

HPV Vaccination as Cancer Prevention: Memphis and Shelby County Updates

April 11, 2025

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Disclosures

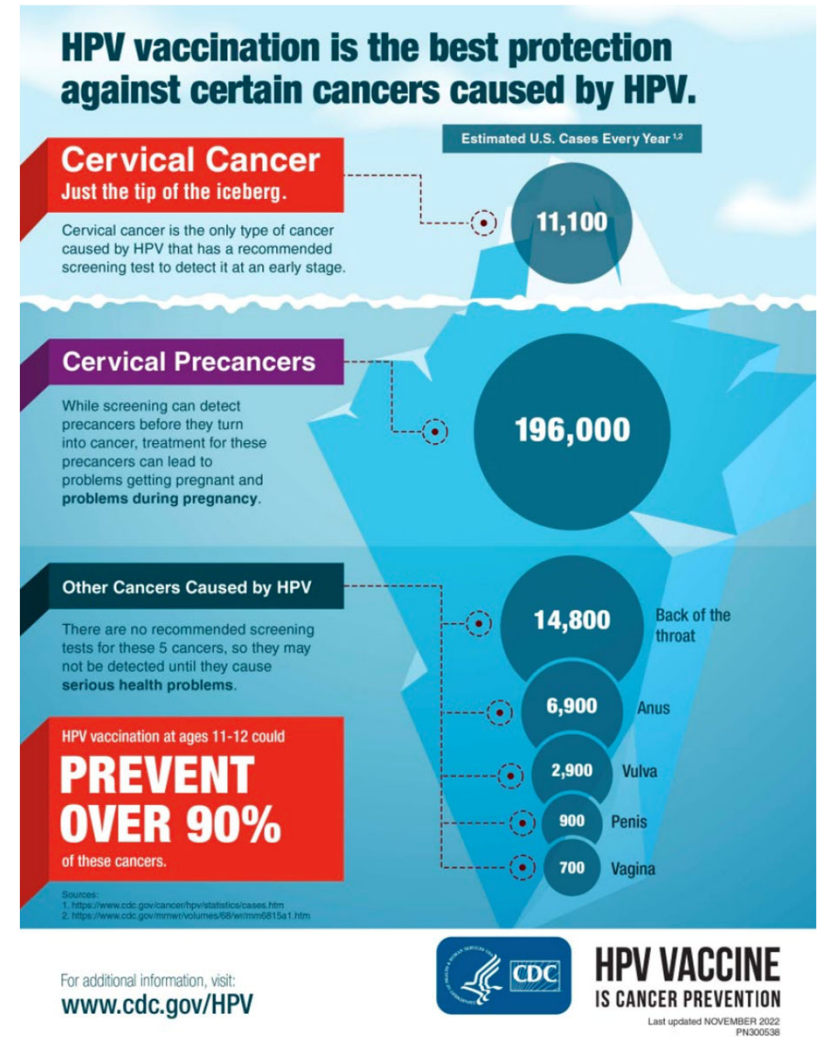
- Speaker for Merck, Sharp and Dohme

Objectives

- Review prevalence of HPV related cancers and disparities
- Discuss local HPV vaccine uptake as a tool for cancer prevention
- Identify opportunities to improve HPV cancer prevention efforts

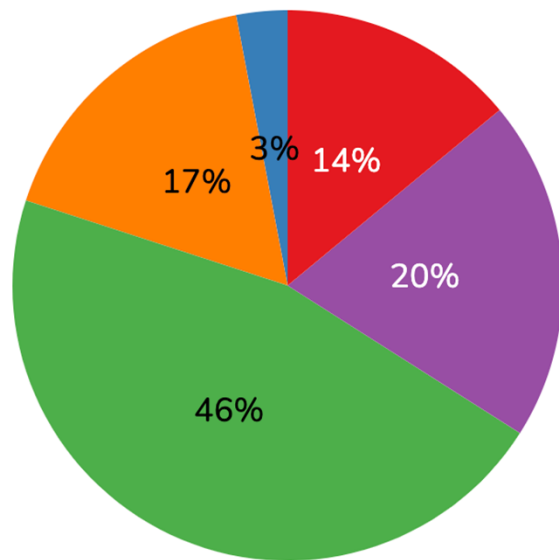
HPV-Associated Cancer Burden

- Vagina
- Vulva
- Anus
- Cervix
- Penis
- Oropharynx
- Precancers
- Genital Warts
- Recurrent Respiratory Papillomatosis

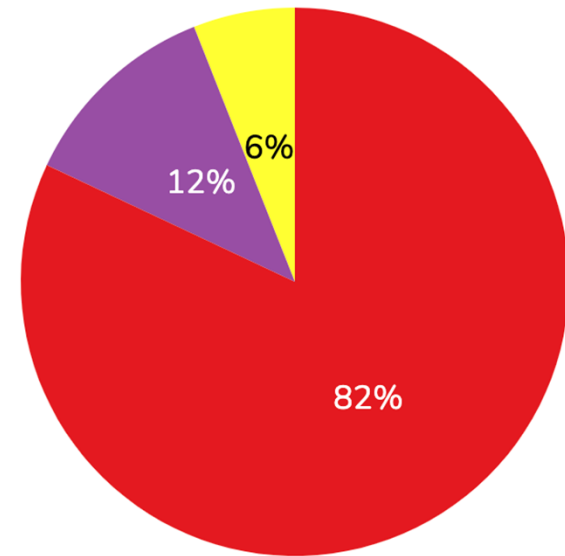
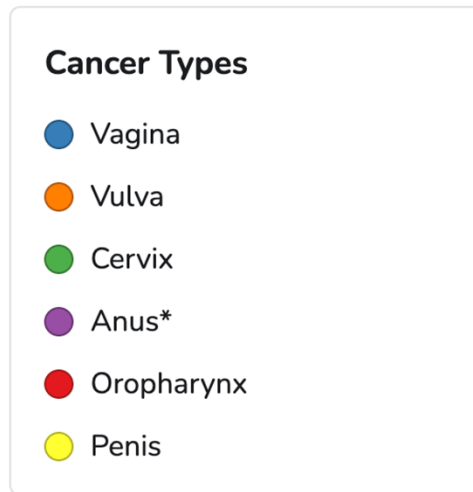


HPV-Associated Cancer Disparities by Gender

- Number of New HPV-Associated Cancers Each Year, by Gender



Females
26,280 cases

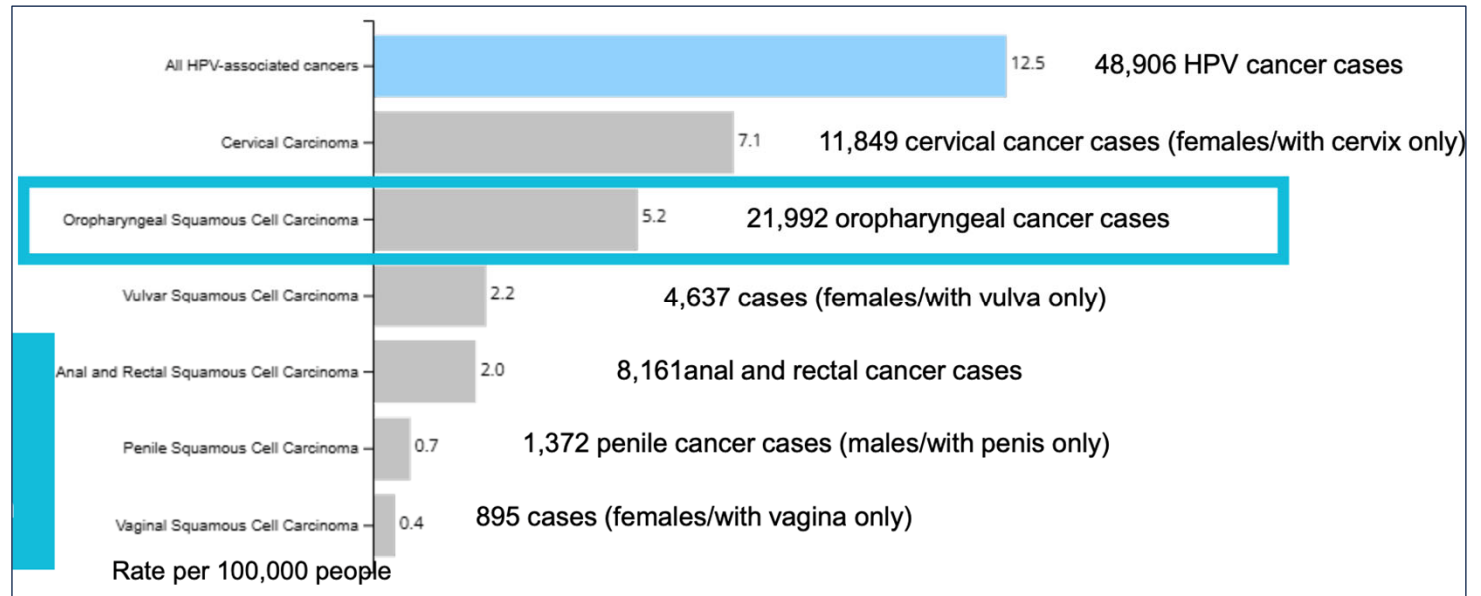


Males
21,704 cases

HPV-Associated Cancer Incidence by Cancer Type

In the last decade, HPV-associated oropharyngeal cancers diagnoses have surpassed cervical cancer diagnoses.

- 71% of all oropharynx cancers are associated with HPV
 - 85–96% are caused by HPV-16 infections
- 84% of new HPV-associated oropharynx cancer cases are in men

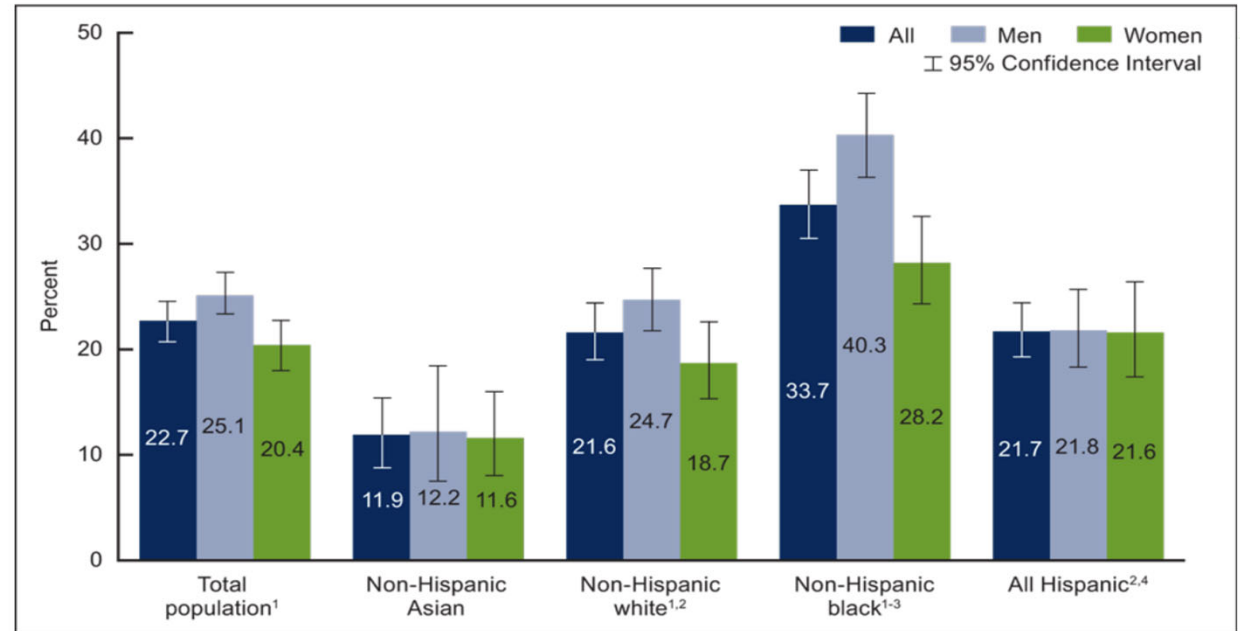


High Risk HPV Prevalence Disparities by Race

Prevalence of high risk HPV types is highest among

- Men
- People who are non-Hispanic and Black.

Figure 4. Prevalence of high-risk genital HPV among adults aged 18–59, by race and Hispanic origin and sex: United States, 2013–2014



¹Percentage for men is significantly higher than women.

²Percentage is significantly different from non-Hispanic Asian, all, men, and women.

³Percentage is significantly different from non-Hispanic white, all, men, and women.

⁴Percentage is significantly different from non-Hispanic black, all, men, and women.

NOTES: HPV is human papillomavirus. High-risk genital HPV means tested positive to one or more of the 14 high-risk HPV types (16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, or 68) from a penile or vaginal swab sample. Penile samples were available only for 2013–2014, so all results presented were limited to that cycle. Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db280_table.pdf#4.

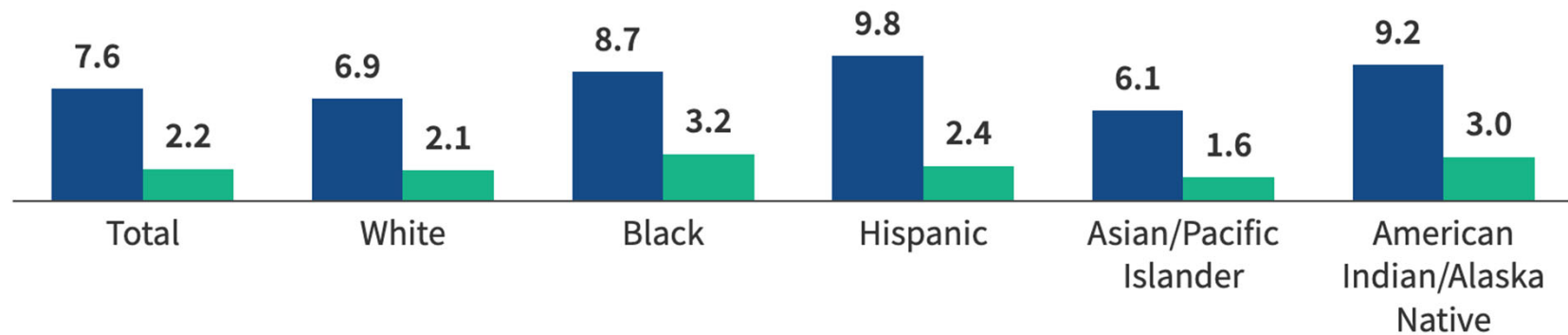
SOURCE: NCHS, National Health and Nutrition Examination Survey, 2013–2014.

HPV Cancer Prevalence Disparities by Race

Cervical Cancer Incidence and Mortality Rates by Race/Ethnicity, 2018-2022

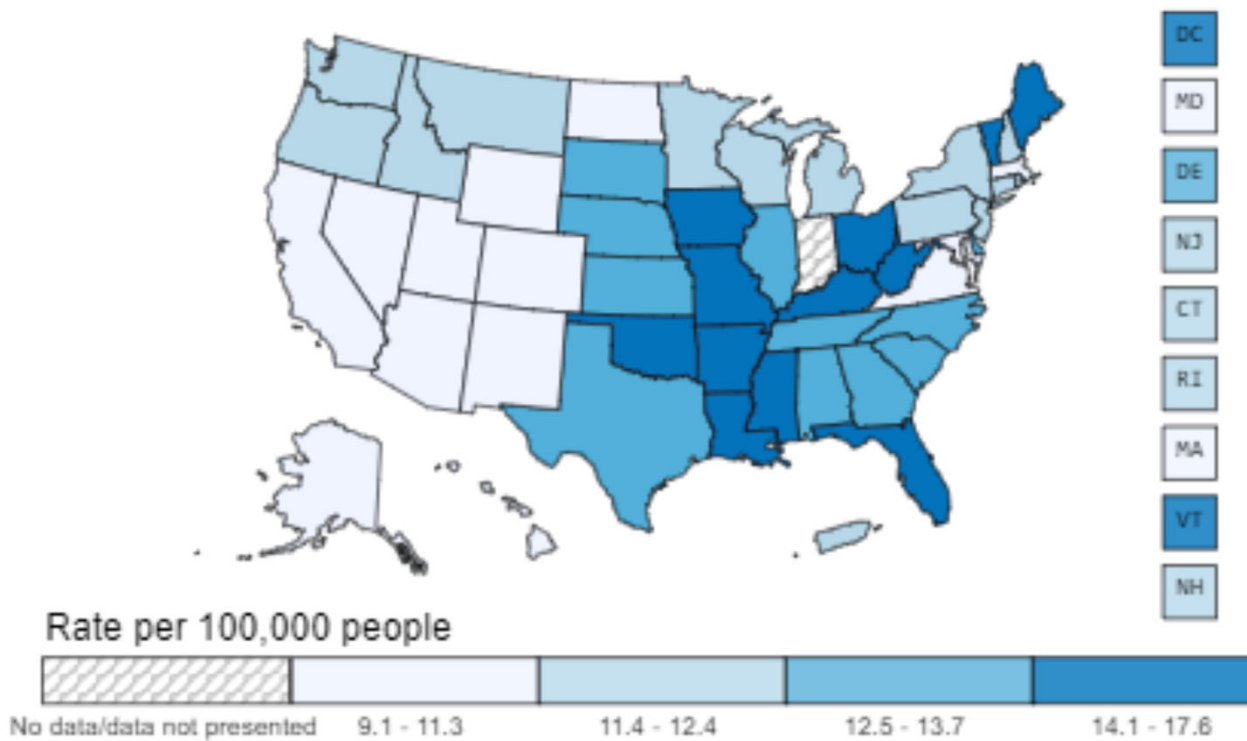
Age-adjusted Rates per 100,000 People

■ Incidence Rate ■ Mortality Rate



HPV-Associated Cancers in Tennessee

Rate of New HPV-associated Cancers By State



Area	Age-Adjusted Rate	Case Count
Michigan	12.5	7,717
New Jersey	11.5	6,586
Virginia	11.3	5,778
Washington	11.8	5,246
Arizona	9.9	4,209
Massachusetts	11.0	4,809
Tennessee	14.2	5,844
Maryland	11.4	4,222
Missouri	14.5	5,322
Wisconsin	11.8	4,314

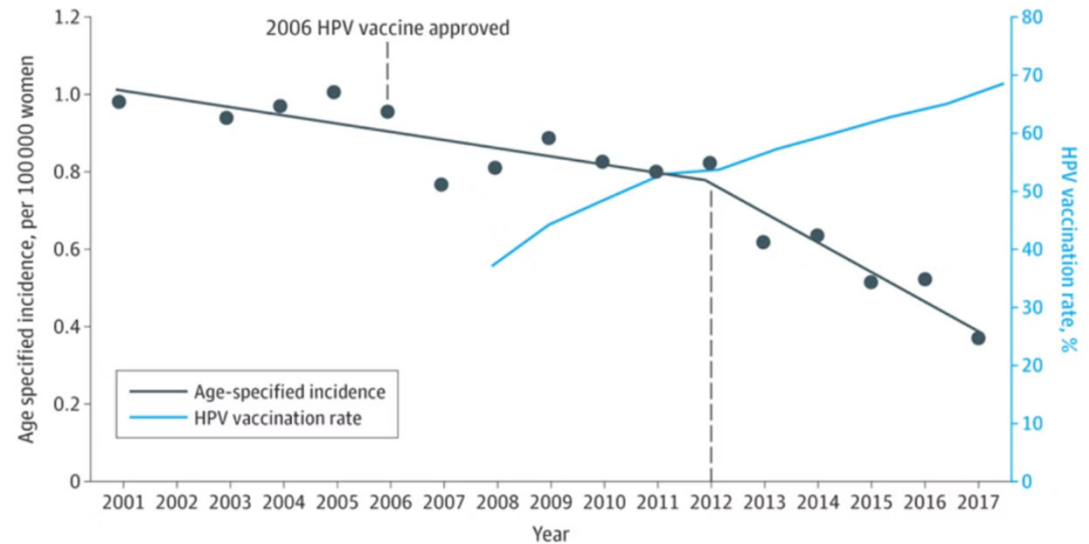
Tennessee #10 in the nation

Source - U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2022 submission data (1999-2020): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; <https://www.cdc.gov/cancer/dataviz>, released in November 2023.

HPV Vaccine linked to declining infections and associated cancers

- Initial HPV vaccine released in US in 2006
- Prevents 90% of HPV vaccine type-related cancers, and up to 100% of cervical cancers
- Proven to be safe and effective

Figure 2. Age-Specified Incidences and Trends of Cervical Squamous Cell Carcinoma in Individuals Aged 20 to 24 Years and Human Papillomavirus Virus (HPV) Vaccination Rate (>1 Dose) in Adolescents Aged 13 to 17 Years



- Jiayao Lei, et al. HPV Vaccination and the Risk of Invasive Cervical Cancer. *N Engl J Med* 2020; 383:1340-1348
- Liao C, et al. Trends in Human Papillomavirus–Associated Cancers, Demographic Characteristics, and Vaccinations in the US, 2001–2017. *JAMA Netw Open.* 2022;5(3):e222530

HPV Vaccination US

- Advisory Committee on Immunization Practices (ACIP) from CDC recommends vaccination at starting at age 9¹
 - Initially for girls, boys added to recommendation in 2011
 - Recommended 2 dose series for those under 15 in 2016
- Healthy People 3030 Goal: 80% vaccination by age 15
 - Would avert 53,300 lifetime cervical cancer cases in the US²
 - could lead to the prevention of 934,000 oropharyngeal cancers and could lead to its elimination by late 2070s³



1. CDC. ACIP Vaccine recommendations.
2. Dunne, Sex Trans Disease.
3. Damgacioglu H, Lancet Regional Health Americas

HPV Vaccination Recommendations

ON-TIME



AGE:
9-12 years

2 DOSES

*Each dose 6-12
months apart*

LATE

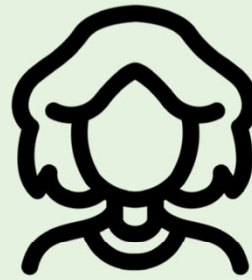


AGE:
13-14 years

2 DOSES

*Each dose 6-12
months apart*

LATE: EXTRA DOSE



AGE:
15-26 years

3 DOSES

*Second dose 1-2 months
after first; Third dose 6
months after first dose*

CONSULT



AGE:
27-45 years

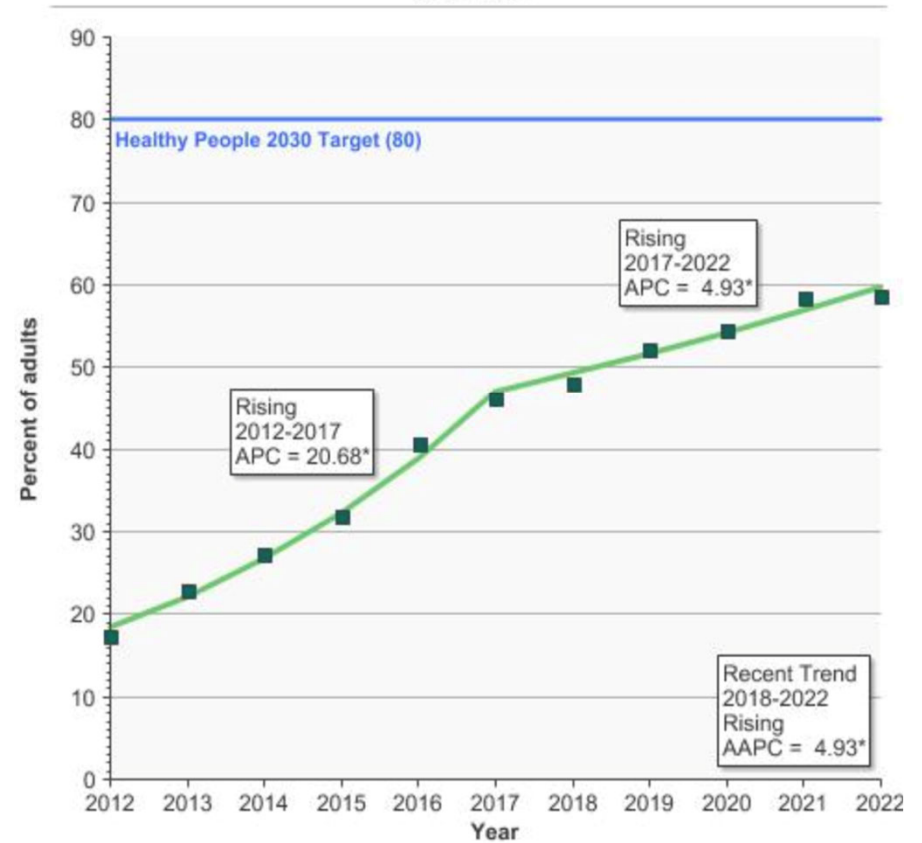
3 DOSES

*Talk with health care
provider about HPV
vaccination*

HPV Vaccination US

- Healthy People 3030 Goal: 80% vaccination
- In 2022, 58.6% of adolescents aged 13-15 years had received 2 or 3 doses of HPV vaccine
- Annual percentage increase sharply declining.

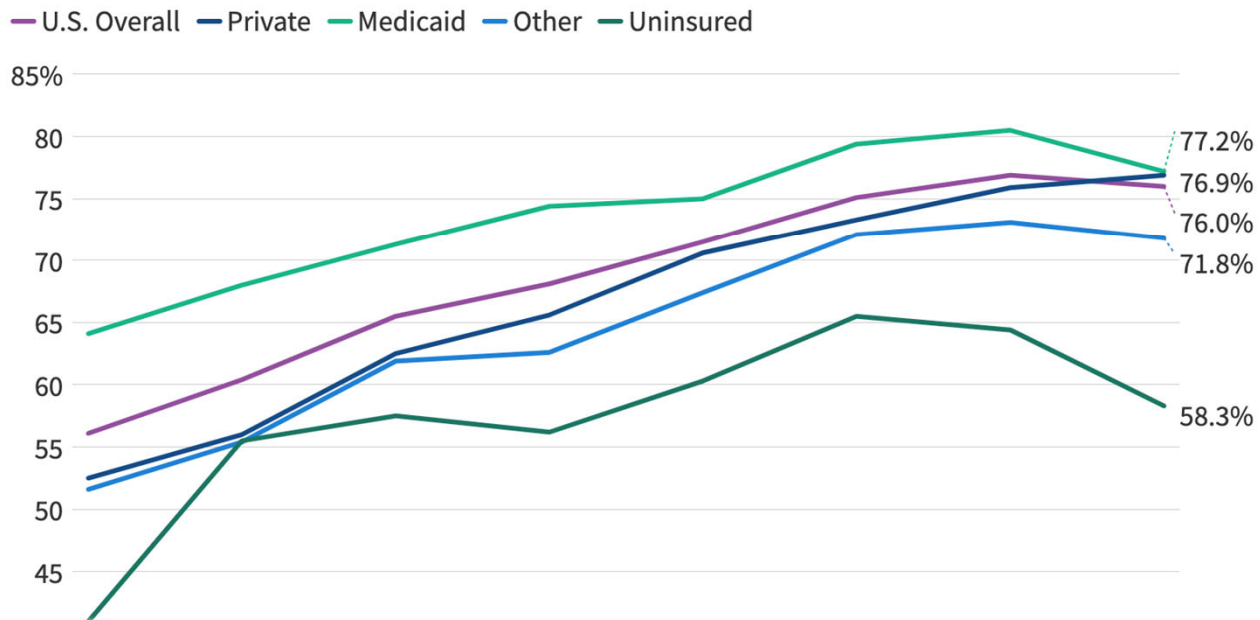
Percentage of adolescents aged 13-15 years who had received 2 or 3 doses of the human papillomavirus (HPV) vaccine as recommended at time of immunization, 2012-2022



HPV Vaccination: Where We've Been

Rates of HPV Vaccine Initiation Among Adolescents Ages 13-17 in the U.S., by Insurance Status

Share of adolescents who have had at least one HPV vaccine, by insurance status, 2015-2022



Why is HPV Vaccine Uptake Low?



Identifying Barriers:

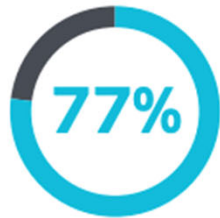
- Access to Care
- Incomplete knowledge about availability/importance
- Lack of optimizing opportunities for vaccination
- Patient/Parental Hesitancy
- Vaccine Safety Concerns
- **Lack of strong provider recommendation**
- **Vaccine Misinformation**

HPV Vaccination: Memphis and Shelby County



HPV Vaccination: State Data

HPV VACCINATION RATES FOR 13-17 YEAR-OLDS AS OF 2023:



U.S. OVERALL
≥1 HPV



TENNESSEE
≥1 HPV



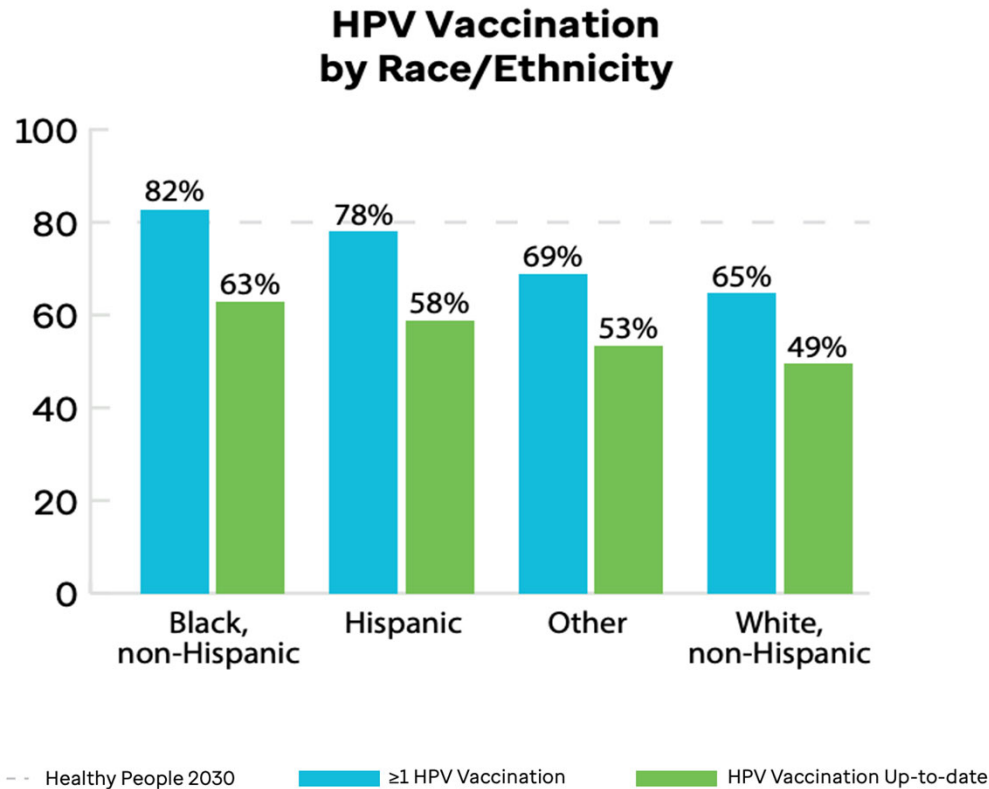
U.S. OVERALL
HPV UTD



TENNESSEE
HPV UTD

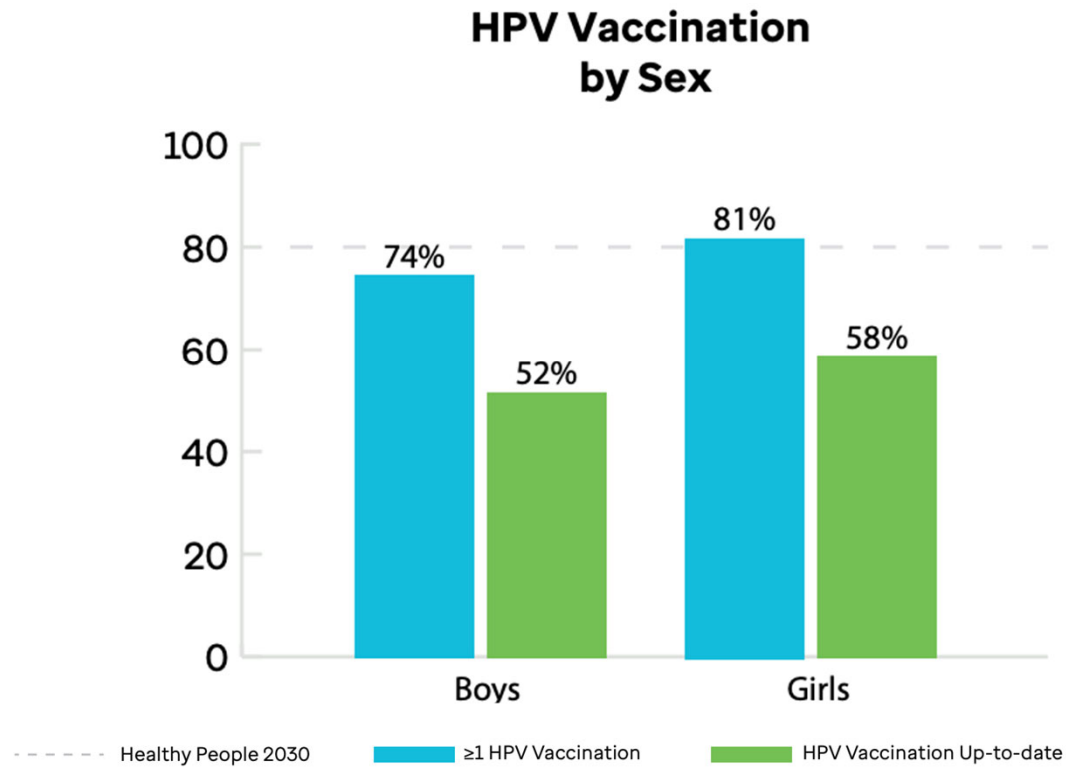
Source: Pingali C, Yankey D, Chen M, et al. National Vaccination Coverage Among Adolescents Aged 13–17 Years — National Immunization Survey-Teen, United States, 2023.

HPV Vaccination: State Data



Source: Pingali C, Yankey D, Chen M, et al. National Vaccination Coverage Among Adolescents Aged 13–17 Years — National Immunization Survey-Teen, United States, 2023.

HPV Vaccination: State Data

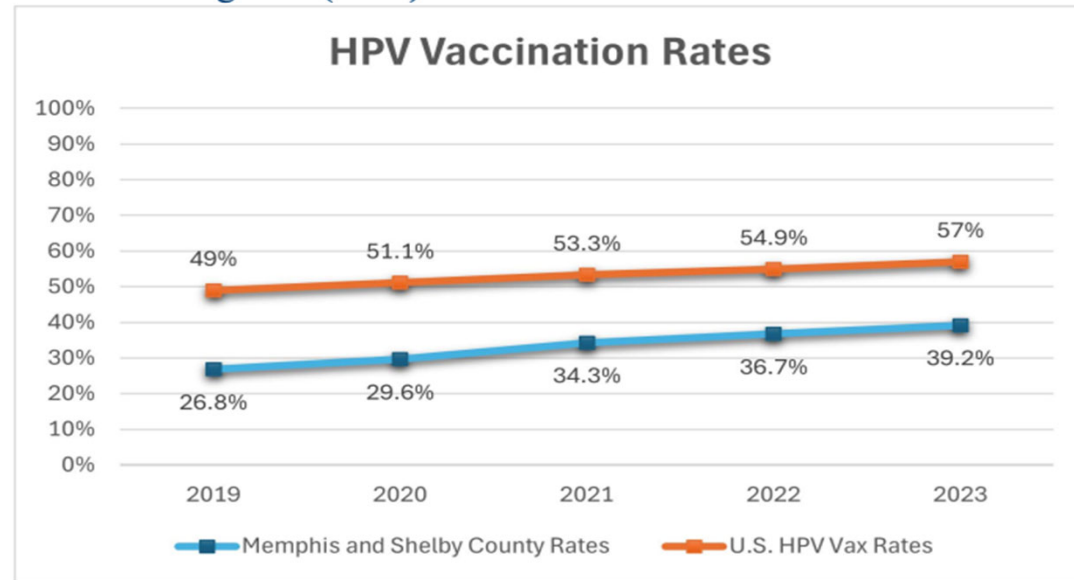


Source: Pingali C, Yankey D, Chen M, et al. National Vaccination Coverage Among Adolescents Aged 13–17 Years — National Immunization Survey-Teen, United States, 2023.

HPV Vaccination: Local Data

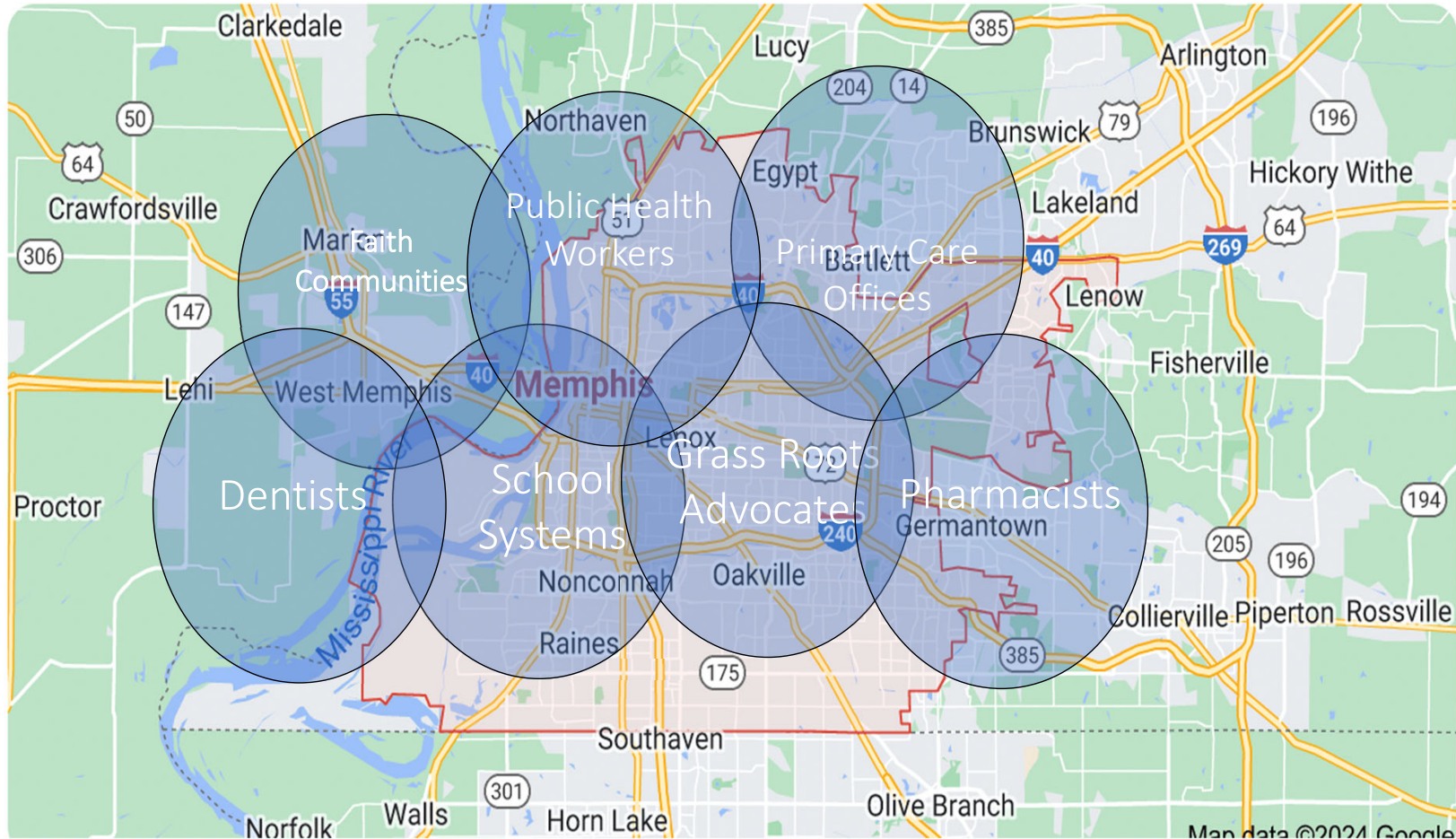
Shelby County HPV vaccine Data:

- 2019: 26.3%
 - 2024: 40.4%
 - 3.3% higher coverage rate in Shelby County compared to the rest of the state
 - 14.1% increase over this five-year period.
- * According to the Tennessee Vaccine Information System (TennVIS)



Source: aylor, et al. Local Impact of the Memphis and Shelby County HPV Cancer Prevention Roundtable on Vaccination Rate. Poster. 2024.

Addressing our Local Barriers: Building Partnerships



Working Collectively for Greater impact: HPV Cancer Prevention Roundtable

- Stakeholders initially gathered by gynecologic oncologist Dr. Michael Ulm
- Established in 2021
- Now housed and supported by the St. Jude Cancer Prevention Program
- Involves stakeholders across many disciplines: physician, nursing, public health, pharmacy, research, faith leaders, community activists



HPV vaccine uptake: Understanding what works

	Likely Impact
Intervention targets what people think and feel <ul style="list-style-type: none"> • Messages that increase disease risk appraisals • Education campaigns that increase confidence • Decision aids • Motivational interviewing 	No/very small impact No/very small impact No/very small impact No/very small impact
Intervention targets social processes <ul style="list-style-type: none"> • Messages that change altruism or free-riding beliefs • Descriptive norm messages • Social network interventions that build on contagion 	No/very small impact Modest impact Modest impact
<ul style="list-style-type: none"> • Healthcare provider recommendations 	Substantial impact
Intervention targets direct behavior change <ul style="list-style-type: none"> • Reminder and recalls • Presumptive healthcare provider recommendations • Onsite vaccinations • Default appointments • Incentives • School and work requirements (mandates) • Sanctions 	Modest impact Substantial impact Substantial impact Substantial impact Substantial impact Substantial impact Substantial impact



Brewer NT et al. Increasing Vaccination: Putting Psychological Science Into Action. Psychol Sci Public Interest. 2017 Dec;18(3):149-207. doi: 10.1177/1529100618760521. PMID: 29611455. Brewer NT. What Works to Increase Vaccination Uptake. Academic Pediatrics, Volume 21, Issue 4, S9 - S16.

Addressing Barriers: Community Initiatives

- Hosting "Cancer Survivor School"
- Collaborating with faith communities to provide HPV vaccine education at "Back to School" events and community fairs
- Immunization drives: working with Shelby County Health Department and mobile vaccine clinic
- Providing vaccine communication training
- Providing free resources: videos, postcards, information sheets



Addressing Barriers: Legislative Initiatives

- Friendsgiving collaboration for vaccine advocacy with the TN Families for Vaccines advocacy
- Legislative breakfasts at the state capital that engaged legislators with supportive information about HPV vaccination
- “Day on the Hill” activities




www.tnfamiliesforvaccines.org/


Addressing Barriers: Clinic/Provider Initiatives

 **Establishing Learning Collaboratives with American Cancer Society**
Worked with 7 local clinics in 2022

 **Celebrating Success: Development of the HPV Roundtable Community Champion award**

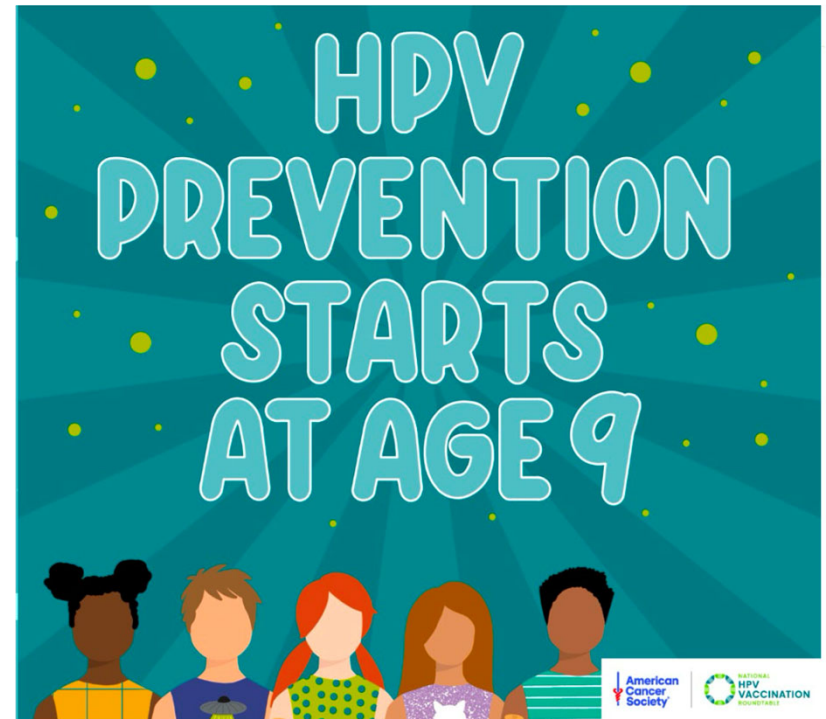
 **Promoting Vaccination at Age 9 through educational events and Announcement Approach trainings**

 **Educating about effective TNIS use to monitor progress**

 **Helping providers address hesitancy through motivational interviewing training**

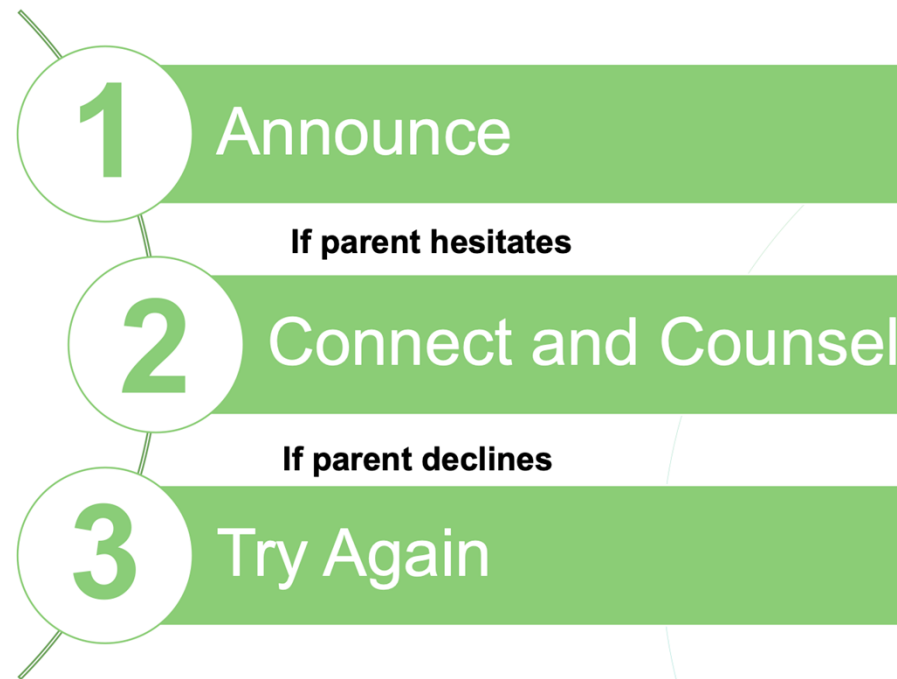
Improving HPV Vaccine Uptake: Clinical Initiatives

- Start HPV vaccination series at age 9
- Standing orders (protocols)
- Provider reminder/recall (advisories)
- Patient reminder/recall
- Health care system +
community based interventions
- Expand access points (ie mobile units)
- Build (or rebuild) confidence in HPV
vaccination



*Resources available through the ACS National HPV
Vaccination Roundtable*

The Biggest Predictor of HPV Vaccine Uptake: A Provider recommendation



Announcement Approach by Dr. Noel Brewer, Dr. Melissa Gilkey, et al., see HPViq.org for more information

Improving HPV Vaccination: Communicating the need

- In both pediatric and adult studies, patients who are provided a strong provider recommendation are significantly more likely to become vaccinated
- Consider scripting a message for vaccinators:

" I STRONGLY recommend your child receive the HPV vaccine TODAY. I recommend it to all my patients 9 or older. Human papilloma virus is a VERY common virus to which 80% of us are exposed during our lifetime and can cause cancer. Giving this vaccine to your child now can prevent cancer in his/her future, and we know that the vaccine is EFFECTIVE with an excellent safety profile."

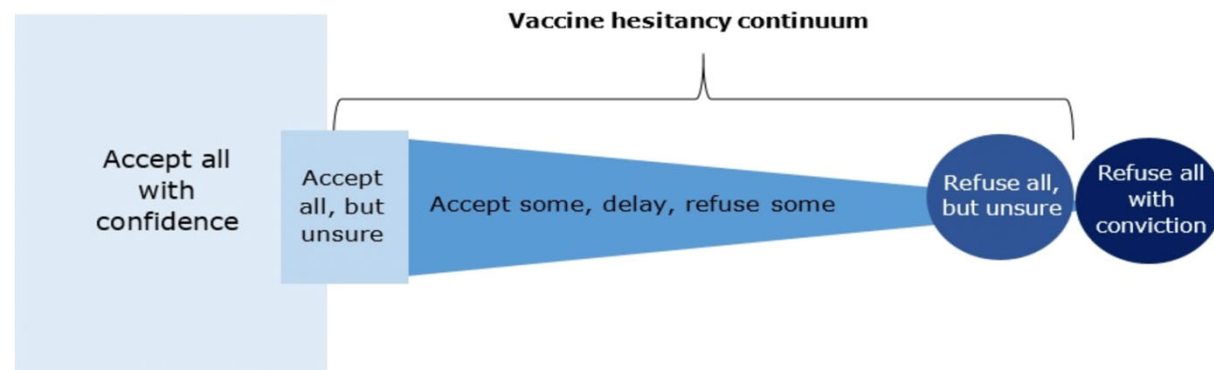
Building Confidence for HPV-related Concerns

Equip Providers with basic messages for common concerns

- Risk: Highly Prevalent Disease state
- Importance: For both genders
- Benefit: Lasting immunity for Cancer Prevention
- Concerns: Excellent Safety Profile

Empathize: Personal Connection Matters

- Learning to listen without reinforcing misinformation



Improving Local HPV Vaccination: Find your "Why"

FIND YOUR
WHY

AND YOU'LL FIND YOUR

WAY.

- JOHN C. MAXWELL



HPV Cancer prevention is possible.
HPV Vaccination is Cancer Prevention.

FAMILY FIRST.
SUNDAY SUPPERS.
HPV CANCER PREVENTION.

IT'S OUR WAY
DOWN SOUTH

Protect your child
with HPV vaccination.

HPV VACCINATION
ROUNDTABLE
OF THE SOUTHEAST

Thank you!

For more information about the Memphis and Shelby County HPV Vaccination Roundtable, scan below!

Visit our webpage by scanning the QR Code



Michelle Bowden
mbowden@uthsc.ed
u

Join the Memphis Roundtable by scanning the QR Code



Thank you!

- Lechner, M., Liu, J., Masterson, L. *et al.* HPV-associated oropharyngeal cancer: epidemiology, molecular biology and clinical management. *Nat Rev Clin Oncol* **19**, 306–327 (2022). <https://doi-org.ezproxy.uthsc.edu/10.1038/s41571-022-00603-7>
- Centers for Disease Control and Prevention. Cancers Associated with Human Papillomavirus. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services; 2024.
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- Patel, P., Sun, L., & Zhan, Y. (2022). Long-term impact of HPV vaccination and COVID-19 pandemic on oropharyngeal cancer incidence and burden among men in the USA: A modeling study. *The Lancet Regional Health – Americas*, *8*, 100143. <https://doi.org/10.1016/j.lana.2021.100143>
- Cancer Trends Progress Report
National Cancer Institute, NIH, DHHS, Bethesda, MD, March 2024, <https://progressreport.cancer.gov>.
- The HPV Vaccine Access and Use in the US. <https://www.kff.org/womens-health-policy/fact-sheet/the-hpv-vaccine-access-and-use-in-the-u-s/>
- St. Jude Cancer Prevention website. <https://www.stjude.org/research/comprehensive-cancer-center/hpv-cancer-prevention-program/hpv-cancer-prevention-roundtable-memphis-shelby.html>
- Taylor, A; Mitchell, K. Brown, J. , Stubbs, A.,. Brandt, H. Local Impact of the Memphis and Shelby County HPV Cancer Prevention Roundtable on Vaccination Rate. <https://sjr-redesign.stjude.org/content/dam/research-redesign/centers-initiatives/hpv-cancer-prevention-program/hpv-resources/nic-2024-memphis-roundtable.pdf>
- Jin SW, Lattimore DC, Harlin E, Davis L, Erholtz V, Brandt HM. Medical and public health professionals' perceived facilitators and barriers of human papillomavirus (HPV) vaccination among African American adolescents in Shelby County, Tennessee. *BMC Health Serv Res.* 2023 May 10;23(1):469.
- Piltch-Loeb R, DiClemente R. The Vaccine Uptake Continuum: Applying Social Science Theory to Shift Vaccine Hesitancy. *Vaccines (Basel).* 2020 Feb 7;8(1):76. doi: 10.3390/vaccines8010076. PMID: 32046228; PMCID: PMC7157682.