

Clinical Communities Speaker Series: Children and Youth-Advanced Practices for the Pediatric Health Care Provider

Human Papillomavirus (HPV) Vaccine: The challenge with compliance

March 26, 2020 11:30 A.M-12:30 P.M (ET)















Presenters



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CAPT Natalie Y. Wells, MD, MPH

Director, Military Population Heath Naval Health Research Center San Diego, CA

Srihari Seshadri, MBBS, PhD, MPH





- Dr. Srihari Seshadri currently serves as Team Lead for the Regulatory Investigations Office, Immunization Healthcare Division, Defense Health Agency, Falls Church, VA. In his current position, he is involved with multiple vaccine safety/effectiveness studies.
- Dr. Seshadri completed medical school in India and served as a physician overseas. Upon completion of Masters in Public Health, he joined Barren River District Health Department, Bowling Green, KY as a Regional Epidemiologist. Sri had collaborated with stakeholders on various public health initiatives to include improving HPV vaccination rate in the district.
- Sri has a PhD in Clinical and Translational Science and is recipient of Kentucky Public Health Association's Career Achievement Award.

MAJ Lindsay E. Roach, DO





- Dr. Lindsay Roach is an Adolescent and Young Adult Medicine (AYA) specialist who completed her residency and fellowship training at Brooke Army Medical Center in San Antonio, Texas. During her fellowship, she performed research in prevention of sexually transmitted diseases and actively participated in mental health initiatives to improve the care and outreach for adolescence and young adults.
- She currently is the Service Chief of the Adolescence and Young Adult Medicine Clinic at Walter Reed National Military Medical Center where she delivers care to the beneficiary population of the active duty and retiree population in the National Capital Region while participating in Graduate Medical Education.

LTC Lynn C. Collins, MBA, MSN, ANC USA (Ret.)





- Lynn C. Collins currently serves as the Clinical Nurse Officer in Charge of the Bennett Army Medical Home at Fort Hood, Texas. She has served in this position since 2012. Previously, Ms. Collins served as the Chief of Nurse Midwifery at Fort Carson and Fort Hood before retiring from the Army with over 25 years of comprehensive health care experience.
- Ms Collins graduated from the University of Texas Medical Branch where she received a Master of Science in Nursing with a subspecialty in midwifery and earned a Master of Arts in Business Management from Touro International University.
- A strong believer in the power of positive thinking and innovation in the workplace, Ms Collins develops and advocates for wellness campaigns to improve the health and well-being of our military population.

Ms. Brenda K. Johnson, LVN





- Brenda Johnson is an LVN at Bennett SCMH located at Fort Hood, Texas. Brenda has been the clinic Immunization nurse for 5 years administering routine vaccinations in addition to deployment vaccines. From 2016 to current, Brenda has administered over 6800 HPV9 vaccinations to our Soldier population.
- Before starting at the Bennett SCMH, Brenda worked for the State of North Dakota caring for physically and developmentally challenged children and adults, the Mapleton Community Home in Mapleton, Minnesota caring for our senior citizens, and MHMR in Killeen, Texas caring for adults with mental illnesses.
- Brenda is married, the mother of 3 adult children (to include one active duty son, one active duty son in law, and one retired from active duty daughter), and 6 grandchildren.

CAPT Natalie Y. Wells, MD, MPH





- Captain Wells, commissioned through the Health Professions Scholarship Program, received her degree in allopathic medicine from the University of Maryland in 2000. She completed her General Preventive Medicine/Public Health residency in 2007.
- She serves as the Director for Military Population Health at the Naval Health Research Center in San Diego, California. She oversees execution of many of the Department of Defense's leading epidemiological and behavioral health studies including the Millennium Cohort Study, the largest longitudinal study in military history. These research programs evaluate the effect of military service on the health and wellbeing of service members, veterans and their families.

Disclosures



- Dr. Seshadri, MAJ Roach, Ms. Collins, Ms. Johnson and CAPT Wells have no relevant financial or non-financial relationships to disclose relating to the content of this activity.
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Learning Objectives



At the conclusion of this activity, participants will be able to:

- 1. Describe the epidemiology of HPV infections.
- List the current HPV vaccine recommendation.
- 3. Discuss strategies to improve HPV vaccination rate and compliance.

Polling Question: Please specify your occupation



- o Physician
- Physician Assistant
- Nurse Practitioner
- Other Nursing Professional (e.g., RN, LPN, LVN)
- Other, please specify ______

Polling Question: If you provide direct patient care, what is your area of practice?



- Family Medicine
- Internal Medicine
- o OB/GYN
- Pediatrics
- Other, please specify ______

Epidemiology of HPV and Vaccine Recommendations



Srihari Seshadri, MBBS, PhD, MPH

Team Lead, Regulatory Investigations Office
Immunization Healthcare Division
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Falls Church, VA















Human Papillomavirus (HPV)

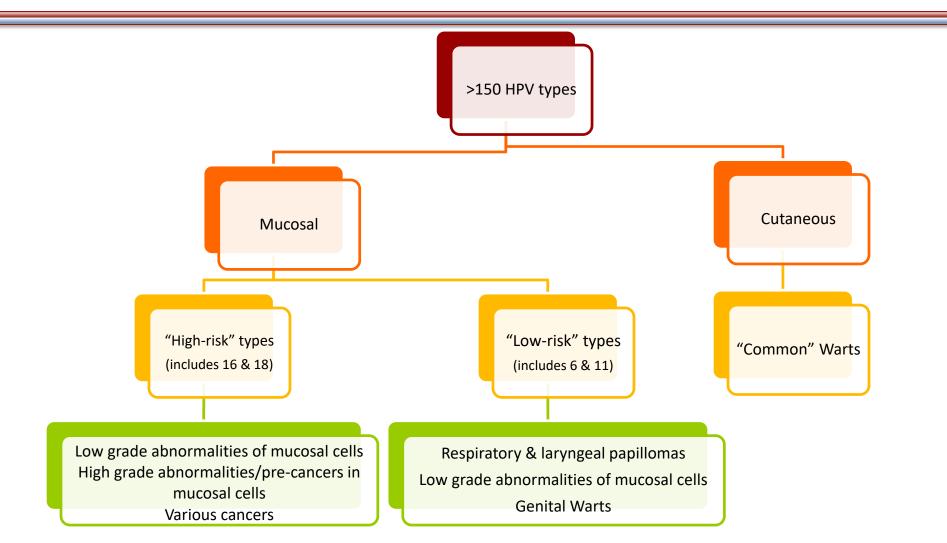


- HPV is a common virus that infects teens and adults 80% of people will get an HPV infection in their lifetime
- About 79 million Americans are currently infected with some type of HPV.
- About 14 million Americans, including teens, become infected each year.
- HPV is spread through intimate skin-to-skin contact during vaginal, anal, or oral sex with someone who has the virus.
- Some HPV infections can lead to cancer
 - ☐ Most HPV infections (9 out of 10) go away by themselves within two years. But, sometimes HPV infections will last longer, and can cause certain types of cancers.

www.cdc.gov/hpv

Types of HPV

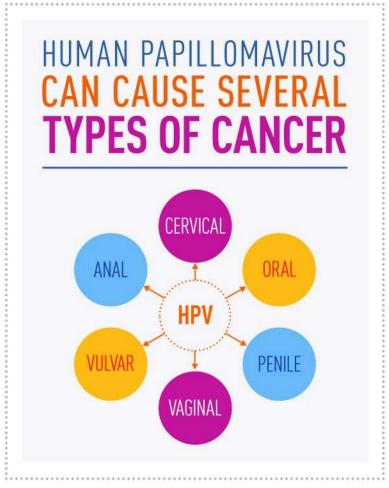




https://www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-and-hpv-testing.html

Cancers Linked with HPV Each Year in U.S¹





Sites	Cases in Women	Cases in Men	
Back of Throat	2,200	11,300	
Cervical	10,900	0	
Anal	4,200	2,000	
Vulvar	2,800	0	
Penile	0	800	
Vaginal	600	0	
Total	20,700	14,100	

cancer.gov/hpv

¹Centers for Disease Control and Prevention. Cancers associated with human papillomavirus, United States— 2012–2016. U.S. Cancer Statistics data brief, no 10. Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2019.



HPV Vaccine Recommendations









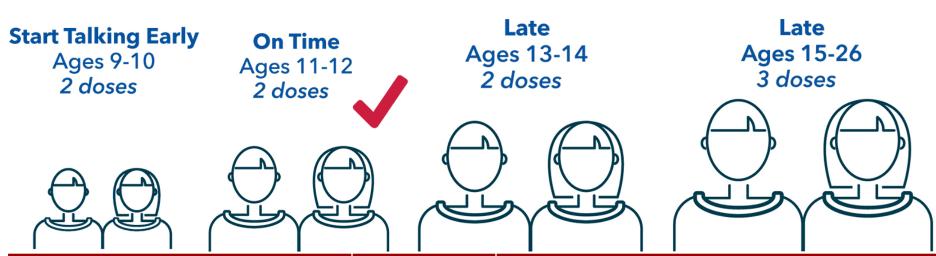






HPV Vaccine Schedule and Dosing





Age Group	Number of vaccine doses	Interval between doses
Persons initiating vaccination at 9 through 14 years, except immunocompromised persons	2	Second dose should be given 6-12 months after the first dose (0, 6–12 month schedule)
Persons in the recommended age groups initiating vaccination at age 15 years or older and persons with immunocompromising conditions	3	The minimum intervals are 4 weeks between the first and second dose, 12 weeks between the second and third doses, and 5 months between the first and third doses. (0, 1–2, 6 month schedule)

https://www.cdc.gov/hpv/hcp/schedules-recommendations.html

Key points with HPV vaccination



- If the vaccination schedule is interrupted, vaccine doses do not need to be repeated.
- People whose immune responses might be lower, for example due to HIV infection, cancer, transplantation, autoimmune disease, or taking immunosuppressant medications, should receive 3 doses.
- Any licensed HPV vaccine can be used to complete the vaccination series with the same recommended schedule and dosing intervals.
- HPV vaccinated women will still need regular cervical cancer screening.

https://www.cdc.gov/hpv/hcp/schedules-recommendations.html

Where do we currently stand with HPV vaccination rates in the U.S.?²



Estimated coverage with selected vaccines and doses among adolescents aged 13–17* years, by age at interview — National Immunization Survey–Teen (NIS-Teen), United States, 2018² - https://www.cdc.gov/mmwr/volumes/68/wr/mm6833a2.htm

integration survey leen (NIS leen), officed states, 2010							
Age in Years	All Adolescents		Females		Males		
	UTD	≥1 dose	UTD	≥1 dose	UTD	≥1 dose	
13 (n=3,852)	39.9 (37.0–42.9)	62.6 (59.7–65.4)	38.9 (35.0–42.9)	61.1 (56.9–65.2)	40.9 (36.5–45.3)	64.0 (59.9–67.9)	
14 (n=3,875)	50.3 (47.3–53.2)	66.9 (64.1–69.6)	52.7 (48.5–56.8)	68.6 (64.4–72.5)	47.7 (43.6–51.8)	65.1 (61.3–68.7)	
15 (n=3,741)	54.0 (51.0–56.9)	69.7 (66.9–72.3)	54.7 (50.4–59.0)	70.7 (66.5–74.5)	53.2 (49.1–57.3)	68.7 (65.0–72.1)	
16 (n=3,751)	54.5 (51.5–57.5)	71.2 (68.5–73.8)	57.5 (53.3–61.6)	73.5 (69.8–76.8)	51.8 (47.5–56.1)	69.2 (65.2–73.0)	
17 (n=3,481)	57.5 (54.4–60.5)	70.1 (67.3–72.8)	66.0 (61.8–70.1)	76.3 (72.2–80.0)	50.0 (45.7–54.3)	64.7 (60.7–68.5)	
Total (n=18,700)	51.1 (49.8–52.5)	68.1 (66.8–69.3)	53.7 (51.8–55.6)	69.9 (68.1–71.6)	48.7 (46.8–50.6)	66.3 (64.6–68.0)	

²Walker TY, Elam-Evans LD, Yankey D, et al. National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2018. MMWR Morb Mortal Wkly Rep 2019;68:718–723.

Polling question: Why do you think HPV vaccination rates are low? (Ranking)



Parental belief their child is not at risk
Concern about safety and efficacy of the vaccine
Not a required vaccine for school
Healthcare providers are not strongly/consistentl
recommending the vaccine

HPV vaccination rates among U.S military members



- Between 2007 and 2017; 111,546 (26.6%) of eligible active component service women and 121,657 (5.8%) of men aged 17-26 years initiated HPV vaccination. Less than half of women (46.6%) and over one-third (35.1%) of men completed the 3 dose series.³
- HPV vaccination rates vary among military treatment facilities and by service branch.
- HPV is not a mandatory vaccine for the U.S. military members.

³Clark, L. L., Stahlman, S., & Taubman, S. B. (2018). Human papillomavirus vaccine initiation, coverage, and completion rates among US active component service members, 2007-2017. MSMR, 25(9), 9-14.

Polling Question: Do you or your clinic use any recall or reminders methods to improve HPV vaccine compliance? (Check all that apply)



□ No
☐ Yes, automated phone call reminders
☐ Yes, mail reminder cards
☐ Yes, make personal phone calls
☐ Yes, send text reminders
☐ Yes, utilize reminder app
☐ Yes, other method, please specify



HPV Vaccination Initiatives



HPV VACCINE IS CANCER PREVENTION.

Source: https://hagersharp.com/our-work/case-studies/cdc-hpv-vaccine-is-cancer-prevention/















Bridging the Divide to HPV Vaccine Compliance: A WRNMMC Initiative



MAJ Lindsay E. Roach, DO

Service Chief, Adolescent and Young Adult Medicine Division
Department of Pediatrics
Walter Reed National Military Medical Center
Bethesda, MD















2018- HPV Vaccination and Compliance Rate: WRNMMC AYAM Clinic



Age (years)	Enrolled	Number of Enrollees Who Received At Least 1 Dose	Number of Enrollees Who are Compliant (UTD)	% Of Enrollees With At Least One Dose	% US ≥1 Dose (National Immunization Survey-Teen)	% of Enrollees Who Are UTD	% US UTD (National Immunization Survey-Teen)
14	84	78	62	79.5%	66.9%	73.8%	50.3%
15	143	126	108	85.7%	69.7%	75.5%	54.0%
16	158	131	109	83.2%	71.2%	69.0%	54.5%
17	182	150	121	80.7%	70.1%	66.5%	57.5%
Total (14- 17 years)	567	485	400	85.8%		70.5%	

In YR 2018 US (13 to 17 years) with:

> 1 Dose=68.1% (66.8-69.3)

> UTD= 51.1% (49.8-52.5)

Data for this table was researched by Alexander G Rittel, MPH, Data Scientist, Enterprise Intelligence & Data Solutions (EIDS) Program Management Office, Solution Delivery Division (SDD), Deputy Assistant Director, Information Operations (DAD IO/J-6), Defense Health Agency.

Bridging the Divide to HPV Vaccine Compliance



Studies consistently show that a strong recommendation from **you** is the single best predictor of vaccination



Source: https://hagersharp.com/our-work/case-studies/cdc-hpv-vaccine-is-cancer-prevention,

Bridging the Divide to HPV Vaccine Compliance: The Great Divide



■ Lack of parental/guardian knowledge and established biases

■ Lack of provider preparation, comfort and consistency in providing education and recommendations for the HPV vaccine

Bridging the Divide to HPV Vaccine Compliance: The Common Resistance Patterns

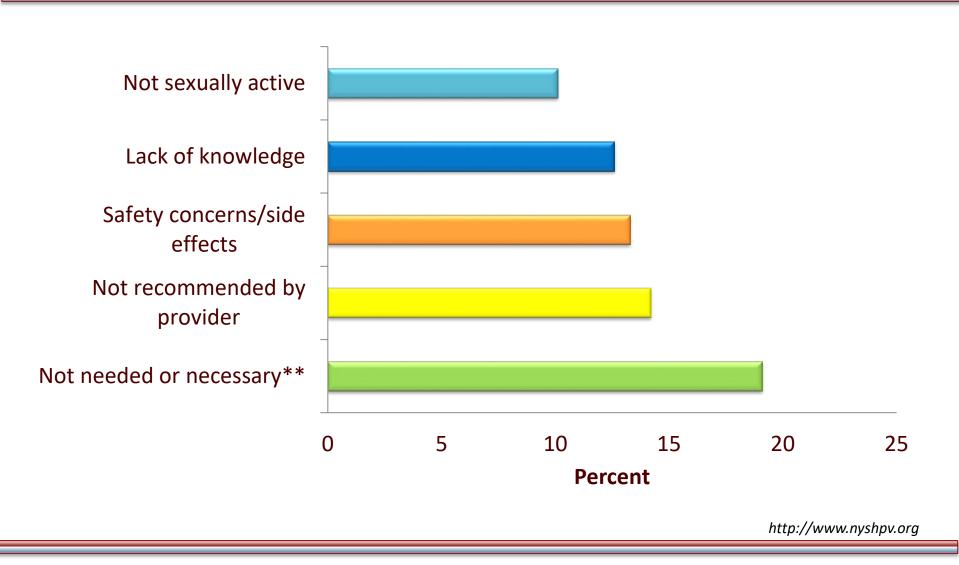


- Concern for Safety
 - The vaccine is "new"
 - Internet mistruths and misleading information
 - Lack of education regarding the safety, efficacy and long term benefits of the HPV vaccine

- Concern for Causation
 - My child is not sexually active
 - My child will not be sexually active
 - This is not necessary and <u>not</u> mandatory

Bridging the Divide to HPV Vaccine Compliance: Barriers to HPV Vaccination





Bridging the Divide to HPV Vaccine Compliance: Vaccine Safety and Effectiveness



- Remember and Repeat the Facts
 - HPV infections can cause certain types of cancers including cervical, vaginal and vulvar cancer in women, penile cancer in men and anal and oropharyngeal cancer in men and women

The HPV vaccine prevents infection from the HPV types that cause over 90% of these cancers.

- Over 120 million doses of the HPV vaccine have been distributed since the vaccine was licensed in 2006, and data continues to show the vaccine is safe and effective. (The vaccine is not "new")
- Approved for use between the ages of 9-45 years old and is routinely started at the age of 11-12 years old
- Initiation before the 15th birthday= 2 vaccines instead of 3. Get it started!
- VAERS investigation showed no unusual pattern or clustering and no deaths related to HPV vaccination
 - These findings are similar to the safety reviews of MCV4 and Tdap vaccines

https://www.cdc.gov/vaccinesafety



Any Visit, Every Time

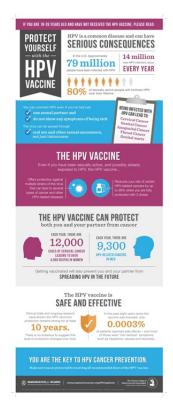
Immunizations Up-to-Date?

Bridging the Divide to HPV Vaccine Compliance: Provider Education/Tools



- Provider education and support
 - Clinic/departmental/organizational level education for all skill levels
 - Patient education handouts and pamphlets readily available for HPV (https://www.cdc.gov/vaccines/hcp/vis)
 - Immunization form clustering and sandwiching





The American College of Obstetricians and Gynecologists

WRNMMC Initiative to Reduce HPV Vaccination Hesitancy



Simulated Patient Activity







Section on Simulation: Reducing HPV Vaccination Hesitancy through Provider Education

Claire Witmer, MD CPT, USA, MC

Walter Reed National Military Medical Center
Assistant Professor Uniformed Services University





Images courtesy of L. Roach

WRNMMC Initiative to Reduce HPV Vaccination Hesitancy





Improving HPV Immunization Rates Through Provider Education and Simulation



Claire Daniels, MD^{1,2}, Katie Jones, MD^{1,2}, Jennifer Hepps, MD^{1,2}, Joseph Lopreiato, MD^{1,2},

Gregory Gorman, MD MHS ^{1,2}, Rhoda Kroeker¹, Charmoine Draughn¹, Cassandra Carr, MD^{1,2}

Department of Pediatrics, Walter Reed National Military Medical Center, *Uniformed Services University of Health Sciences, Bethesda, MD

Background

- Human Papillomavirus (HPV) is the most common sexually transmitted infection, affecting 80% of individuals in their lifetime.
- A vaccine to protect against HPV related cancers and genital warts has been FDA approved since 2006, showing long term immunity and safety.
- AAP and CDC recommend immunization against HPV at 11 and 12 year well visits for all boys and girls.
- There remains hesitation from providers and parents surrounding HPV vaccination
- The most common reason parents do not immunize is because their provider does not recommend the vaccine.

Goal Statement

- Increase the number of 11-18 year olds immunized against HPV.
- * Educate providers on how to recommend HPV vaccine

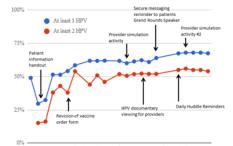
Methods

- Educate providers on evidence based methods to respond to parental concerns about the HPV vaccine.
- . Improve vaccine education and communication for parents.
- Make ordering and obtaining the vaccine easier

Changes Being Tested

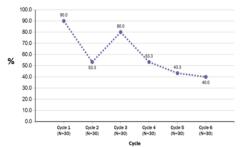
- Provide bi-annual simulation center curriculum for providers to practice delivering a strong recommendation for the HPV vaccine and answering parental concerns
- Provide monthly HPV education updates to providers grand rounds, patient documentary viewing, web-published public dashboard of run chart.
- Take advantage of secure messaging and handouts to inform parents on vaccination guidelines and remind them about the recommended schedule.
- Create a morning huddle reminder system to identify patients in need of vaccination.
- Develop an after-hours clinic for teen immunizations to improve compliance with vaccine schedule.

HPV Immunization Rates in the PCMH



Run-chart of the percentage of 11-18 year olds who received one HPV vaccine and 12-18 year olds who received 2 vaccines. Source: <u>Carepoint</u>

Missed Opportunities for HPV Immunization



Run chart of the percentage of outpatient visits with missed opportunities for HPV immunization. Source: AHLTA; retrospective chart review of 30 charts/month

Take Home Points

- Initiation of HPV series increased from 52% to 68% in a 2 year period, surpassing the national average initiation at 60%.
- Getting practice and feedback on delivering a <u>STRONG message using simulation</u> is a key to increasing HPV immunization.
- Reminders at huddles encourage providers to vaccinate at acute and well visits.

Future Directions

- Educate providers throughout the NCR regarding evidence based messages for immunization. We can bring course materials and hold role-play sessions for outlying clinics.
- Use teen organizations to provide education and immunization to teens in the community.
- We plan to share our simulation center curriculum at the American Academy of Pediatrics Section on Simulation at the 2018 National Conference Exhibition.

References

- CDC Tools and Materials for Your Office. https://www.cdc.gov/hpv/hcp/tools-materials.html
- Farmar AM, Love-Osbourne K, Chichester K, et al. Achieving High Adolescent HPV Vaccine Coverage. Pediatrics. 2016, 138(5).
- HPV Vaccine is Cancer Prevention: HPV Champion Tool Kit. American Academy of Pediatrics. https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/immunizations/HPV-Champion-Toolki asox

The views expressed in this presentation are those of the authors and do not necessarily reflect the official policy or position of the Department of the Navy, the Department of the Army, the Department of Defense, nor the US Government.

Provider Education and Preparation to Build the Bridge: Summary



- Clear, concise, accurate and <u>confident</u> education regarding the importance of HPV vaccination compliance and long term benefit
 - ☐ Establish educational opportunities to ensure all providers are competent, effective and compliant
 - ☐ Vaccination forms and educational materials readily available
- Any visit, every time
- Facts only and only if needed
- Persistence



LTC Lynn Collins, MBA, MSN, ANC USA (Ret.)

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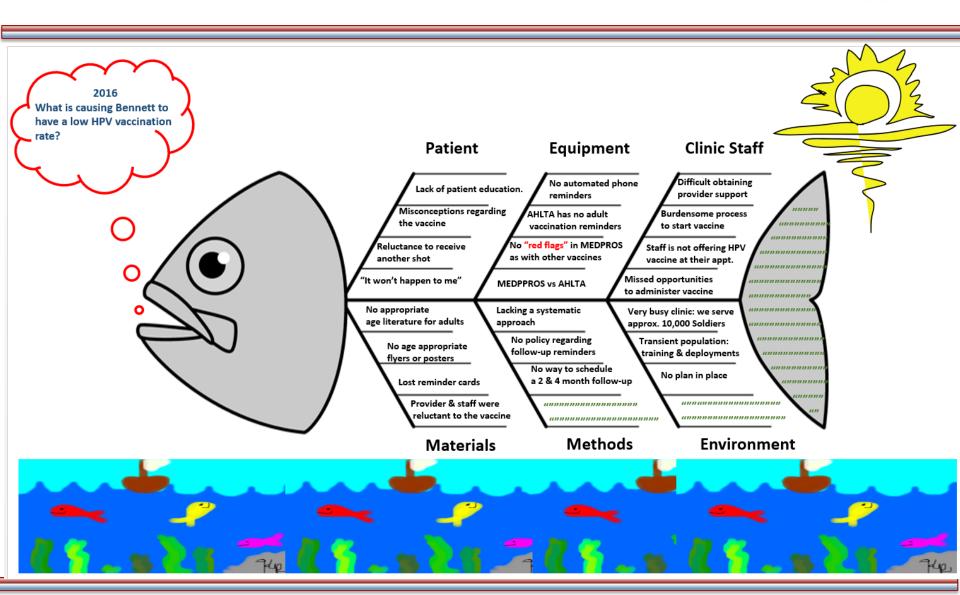






Fishbone Diagram-2016





Start with A Knowledge Base Pre-test and/or Survey



Start with a pre-quiz:

- 1. T/F HPV is one of the most common sexually transmitted infections.
- 2. T/F HPV is most common in people in their 30's.
- 3. T/F HPV can be transmitted through non-penetrating sexual activity.
- 4. T/F HPV-related cancers are not common in men.
- 5. T/F HPV 9 (Gardasil) is approved for both males and females.
- 6. T/F No serious safety concerns have been identified with the HPV 9 vaccine.
- 7. T/F HPV 9 is recommended to start at age 13 years.
- 8. T/F HPV vaccination could prevent more than 90% of cancers caused by HPV.
- 9. T/F Screening will not protect patients from most HPV cancers.
- 10. T/F HPV 9 can be given to pregnant women.

Source: Centers for Disease Control and Prevention: About HPV https://www.cdc.gov/hpv/parents/about-hpv.html & https://www.cdc.gov/cancer/hpv/statistics/cases.htm.

1.T 2.F 3.T 4.T 5.T 6.T 7. F 8.T 9.T 10.F

Survey of Knowledge



Question		Strongly Disagree		Neither		Strongly Agree		
			2	3	4	5	6	7
1	I recommend the HPV vaccine to my female and male patients starting at age 9 years							
2	I am comfortable with discussing the side effects of the HPV vaccine with my patients and their parents							
3	I understand the recommendations for the HPV vaccine for male and female patients							
4	I know the time interval between each vaccine							
5	I am comfortable answering questions my patients and their parents have about the HPV vaccine							

Fishbone Diagram-2020



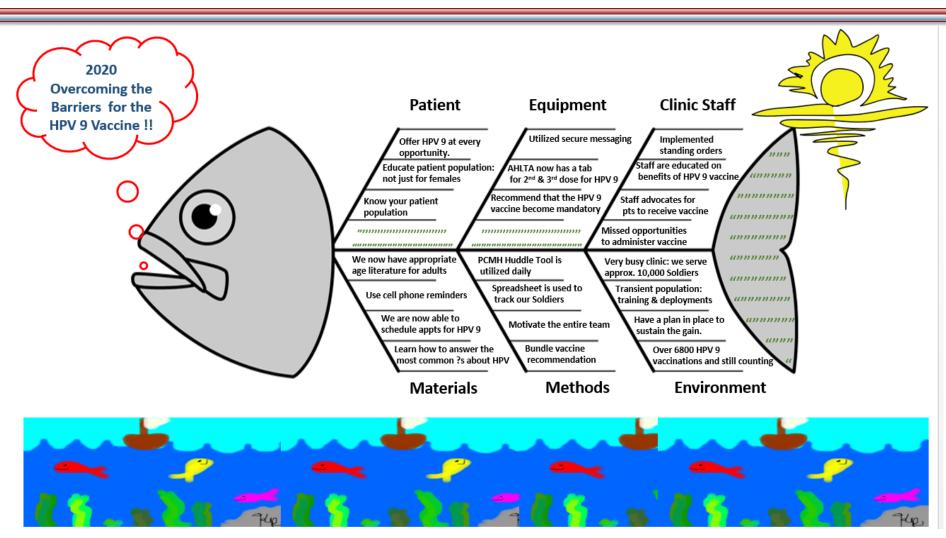
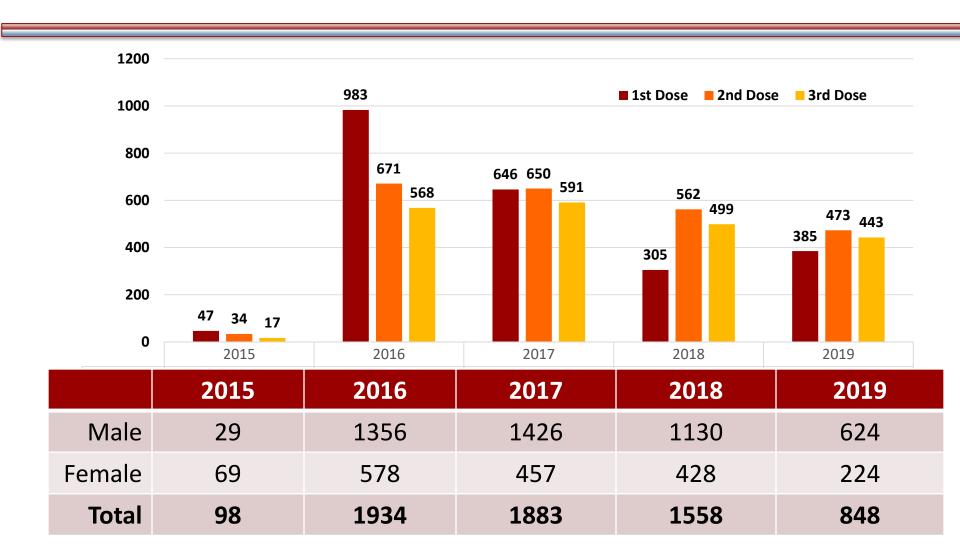


Image provided by of L.Collins and B. Johnson

Results: Total Doses of HPV Vaccine Given: 6874





Adapted from CDC - Attain & Maintain High HPV Vaccination Rates: HPV Vaccine is Cancer Prevention

Top 10 Tips For HPV Vaccination Success

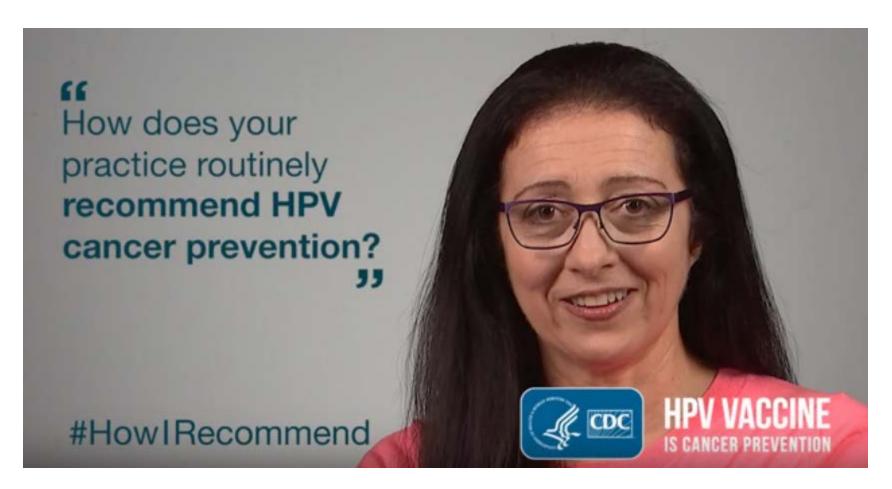


Appreciate the significance of achieving high HPV vaccination rates.	By boosting HPV vaccination rates among your patients, you will be preventing cancer.
2. Acknowledge the importance your recommendation has when it comes to patients choosing to be vaccinated.	Clinician recommendation is the number one reason patients decide to be vaccinated against HPV.
3. Use an effective approach by bundling your vaccine recommendation.	Recommended the HPV vaccine the same day and the same way you recommend all other vaccines.
4. Motivate your entire team to discuss the benefits of receiving the HPV vaccine.	Starting with your front desk, ensure each team member is aware of HPV vaccine's importance and is educated on proper vaccination practices and recommendations. Ensure the staff regularly check immunization records.
5. Implement systems to ensure you never miss an opportunity to vaccinate.	Establish a policy to vaccinate at every visit. Create a system to check immunization status ahead of all visits.
6. Encourage use of local resources.	Use local resources to achieve goals of increasing vaccination rates for HPV.
7. Know your population.	Deputize your team to assist with knowing who needs to be immunized.
8. Maintain a strong provider-patient relationship to help with challenging immunization conversations	It can be extremely gratifying when your patients who initially questioned you on the vaccine agrees to get vaccinated.
9. Learn how to answer the most common questions about the HPV vaccine	Be prepared to answer questions succinctly, accurately and empathically by using terms that they understand.
10. Use personal examples of how you chose to vaccinate family members or friends and why.	Providing personal examples shows you believe in the importance of immunizations, especially the HPV vaccine for cancer prevention.

Adapted from CDC - Attain & Maintain High HPV Vaccination Rates: HPV Vaccine is Cancer Prevention https://www.cdc.gov/hpv/downloads/top10-improving-practice.pdf

Bundle Vaccine Recommendations

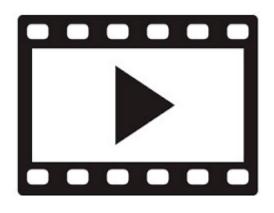




https://www.youtube.com/watch?v=IHwbz8 GSeU

Standby for Video





 Audio will come through your computer speakers

If needed, take a moment to unmute your computer speakers and increase the volume.

HPV vaccination related research in DoD



CAPT Natalie Y. Wells, MD, MPH Director, Military Population Heath Naval Health Research Center San Diego, CA











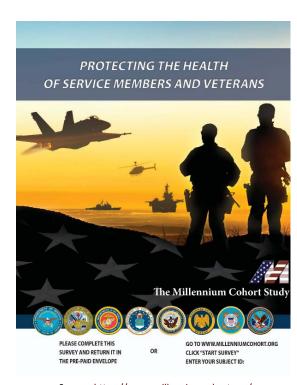




Millennium Cohort Study



- Largest and longest running cohort study in military history⁴
 - ☐ Initiated July 2001 (pre-9/11)
 - ☐ Includes >200,000 participants from all services, active duty, Reserve, and National Guard
- Participants complete surveys every 3 years (planned through 2068)
 - ☐ Standardized instruments assess physical and mental health outcomes and health behaviors (e.g., smoking)
- Survey data can be linked with a number of other data sources, including demographic, administrative, and medical encounter data



Source: https://www.millenniumcohort.org/

HPV Vaccination Among Participants in the Millennium Cohort Study, 2006-2017



Study Population

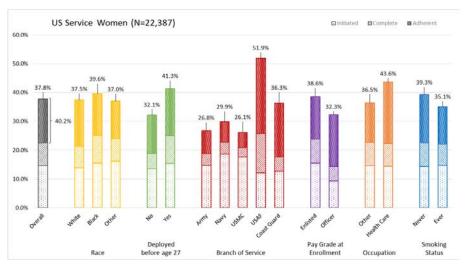
	Millennium Cohort Study (MCS) Participants
	☐ Active duty in 2006 (women) or 2009 (men) or later
	☐ Age 18-26 years in 2006 (women) or 2009 (men) or later
	Vaccination data over the period 2006-2017
	☐ Military's central immunization database (CVX codes)
	☐ Medical encounter data from the MHS Data Repository (CPT codes)
<u>4n</u>	<u>alysis</u>
	Outcomes of interest
	☐ Initiation: first dose of HPV vaccine by age 26
	Adherence: third dose of HPV vaccine within a year of initiation; restricted to initiators
	☐ Timing of initiation: first dose of HPV vaccine during boot camp; restricted to initiators ⁵

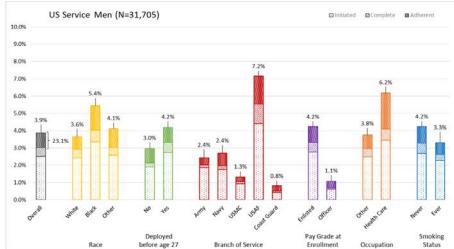
HPV Vaccination Among Participants in the Millennium Cohort Study, 2006-2017



Figure 1A. HPV Vaccine Initiation, Completion, and Adherence Among US Service Women by Selected Factors

Figure 1B. HPV Vaccine Initiation, Completion, and Adherence Among US Service Men by Selected Factors





Key Takeaways



- Compared to their respective counterparts, members of the Air Force and those in healthcare occupations had higher percentages of initiation and adherence.
- Initiation and adherence percentages were lower among self-reported ever smokers (cigarette) compared to never smokers.
- Service branch policies and/or practices affect observed differences in HPV coverage.
- Deployment influences HPV vaccine series initiation and completion.

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