



Human Papillomavirus (HPV): Empowering Providers to Advocate for Vaccination

Housekeeping Notes

- All attendee lines are muted.
- Please submit your questions to our panelists via the Q&A feature.
- Questions will be addressed at the end of the session, as time permits.



Continuing Education



- In order to obtain contact hours, you must:
 - Watch the 60-minute webinar (live or recorded).
 - Complete evaluation and post-knowledge check with 80% or higher.
- Continuing Education
 - In support of improving patient care, this activity has been planned and implemented by Quality Insights and CAMC Institute for Academic Medicine. CAMC Institute for Academic Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.
 - Physicians: The CAMC Institute for Academic Medicine designates this live activity for a maximum of **1 hour for AMA PRA Category I Credit(s)**[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity.
 - Nurses: The CAMC The CAMC Institute for Academic Medicine is an approved provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. This offering has been approved for 1 contact hour (JA0026-26-25-716).



Continuing Education Certificate



Congratulations! You have passed the post-knowledge check. Download your certificate by copying and pasting this link: <https://qualityinsights.info/4b9NpDs>

Score: 100%

6/6 points



Disclaimer

The CAMC Institute for Academic Medicine and WV Quality Insights control the content and production of this CE activity and attempt to ensure the presentation of balanced, objective information. In accordance with the Standards for Integrity and Independence in Accredited Continuing Education established by the ACCME, faculty, abstract reviewers, paper presenters/authors, planning committee members, staff, and any others involved in planning the educational content must disclose any relationship they or their co-authors have with ineligible companies which may be related to their content. The ACCME defines “relevant financial relationships” as financial relationships in any amount occurring within the past 24 months that create a conflict of interest. All presenters, planning committee, and faculty have declared no financial interest in an ineligible company for this conference.



JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION



Meet the Presenters



Courtney McCullough, MPH
Practice Transformation Specialist



Dr. Kristin Oliver, MD, MHS



Anna Gurdak, MBA
Practice Transformation Specialist



Quality Insights Overview

- Non-profit organization focused on improving health care quality in the pursuit of better care, smarter spending, and healthier people.
- Strive to be a change agent, partner, and integrator of local organizations collaborating to improve care.



Learning Objectives

After this course, the learner will be able to:

1. Understand the latest evidence and impact of HPV-associated diseases and cancers and their implications for public health.
2. Identify common barriers to HPV vaccination, including misinformation and hesitancy, and their influence on vaccination practices.
3. Explore effective strategies for patient advocacy and seamless integration of vaccination efforts into daily workflow.
4. Learn how to leverage key resources to enhance vaccination rates and monitor success.



A person wearing a white lab coat and blue nitrile gloves is shown from the chest down. They are holding a silver pen in their right hand, pointing it towards the center. In their left hand, they are holding three small wooden blocks that spell out 'HPV'. The background is a blurred laboratory setting.

Why vaccinate against the Human Papillomavirus?



HPV Infection

Most females and males will be infected with at least one type of mucosal HPV at some point in their lives.

- An estimated 79 million Americans are currently infected.
- There are 13 million new infections per year in the U.S.
- HPV infection is most common in people in their teens and early 20s.

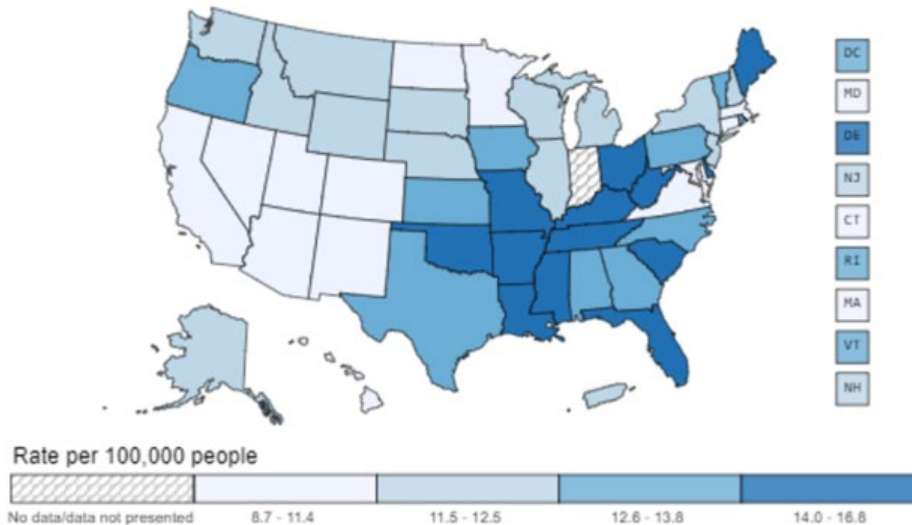
Most people will never know that they have been infected.

Source: [CDC](#), 2024.



Delaware Statistics: HPV Attributable Cancer

Rate of New HPV-associated Cancers By State
All HPV-associated Cancers,
Male and Female, United States, 2017-2021



In Delaware in **2017-2021**, the age-adjusted rate of All HPV-associated cancers was **14.0** per 100,000 people.

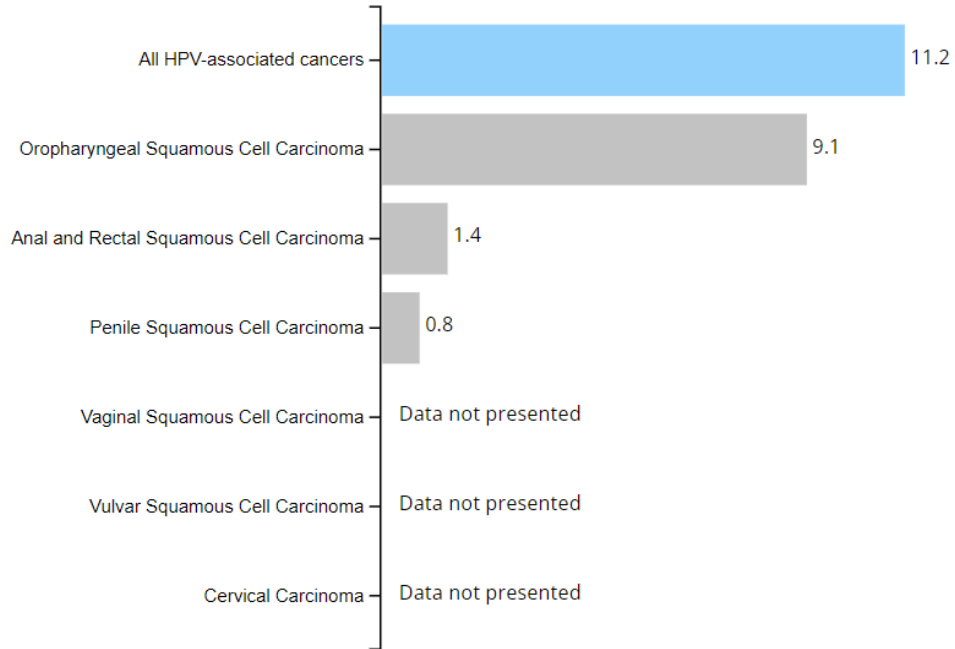
901 cancer cases were reported.

Source: [CDC](#), n.d.



The Impact of HPV

HPV-Associated Cancers by Type, Men, 2017-2021

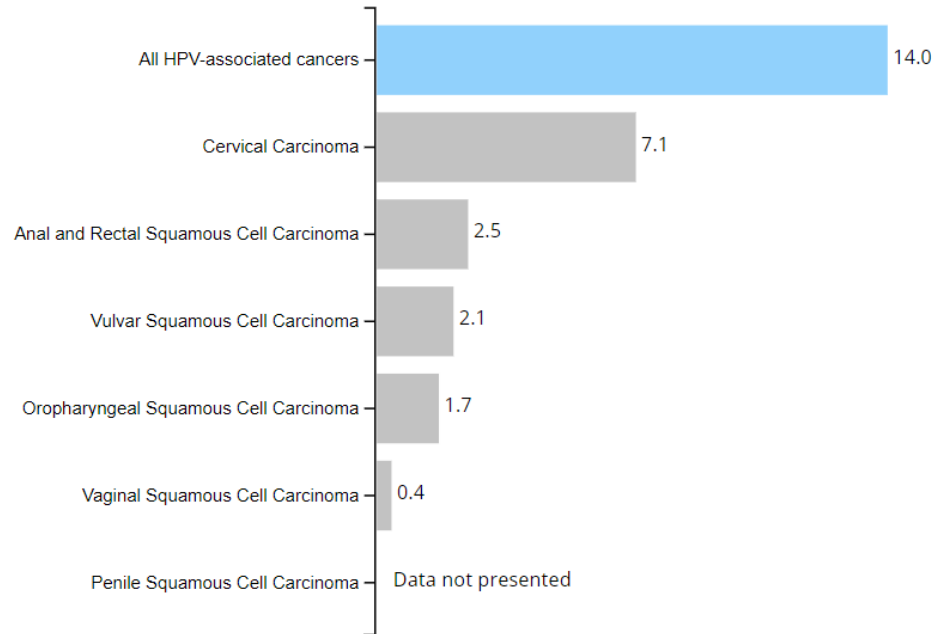


Source: [CDC](#), 2024.



The Impact of HPV (cont.)

HPV-Associated Cancers by Type, Women, 2017-2021



Source: [CDC](#), 2024.



Disease Burden

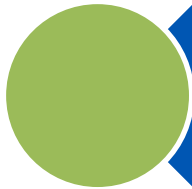


Over 37,000 new cases of HPV-associated cancer annually.

- 21,700 among women
- 15,600 among men



Over 90% of cases are **PREVENTABLE** through vaccination.



HPV infection may place mothers at increased risk of preterm delivery and miscarriage.

Sources: [U.S. Cancer Statistics: Data Visualizations](#), [CDC](#), 2024, [JAMA](#), 2020.



HPV Vaccination: The Current Landscape



\$25.9M Total Bank Balance

\$17.9M Working Capital

20,1% YTD

14 15
vs previous month

Jun Jul Aug Sep Oct Nov Dec

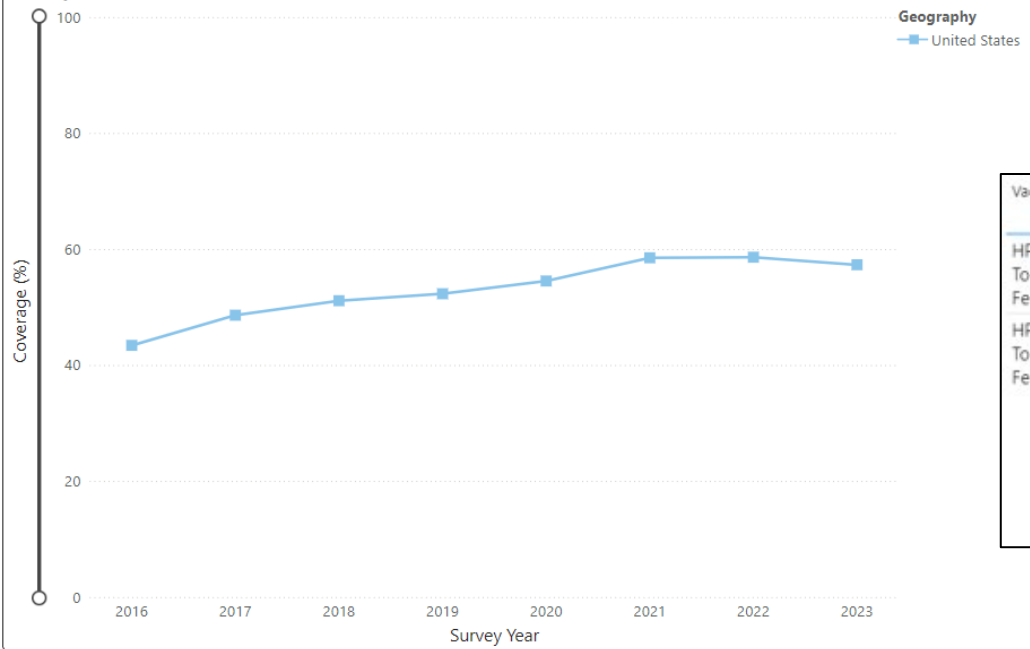
Refreshed 2 Min ago

Last 24 Hours



HPV Coverage Rates in U.S.

Up-to-Date HPV Vaccination Coverage by Year among Adolescents Age 13-15 Years, National Immunization Survey-Teen



Vaccine	Geography	Dimenson	Coverage (%)	95% CI (%)	Sample Size
HPV Vaccination Up-To-Date, Males and Females	United States	13-15 Years	57.3	55.3 to 59.4	10,014
HPV Vaccination Up-To-Date, Males and Females	United States	13-17 Years	61.4	59.9 to 63	16,568

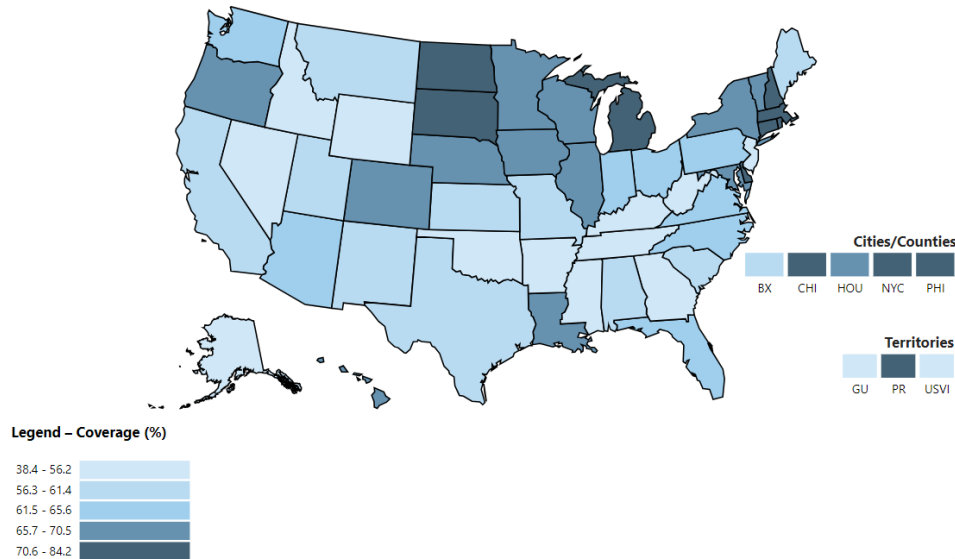
i If all data rows are not visible in tooltip, reduce the number of selected geographies.

Source: [CDC](#), 2024.



Delaware Statistics: HPV Vaccination Rate

Up-to-Date HPV Vaccination Coverage among Adolescents Age 13-17 Years, 2023, National Immunization Survey-Teen



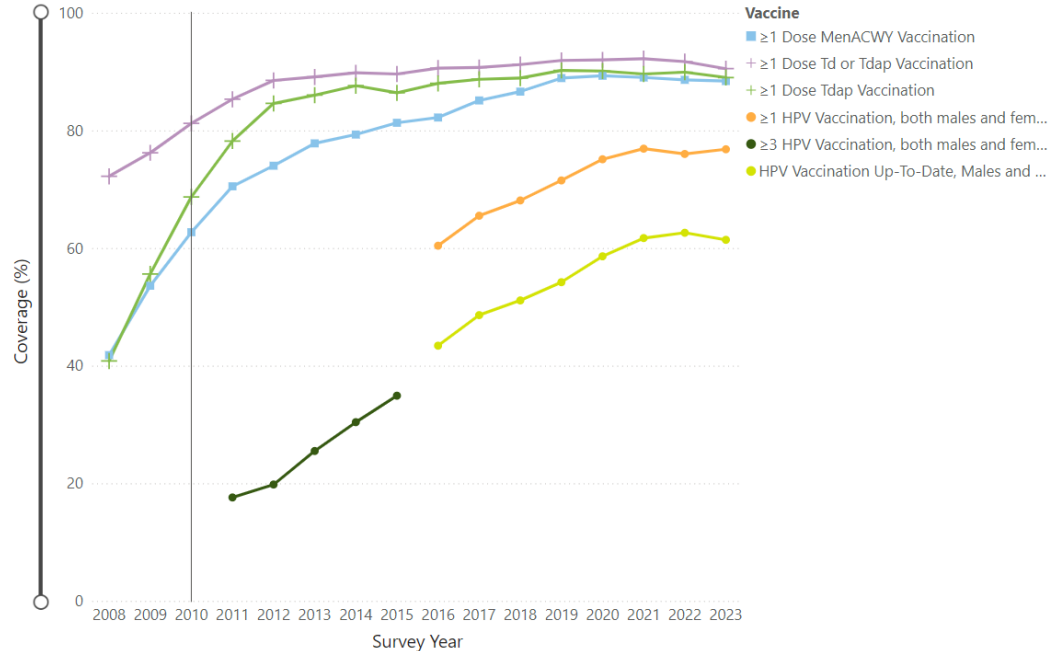
Geography
Delaware
Coverage Estimate (%)
73.0
95% CI (%)
66.6 to 78.5
Sample Size
293

Source: [CDC](#), 2024.



Vaccination Coverage for Adolescents 13-17 Years

Vaccination Coverage by Year among Adolescents Age 13-17 Years, United States, National Immunization Survey-Teen



Source: [CDC](#), 2024.



Economic Benefits of HPV Vaccination

- Reduced healthcare costs
 - Cost of treatment
 - Frequency of screenings
- Workforce productivity
- Health equity
- Increased return on investment

Source: [Chesson](#), 2019.



Vaccination Disparities

- Social Determinants of Health
 - Geographic
 - Socioeconomic
 - Racial and Ethnic
 - Healthcare Access
 - Education
- Gender Disparities

Sources: [Locklar](#) (2022), [Walker](#) (2018), [CDC](#), (2024).



USING MOTIVATIONAL INTERVIEWING TO GUIDE VACCINE CONVERSATIONS (AND ELIMINATE CERVICAL CANCER)

Kristin Oliver, MD, MHS

Associate Professor

Environmental Medicine and Public Health, Pediatrics



I 
VACCINES



CANCER SCIENCE UPDATE

HPV Vaccination Can Prevent Cancers

About **92%**
of HPV-attributable cancers
can be prevented in the future.



www.cdc.gov/cancer

Source: [CDC](https://www.cdc.gov), 2025.



HPV infections targeted by vaccine have decreased since vaccination was introduced*

Among teen girls†

88%



Among young women†

81%



HEALTH CARE PROVIDERS should recommend HPV vaccination for all patients at age 11 or 12[‡]

**HPV can cause some cancers in women and men
HPV vaccination is cancer prevention**

* HPV vaccination introduced in 2006

† Prevalence of HPV types targeted by the quadrivalent HPV vaccine among females aged 14-19 years and females aged 20-24 years in 2015-2018 compared with 2003-2006

‡ HPV vaccination is also recommended for everyone through age 26 years if not adequately vaccinated previously

CDC.GOV

bit.ly/7012a2

NIH/NR

Source: [CDC](https://www.cdc.gov), 2021.



Best Practices to Increase Vaccination

Strong Provider Recommendation

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.
If a parent is hesitant...
- 2 CONNECT & COUNSEL**
Connect with parents by ask for their main concern about vaccine. Counsel parents by a research-tested message to address their concern. They clearly recommend getting HPV vaccine today.
If a parent declines...
- 3 TRY AGAIN**
Say you'll bring up HPV vaccine at their next visit. Then make a note in the child's chart. Also of parents who initially decline later age HPV vaccine or plan to soon.

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 11 so today he'll get a vaccine that prevents six HPV cancers."

Standing Orders



Reminder/ Recall

Protect Your Child from Diseases

YOUR CHILD IS OVERDUE FOR IMMUNIZATIONS!

Children need regular check-ups to stay healthy.

healthychildren.org American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN

Provider Prompts

T1

Patient's Alerts

Patient's alerts:

Due for HPV vaccine



What is Vaccine Confidence?

- Vaccine confidence is the belief that vaccines:
 - Work
 - Are safe
 - Are part of a trustworthy medical system



There are Degrees of Vaccine Confidence



Starting the Conversation



Initiation Rates for Routine Vaccines Depend on a High-Quality Recommendation

If no recommendation or presented as optional: **20-30%**

If soft recommendation: **50%**

If strong recommendation: **70-90%**

Source: Opel Pediatrics 2013, Brewer Pediatrics 2016, Gilkey, et al., 2015.



Optional Versus Announcement Recommendation

Optional: *“Have you thought about what shots you’d like to get today?”*

- May unintentionally imply shot is not important or few people do it.
- 20-30% vaccination rate in studies of both childhood and adolescent vaccines.

Announcement: *“We have some shots to do today.”*

- Implies shot is important and most people get it.
- 70-90% vaccination rate in studies of both childhood and adolescent vaccines.

Source: Opel Pediatrics 2013, Brewer Pediatrics 2016, Gilkey, et al., 2015



Discussion

- How would you describe your HPV vaccine recommendation?
- No recommendation
- Soft/optional recommendation
- Strong recommendation



Here's what we want to avoid:

Convince or persuade

Argue and debate

Be judgmental

Solve the problem

Be confrontational

Impose views

Be dismissive

Instead, respond to vaccine hesitancy by aiming to:

Be supportive

Be empathic

Be inclusive

Build trust

Explore perspectives

Be aware of own feelings

Listen

Explore concerns

Source: Adapted with permission from materials provided by members of the Motivational Interviewing Network of Trainers (MINT), J Carpenter, L Williams & B Kutner (Harm Reduction Coalition).



Motivational Interviewing for Vaccine Conversations



Resolving Ambivalence



Understanding Change



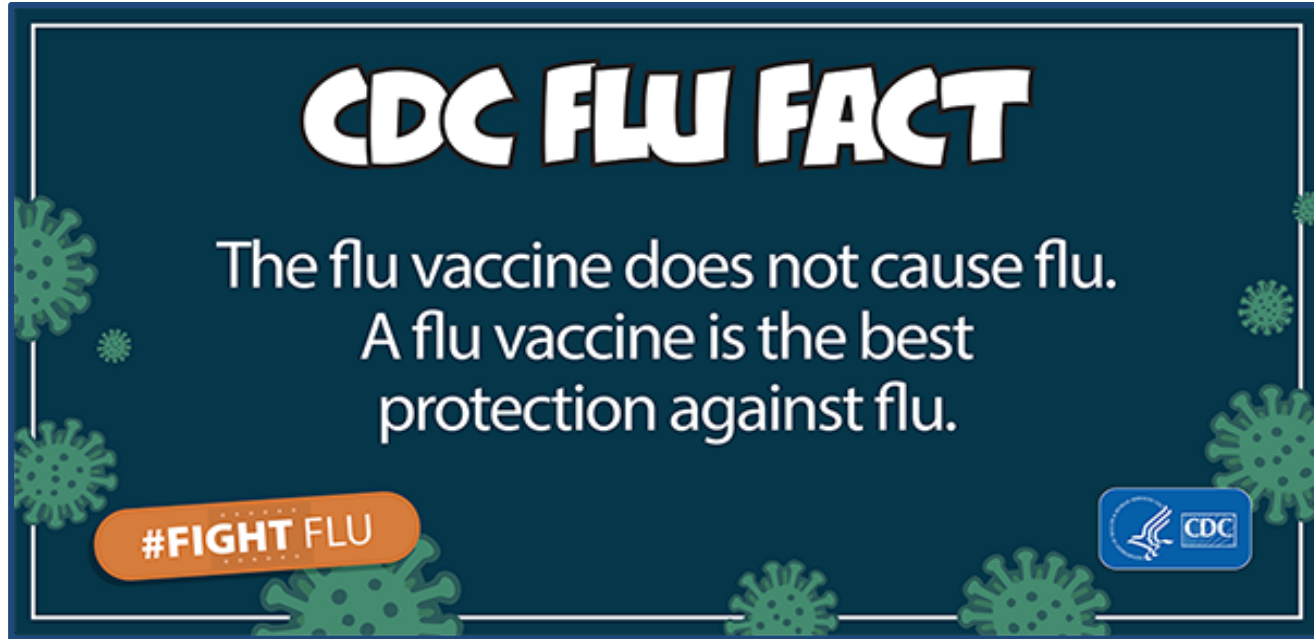
Understanding Change



Source: University of Missouri, [ADEPT Motivational Interviewing Philosophy and Principles](#), 2017.




Correcting Myths Doesn't Always Work

A dark blue rectangular graphic with a white border. At the top, the text "CDC FLU FACT" is written in large, bold, white, stylized letters. Below this, the text "The flu vaccine does not cause flu. A flu vaccine is the best protection against flu." is written in white. In the bottom left corner, there is an orange rounded rectangle containing the text "#FIGHT FLU" in white. In the bottom right corner, there is a blue rounded rectangle containing the CDC logo (a white eagle head) and the text "CDC" in white. The background of the graphic is decorated with several green, spiky virus-like particles of varying sizes.

CDC FLU FACT

The flu vaccine does not cause flu.
A flu vaccine is the best
protection against flu.

#FIGHT FLU



Source: Nyhan. Vaccine. 2015.

Data Dumping Doesn't Work

What NOT to say:

“Well, data shows that many adolescents will be having sex by middle school, and if you’re worried about her having sex, studies have shown that the HPV vaccine won’t increase the likelihood of her having sex. It’s really important to prevent cancer with this vaccine.”



What is Motivational Interviewing?



Photo credit: [pexels.com](https://www.pexels.com)



Photo credit: [pexels.com](https://www.pexels.com)



Motivational Interviewing Tools

- Ask open ended questions
- Reflective listening
- Recognized values and strengths
- Support autonomy- the right to decide
- Summarizing the conversation

Ask Open-Ended Questions

- Usually begin with who, what, how, why, tell me.
 - “What do you think about getting the vaccine?”
 - “Tell me your thoughts about getting the vaccine”
 - “What concerns you most about the vaccine?”

**Share other open-ended questions you
have used or could use.**

Source: Adapted with permission from materials provided by members of the Motivational Interviewing Network of Trainers (MINT), J Carpenter, L Williams & B Kutner (Harm Reduction Coalition).



Listen Reflectively

- Can be simple or complex
 - Simple reflections repeat or rephrase.
 - Complex reflections reflect deeper meaning and feeling.
 - Complex reflections deepen the conversation and can be forward-moving.

Source: Adapted with permission from materials provided by members of the Motivational Interviewing Network of Trainers (MINT), J Carpenter, L Williams & B Kutner (Harm Reduction Coalition).

Listen Reflectively

- **Parent:** “I’m not sure about that vaccine, or if it’s even safe.”
 - **Simple:** “You doubt its safety.”
 - **Complex:** “If you knew it was safe, you’d be more willing.”
- **Parent:** “When I got the vaccine, I got really sick.”
 - **Simple:** “You got really sick after you had the vaccine.”
 - **Complex:** “You want to make sure that that won’t happen to your daughter if she takes the vaccine.”
- **Parent:** “I know it’s important, but I’m afraid to give it to him.”
 - **Simple:** “It’s scary to you.”
 - **Complex:** “As scary as it is, you see the vaccine as important.”

Source: Adapted with permission from materials provided by members of the Motivational Interviewing Network of Trainers (MINT), J Carpenter, L Williams & B Kutner (Harm Reduction Coalition).



Ask Permission to Share Information

- “If it’s OK with you, can I share some information I have?”
- “Is it OK if I go over how I’ve come to think about this vaccine?”

**Share other ways you could
“ask permission.”**

Provide a Little Information to Change a Patient's Perspective

- “... You're right, the flu vaccine doesn't always prevent every infection. But it does prevent the things we want to avoid most- getting hospitalized or dying”
- “... I hear you. Parker is only 11 years old, but we recommend the HPV vaccine at this age because younger kids have a better immune response. That's why they only need 2 doses instead of 3.”

Source: Adapted with permission from materials provided by members of the Motivational Interviewing Network of Trainers (MINT), J Carpenter, L Williams & B Kutner (Harm Reduction Coalition).

Change Talk

Readiness Ruler



“On a scale of 1 to 10, where 10 is the most important, where does HPV vaccination fall for you?”

Parent answers 2 or 3

“Why is it a 2 and not a 1?”

Other MI Strategies - Elicit Positive Talk ("change talk")

- Ask open-ended questions that may lead to affirming statements.
 - You've mentioned side effects as a concern. What do you see as some possible "side effects" of NOT getting the HPV vaccine?
- Reflect on parents' positive and negative perspectives, then ask about positive.
 - You see cancer as frightening, but you're worried about the vaccine's safety. Do you know anyone who has had an HPV-related cancer?



Make a Personalized Recommendation But Respect Autonomy

- “I really believe this a safe and important vaccine, which is why I recommend it to all my patients. Having said that, this is a decision that only you and your family can make. What do you think?”



If hesitant, how should you proceed?



Accept all	Vaccine Hesitant	Refuse all
<p>Strong recommendation.</p> <p>Make a vaccination plan.</p>	<p>A conversation guided by the MOTIVATIONAL INTERVIEWING method.</p>	<ul style="list-style-type: none"> • Do not end the engagement. • Focus on their concerns. • Practice Reflective Listening. • Leave space for any discussion.

Healthcare Workers Have Emotions About Vaccine Conversations

Some coping strategies:

Reaction	Coping Strategy
Frustration/anxiety	<ul style="list-style-type: none">• Slow down and know you have more than one time to talk to the patient/family.• Shift focus to genuine interest and empathy for the patient/family.• Ask about their hesitancy to understand it better.• Use breathing exercises.
Helplessness	<ul style="list-style-type: none">• Remember, listening is helpful.• Recall your job is not to change minds.• Focus on what you can do - listen, reflect, summarize.
Inadequacy	<ul style="list-style-type: none">• It's OK to not know all the answers and to say, "I don't know."



Acknowledgements

This material has been adapted from:

World Health Organization's Conversations to build trust in vaccinations

Harm Reduction Coalition Consultant Bryan Kutner, PhD, MPH with permission including materials provided by members of the Motivational Interviewing Network of Trainers (MINT), Judith Carpenter RD (MINT certified trainer) and Dr. Lyn Williams Carpenter J and Williams L. (2021)

Helpful conversations for vaccination hesitancy. Training slides and handouts, and COVID-19 Vaccination: Using Motivational Interviewing to Guide Conversations, Kristin Oliver, MD, Andrea Hamilton, PhD



Thank you



Measuring Vaccination Success

Success



What Success Looks Like

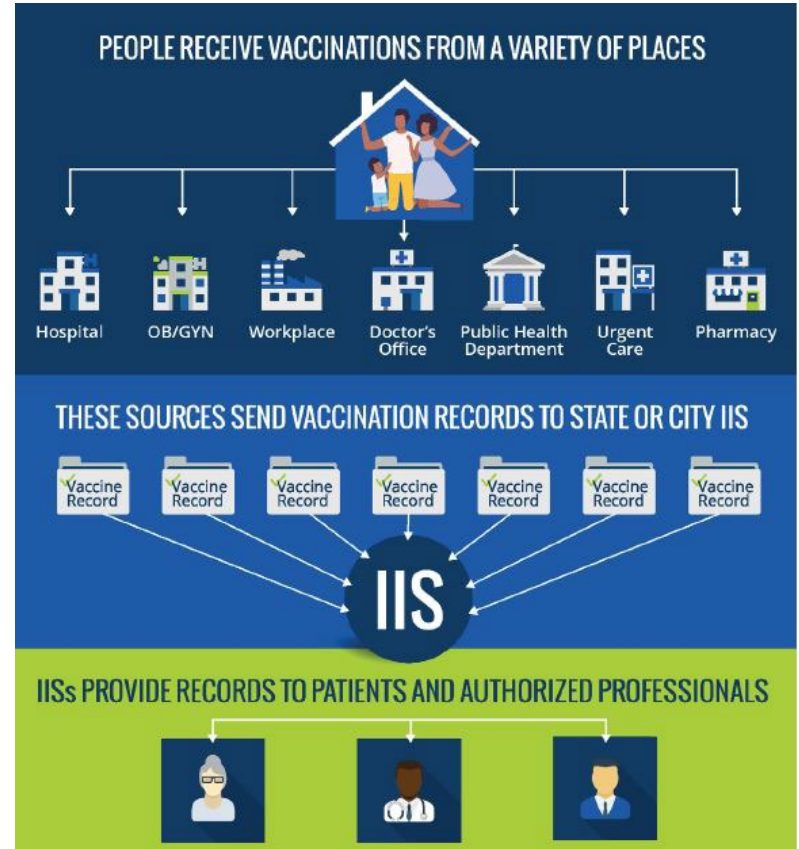
- Increased HPV vaccination rates.
- Improved patient health outcomes.
- Stronger trust between providers and families.
- Alignment with national and community goals.



Leveraging IIS

- Quarterly Tasks
 - Roster clean-up and patient inactivation.
- Staff Readiness
 - Ensure training for DelVAX users.
- Ongoing Monitoring
 - Use DelVAX reports for immunization tracking.

Adapted from: [CDC](https://www.cdc.gov/), 2023.



Tracking Practice-Specific Goals

- Review Progress
 - Regularly check vaccination rates.
- Benchmark
 - Compare to [state and national averages](#).
- Align Objectives
 - Aim for [Healthy People 2030](#) targets.



Reducing Missed Opportunities

- **Maximize Every Visit**
 - Assess vaccination status at each visit.
- **Provide Education**
 - Offer HPV vaccine information to patients and families.
- **Administer Vaccines**
 - Ensure all eligible patients receive the HPV vaccine.



Strategies to Increase HPV Vaccine Uptake

- Pre-visit planning
- Expand access
- Pro-immunization culture
- EHR prompts / IIS reconciliation



Common Challenges

- Parental hesitancy
 - **Solution:** Provide clear, evidence-based education.
- Time constraints in visits
 - **Solution:** Streamline workflows.
- Missed follow-ups
 - **Solution:** Implement reminder-recall systems.



Reminder-Recall Systems

Patient Reminders:

- Mail letters or postcards
- Appointment magnets/cards
- Telephone calls or text messages
- Patient portal messages

HPV Vaccine Reminder
Protect yourself! Get both doses.*

1st _____ Date of 1st dose

2nd _____ 6 to 12 months after 1st

Name Physician Name

*This schedule is for 9 to 14 years olds who receive the 2nd dose at least 5 months after the first.



Quality Improvement Resources

- [Quality Insights HPV Resources & practice support](#)
- No-Cost American Board of Internal Medicine [MOC Credit](#)
- [HPV Vaccine: Cancer Prevention](#) (Quality Insights' Powtoon)
- [The Vaccine Scene: Learn more about the HPV Vaccine](#) (Quality Insights' Powtoon)
- [National HPV Roundtable: Start at 9 Toolkit](#)
- [Immunization Coalition of Delaware](#)
- [No-Cost HPV Continuing Education Course](#)
 - Use code **DEPHS** to sign up.



Summary

- Nearly everyone who is sexually active will get an HPV infection at some point in their life.
- HPV vaccination can prevent 90% of HPV-related cancers.
- Motivational Interviewing techniques can help alleviate patient ambivalence.
- Evidence-based interventions can be implemented within the practice to ensure HPV vaccination administration and to improve vaccination rates.



Key Take Aways

- Think of HPV vaccination like a seat belt:
 - It's preventative, simple, & saves lives
- Patients trust their provider's recommendation
 - Provider recommendation is the #1 reason parents chose to vaccinate against HPV
- Use a new Motivational Interviewing technique today
- Small changes lead to big impacts

Source: [National HPV Vaccination Roundtable](#), 2019.



Evaluation and Post-Knowledge Check

Access the evaluation and post-knowledge check via this link or by scanning the QR code.

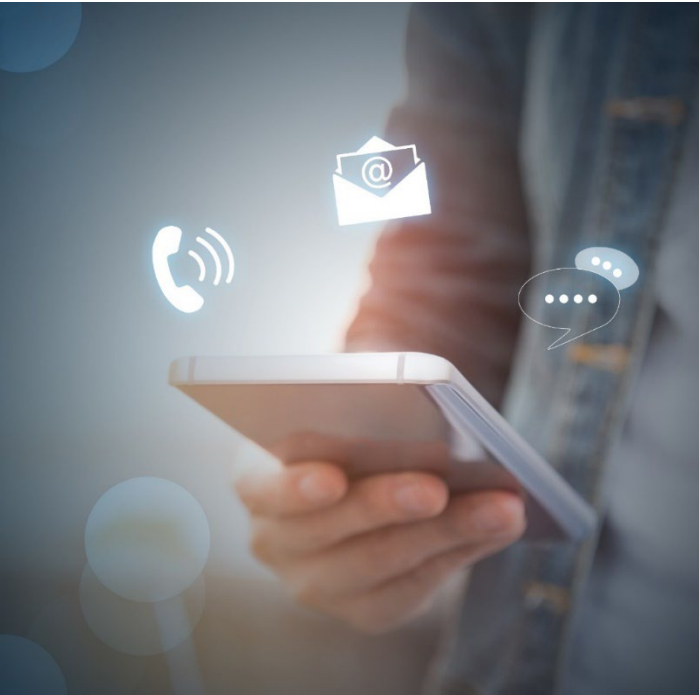
<https://www.surveymonkey.com/r/7H6LM5F>



Questions?



Contact the Presenters



Courtney McCullough

Email: cmccullough@qualityinsights.org

Phone: 267.264.5450

Dr. Kristin Oliver

Email: kristin.oliver@mssm.edu

Anna Gurdak

Email: agurdak@qualityinsights.org

Phone: 445.448.8733



Quality Insights Online



Quality Insights website:

www.qualityinsights.org/stateservices

Social Media:



THANK YOU!



Quality
Insights

This project is in collaboration with the Division of Public Health (DPH) – Comprehensive Cancer Control Program, Immunization and Vaccines for Children, and the Centers for Disease Control and Prevention (CDC). Publication number DEDPH-HPV-021125

Resources

- American Cancer Society. (2021). *Steps for increasing HPV vaccination in practice*. American Cancer Society. <https://www.cancer.org/content/dam/cancer-org/online-documents/en/pdf/flyers/steps-for-increasing-hpv-vaccination-in-practice.pdf>
- Centers for Disease Control and Prevention. (n.d.). *Cancers caused by human papillomavirus (HPV)*. Centers for Disease Control and Prevention. <https://www.cdc.gov/hpv/about/cancers-caused-by-hpv.html>
- Centers for Disease Control and Prevention. (n.d.). *Human papillomavirus (HPV) vaccination recommendations*. Centers for Disease Control and Prevention. <https://www.cdc.gov/vaccines/vpd/hpv/hcp/recommendations.html>
- Centers for Disease Control and Prevention. (n.d.). *United States Cancer Statistics: At a glance*. Centers for Disease Control and Prevention. <https://gis.cdc.gov/cancer/USCS/#/AtAGlance/>
- Centers for Disease Control and Prevention. (n.d.). *TeenVaxView interactive tool*. Centers for Disease Control and Prevention. <https://www.cdc.gov/teenvaxview/interactive/index.html>
- Community Preventive Services Task Force. (2019). *Task force findings: Increasing vaccination*. The Community Guide. <https://www.thecommunityguide.org/pages/task-force-findings-increasing-vaccination.html>
- Kogan, M. D., & Barros, A. J. D. (2024). *Quality Initiative to Increase Early Initiation and Series Completion of Human Papillomavirus Vaccine and its Impact on Health Disparities*. *Journal of Pediatrics*, 187(1), 123-134. <https://doi.org/10.1016/j.acap.2024.05.009>
- Barbieri, Marco, and Sara Boccalini. "Return on Investment (ROI) of Three Vaccination Programmes in Italy: HPV at 12 Years, Herpes Zoster in Adults, and Influenza in the Elderly." *Vaccines*, vol. 11, no. 5, 1 May 2023, p. 924, www.mdpi.com/2076-393X/11/5/924, <https://doi.org/10.3390/vaccines11050924>.



Resources

- CDC. “About HPV.” *Human Papillomavirus (HPV)*, 15 July 2024, www.cdc.gov/hpv/about/index.html.
- Centers for Disease Control and Prevention. “Cancers Caused by HPV.” *Human Papillomavirus (HPV)*, 9 July 2024, www.cdc.gov/hpv/about/cancers-caused-by-hpv.html.
- “USCS Data Visualizations.” Cdc.gov, 2025. Chesson, Harrell W., et al. “Estimates of the Annual Direct Medical Costs of the Prevention and Treatment of Disease Associated with Human Papillomavirus in the United States.” *Vaccine*, vol. 30, no. 42, Sept. 2012, pp. 6016–6019, <https://doi.org/10.1016/j.vaccine.2012.07.056>.
- “Explore HPV Vaccination in Delaware | AHR.” *Americashealthrankings.org*, 2023, www.americashealthrankings.org/explore/measures/immunize HPV/DE.
- Locklar, Lindsay R. B., and D. Phuong Do. “Rural-Urban Differences in HPV Testing for Cervical Cancer Screening.” *The Journal of Rural Health*, 10 Sept. 2021, <https://doi.org/10.1111/jrh.12615>.
- “Rural Health for Delaware Overview - Rural Health Information Hub.” Ruralhealthinfo.org, 2022, www.ruralhealthinfo.org/states/delaware.
- “USCS Data Visualizations.” Gis.cdc.gov, gis.cdc.gov/Cancer/USCS/#/RiskFactors/.
- Walker, Tanja Y., et al. “National, Regional, State, and Selected Local Area Vaccination Coverage among Adolescents Aged 13–17 Years — United States, 2018.” *MMWR. Morbidity and Mortality Weekly Report*, vol. 68, no. 33, 23 Aug. 2019, pp. 718–723, www.cdc.gov/mmwr/volumes/68/wr/mm6833a2.htm, <https://doi.org/10.15585/mmwr.mm6833a2>.

