

# HPV Vaccine...Why age 9?

## It makes cancer prevention easier!



May 25, 2023  
Sherri Zorn MD, FAAP

WA HPV Free Task Force  
WCAAP Quality Improvement Coach  
National HPV Vaccination Roundtable Best Practices Task Group



No conflicts of interest

# Washington state makes cancer prevention easier

## Jan 20, 2023 - WAIS update: HPV is “due now” at age 9

Patient						
Name:	TEST PATIENT	SIIS Patient ID:	11867247			
Date of Birth:	11/26/2013	Age:	9 yrs			
Guardian:		Organization Level Status:	Inactive			
Vaccination Forecast						
The forecast automatically switches to the catch-up schedule when a patient is behind schedule.						
Vaccine Group	Forecasted Dose	Recommended Date	Minimum Valid Date	Overdue Date	Status	
HEP-B 3 DOSE	1	11/26/2013	11/26/2013	12/23/2013	Past Due	
POLIO	1	01/26/2014	01/07/2014	02/26/2014	Past Due	
HEP-A	1	11/26/2014	11/26/2014	12/23/2015	Past Due	
MMR	1	11/26/2014	11/26/2014	04/22/2015	Past Due	
VARICELLA	1	11/26/2014	11/26/2014	04/22/2015	Past Due	
Tdap	1	11/26/2020	11/26/2020	11/26/2020	Past Due	
FLU	1	07/01/2022	07/01/2022	07/28/2022	Past Due	
HPV	1	11/26/2022	11/26/2022	12/23/2026	Due Now	
MENINGOCOCCAL	1	11/26/2024	11/26/2024	12/23/2026	Not Yet Due	
MENINGOCOCCAL B, OMV (Clinical Discretion)	1	11/26/2029	11/26/2023	12/26/2029	Not Yet Due	
MENINGOCOCCAL B, RECOMBINANT (Clinical Discretion)	1	11/26/2029	11/26/2023	12/26/2029	Not Yet Due	



### CDC/ACIP:

*“Children and adults aged 9 through 26 years. HPV vaccination is routinely recommended at age 11 or 12 years; **vaccination can be given starting at age 9 years.**”*

### Starting HPV at age 9 is best practice:

- American Academy of Pediatrics (2018)
- American Cancer Society
- National HPV Vaccination Roundtable
- Washington State DOH



9 ?



# 2017: my journey



STATE OF WASHINGTON

DEPARTMENT OF HEALTH

1610 NE 150th Street • Shoreline, Washington 98155-7224  
Tel: 206-418-5406 • TTY Relay Service: 800-833-6388

DOH 348-624 April 2017

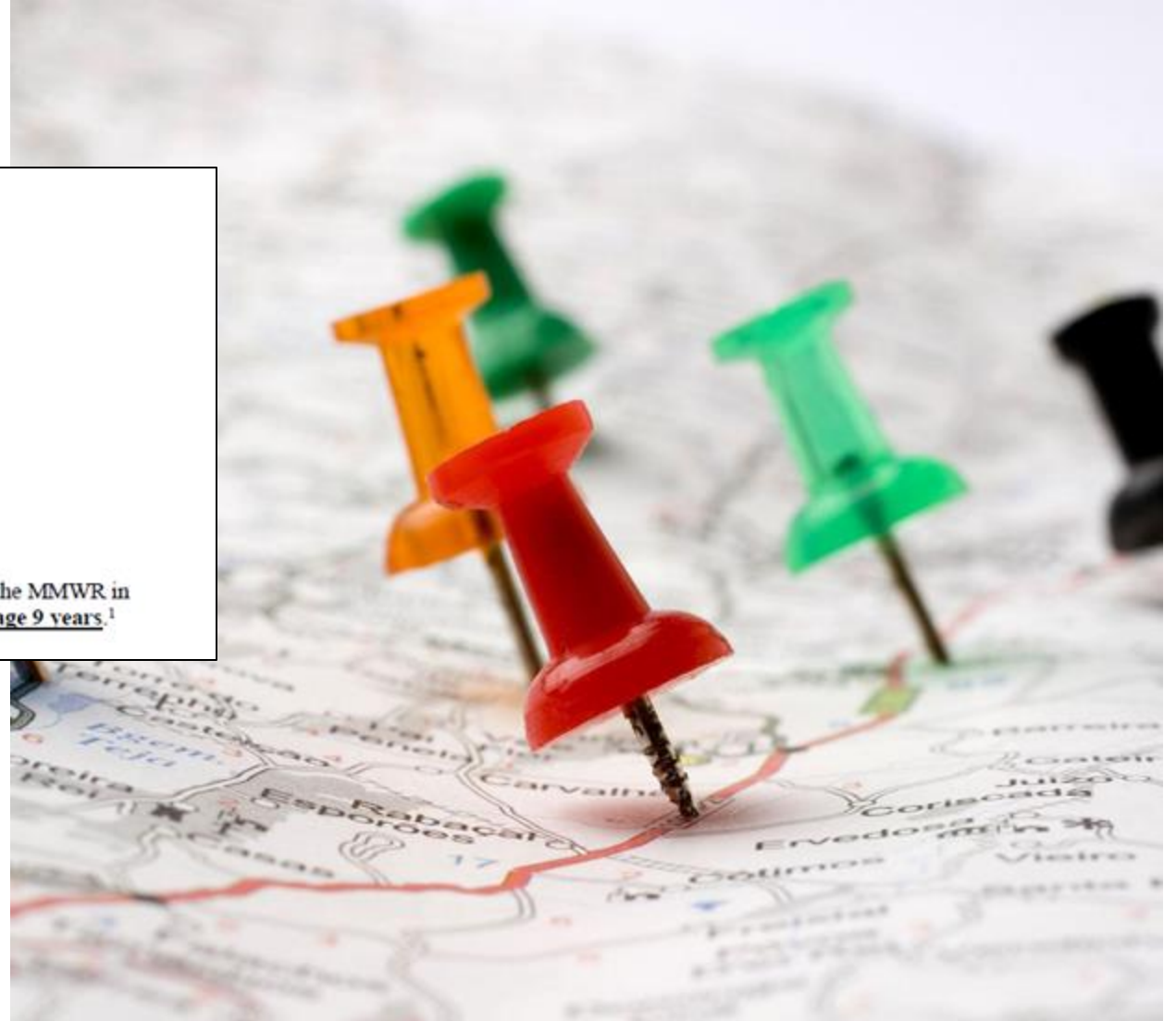
April 20, 2017

Dear Provider,

New ACIP recommendations for the HPV two dose vaccination series were published in the MMWR in December 2016. I would like to emphasize the HPV two dose series can be initiated at age 9 years.<sup>1</sup>

I needed to know more...

- HPV infection & cancers, HPV vaccine, safety & immunity
  - No downsides to starting at 9
- Just try it
  - Recommendations were easier at 9
  - More time and opportunities to vaccinate before age 13



# HPV Cancers

United States:

- ~37,300 cases/year of HPV-attributable cancers
- ~200,000 cases/year of cervical precancers

Caused by persistent HPV infections

- usually acquired in teen & young adult years
- precancers and cancers occur years to decades later

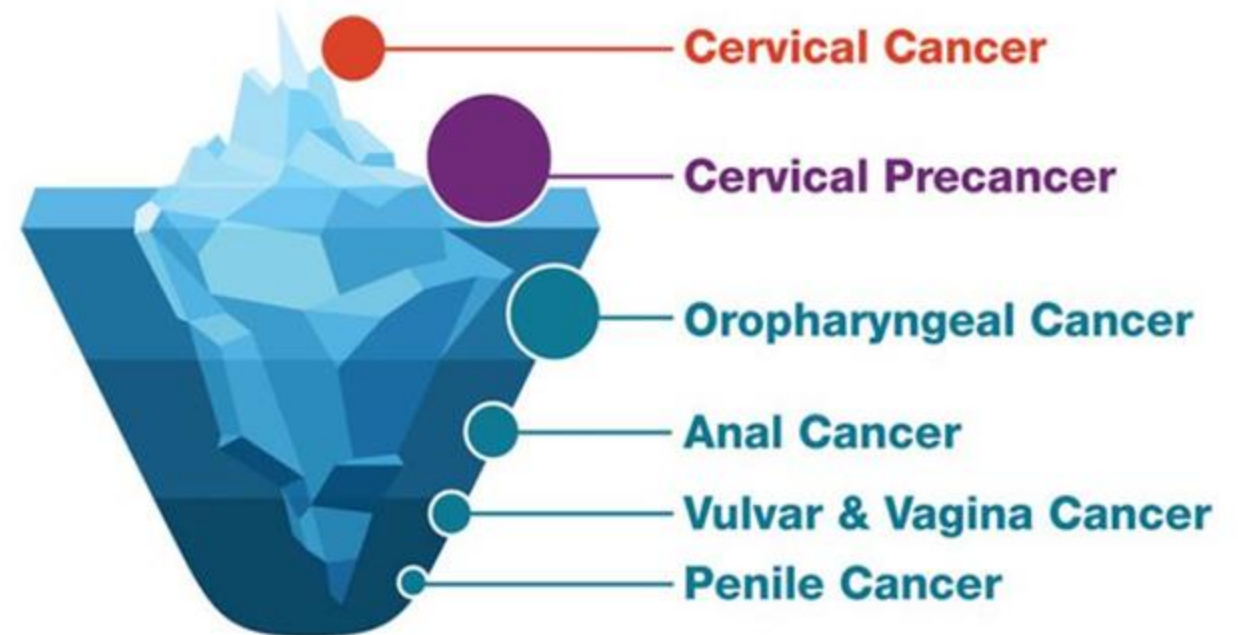
Doesn't require sexual activity! Just skin-to-skin contact

Oropharyngeal cancers (throat & back of mouth)

- 4 out of 5 cases occur in men
- rates are rising
- more common than cervical cancers

Rural HPV cancer disparities

- increased HPV cancer rates
- decreased HPV vaccination rates (about 10% lower)



<https://www.cdc.gov/cancer/hpv/statistics/cases.htm>

<https://www.cdc.gov/cancer/uscs/pdf/USCS-DataBrief-No31-October2022-h.pdf>

Zahnd, *Journal of Rural Health* (2019)



# HPV Vaccine



- Safe
  - over 15 years of safety data
  - robust monitoring system in US and multiple other countries



- Long-lasting immunity
  - doesn't wear off
  - no booster dose needed

- **Effective: can prevent over 90% of HPV-attributable cancers**



- Works best when completed by age 13
  - better immunity (highest titers at age 9-12 years)
  - before exposure
  - best protection against future cancers

Meites, *MMWR* (2016) & (2019)

Gee, *Hum Vaccine Immunotherapeutics* (2016): safety review

Iversen, *JAMA* (2016): info on titers and 12-month dosing interval

<https://www.cdc.gov/vaccinesafety/vaccines/hpv/hpv-safety-faqs.html>

<https://www.cdc.gov/cancer/uscs/pdf/USCS-DataBrief-No31-October2022-h.pdf>

Collins-Fairclough, *Human Vaccines & Immunotherapeutics* (2021): extended dosing interval

Hoes, *Human Vaccines & Immunotherapeutics* (2022): review of long-term immunogenicity

# Age at Vaccination: Younger is better

The effects of the national HPV vaccination programme in England, UK, on cervical cancer and grade 3 cervical intraepithelial neoplasia incidence: a register-based observational study

Milena Falcaro, PhD · Alejandra Castañon, PhD · Busani Ndlela, PhD · Marta Checchi, MSc · Kate Soldan, PhD

Jamie Lopez-Bernal, PhD · et al. [Show all authors](#)

Published: November 03, 2021 · DOI: [https://doi.org/10.1016/S0140-6736\(21\)00800-0](https://doi.org/10.1016/S0140-6736(21)00800-0)

Registry based study in England

Bivalent vaccine

Standard age for HPV vaccination: 12-13 years

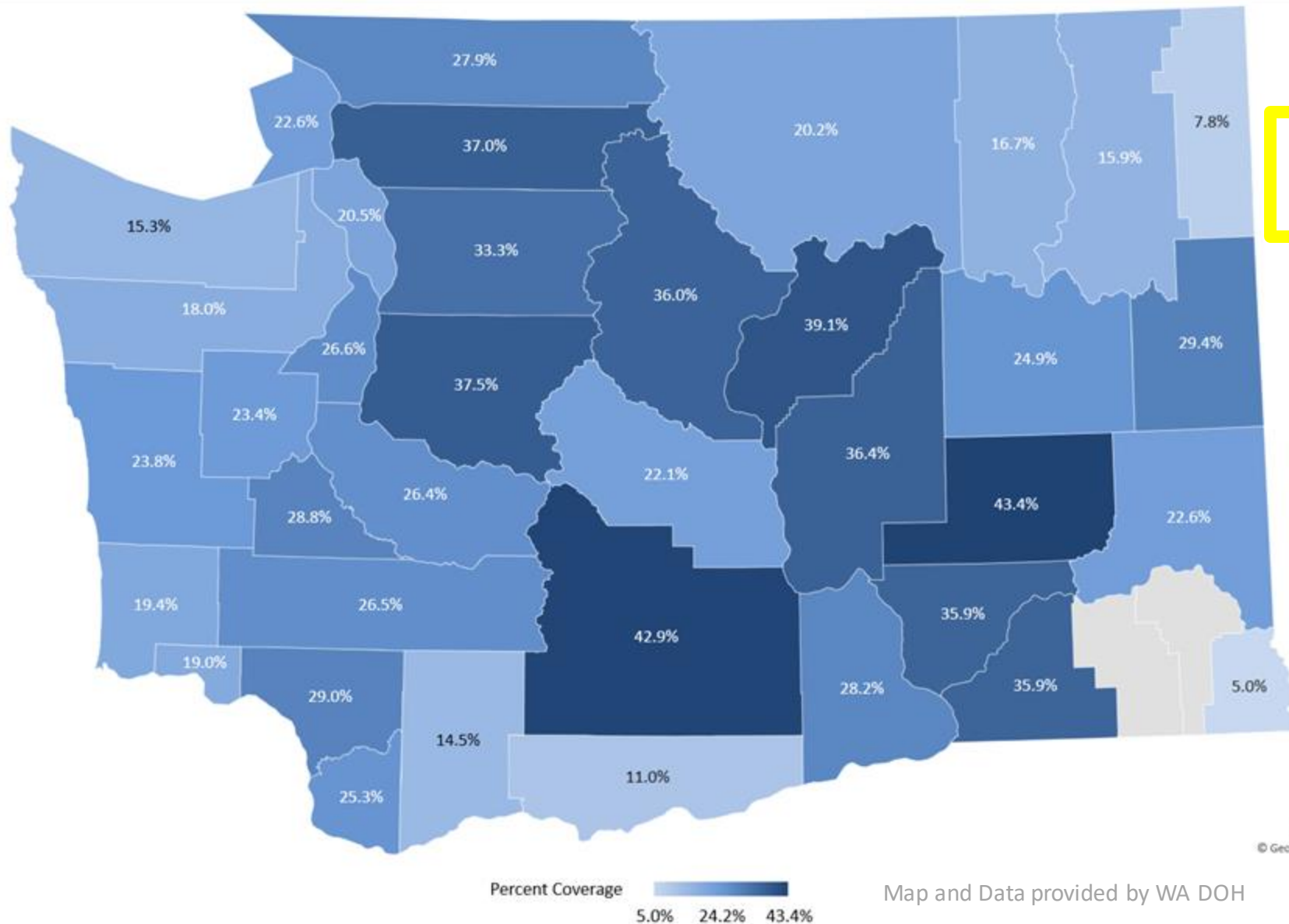
13.7 million years of follow-up for women ages 20-30 years

Effectiveness drops when vaccination occurred above age 13

Age at Vaccination	Reduction in Cervical Precancers (CIN3)	Reduction in Cervical Cancer Incidence
12-13	97%	87%
14-16	75%	62%
16-18	39%	34%



# HPV UTD rates by 13<sup>th</sup> birthday in WA, 2022



Healthy People 2030 Goal:  
UTD HPV = 80% for age 13-15

1+ HPV (initiation) = 51.3%  
(range 8.9-67.9%)

UTD HPV (completion) = 31.3%  
(range 5.0-43.4%)

We can do better to  
protect our children  
from HPV cancers!

Powered by Bing  
© GeoNames, TomTom



# HPV Vaccine Dosing Schedule



## ON TIME

AGE 9-12

**2 Doses**

*6-12 months apart*

Begin at age 9 years old for a better immune response.



## LATE

AGES 13-14

**2 Doses**

*6-12 months apart*



## CRITICAL

AGES 15-26

**3 Doses**

*1st dose at visit one*

*2nd dose 1-2 months later*

*3rd dose 6 months after 1st dose*

[hpvroundtable.org](http://hpvroundtable.org)

Same schedule for all genders

No need to restart series if dosing interval is extended

Shared clinical decision-making for individuals age 27-45  
(not routinely recommended due to low benefit)

Tip: consider using 12-month dosing interval at age 9-12  
-higher titers and easier workflows  
-can skip the shot-only visit at 6 months

# Scientific Literature: HPV at 9

- **Providers have positive experiences recommending before age 11**  
*Biancarelli, Journal of Pediatrics (2020) - MA*  
*Zorn, Human Vaccines and Immunotherapeutics (2023) - WA*
- **Providers recommend (or are willing to recommend) HPV at age 9**  
*Lake, Human Vaccines and Immunotherapeutics (2023) - USA survey in FQHCs*  
*Kong, Academic Pediatrics (2022) - USA survey*
- **Higher rates of on-time completion**  
*Goodman, Pediatrics (2023) - NIS-Teen analysis*  
*Saxena, Human Vaccines and Immunotherapeutics (2023) – USA MarketScan claims analysis*  
*Zorn, Human Vaccines and Immunotherapeutics (2023) - WA*  
*O’Leary Sonja, Human Vaccines and Immunotherapeutics (2023) - CO*  
*Cox, Pediatrics (2022) - MA*  
*Casey, Journal of Lower Genital Tract Disease (2021) - MA*  
*Perkins, Pediatrics (2020) - MA*  
*St Sauver, Preventive Medicine (2016) - MN*
- **EMR prompts/alerts help promote HPV at age 9**  
*O’Leary Sonja, Human Vaccines and Immunotherapeutics (2023) - CO*  
*Goleman, Acad Pediatrics (2018) - OH*



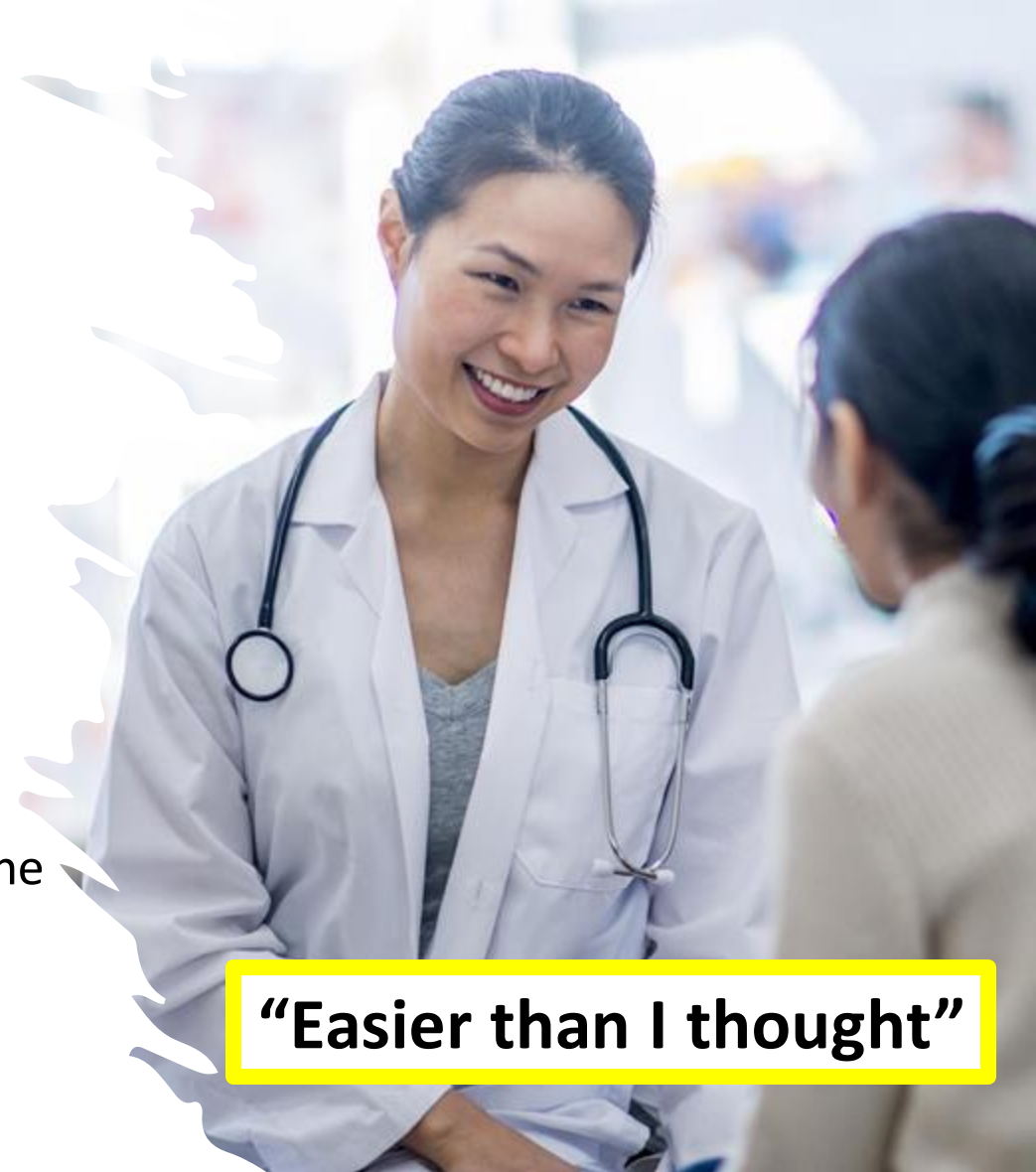
and more...

Special edition: *Human Vaccines and Immunotherapeutics (2022-2023)*

<https://www.tandfonline.com/journals/khvi20/collections/HPV-vaccination-starting-age-9>

# Why HPV at Age 9?

- Easier conversations
  - focus on cancer prevention NOT sex
- Fewer shots per visit
  - many prefer spacing shots out instead of bundling
- More time = more opportunities to vaccinate by age 13
  - More time for hesitant parents/patients to learn about the vaccine
  - Helps mitigate disruptions in care
- Robust immunity: highest titers between ages 9-12
- Higher on-time completion rates... more cancers prevented!



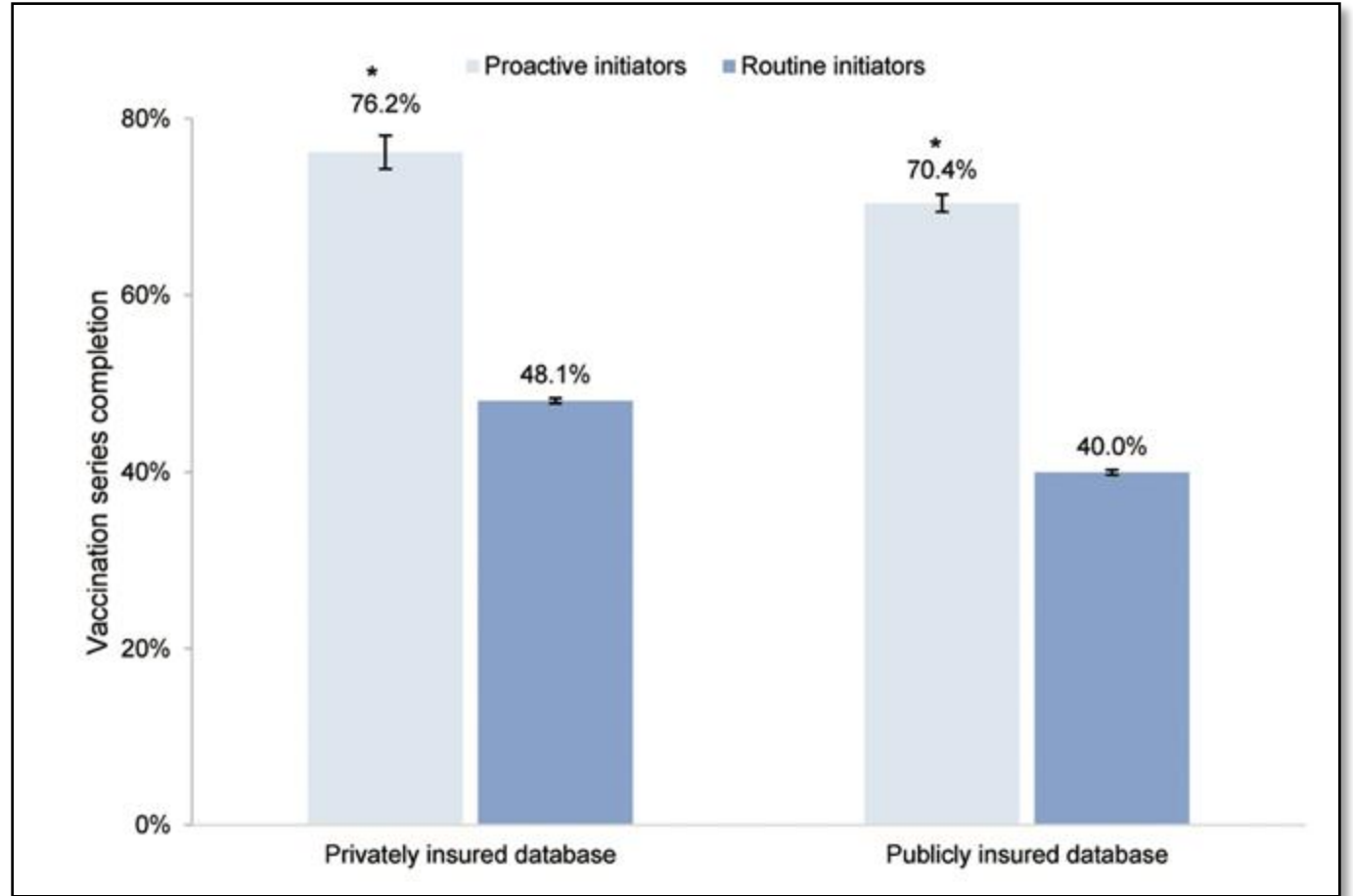
**“Easier than I thought”**

Biancarelli, *Journal of Pediatrics* (2020)  
O’Leary, Sean, *Human Vaccines and Immunotherapeutics* (2022)  
Evidence-Summary-HPV-Vaccination-Age 9-12, [hpvroundtable.org](http://hpvroundtable.org) (2022)



# Higher rates of on-time completion by age 13

age 9-10 (light blue) vs age 11-12 (dark blue)



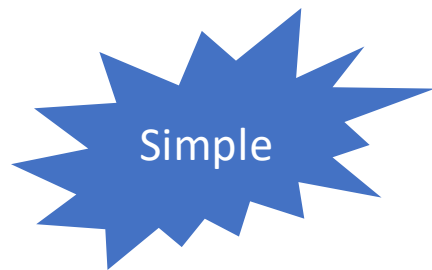
**Figure 2.** Percent HPV vaccination series completion by 13 years of age among proactive and routine initiators enrolled in the privately insured and publicly insured databases. Note: The base-case results are denoted by the blue bars. The error bars show the 95% confidence intervals. Asterisk indicates a statistically significant difference between proactive and routine initiators in the base-case analysis ( $p < 0.001$ ).

# HPV Vax at 9 works in Washington



Multi-level quality improvement strategies to optimize HPV vaccination starting at the 9-year well child visit:  
Success stories from two private pediatric clinics

	Clinic A:	Clinic B:
HPV Vax at 9	Started in 2018	Started in 2021 (during pandemic)
Characteristics	Urban King County	Urban/suburban King County
# of providers	10 pediatricians (MD)	85 pediatric providers (MD, DO, ARNP)
# patients (age 9-10)	1,128	11,436
Standing Orders	No: shots given after the visit	Yes: shots often given before the visit
Electronic Medical Record	Order sets: HPV at age 9-10	Prompt: HPV at 9



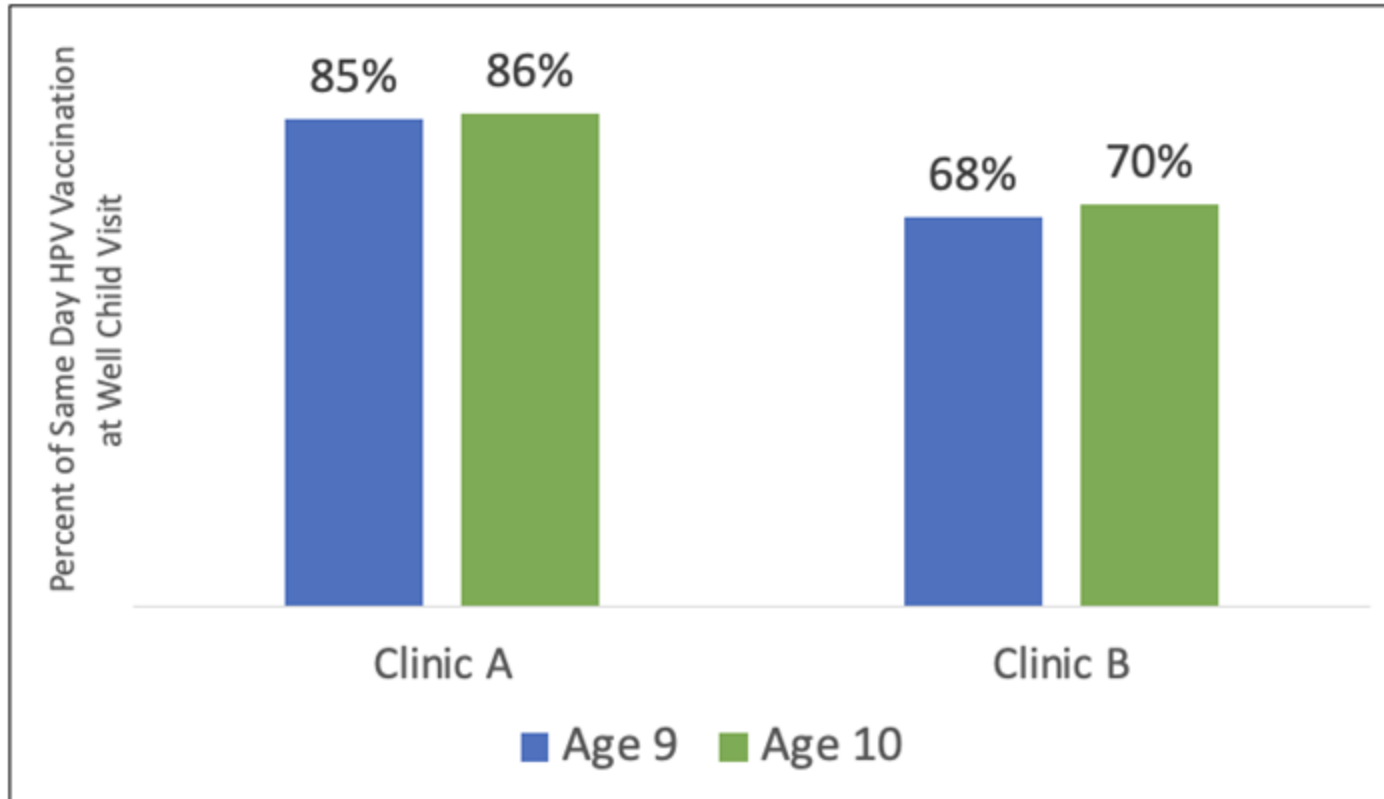
HPV at 9 & 10 year well child visit

Easy to implement

Streamlined workflows

Zorn, Darville-Sanders, Vu, Carter, Treend, Raunio, Vasavada,  
*Human Vaccines and Immunotherapeutics* (2023)

# Acceptable to providers, staff, and parents!



Majority of patients received the HPV vaccine on the same day as the 9-year and 10-year well child visits

“Giving a simple strong recommendation focused on cancer prevention is easier and more effective than getting into an awkward discussion about sex”



# 9-10 HPV Initiation Coverage Rates (WAIS)

Clinic A:

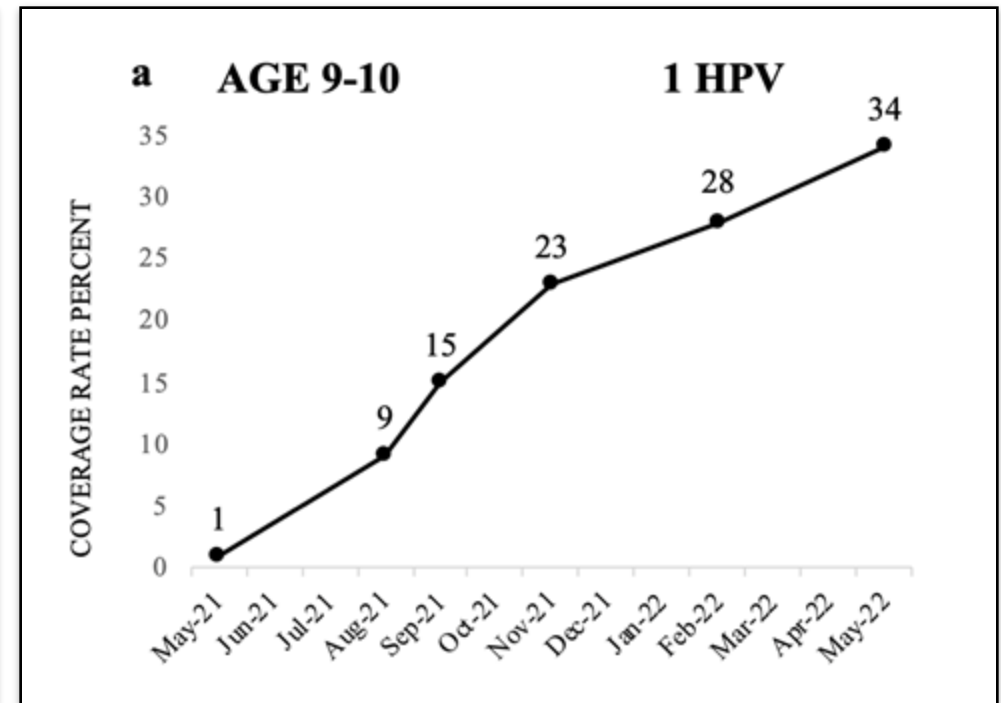
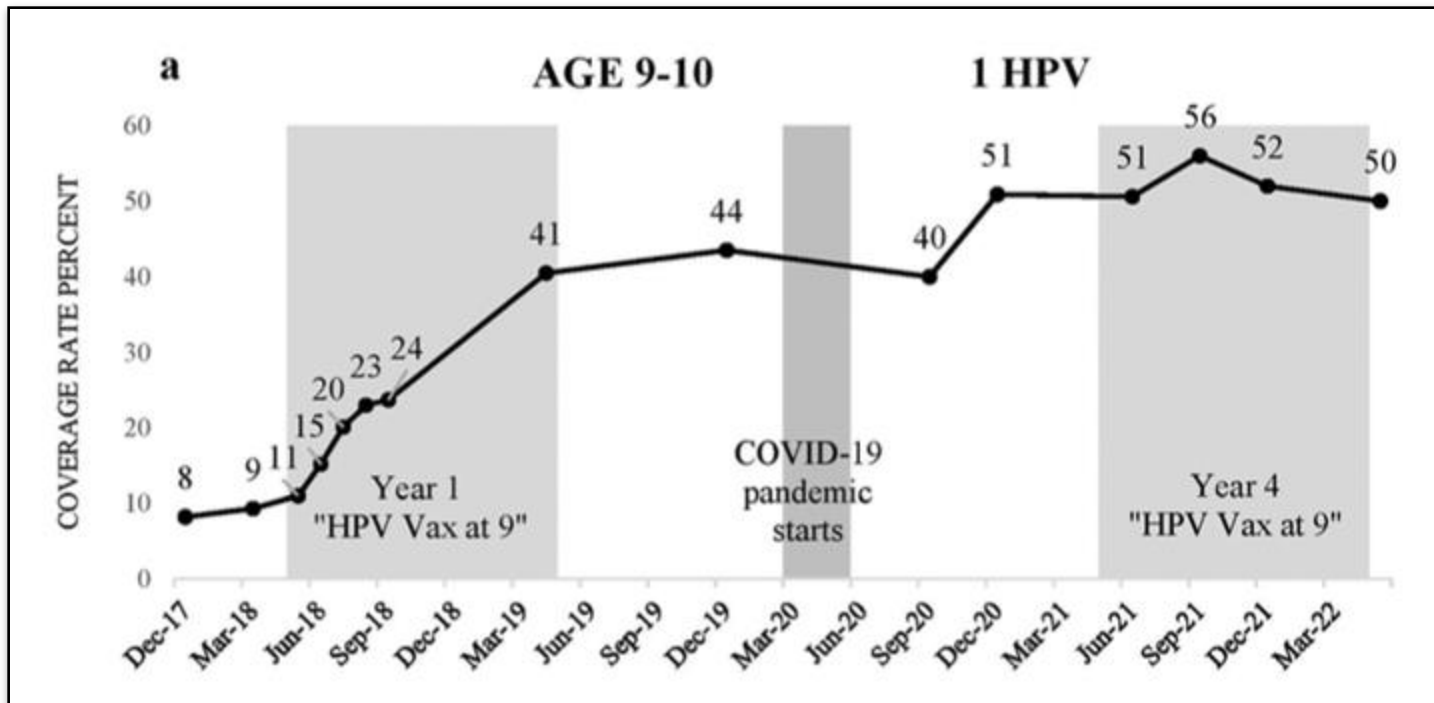
Year 1: increased 30 percentage points



Clinic B:

Year 1: increased 33 percentage points

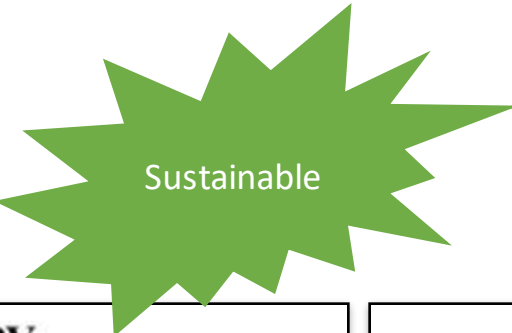
Year 2: increased from 34% to 40% (unpublished)



# 11-12 HPV UTD Coverage Rates (WAIIS)

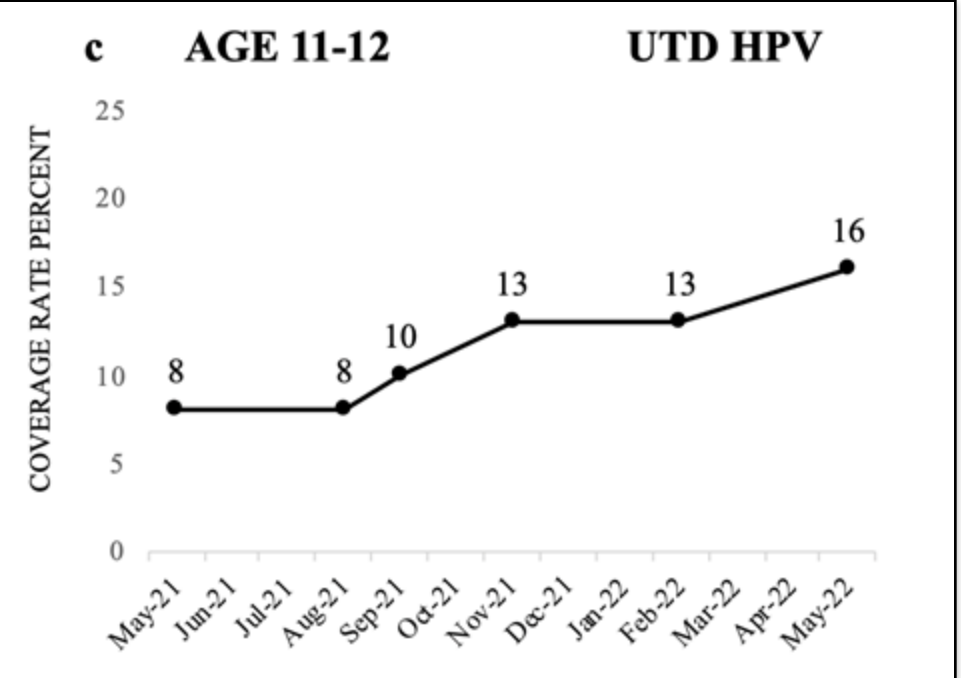
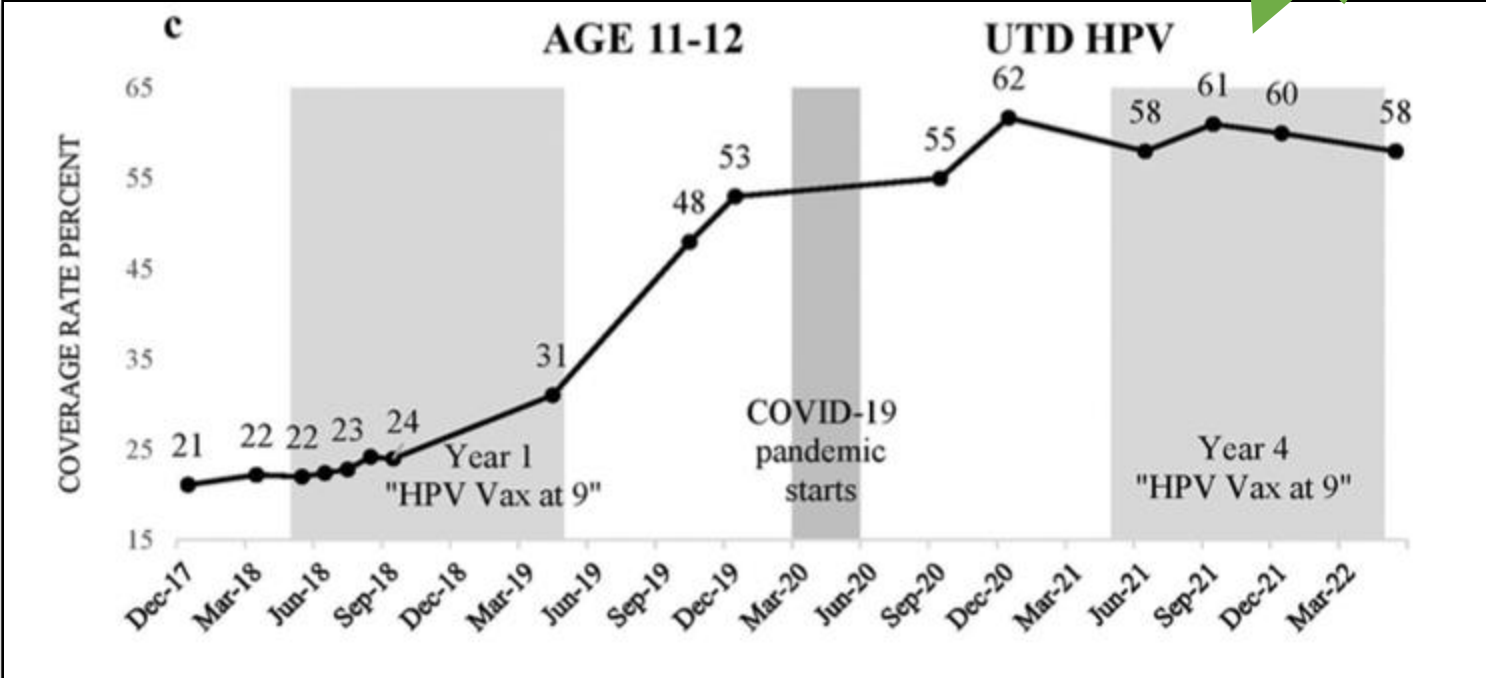
## Clinic A:

- Year 1: increased 9 percentage points
- Year 2: accelerated increases
- Maximal 40 percentage point increase to peak of 62%
- Stability despite the pandemic



## Clinic B:

- Year 1: increased 8 percentage points
- Year 2: accelerated increase of 18 percentage points from 16% to 34%; (unpublished)



# HPV Vax at 9 works in Rural WA too!

5 clinics serving rural populations in WA (36 providers; Feb-July 2023)



- 20% already recommend at 9 & 10 years
- 88% somewhat or more willing to “recommend at age 9”
  
- 2 training webinars
- Posters and training tools provided
  
- **HPV vaccination rates rising quickly at age 9-10**
- **Clinic leaders find it EASY to implement**

“This has been an eye-opening experience and a big surprise that parents are welcoming of HPV at age 9-10”  
“Wow, I didn’t think it would be this easy” ... referring to implementing HPV vax at 9

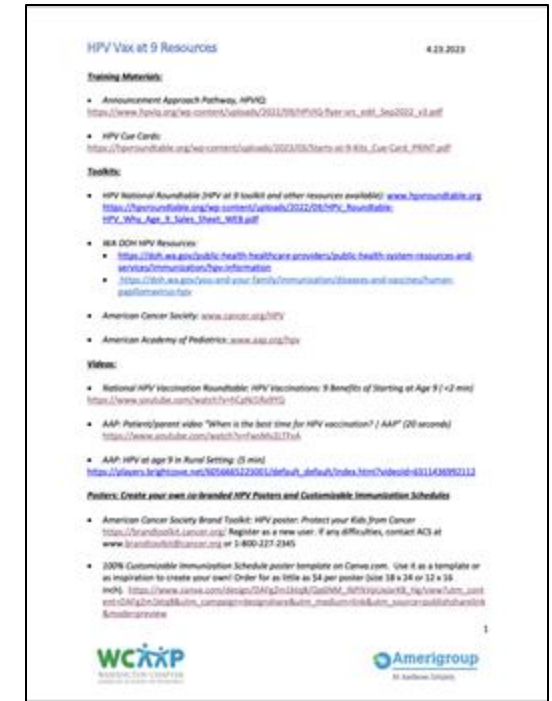
- MOC credit for participating
- Recruiting for 2<sup>nd</sup> cohort; starts June 14<sup>th</sup>
- [www.wcaap.org](http://www.wcaap.org)



# Implementing “HPV Vax at 9”

Be curious... Give it a try

- Policy: Get leadership/organizational support
- Optimize EMR prompts/order sets (if possible)
  - Some clinics face EMR barriers... don't let that discourage you
- Prepare your clinic environment
  - Clear, concise, consistent messaging: “HPV vaccine is cancer prevention, Starts at 9”
- Train your team... use announcement approach
- Support your team... be open to questions or concerns
  - Acknowledge that change can be hard



[www.wcaap.org/resources/vaccines/](http://www.wcaap.org/resources/vaccines/)



# Clear, Concise Messaging



HPV vaccine prevents HPV cancers  
Starts at age 9

A picture is worth a 1,000 words  
boys and girls  
multiple races and ethnicities  
pre-teens ages 9-12

American Cancer Society Brand Toolkit  
<https://brandtoolkit.cancer.org/BMS/>

**Tip:**  
Consider posting in lobby, exam rooms,  
immunization room, weigh station

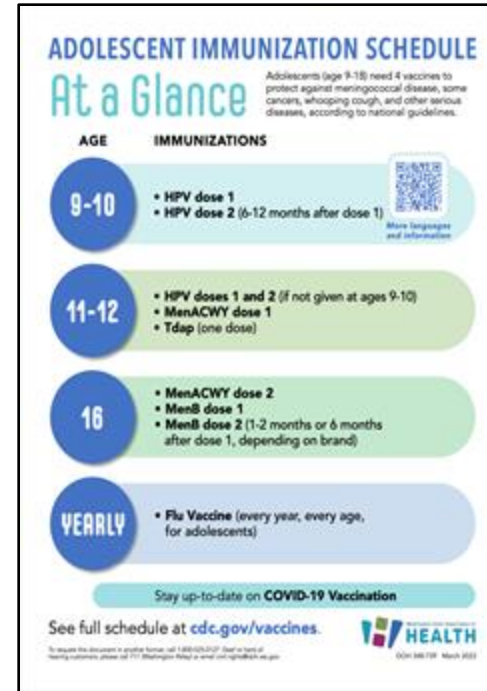
# Post Standardized Immunization Schedule

Indicates vaccines are important and routine

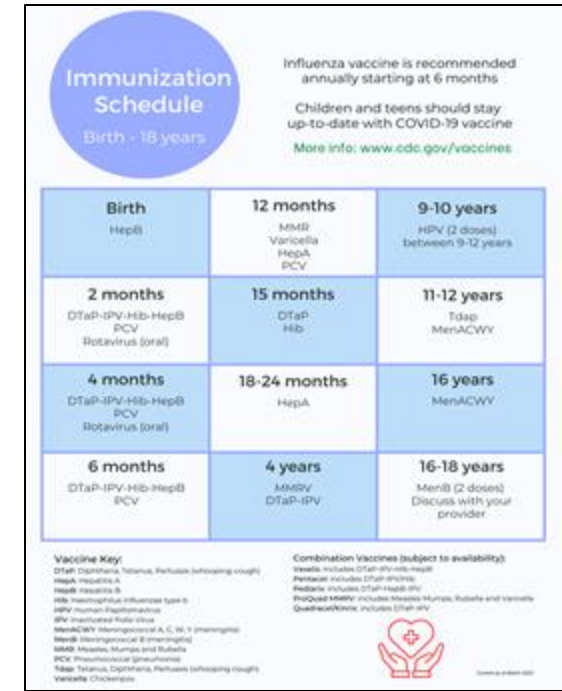
Talking point – low tech visual cue

- Parents:
  - like knowing what is next
- Staff:
  - promotes standard workflow
  - reduces confusion...easier for staff
- Providers:
  - adds authority to strong recommendation

Tips: Make it large! 18 x 24 inch  
 Feature HPV at age 9  
 Consider patients' primary language  
 Teach staff to interact with the poster



Available in 6 languages



Modifiable template  
 English & Spanish

[www.wcaap.org/resources/vaccines/](https://www.wcaap.org/resources/vaccines/)

“The giant poster is amazing... low tech, but powerful”  
 “It was our simplest, cheapest and BEST intervention”



# Gather Parent-Patient Information Materials

**Protect your child against viruses that can cause cancer.**

HPV vaccine can be given starting at age nine. It protects children against cancers caused by the human papillomavirus.

**Two reasons for two doses at age nine**  
HPV vaccines are safe and develop better immunity when given at younger ages, producing the most infection-fighting cells, or antibodies, in preteens. It is highly effective in preventing infection from certain types of HPV when given before a person is exposed to the virus.

When your child turns nine, ask your health care provider about protecting them from cancer with the HPV vaccine. Learn more at <https://www.doh.wa.gov/hpv>.

At least 35,900 people in the U.S. get cancer caused by HPV each year.

The two most common cancers caused by HPV are cervical cancer in women and mouth/throat cancer in men.

Only TWO doses of HPV vaccine are needed for most kids who start the series at ages 9 to 14. THREE doses are needed for those starting at ages 15 to 26.

To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email [civil.rights@doh.wa.gov](mailto:civil.rights@doh.wa.gov). Feb. 2023 DOH #348-612

37,000 people get cancer caused by HPV each year in the U.S.

**HPV Vaccine**

Protect your child against viruses that can cause cancer

HPV vaccine is cancer prevention.

**Resources**  
Washington State Department of Health: [www.doh.wa.gov/hpv](http://www.doh.wa.gov/hpv)  
Centers for Disease Control and Prevention: [www.cdc.gov/hpv](http://www.cdc.gov/hpv)  
Watch Me Grow Washington Hotline: 1-800-322-2588  
Washington State Local Health Departments and Districts: [www.doh.wa.gov/localhealth](http://www.doh.wa.gov/localhealth)

DOH 348-04 March 2012  
To request this document in another format, call 1-800-525-0127. Deaf or hard of hearing customers, please call 711 (Washington Relay) or email [civil.rights@doh.wa.gov](mailto:civil.rights@doh.wa.gov).

HPV at 9 resources from WA DOH... translated into 5+ languages  
Spanish, Russian, Ukrainian, Vietnamese, Marshallese  
(flyer also in Chinese)

## HPV at 9 Toolboxes

### “Made in Washington”

- <https://doh.wa.gov/public-health-healthcare-providers/public-health-system-resources-and-services/immunization/hpv-information>
- [www.wcaap.org/resources/vaccines/](http://www.wcaap.org/resources/vaccines/)
- [www.aihc-wa.com](http://www.aihc-wa.com) (coming soon)

### “Made in USA”

- [www.cancer.org/HPV](http://www.cancer.org/HPV)
- [www.aap.org/hpv](http://www.aap.org/hpv)
- [www.hpvroundtable.org](http://www.hpvroundtable.org)



# Train your team

## HPV Vaccine: It's Cancer Prevention

**Who?** All kids (both boys and girls) should get the vaccine starting at age 9.

**What?** The human papillomavirus (HPV) vaccine is a cancer prevention vaccine.

**Why?**

- The HPV vaccine prevents 6 different cancers (mouth/throat, cervix, vulva, vagina, penis and anus).
- The HPV vaccine prevents most genital warts.
- The HPV vaccine is safe and effective, with no long term side effects.
- The HPV vaccine has been given for more than 15 years and provides long lasting protection.

**When?**

**On Time**  
AGE 9-12  
2 Doses  
6-12 months apart

**Late**  
AGES 13-14  
2 Doses  
6-12 months apart

**Critical**  
AGES 15-26  
3 Doses  
1st dose at visit one  
2nd dose 1-2 months later  
3rd dose 6 months after 1st dose

Special Acknowledgements to the WA HPV Free Taskforce for the creation of this resource.

American Cancer Society  
National HPV Vaccination Roundtable

## HPV Cue Card:

[https://hpvroundtable.org/wp-content/uploads/2023/03/Starts-at-9-Kits\\_Cue-Card\\_PRINT.pdf](https://hpvroundtable.org/wp-content/uploads/2023/03/Starts-at-9-Kits_Cue-Card_PRINT.pdf)

## The Announcement Approach for Increasing HPV Vaccination

Take these steps to more effectively recommend HPV vaccination. They will save you time and improve patient satisfaction.

- 1 ANNOUNCE**  
Start with a presumptive announcement that assumes parents are ready to vaccinate. This is an effective way to recommend adolescent vaccines, including HPV vaccine.<sup>1</sup>  
KEY ELEMENTS OF AN ANNOUNCEMENT:
  - Note child's age to cue that this is part of routine care.
  - Say you will vaccinate today.
  - Announce children this age get a vaccine that prevents six HPV cancers.

ANNOUNCEMENT EXAMPLE  
"Marcus is now 9, so today he'll get a vaccine that prevents six HPV cancers."
- 2 CONNECT & COUNSEL**  
Connect with parents by asking for their main concern about HPV vaccine. Counsel parents by using a research-tested message to address their concern.<sup>2</sup> Then clearly recommend getting HPV vaccine today.
- 3 TRY AGAIN**  
Say you'll bring up HPV vaccine at the next visit. Then make a note in the child's chart. Almost 70% of parents who initially decline later agree to HPV vaccine or plan to soon.

1. Brewer, et al., 2017, Pediatrics. 2. Shah, et al., 2019, Pediatrics. 3. Romalis, et al., 2018, Academic Pediatrics. hpv.org

HPV 10  
National Quality Improvement Study

## Announcement Approach:

[https://www.hpviq.org/wp-content/uploads/2022/09/HPVIQ-flyer-src\\_edit\\_Sep2022\\_v3.pdf](https://www.hpviq.org/wp-content/uploads/2022/09/HPVIQ-flyer-src_edit_Sep2022_v3.pdf)

# Try it! Recommend HPV vaccine at age 9

- Use presumptive announcement
- Focus on cancer prevention

“Marcus is now 9, so today he’ll get a vaccine that prevents six HPV cancers”

- If hesitant, connect with parents, ask for their main concern
  - Don’t be afraid of questions
  - Counsel using research-tested messages
- If the parent declines, try again another day; 70% of parents who initially decline HPV, eventually say YES

Opel, *Pediatrics* (2013)

Brewer, *Pediatrics* (2017)

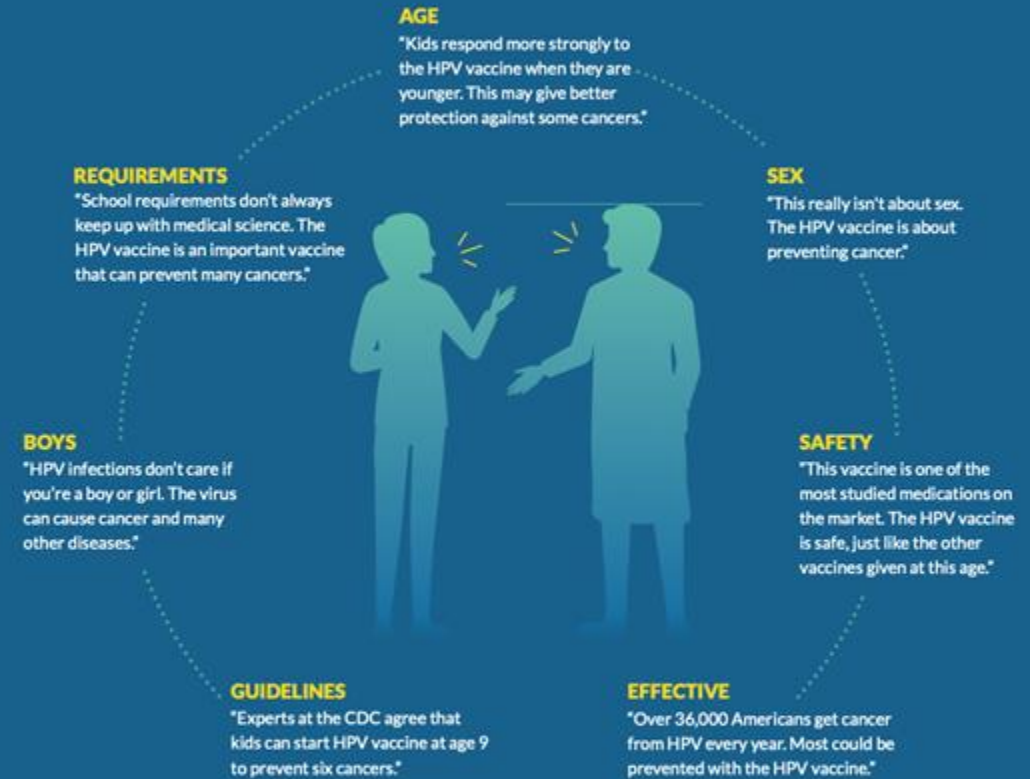
Shah, *Pediatrics* (2019)

Kornides, *Academic Pediatrics* (2018)

[https://www.hpviq.org/wp-content/uploads/2022/09/HPVIQ-flyer-src\\_edit\\_Sep2022\\_v3.pdf](https://www.hpviq.org/wp-content/uploads/2022/09/HPVIQ-flyer-src_edit_Sep2022_v3.pdf)

## Research-tested Messages to Address HPV Vaccine Concerns

1,200 parents told us these were the best messages to use when addressing their concerns.<sup>2</sup>



2. Shah, et al., 2019, *Pediatrics*.

hpviq.org

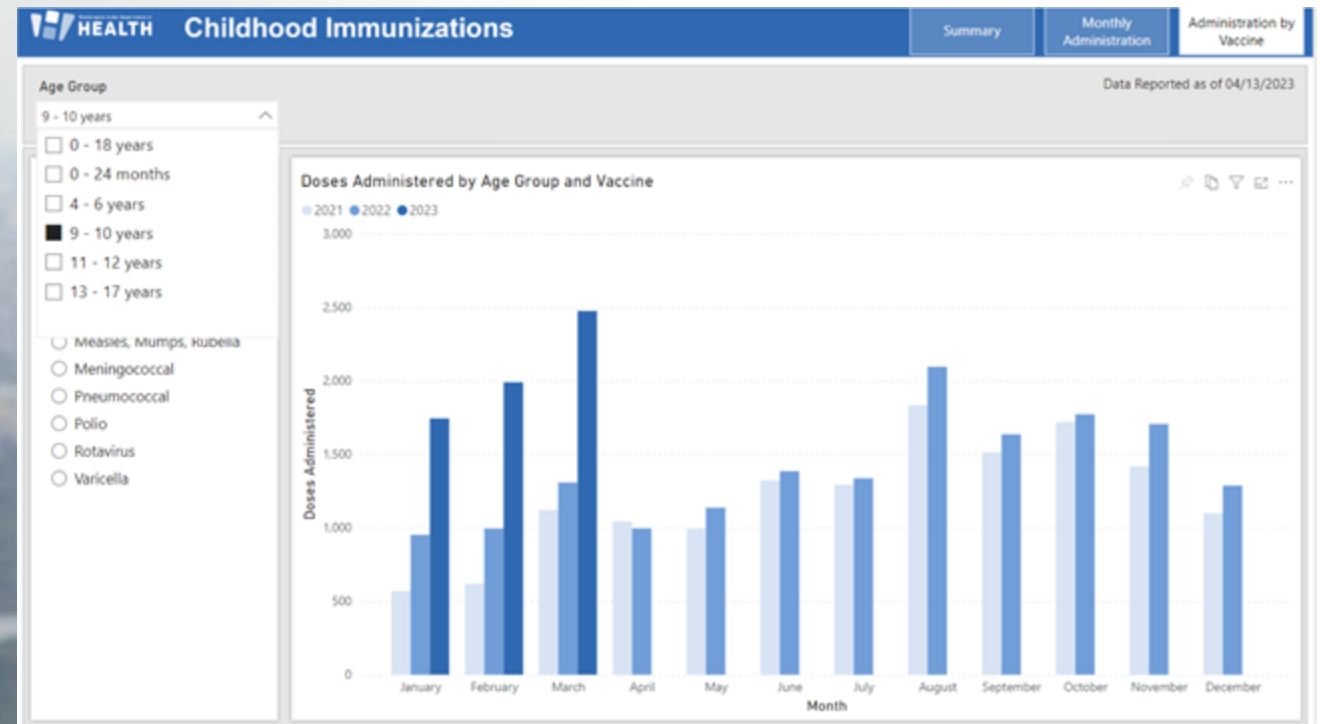
Developed with funding from the Centers for Disease Control and Prevention, cooperative agreement U01IP001073-03-04.



# Eyes on Washington: Forecast Success



- HPV doses administered at age 9-10 = doubled
- More Washington kids will be protected from HPV cancers



Source: Data based on doses administered data documented in the Washington State Department of Health Immunization Information System



# HPV Vaccine is Cancer Prevention

It starts at age 9

Give it a try



Simple

Successful

Sustainable