

HPV Prevention Methods for Young Adults



NATALIE JOSEPH, MD, MPH
BOSTON MEDICAL CENTER

Disclosure



I, Natalie Joseph, have been asked to disclose any significant relationships with commercial entities that are either providing financial support for this program or whose products or services are mentioned during my presentations.

I am disclosing my relationship with Merck. Merck has and continues to support the research I conduct related to HPV.

I may/will discuss the use of vaccines in a manner not approved by the U.S. Food and Drug Administration.

But in accordance with ACIP recommendations.

Background



- Human Papillomavirus (HPV) is primarily transmitted through any type sexual interaction (vaginal, anal, oral) and some non-sexual.
- Approximately 79 million Americans carry a type of Human Papilloma Virus (HPV).¹
- HPV infection causes genital warts and several types of cancers: cervical, vaginal, vulvar, penile, oropharyngeal, and anal.²
 - Highest burden is cervical cancer in females and oropharyngeal (throat/mouth) cancer in males.
- HPV infection is prevented via HPV vaccination.
 - In women, as many as 93% of cervical cancer cases can be prevented by HPV-9 vaccination and pap smear screening.⁴
 - In men, as many as 70% of oral cancer cases can be prevented by vaccination.³

Cancers Caused by HPV per year, U.S., 2010-2014

Cancer site	Percentage probably caused by any HPV type	Number probably caused by any HPV type		
		Female	Male	Both Sexes
Cervix	91%	10,600	0	10,600
Vagina	75%	600	0	600
Vulva	69%	2,600	0	2,600
Penis	63%	0	800	800
Anus*	91%	3,800	1,900	5,700
Oropharynx	70%	2,100	10,100	12,200
TOTAL		19,700	12,800	32,500

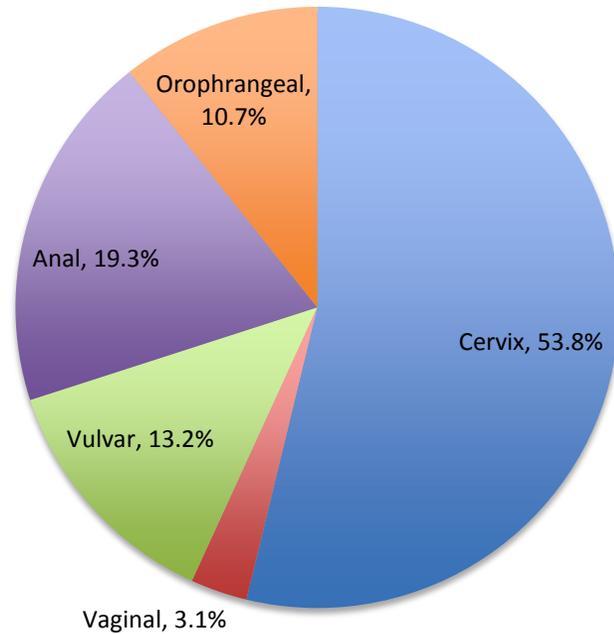
*Includes anal and rectal squamous cell carcinomas

Sources: <https://www.cdc.gov/cancer/hpv/statistics> and Saraiya M et al. J Natl Cancer Inst. 2015;107:djv086

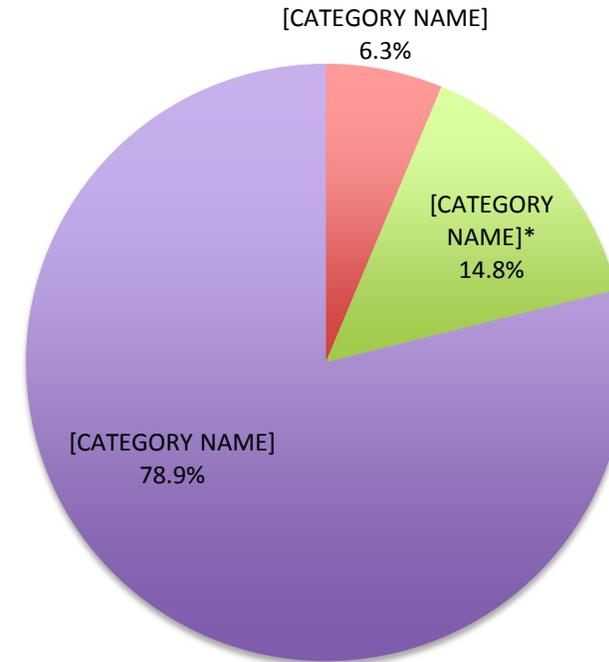
HPV-Related Cancers



HPV-Related Cancers in Women (n=19700)



HPV-Related Cancers in Men (n=12,800)

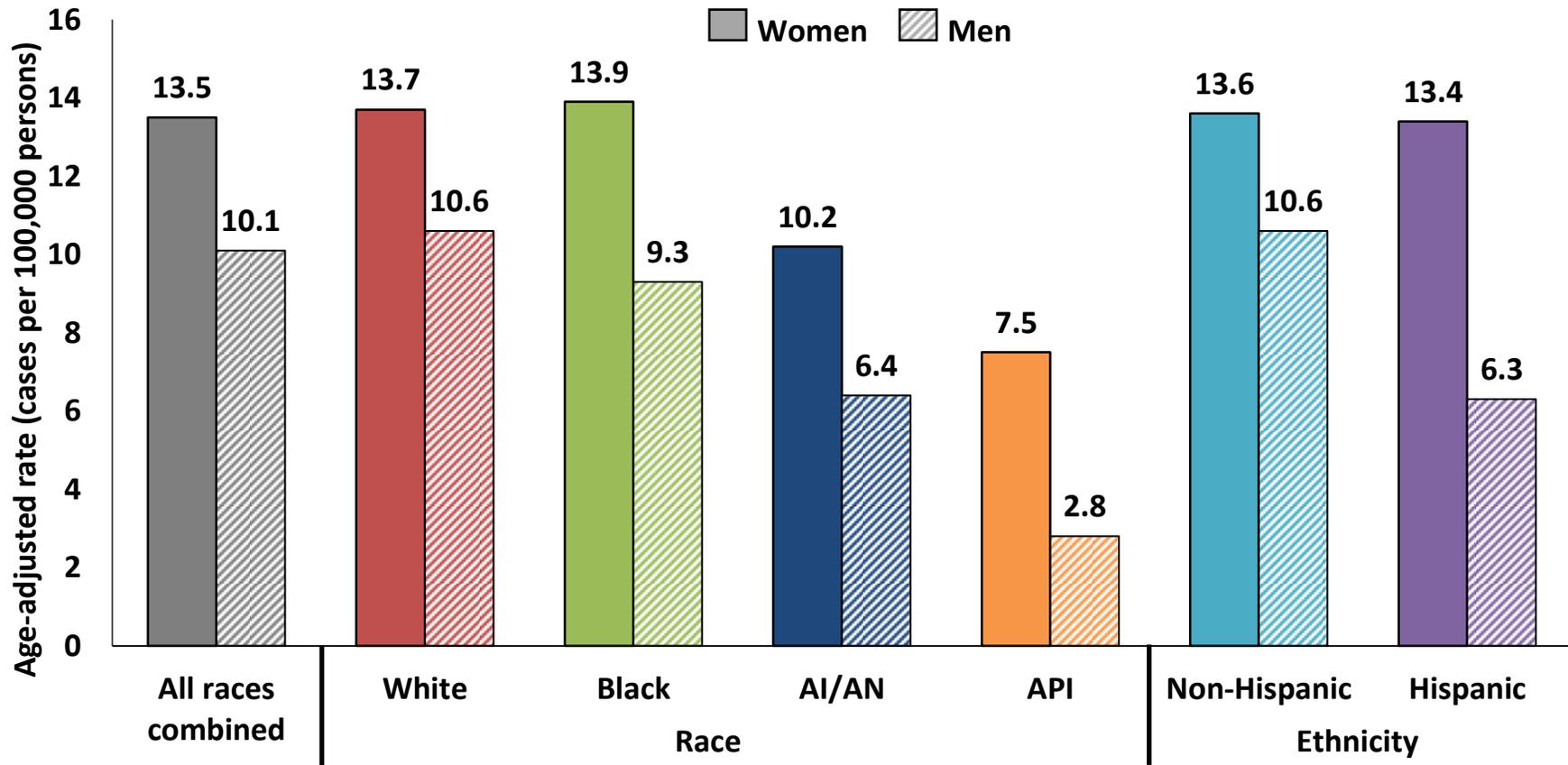


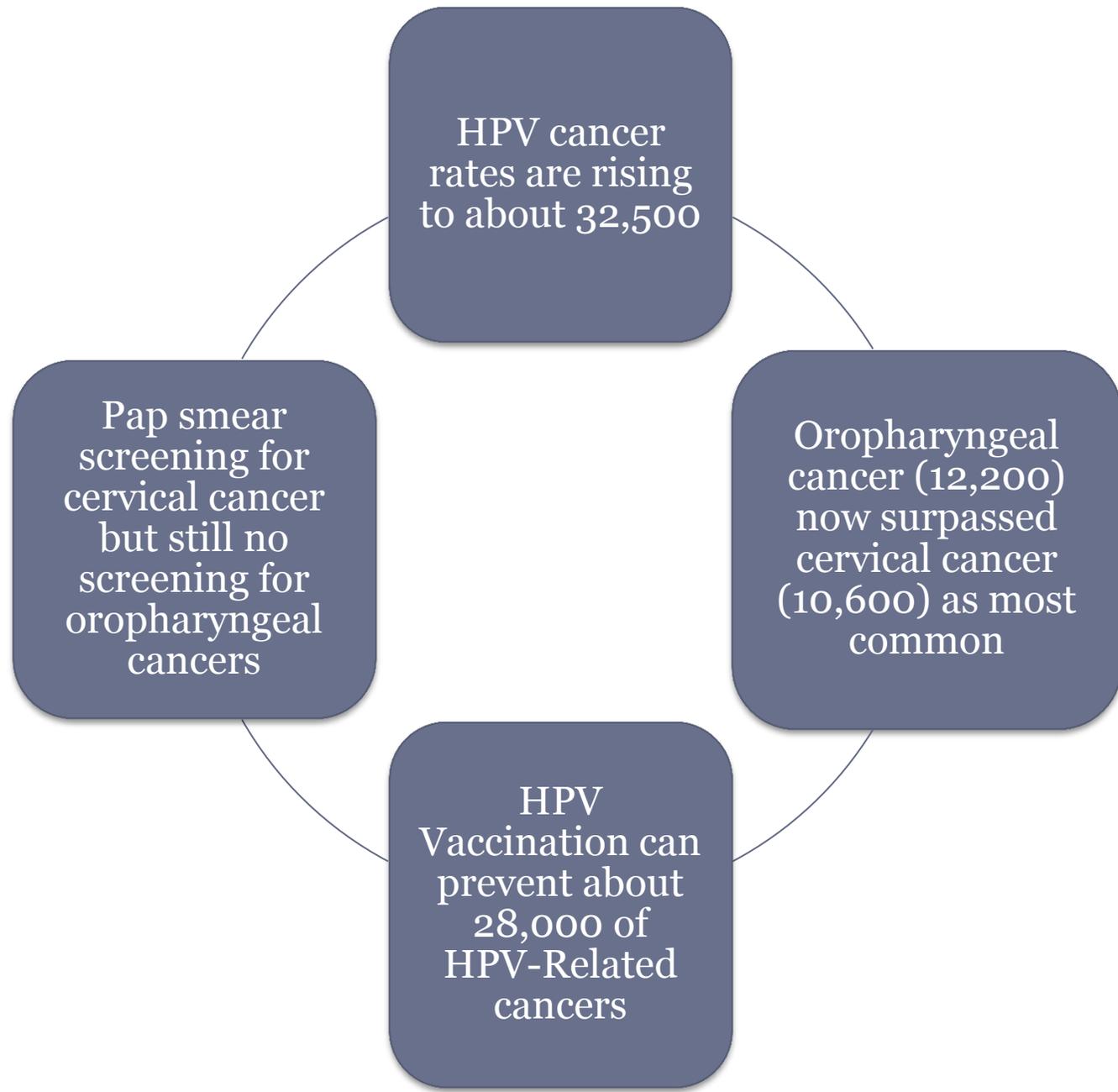
*Includes anal and rectal squamous cell carcinomas

Sources: <https://www.cdc.gov/cancer/hpv/statistics> and Saraiya M et al. J Natl Cancer Inst.

2015;107:djv086

HPV-Associated Cancer Rates by Sex, Race, and Ethnicity, United States, 2010–2014





CDC HPV Vaccine Recommendations



- December 2016 the CDC published a report recommending a 2-dose HPV schedule for girls and boys who begin the vaccination series at ages 9 through 14 years and the 3-doses remained for ages 15 through 26 years.⁶

AGE AT FIRST DOSE	DOSE #2	DOSE #3
9 years until 15th birthday	6–12 months after dose #1	Not needed
15 years or older	1–2 months after dose #1	Approximately 4 months after dose #2

HPV Vaccination Rates Among Young Adults

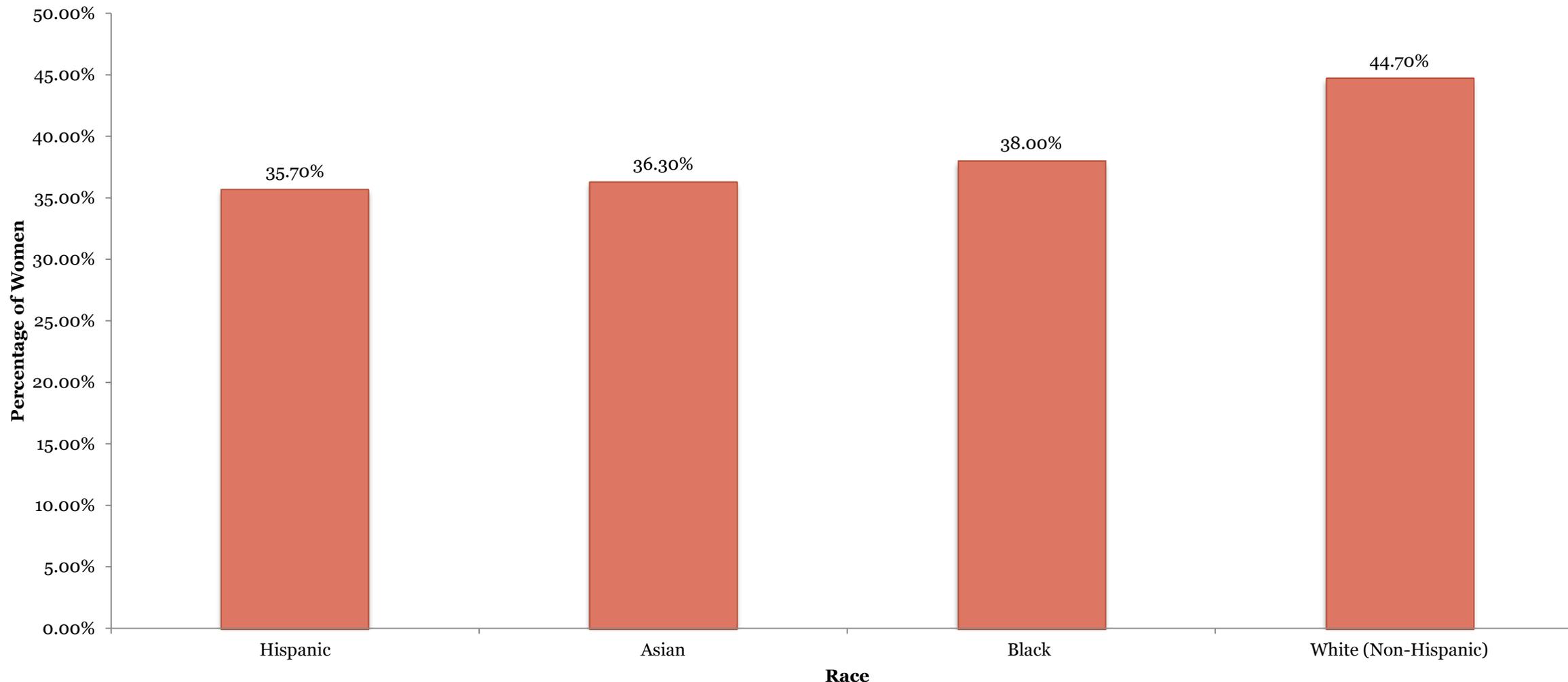


- 41.6% of young women aged 19-26 had at least 1 dose of the HPV vaccine.⁷
- 10.1% of young men aged 19-26 had at least 1 dose of the HPV vaccine.⁷

HPV Vaccine Coverage in Women



HPV Vaccine Coverage in Women 19-26 years old by Race



“Morbidity and Mortality Weekly Report (MMWR).” Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 21 June 2017, www.cdc.gov/mmwr/volumes/66/ss/ss6611a1.htm.

RESEARCH STUDIES IN YOUNG ADULTS

Ethnic differences in perceived benefits and barriers to HPV vaccine acceptance: a qualitative analysis of young African American, Haitian, Caucasian, and Latino **men**.

- Objective: To examine the attitudes toward human papillomavirus (HPV) vaccination among young men.
- Study Design: In-person semi-structured interview among 89 young men aged 18-22 years.⁸

Results: Barriers



- **Inadequate knowledge.**
 - “I don't know anything about it (HPV) and it doesn't make any sense...” (African American)
- **Low perceived risk.**
 - “I don't think I should have anything if I'm only having sex with nobody else but one.” (Haitian)
- **Vaccine cost.**
 - “If their insurance covers it, good. If not, then you have the trade off of whether you want to pay for it or not. I don't think it's cheap either.” (Caucasian)

Results: Facilitators



- **Benefits of vaccination.**
 - “It would be the prevention of an epidemic or, you know, just stopping the spread of disease.” (Caucasian)
- **Perceived level of STD protection.**
 - “To be protected and to be safe to decrease my chances of getting STDs.” (African American)
- **Perceived level of oral and anal cancer prevention.**
 - “If there is evidence that proves the vaccine is gonna help me and, um, that's obviously I don't want to deal with anal or oral cancers.” (Caucasian)
- **High level of trust in provider**
 - “It's like, if the doctor is telling you to get it, it's probably something you should be getting. People don't just hire a doctor for nothing, you know?” (Latino)



- Young men described wanting conclusive evidence about the HPV vaccine.
 - “I would like to have good proof about these vaccines.”
 - “I want research information. Why all of a sudden is HPV a problem and where did it come from?”
- Young men also described wanting to do their own research about the HPV vaccine before accepting the vaccine.
 - “It’d be very unlikely (to accept the vaccine) because I’d have to—like I said earlier—I’d have to go on the Internet and just see what has other researchers come up with and other studies and other experiments on it—what would all that calculate to.”

Dissemination of knowledge about HPV-related diseases: how and what to communicate



- **Clinic-based: How during the clinic visit**

- “I like talking with the doctor in person because it seems as if they really care instead of just having a piece of paper for you to read and they do say it in person so that’s good.”
- “Hopefully around when I’m getting my physical so I know what is going on and so they can look at my body and say “oh [name] watch out for these things”
- “I could get my doctors to learn it by looking at my condition so that the doctor could help me out with it. No information besides that to be 100%

Clinic-based: What to communicate during the visit

- ‘Additional information is if would be curable in the future or other factors of if it is only in the vagina or other things.; Yeah, I would like to know if they might be side effects or just a little bit more information.’
- Oh man. I would want to know how it looks. I would want to know how common it is. I would want to know what it would do to your mouth. Is it contagious? All of that.”
- “... Probably a movie. And ummmmm like how could it be prevented.”

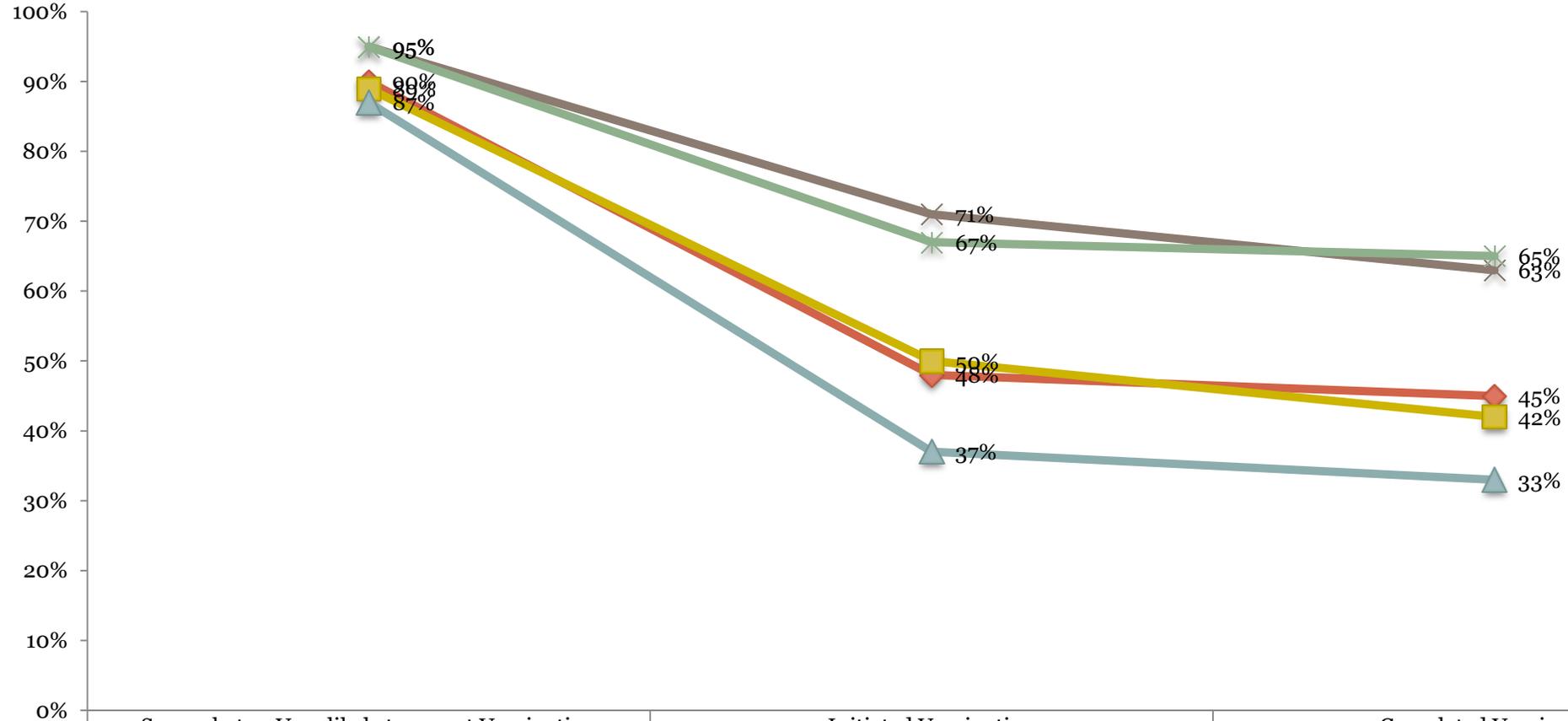
Racial and ethnic differences in HPV knowledge, attitudes, and vaccination rates among low-income African-American, Haitian, Latina, and Caucasian young adult **women**.

- Objective: To examine facilitators and barriers to HPV vaccine uptake in young women and to determine vaccination completion rates among participants over 5 years.
- Study Design: In person semi-structured interviews among 132 young women aged 18-22 years.

Results



Percentage of Women 18-22 Years Old and Vaccine Status (n=132)



	Somewhat or Very likely to accept Vaccination	Initiated Vaccination	Completed Vaccination
◆ All Races	90%	48%	45%
■ African American	89%	50%	42%
▲ Haitian	87%	37%	33%
✕ Latino	95%	71%	63%
✱ White	95%	67%	65%

Results: Barriers



- **False sense of security.**
 - "I think it can give a false sense of security, health, that nothing can happen to you." (White)
- **Fear of infection of HPV from vaccine/counter effect of the vaccine.**
 - "You inject part of the virus into you. So if your body is more susceptible, you might get it. Just like when you take the flu shot, a lot of time people get sick." (White)
- **Limited knowledge or need for more information.**
 - "I don't know much about it. So, I haven't heard doctors speaking about it, so i don't know if it's really good for us." (Haitian)
- **Needle phobia.**
 - "Scared of shots" (African American)
- **Low perceived risk due to sexual inactivity.**
 - "If you plan on having sex, then you should get it, but if you don't plan to you shouldn't" (Latina)

Results: Facilitators



- **High level of trust in provider recommendations**
 - "I really trust my doctors. so I feel like I always...take the vaccines that have been recommended to me." (Caucasian)
- **Education about HPV and benefits of vaccination**
 - "You basically are protecting lives. Sex is very common among adolescents. if you can give a vaccine to protect, that would be good." (Haitian)
- **Perceived level of cervical cancer prevention**
 - "I don't want to have cervical cancer and if I could prevent that in any way, I would. At first, I would say no but when I heard of what it was, I agreed." (African American)

Successful Campaigns to educate/vaccinate this Population



- Increasing patient-provider communication, education, and reminders continue to be one of most effective ways to increase HPV vaccination.
- The role of technology and social media today.
 - Text reminders.
 - Facebook.
 - Snapchat.
 - Twitter.
 - Instagram.
 - Web-based platform.
 - ✦ WoW

HPV Knowledge among Different Ethnicities



- Mean knowledge scores by ethnicity:
 - Haitian(72%)
 - Latina (85%)
 - African-American (87%)
 - White (100%)
- Hence, Haitians were the least knowledgeable about HPV infection and its vaccine while Whites were the most knowledgeable.

Wheel of Wellness (WoW)



- Wheel of Wellness (WoW) is a Health Insurance Portability and Accountability Act of 1996 (HIPAA) protected website and texting system that provides families with access to resources and answers to specific health needs related to cancer prevention.
- WoW empowers families to make health conscious decisions by learning more about the HPV vaccine and HPV-associated cancers.



The website component provides several features:

- ✦ A medical history and appointment tracker.
- ✦ Free access to online resources and links.
- ✦ Evidence based answers to frequently asked questions.

Texting system is tailored to the individual patient:

- ✦ Educational texts are based on vaccine and screening concerns and questions.
- ✦ Scheduling texts are based on vaccine and screening history and guidelines.
- ✦ Reminder texts are based on vaccine and screening appointments.

How to Engage Young Adults in Health Decision Making for Vaccination



- ❖ Training providers to use Motivational Interviewing (MI)/Brief Negotiated Interview for hesitant and refusing parents using a shared decision approach.¹⁰
 - ❖ CME credits
 - ❖ Three C's: Confident, Concise, and Consistent Healthcare provider Recommendations for Adolescent Vaccines.¹⁰
- ❖ Use of an embodied, online animated character, delivered via computer or tablet screen. She is programmed and designed to screen young adults for HPV-related health risk and to help them via shared decision making to resolve those risks by promoting and accepting the HPV vaccine

❖ **Future studies should focus on strategies to best deliver HPV prevention through:**

- Improving patient-provider communication in primary settings;
- Increasing and improving HPV vaccine recommendation at dental clinics;
- College-based campaigns using social media, Health educators/advisors in dorms;
- Developing effective health reminder systems;
- Promoting combined flu and HPV vaccination clinics;
- Partnering with local major businesses for HPV vaccine promotion and delivery (YMCA, CHURCH, PHARMACIES, WALMART, TARGET, CVS)
- Consistent use of Immunization Registry.

Acknowledgement



- We would like to thank the multiple research assistants who conducted the interviews and transcribed them.
- Special thanks to staff in the adolescent and pediatric clinic.
- This work was supported by a Building Interdisciplinary Research Careers in Women's Health Grant (K12-HD43444), Boston University Institutional Research Grant (IRG-72-001-33-IRG), the American Cancer Society Career Development Award (CDDA-10-086-01; and ACS-MRSG-09-151-01), and the Merck Investigator Studies Program (MIISP #53261).

Thank you!



✧ Any questions?

✧ Contact information

Email: Napierre@bu.edu

Work phone: (617)-414-4086

References



1. CDC, National Program of Cancer Registries and the NCI Surveillance, Epidemiology and End Results Program, <https://www.cdc.gov/cancer/hpv/statistics>
2. Shiels MS, Kreimer AR, Coghill AE, Darragh TM, Devesa SS. Anal cancer incidence in the United States, 1977–2011: distinct patterns by histology and behavior. *Cancer Epidemiol Biomarkers Prev* 2015;24:1548–56.
3. “Gardasil 9 Protects against Additional HPV Types.” *National Cancer Institute*, www.cancer.gov/types/cervical/research/gardasil9-prevents-more-HPV-types.
4. “Millions of US women are not getting screened for cervical cancer.” Centers for Disease Control and Prevention. N.p., n.d. Web. 30 June 2017.
5. “HPV and Cancer.” *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 3 Mar. 2017, www.cdc.gov/cancer/hpv/statistics/cases.htm.
6. Meites E, Kempe A, Markowitz LE. Use of a 2-Dose Schedule for Human Papillomavirus Vaccination — Updated Recommendations of the Advisory Committee on Immunization Practices. *MMWR Morb Mortal Wkly Rep* 2016;65:1405–1408. DOI: <http://dx.doi.org/10.15585/mmwr.mm6549a5>.
7. “Morbidity and Mortality Weekly Report (MMWR).” *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 21 June 2017, www.cdc.gov/mmwr/volumes/66/ss/ss6611a1.htm.
8. Joseph, Natalie Pierre, et al. “Racial and Ethnic Differences in HPV Knowledge, Attitudes, and Vaccination Rates among Low-Income African-American, Haitian, Latina, and Caucasian Young Adult Women.” *Journal of Pediatric and Adolescent Gynecology*, vol. 27, no. 2, 2014, pp. 83–92., doi:10.1016/j.jpag.2013.08.011.
9. Pierre, N, et al. “Ethnic Differences in Perceived Benefits and Barriers to HPV Vaccine Acceptance: a Qualitative Analysis of Young African American, Haitian, Caucasian, and Latino Men.” *Clinical Pediatrics*, U.S. National Library of Medicine, Feb. 2014, www.ncbi.nlm.nih.gov/pubmed/24403292.
10. “UNITY Projects.” Unity, www.unity4teenvax.org/unity-projects/.