Prevention of HPV-Associated Cancers

Understanding the Current Environment to Maximize Protection

This activity is supported through an independent educational grant from Merck & Co., Inc., Rahway, NJ, USA.

Jointly provided by Center for Independent Healthcare Education and Vemco MedEd

Activity Description

Target Audience

This activity is designed as a comprehensive approach to address the practice needs of primary care providers, including primary care physicians, osteopathic physicians, physician assistants, nurse practitioners, and allied healthcare professionals, who are at the forefront of caring for patients eligible for immunizations and/or at risk for vaccine-preventable diseases.

Learning Objectives

At the conclusion of the educational activity, the learner should be able to:

- Explain the current incidence of human papillomavirus (HPV)-associated cancers in men and women and how the incidence has changed since the availability of HPV vaccination
- Recognize how patient barriers to HPV vaccination can differ depending on age, gender, and other patient factors
- Utilize communication strategies designed to educate vaccine-eligible patients in an age-appropriate and gender-neutral manner about the risks of HPV infection and benefits of vaccination

Faculty and Disclosure

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The Lewis Katz School of Medicine at Temple University
Associate Professor (adj), Oral Health
Maurice Kornberg School of Dentistry at Temple University
Philadelphia, PA

Dr. Margot Savoy has the following relevant financial relationships with ineligible companies to disclose:

Advisory Board: Novo Nordisk; Eisai Inc.

Author: Merck & Co., Inc.

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HPV Infection is Very Common

- Most sexually active men and women will acquire genital HPV infection at some point in their lives
  - Not reportable
  - Most infections are clinically silent
  - Many infections resolve spontaneously

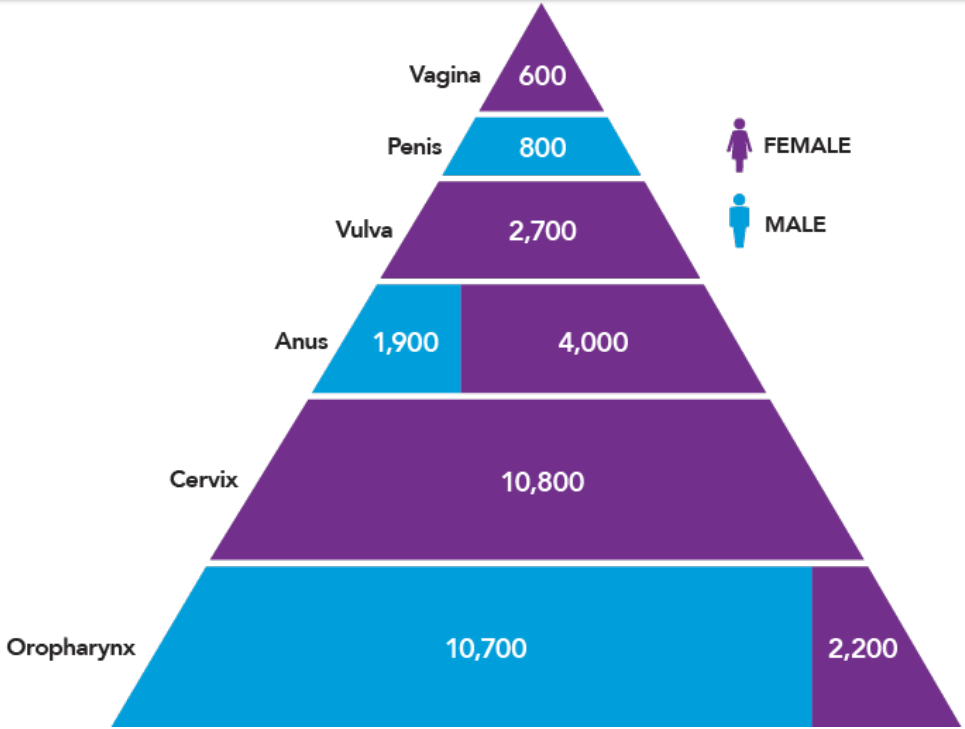
Doorbar J, et al. *Vaccine*. 2012;30 Suppl 5:F55-70.

Incidence & Prevalence

- 77.3 million persons in the United States with HPV infection (2018)
  - 42.5 million with a disease-associated HPV infection
    - Anogenital warts
    - Cancer
      - Oropharyngeal: 14.3 per 100,000 persons
      - Cervical: 6.1 per 100,000 persons
      - Anal: 1.7 per 100,000 persons
- Prevalence ~40%

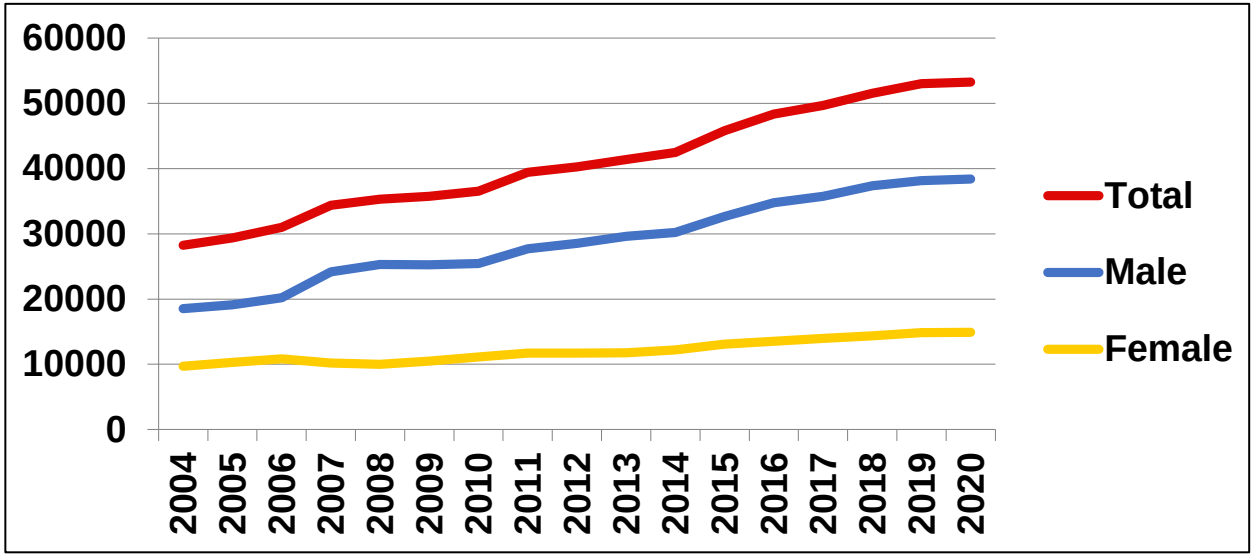
Lewis RM, et al. *Sex Transm Dis*. 2021;48(4):273-277.
Zhang Y, et al. *JAMA Oncol.* 2021;7(10):e212907.
NIH SEER Program (2020 stats) https://seer.cancer.gov/statfacts/ (Accessed 9/4/2023).

Numbers of US Cancers Caused by HPV



Centers for Disease Control and Prevention. How many cancers are linked with HPV each year? [Internet]. Atlanta (GA): CDC; [updated 2018 Aug 22; cited 2018 Aug 26]. Available from: https://www.cdc.gov/cancer/hpv/statistics/cases.htm

Incidence of Oropharyngeal Cancers

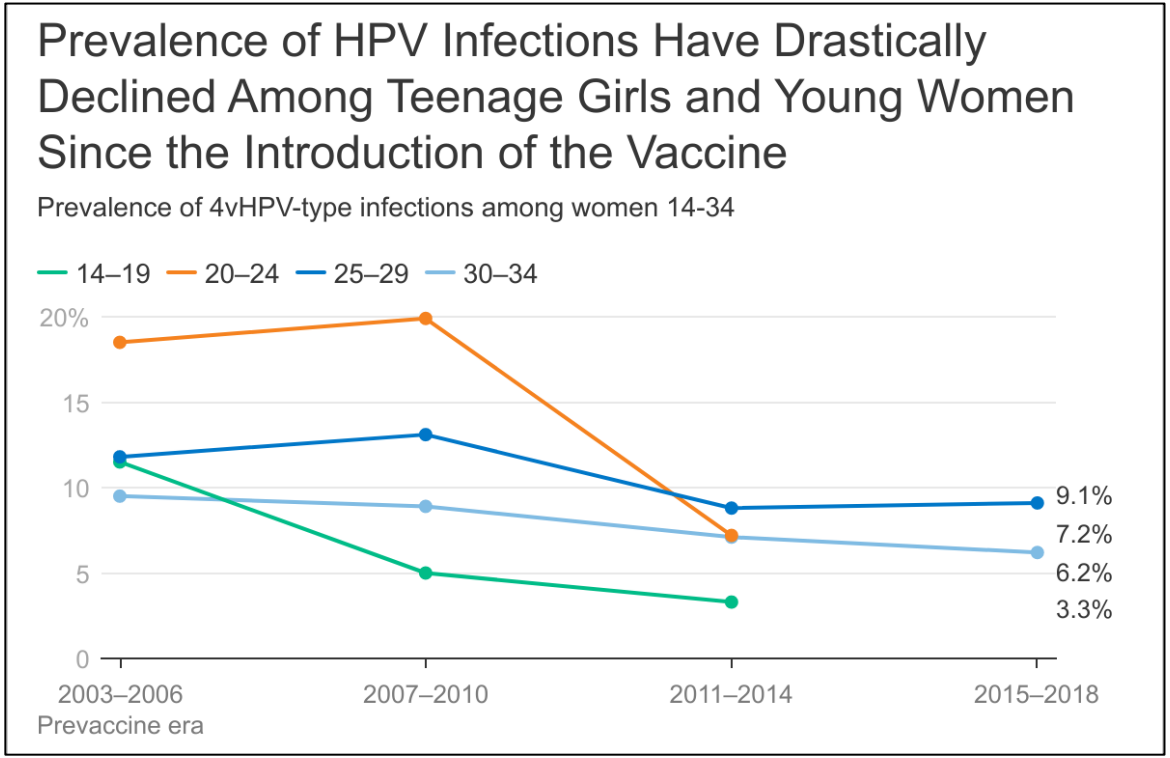


Incidence of HPV-related oropharyngeal carcinomas are **increasing**

- Particularly among <u>males</u> (3× more common)
- 70+% positive for HPV 16

American Cancer Society. *Cancer Facts & Figures. 2004-2020*, www.cancer.org.

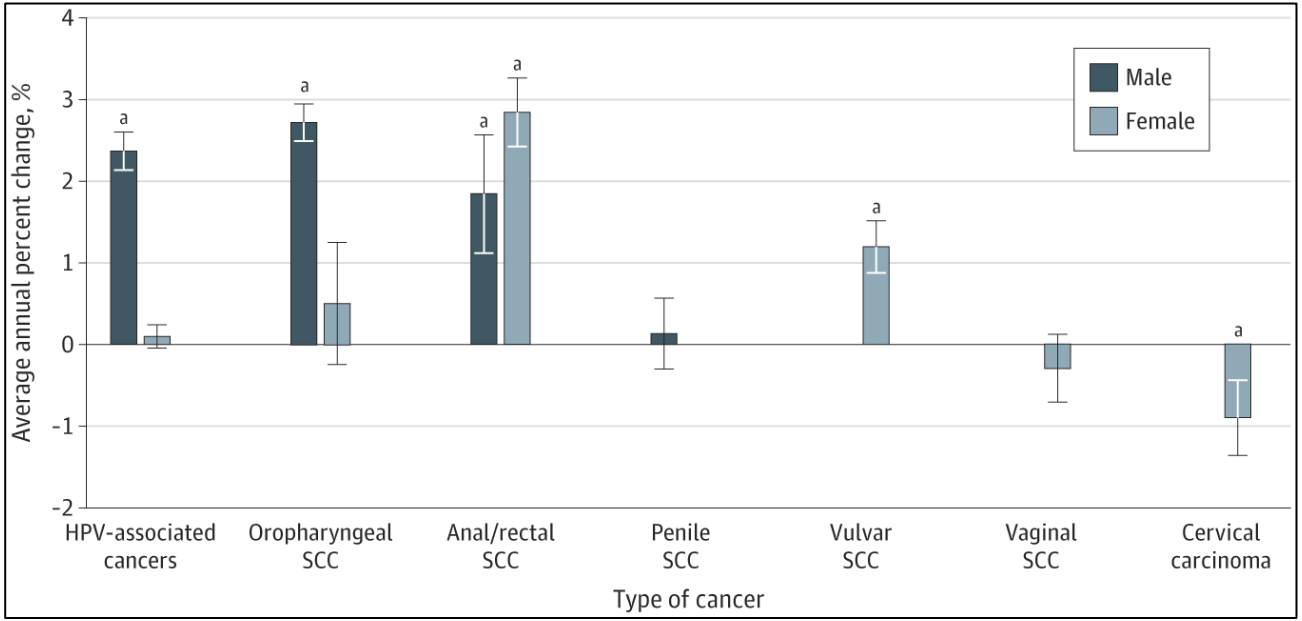
Vaccination Decreases HPV Infections



Rosenblum HG, et al. *MMWR Morb Mort Wkly Rep*. 2021;70:415-20.

Reducing HPV Infections Prevents Cancer

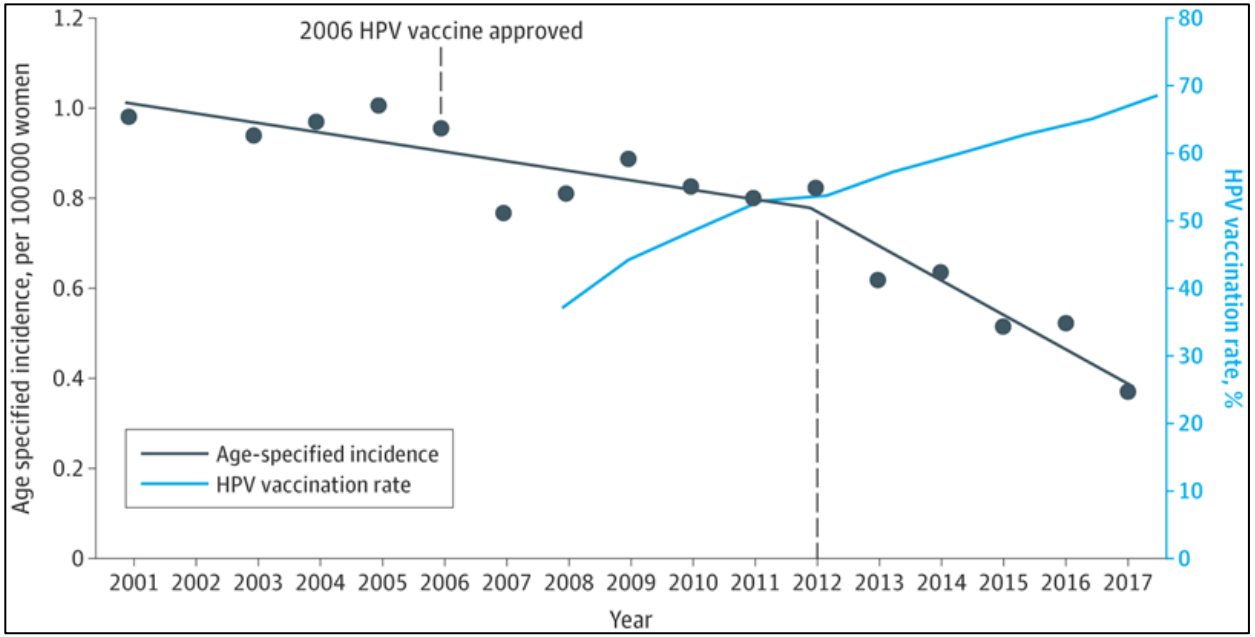
Average Annual Percent Change (AAPC) of Human Papillomavirus Virus (HPV)-Associated Cancers in US Cancer Statistics Public Use Databases From 2001 to 2017



Liao C, et al. *JAMA Netw Open.* 2022;5(3):e222530.

Reducing HPV Infections Prevents Cancer

Age-Specified Incidences and Trends of Cervical Squamous Cell Carcinoma in Individuals Aged 20 to 24 Y & Human Papillomavirus Virus (HPV) Vaccination Rate (>1 Dose) in Adolescents Aged 13 to 17 Y



Liao C, et al. *JAMA Netw Open.* 2022;5(3):e222530.

HPV Vaccine Recommendations: ACIP Update

- HPV vaccination recommended for both males and females through age 26 years
  - Target age 11-12 years
    - Can start as early as age 9
  - If <15 years of age: **2 doses** (6 months apart)
  - If >15 years of age: **3 doses** (at 0, 2 and 6 months)
- For ages 27 to 45 years: decision to vaccinate based on *shared decision-making*

Meites E, et al. *MMWR Morb Mortal Wkly Rep*. 2019;68(32):698-702.

Vaccine Recommendations

HPV vaccine should be offered to all age-eligible adolescents and adults *regardless* of risk.

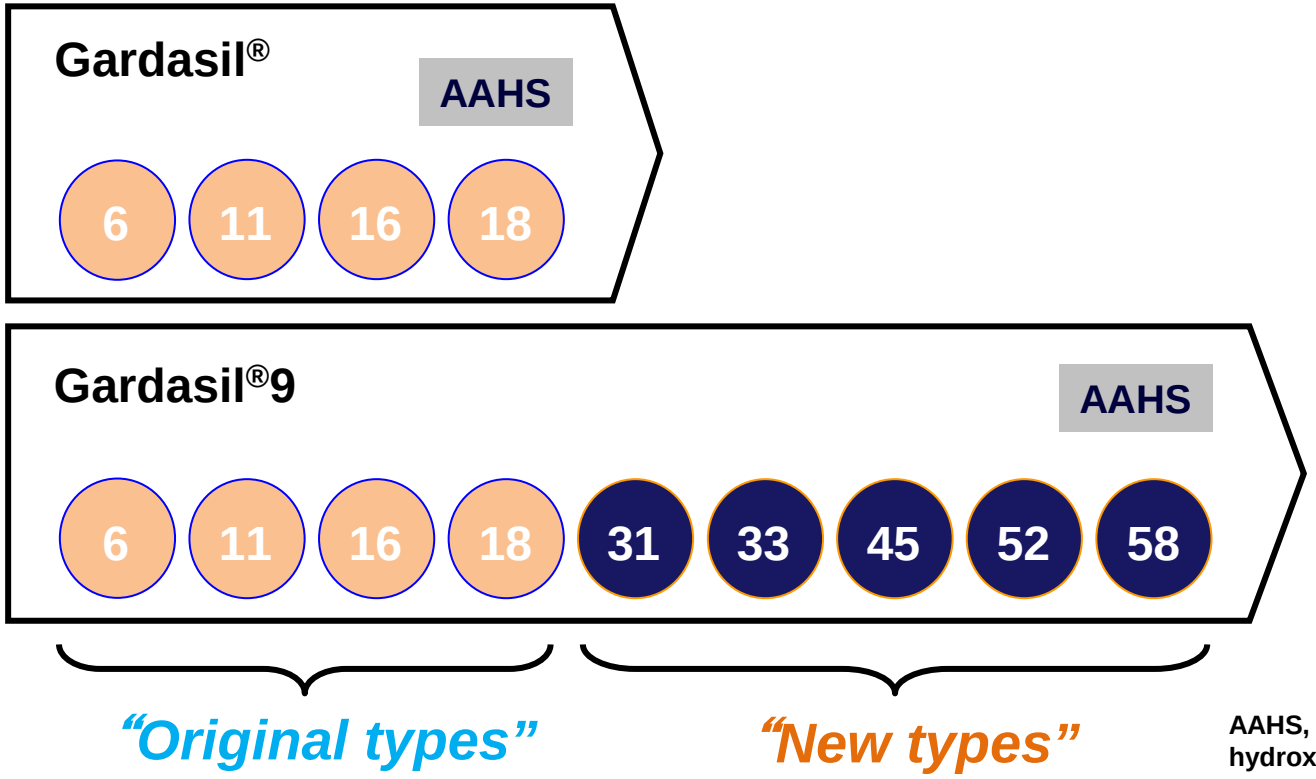
Only screening questions:

1. Previously vaccinated against HPV?

?

2. Currently pregnant?

9-Valent HPV Vaccine Composition



AAHS, amorphous aluminum hydroxyphosphate sulfate

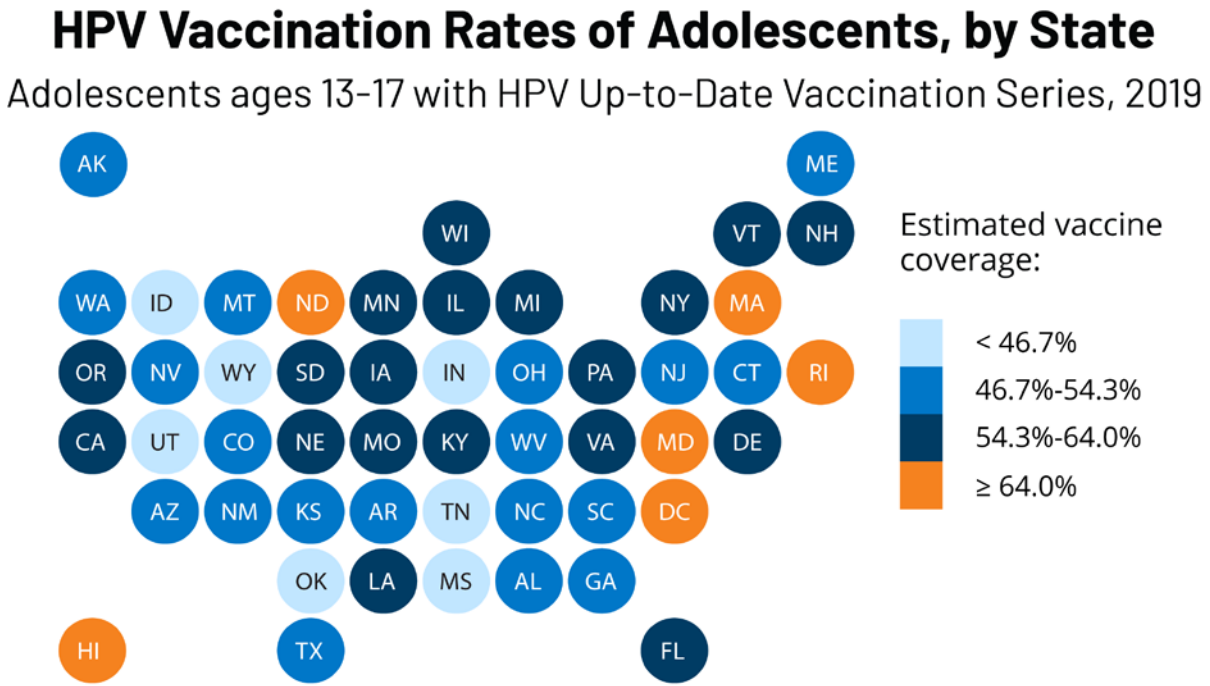
HPV Vaccine Safety

- >350 million doses of HPV vaccine distributed worldwide
- Most common adverse events are mild: Sore arm, myalgias
- Among serious adverse events: **No** patterns to suggest any events related to the HPV vaccine
- Findings similar to the safety of all other adolescent vaccines

Slade BA, et al. *JAMA*. 2009;302(7):750-757.
Centers for Disease Control and Prevention. FAQs about HPV safety. Available at: https://www.cdc.gov/vaccinesafety/vaccines/hpv/hpv-safety-faqs.html. Last Reviewed July 15, 2020.

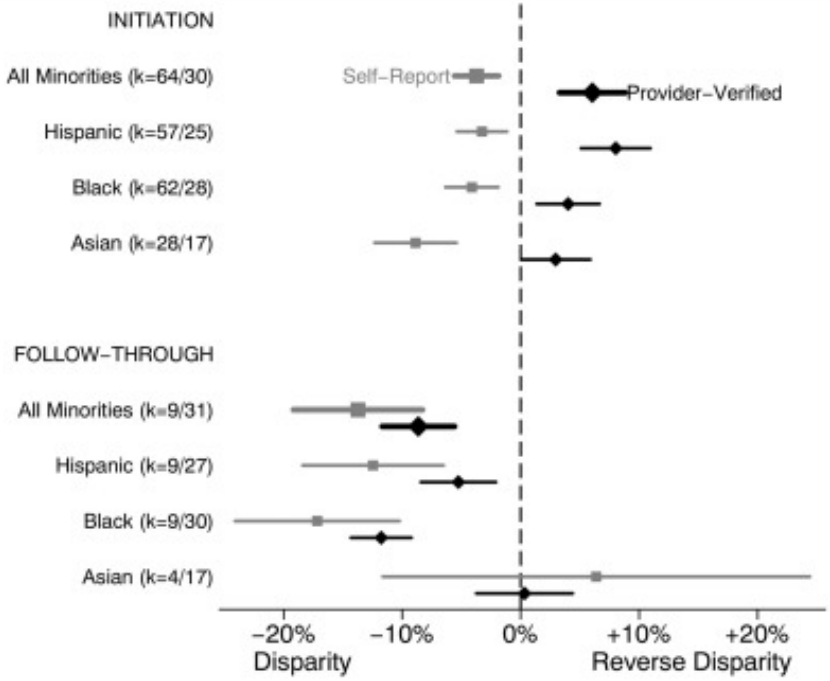
HPV Vaccination Rates Remain Low

- **U.S. Value:** 61.7%
- **Healthiest State:** Rhode Island: 83.2%
- **Least-healthy State:** Mississippi: 32.7%
- **Definition:** Percentage of adolescents ages 13-17 who received all recommended doses of the human papillomavirus (HPV) vaccine
- **Data Source & Year(s):** CDC, National Immunization Survey-Teen, 2021



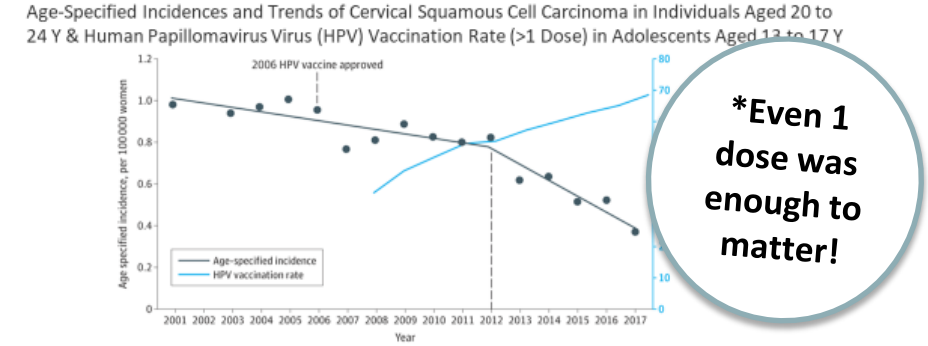
America's Health Rankings analysis of CDC, National Immunization Survey-Teen, United Health Foundation, AmericasHealthRankings.org, accessed 2023.

Everyone isn't Vaccinated Equally = Disparities



- Self-reported vaccination is lower than provider-verified
- Minority patients are more likely to start HPV vaccination*
- White patients are more likely to finish the course

Reducing HPV Infections Prevents Cancer

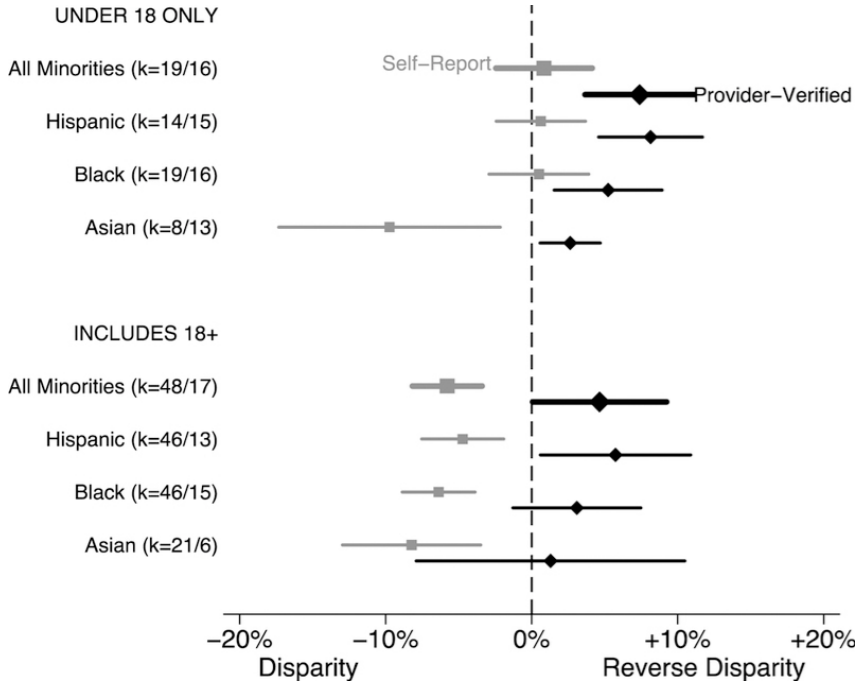


Spencer JC, et al. *Prev Med*. 2019;123:197-203.

Liao C, et al. *JAMA Netw Open.* 2022;5(3):e222530.

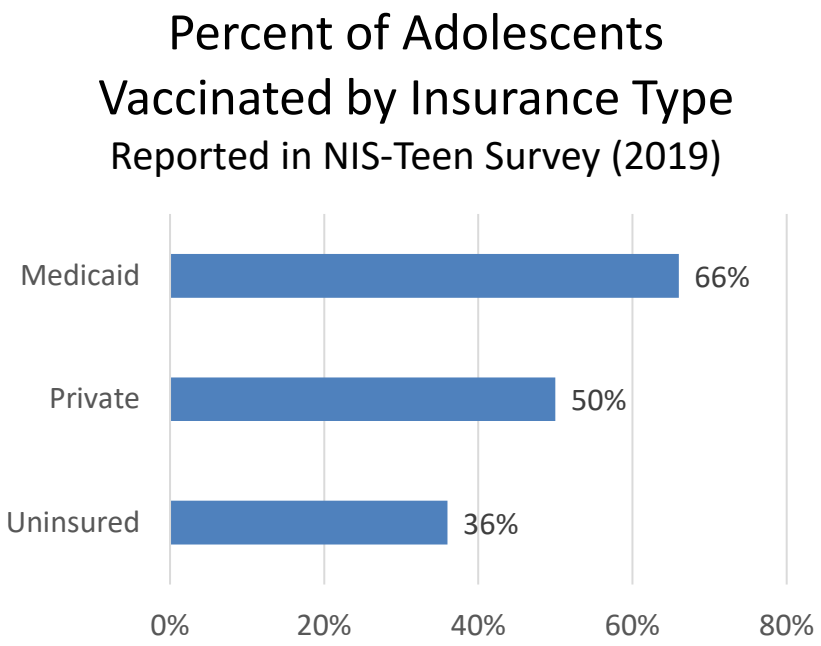
Everyone isn't Vaccinated Equally = Disparities

- The "reverse" disparity shows up more for under 18 so we are missing the optimal window for those patients



Spencer JC, et al. *Prev Med*. 2019;123:197-203.

Everyone isn’t Vaccinated Equally = Disparities



- Medicaid > Private insurance (*another reverse disparity)
- HPV vaccine is covered by VFC so even uninsured teens should have access
- Individuals <26 years without a PCP have lower vaccination rates
- Higher use of ED for non-emergent care with lower vaccination rates

Hirth J. *Hum Vaccin Immunother*. 2019;15(1):146-155.
Freeman AH, et al. *Obstet Gynecol*. 2018;132(3):717-723.
Spencer JC, et al. *Prevent Med*. 2019;123:197-203.

Factors Impacting Vaccination Uptake

- Highest HPV vaccine uptake rates among 13- to 17-year-old females (2008–2016):
  - Racial/ethnic minorities (non-Hispanic black and Hispanic, younger)
  - Low income (below poverty)
  - Residing in the Northeast United States
  - Mothers were less educated and single
- Families who received a provider's recommendation to immunize for HPV showed twice greater likelihood of HPV vaccine uptake compared with families without a recommendation (65.7% vs. 32.3%).

Clinicians are still not giving a strong recommendation (up to 48% in a study sample)

Source: https://aacrjournals.org/cebp/article/29/7/1458/72404/Patterns-and-Disparities-in-Human-Papillomavirus

Factors Impacting Vaccination Update (cont'd)

- Higher vaccine uptake (adults) was associated with:
  - having health insurance
  - older age
  - receipt of childhood vaccines
  - a higher vaccine-related knowledge
  - more healthcare utilization
  - having a healthcare provider as a source of information
  - positive vaccine attitudes

Kessels SJM, et al. *Vaccine*. 2012;30:3546-56.

Parental Attitudes Impact Uptake

RESEARCH ARTICLE

Open Access

Determinants of human papillomavirus vaccine attitudes: an interview of Wisconsin parents

Kathrine L. Barnes[1*], Jeffrey J. VanWormer[1], Shannon Stokley[2], Elizabeth R. Vickers[1], Huong Q. McLean[1], Edward A. Belongia[1] and Casper G. Bendixsen[1]

Abstract

Background: Parental attitudes play a key role in their decisions to vaccinate adolescents against the human papillomavirus (HPV). Little is known, however, about the formative experiences that shape parents' attitudes about the HPV vaccine.

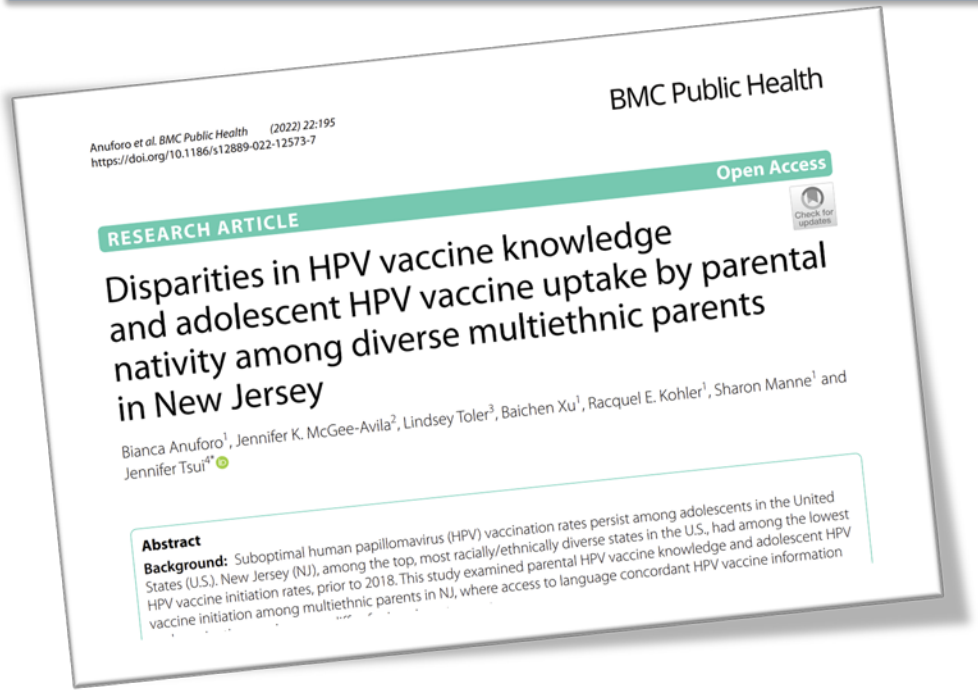
Methods: We conducted semi-structured interviews with 25 parents of 11–17 year old adolescents in Wisconsin who changed their HPV vaccine attitudes (per prior surveys) over one year. A modified grounded theory approach was then used to generate primary themes of attitudinal determinants.

Results: Participants were predominately mothers. We identified three major themes that shaped parents' HPV attitudes: (1) the perceived likelihood of the HPV vaccine preventing cancer, (2) agency in adolescence and gauging their adolescent child's intent for sexual activity, (3) the credibility of HPV vaccine information sources. General messaging around cancer prevention did not always supersede some parents' concerns about the vaccine's

- Did not perceive their child to be at risk
- Link to sexual activity
- Cancers prevented perceived as rare
- Concern about side effects (pain, fainting)
- Agency for decision-making (including adolescent in decision-making)
- While pharmaceutical companies were distrusted, almost all participants expressed a high degree of trust in their doctor's advice.

Barnes KL, et al. *BMC Public Health.* 2018;18:746.

Parental Knowledge about HPV Vaccine



Anuforo et al. BMC Public Health (2022) 22:195
https://doi.org/10.1186/s12889-022-12573-7

BMC Public Health

RESEARCH ARTICLE

Open Access

Disparities in HPV vaccine knowledge and adolescent HPV vaccine uptake by parental nativity among diverse multiethnic parents in New Jersey

Bianca Anuforo[1], Jennifer K. McGee-Avila[2], Lindsey Toler[3], Baichen Xu[1], Racquel E. Kohler[1], Sharon Manne[1] and Jennifer Tsui[4*]

Abstract

Background: Suboptimal human papillomavirus (HPV) vaccination rates persist among adolescents in the United States (U.S.). New Jersey (NJ), among the top, most racially/ethnically diverse states in the U.S., had among the lowest HPV vaccine initiation rates, prior to 2018. This study examined parental HPV vaccine knowledge and adolescent HPV vaccine initiation among multiethnic parents in NJ, where access to language concordant HPV vaccine information

Parental HPV vaccine knowledge remains low among suburban-dwelling, immigrant parents, even though they have higher education and access to health care.

Anuforo B, et al. *BMC Public Health*. 2022;22(1):195.

Adults are Unaware of Link Between HPV and Oropharyngeal Cancer

Survey of 288 adults (18 to 45 years) who sought routine outpatient care at a Boston otolaryngology clinic

- 26.6% were vaccinated against HPV (10.6% of men)
- Only 23.3% understood the relationship between HPV infection and oropharyngeal cancer
  - Women were more likely to be vaccinated, were more aware of HPV causes of cancer, and more likely to be informed about HPV from a healthcare practitioner
- Knowledge of the relationship between HPV infection and cancer was associated with a greater likelihood of being vaccinated

Bloom JC, et al. *JAMA Otolaryngol Head Neck Surg*. 2023;e232073 (Online ahead of print). doi:10.1001/jamaoto.2023.2073.

Adolescent Perceptions about HPV Vaccination

- Adolescents want to be engaged in the conversation and decision-making around HPV vaccination
- They are capable of understanding complexities around vaccine and disease prevention

vaccines

Article

Understanding How Adolescents Think about the HPV Vaccine

MDPI

Robyn A. Pennella, Katherine A. Ayers * and Heather M. Brandt

St. Jude Children's Research Hospital, 262 Danny Thomas Pl, Memphis, TN 38105, USA; Robyn.Pennella@stjude.org (R.A.P.); heather.brandt@stjude.org (H.M.B.)
* Correspondence: Kate.Ayers@stjude.org; Tel.: +19-(01)-3025555

Received: 11 September 2020; Accepted: 13 November 2020; Published: 18 November 2020

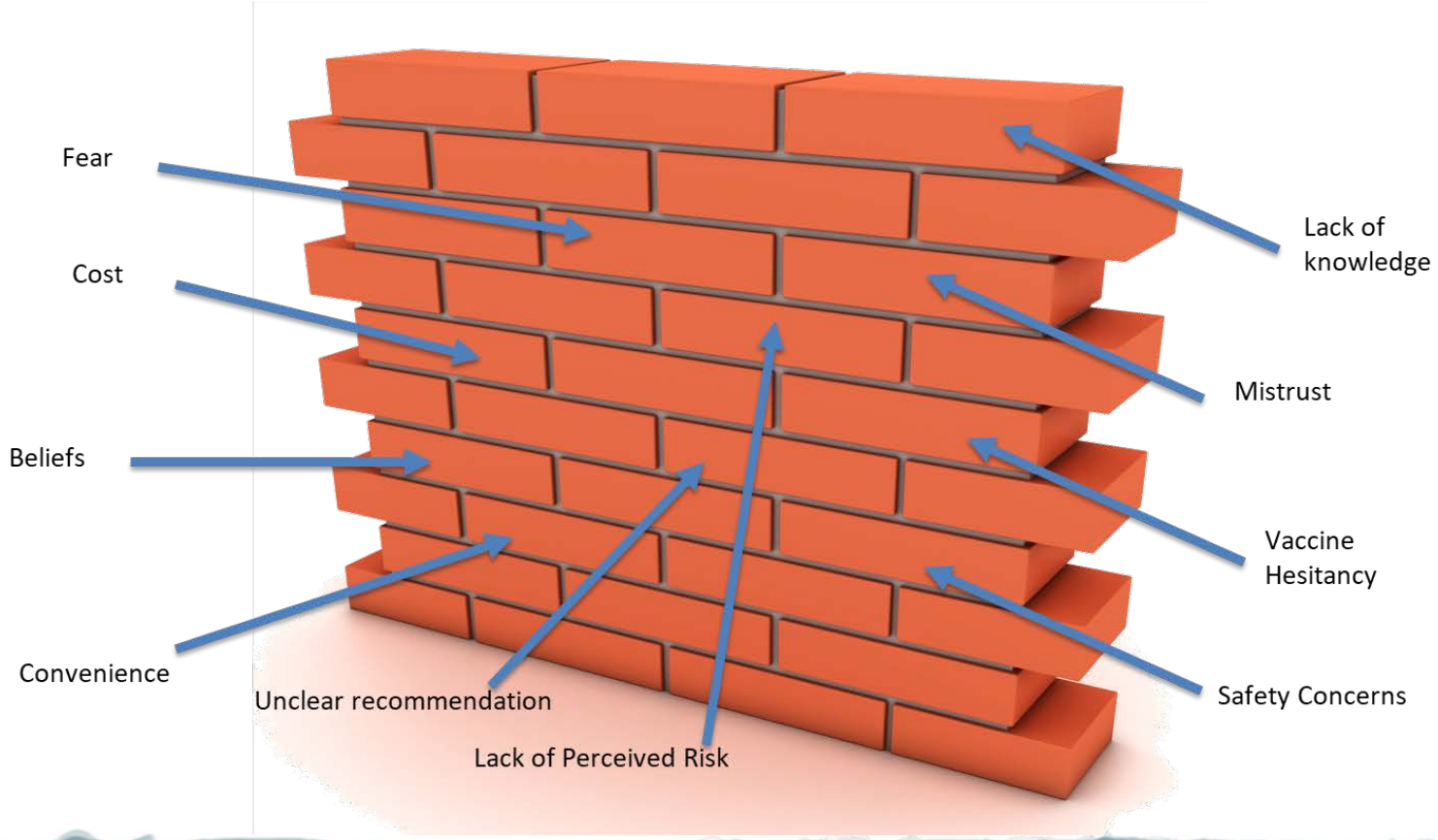
check for updates

Abstract: Despite educational efforts, Tennessee human papillomavirus (HPV) vaccination rates are 43%, among the lowest in the United States. This study examined how adolescents think about the HPV vaccine to identify patterns and misconceptions to enhance educational efforts. Adolescents (ages 11–12) (N = 168) responded to open-ended questions regarding their thinking

- **120/140 indicated that there was no concern around the HPV vaccine and that the HPV vaccine is good and helpful.**
- Wanted more information about HPV in general, risks/benefits of vaccination and how to advocate to help others prevent cancer/disease

Pennella RA, et al. *Vaccines (Basel).* 2020;8(4):693.

Patient Barriers to HPV Vaccine Delivery



Other Barriers to HPV Vaccine Delivery

Patient	Physician	Practice/System	Vaccine
• Fear of needles • Cost/insurance • Convenience • Safety concerns • Belief/Religion • Lack of knowledge	• Fail to give recommendations • Belief patients don't want vaccine • Time concern • Personal lack of confidence in vaccines • Lack of knowledge	• Lack of accurate information • Cost to store & administer • Staffing • Reminder systems • Limited hours of operation • Physician-dependent system	• "New" vaccine/concern about efficacy • Concerns about safety • Insurance coverage • Distribution & supply issues

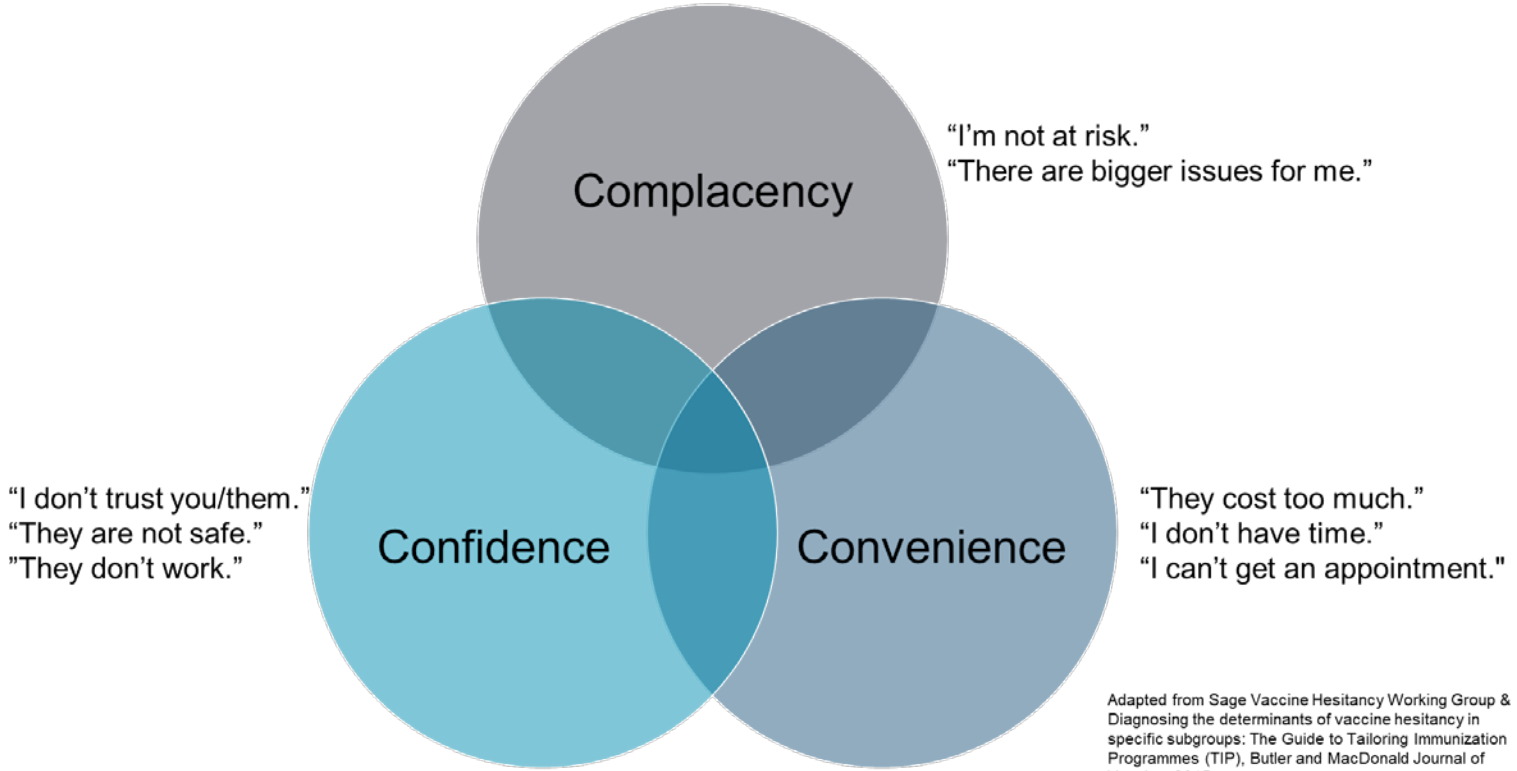
Needle Fear, Pain & Syncope

- Assume all patients have needle fears & plan accordingly
- Explain the procedure (tell the truth about the stick and burn)
- Avoid pictures of needles or showing the needle
- Techniques to consider
  - Numbing creams and sprays
  - Vibration or cooling
  - Distraction
  - Relaxation & breath control

- All vaccines in teens can cause vasovagal syncope
  - Consider giving vaccines at start of visit so they can leave at the end

Source: CDC. Available at: https://www.cdc.gov/childrensmentalhealth/features/needle-fears-and-phobia.html.

Vaccine Hesitancy



Adapted from Sage Vaccine Hesitancy Working Group & Diagnosing the determinants of vaccine hesitancy in specific subgroups: The Guide to Tailoring Immunization Programmes (TIP), Butler and MacDonald Journal of Vaccine, 2015.

Vaccine Hesitancy: Complacency

- Often perceive low personal risk of infection and/or minimize disease severity.
  - “I’ll wait until my child is older and sexually active.”
- Being able to explain the impact of personal risk and the severity of the disease being prevented helps
  - Empathic approach
  - Avoid stigmatizing language (anti-vaxxer)
  - Careful to avoid appearing to use scare tactics
  - Some folks need graphic/visual explanations

Vaccine Hesitancy: Convenience

- Consider walk-in/drive-up hours
- Offer vaccines at scheduled visits (even not wellness)
- Consider early or late appointment/hours; weekends
- Anticipatory guidance for planning ahead
- Standing orders

Vaccine Hesitancy: Confidence

- A lack of confidence can show up as mistrust of you/your team, the vaccine itself (safety, efficacy) or the overall medical establishment (CDC, health system)
- Addressing this isn't usually a one-and-done project.
- **Trust is built over time**
  - Intentionally work on your part to be who you say you are
  - Transparency/Honesty
  - Listening & Addressing questions/concerns
  - Providing balanced information from trusted sources

Make a Strong Recommendation

- Many patients report not getting a recommendation from their clinician for vaccines (or it being a weak or hesitant recommendation)

- A strong recommendation:
  - Is a statement, not a question
  - Strongly recommends being vaccinated
  - Presumptive, declarative statements are more effective

- I strongly recommend you are vaccinated today against HPV.

Opel DJ, et al. *Pediatrics.* 2013;132:1037-46.

The Announcement Approach

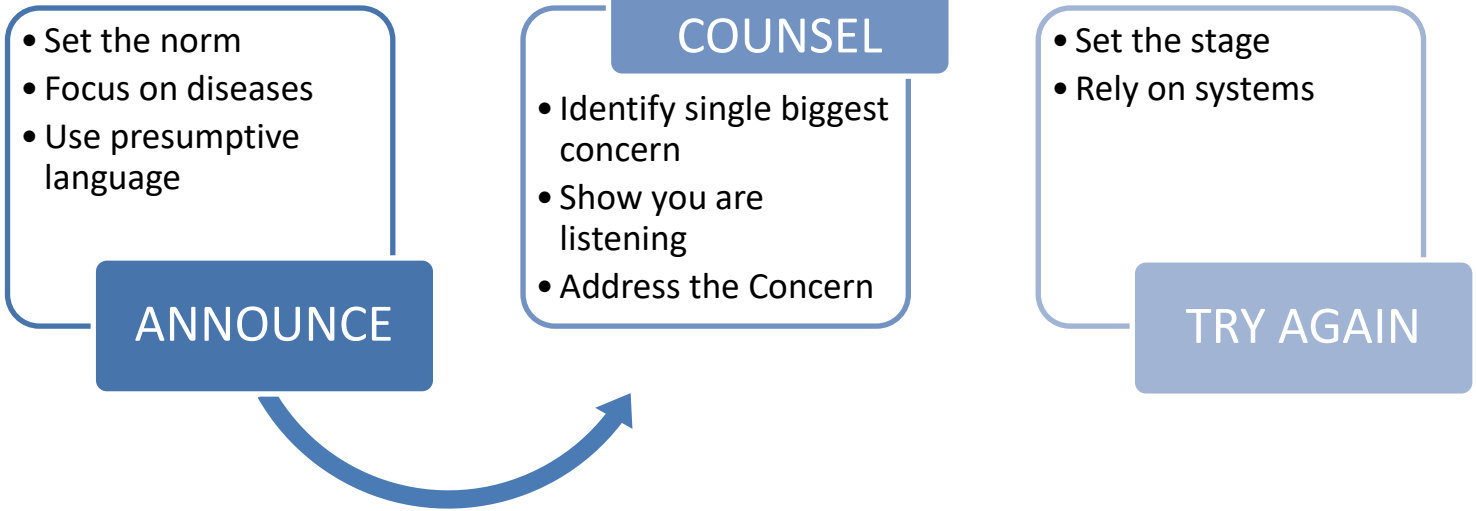
- Evidence-based intervention
  - RCT across 29 primary care clinics

- The Announcement Approach
  - saves time[1]
  - leads to higher satisfaction among parents and providers[2]
  - Increases vaccination rates

[1]Malo TL, et al. *Implement Sci*. 2018;13(1):57.
[2]Fenton AT, et al. *Hum Vaccin Immunother*. 2018;14(10):2503–9.

The Announcement Approach (cont'd)

Show urgency: Use words like "today" & "recommend"



Brewer NT, et al. *Hum Vaccin Immunother*. 2023;19(2):2216117.

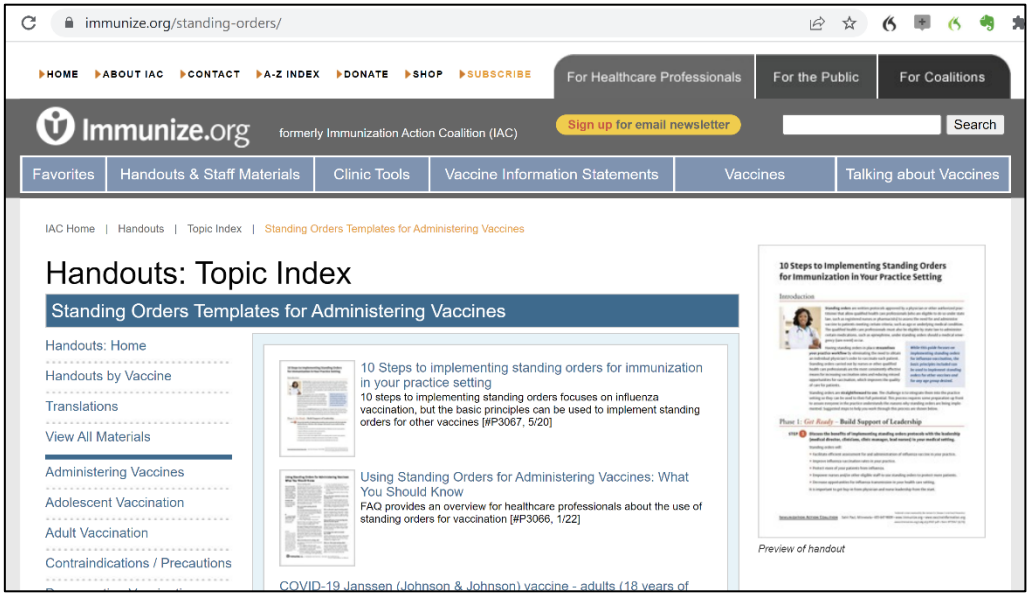
Consider a Vaccine Champion

- Identify a staff member to be the local expert about immunizations (not a physician alone− partner with a staff member)
- Empower them to lead education and QI practice-based initiatives
- They can track data and report back to practice
- Consider offering dedicated time or payment as a leadership role

AAFP Adolescent Immunization Office Champions Project, 2015. Available at: https://www.aafp.org/dam/AAFP/documents/patient_care/immunizations/office-champions-final-report-adolescent.pdf.
AAFP Child and Adolescent Immunization Champions Project, 2014. Available at: https://www.aafp.org/dam/AAFP/documents/patient_care/immunizations/office-champions-final-report.pdf.

Standing Orders

- Orders signed by medical director or lead physician that empowers nursing staff to vaccinate without another order from the physician
- Use IAC templates to save time implementing
- Engage the doctors in your group to minimize variations



Immunization Reconciliation at Every Visit

- Immunization registry access
- Embed review for all patients in the pre-visit huddle
- Allows activation of pre-visit vaccination if no standing order (physician can order during the huddle)
- Even if patient declines, after visit summary can create reminder of what is still due

Reminder/Recall Systems

- Can be automated or “live”
  - Phone call, text, postcards, portal messages
- Usually require some data management system to trigger which patient requires a reminder
  - EMR-based, registry-based
  - Patient selected (opt-in)
- Some don’t contact patient separately but set reminders/triggers to remind them at visits
- Some choose a set date (e.g., birthday reminders for all preventive tasks due)

CDC. Available at: https://www.cdc.gov/vaccines/hcp/admin/reminder-sys.html.

A Few Resources for Later

National HPV Vaccination Roundtable

Search … Search

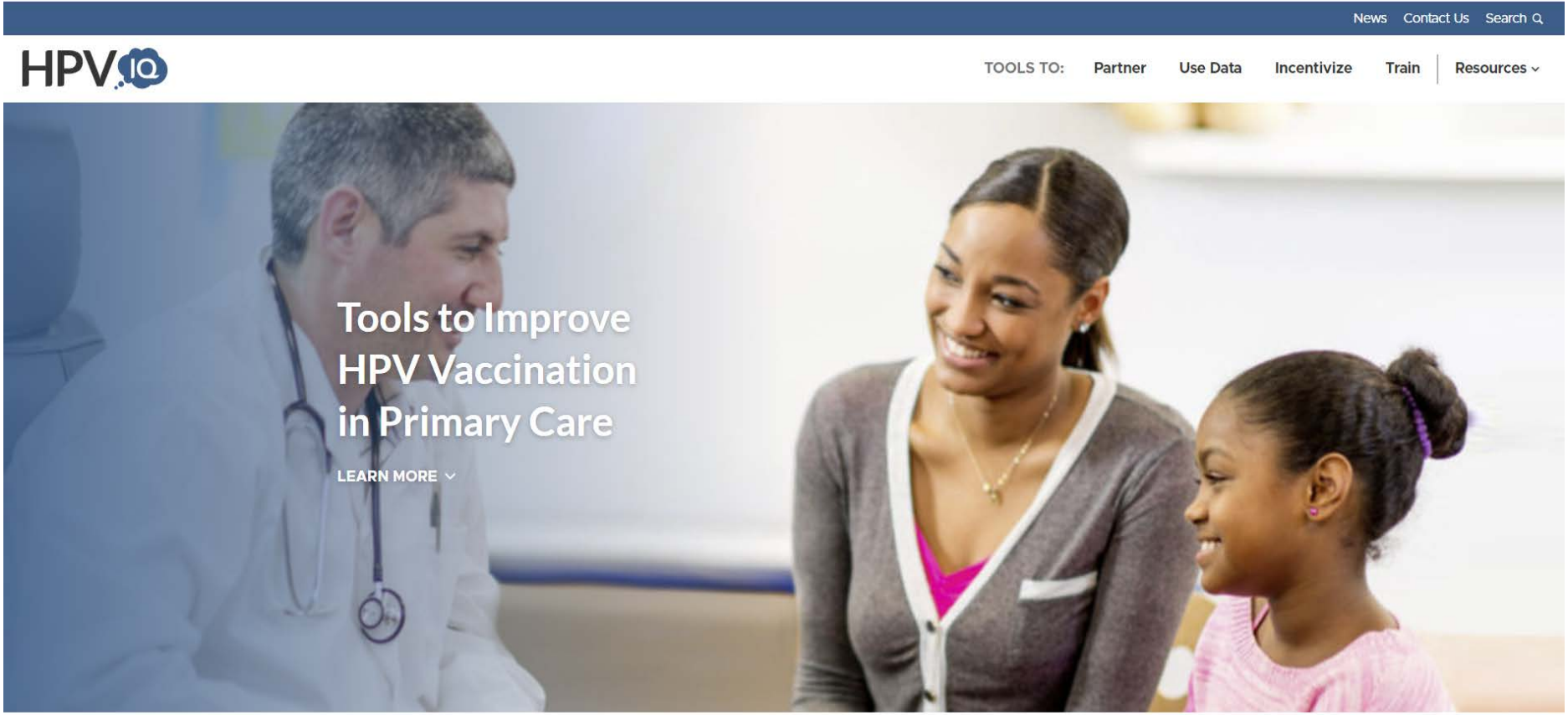
About | Task Groups | Resource Library | Stay Informed | Get Involved | Member Information | Archived Resources

Know the Facts! There are many benefits to initiating the HPV vaccine series at age 9.

Check out the Why Age 9? Fact Sheet and the Age 9 Call to Action Letter.

See the Start at Age 9 Page

https://hpvroundtable.org/



www.HPViq.org

CDC Releases 2023 Vaccine Schedules - Includes COVID-19 Vaccines VIEW NEW SCHEDULE

Immunizations and Vaccines

Creating a Community of Immunity

Vaccines are one of the best preventive health tools we have. But vaccine misinformation is a real threat to public health and with increased patient hesitancy, potentially deadly disease outbreaks will happen. It's critical that everyone protect their health and those around them.

According to the CDC, **vaccinations will prevent more than 21 million hospitalizations and 730,000 deaths among children born in the last 20 years.**[1] For every $1 invested in vaccines, an estimated $10.20 is saved in direct medical costs.[2] But more education is needed to improve vaccination rates. AAFP resources can support your efforts to get your patients vaccinated, from birth to advanced age.

Immunization Schedules

Influenza and Other Diseases

COVID-19 Vaccines and Boosters

Resources to Address Vaccine Concerns

Free CME Immunization Courses

Patient Vaccine Education

https://www.aafp.org/family-physician/patient-care/prevention-wellness/immunizations-vaccines.html

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July 13, 2023

WEBINAR WATCH

Improving the Vaccination Experience: Reducing Pain and Anxiety for Children and Adults

February 28, 2023

WEBINAR WATCH

Improving the Vaccination Experience: Accessible Vaccination for Neurodiverse People at Any Age

December 13, 2022

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