vaccines, etc.” - physician
- “We have team meetings to discuss the project, changes, barriers, and outcomes. We have posters and vaccination schedules displayed in the clinic waiting room as well as exam rooms. These changes seem like they will be relatively easy to sustain because the recommendations are being presented as the "new normal". – nurse

#### Additional insights:

- “Good project in the midst of overall vaccine declines.” – physician
- “Great program, speakers were really good! I wish it was a little shorter tho” – physician
- “Videos are long; some repetitive for clinicians” - physician
- “Great QI project! Easy to perform. It is an exciting project as we are able to see and to measure positive outcomes relatively soon.” - physician

## 8. Challenges

- EHR Prompt Limitations: Most clinics used EPIC, but parent organizations declined to update EHR HPV prompts unless CDC/ACIP officially changes HPV recommendation language.
- Module Navigation: Some learners had difficulty navigating the eLearning platform.
- Survey Collection:
  - Pre-survey completion rates were lower than expected
  - Post-survey response rate was high for physicians (due to MOC requirement), but lower for staff.
  - Any duplicate responses were manually resolved, using the first response for survey analysis

## 9. Feedback and Rating of QI Project and Components

#### Overall Rating by Providers:

- 4.7/5 stars for “time well spent”
- 4.7/5 stars for “ease of implementation”

#### Rating of the Various Components

Rate the importance of each component	Training Modules	Access to data (HPV Coverage Rates)	Team Meetings	Immunization Schedule Poster	HPV Poster	Training Tools
Extremely important	38%	51%	27%	54%	43%	16%
Very important	46%	38%	41%	24%	32%	38%
Somewhat important	16%	11%	32%	19%	19%	41%
Not Important	0%	0%	0%	3%	3%	5%
Not applicable					3%	

## 10. Outcomes and Achievements

- All clinics successfully implemented age 9 workflows
- 715 HPV vaccine doses were administered to 9-10-year-olds during Cohort 4
- Both SMART Aims were achieved
  - All clinics met or exceeded age 9-10 HPV coverage rate goals
  - Provider confidence in giving effective HPV recommendations at ages 9-10 increased from 74% to 94%
- 31 physicians received MOC credit (25 pediatric and 6 family medicine)

## 11. Key Learnings and Recommendations

- Incentives matter: MOC and CE credits are strong motivators
- Survey process needs refinement: Especially to increase staff participation
- Training: E-learning modules facilitated asynchronous learning and simplified the continuing education award process
  - Some providers valued the comprehensiveness and content repetition of modules to enhance learning; however, others preferred a more streamlined approach. Some suggested spacing out the modules instead of completing in one session.
  - Future recommendation: require 2 instead of 4 modules for MOC
- Clinic specific slide decks and speaking notes: Helpful for internal team meetings
- Survivor stories: Highly impactful and motivational
- Tracking data: Recommend following age 9-10 and 11-12 coverage rates over the next one to two years to monitor success and impact. Similar to previous cohorts, we expect age 11-12 coverage rates to increase over the next year.

## 12. Conclusion

Cohort 4 of the HPV@9 Quality Improvement Project demonstrated that initiating HPV vaccination at age 9 is both feasible and effective. Clinics achieved measurable improvements in vaccination rates and provider confidence. These results are consistent with previous cohorts and reinforce the value of structured, supported quality improvement initiatives. Continued efforts to streamline training, track coverage rates over time, and share success stories will help sustain and expand these gains across Washington state.

## 13. Funding

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