You are the Key to HPV Cancer Prevention

Understanding the Burden of HPV Disease, the Importance of the HPV Vaccine Recommendation, and Communicating about HPV Vaccination

Speaker Name
Speaker Title
Speaker Affiliation

Date
Disclosure

*Please add any financial disclosures or conflicts of interest to this slide*
Summary

Stagnant HPV vaccination rates are leaving another cohort of boys and girls vulnerable to devastating HPV cancers. Vaccination could prevent most of these cancers.

Provided in this presentation is up-to-date information on HPV infection, HPV-related disease, and HPV cancers. HPV vaccine information and recommendations, as well as HPV vaccine safety and impact, are reviewed.

The presentation also provides evidence-based suggestions for successful HPV vaccine communication with patients and their parents, as well as the current HPV vaccine communication resources available from CDC.
Objectives

1. Define the importance of HPV vaccination for cancer prevention and the rationale for vaccinating at ages 11 or 12.

2. List the indications for HPV vaccine for girls and for boys.

3. Provide useful and compelling information about HPV vaccine to parents to aid in making the decision to vaccinate.

4. Locate resources relevant to current immunization practice.
Understanding the Burden

HPV INFECTION & DISEASE
HPV Types Differ in their Disease Associations

~40 Types

Mucosal sites of infection

High risk (oncogenic)
HPV 16, 18

Low risk (non-oncogenic)
HPV 6, 11

Low risk (non-oncogenic)
HPV 6, 11

Low risk (non-oncogenic)
HPV 6, 11

Cervical Cancer
Anogenital Cancers
Oropharyngeal Cancer
Cancer Precursors
Low Grade Cervical Disease

Genital Warts
Laryngeal Papillomas
Low Grade Cervical Disease

“Common”
Hand and Foot Warts

~ 80 Types

Cutaneous sites of infection

~ 80 Types
HPV Infection

- Most females and males will be infected with at least one type of HPV at some point in their lives
  - Estimated 79 million Americans currently infected
  - 14 million new infections/year in the US
  - HPV infection is most common in people in their teens and early 20s

- Most people will never know that they have been infected

Numbers of Cancers and Genital Warts Attributed to HPV Infections, U.S.

Cancers Attributed to HPV, U.S.

<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>Average # Cancers Per Year at Site (a)</th>
<th>Percent Probably Caused by HPV (a)</th>
<th>Number Probably Caused by HPV (a)</th>
<th>Percent HPV Cancers Probably Caused by HPV16 or 18 (b)</th>
<th>Number of Cancers Per Year Probably Caused by HPV16 or 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anus</td>
<td>4,767</td>
<td>93</td>
<td>4,500</td>
<td>93</td>
<td>4,200</td>
</tr>
<tr>
<td>Cervix</td>
<td>11,967</td>
<td>96</td>
<td>11,500</td>
<td>76</td>
<td>8,700</td>
</tr>
<tr>
<td>Oropharynx</td>
<td>11,726</td>
<td>63</td>
<td>7,400</td>
<td>95</td>
<td>7,000</td>
</tr>
<tr>
<td>Penis</td>
<td>1,046</td>
<td>36</td>
<td>400</td>
<td>87</td>
<td>300</td>
</tr>
<tr>
<td>Vagina</td>
<td>729</td>
<td>64</td>
<td>500</td>
<td>88</td>
<td>400</td>
</tr>
<tr>
<td>Vulva</td>
<td>3,136</td>
<td>51</td>
<td>1,600</td>
<td>86</td>
<td>1,400</td>
</tr>
<tr>
<td>TOTAL</td>
<td>33,371</td>
<td>25,900</td>
<td></td>
<td></td>
<td>22,000</td>
</tr>
</tbody>
</table>


Average Number of New HPV-Associated Cancers by Sex, in the United States, 2005-2009

**Women (N=20,413)**
- Cervix: 55% (n=11,279)
- Vulva: 15% (n=3,039)
- Oropharynx: 11% (n=2,317)
- Anus: 15% (n=3,084)
- Vagina: 4% (n=694)

**Men (N=12,002)**
- Oropharynx: 78% (n=9,312)
- Penis: 8% (n=1,003)
- Anus: 14% (n=1,687)

References:
How Many Cancers Are Linked with HPV Each Year?

![Bar Chart showing the average number of cases per year for various cancers attributed to HPV.](chart.png)
Cervical Cancer

- Cervical cancer is the most common HPV-associated cancer among women
  - 500,000+ new cases and 275,000 attributable deaths worldwide in 2008
  - 11,000+ new cases and 4,000 attributable deaths in 2011 in the U.S.

- 37% cervical cancers occur in women who are between the ages of 20 and 44
  - 13% (or nearly 1 in 8) between 20 and 34
  - 24% (or nearly 1 in 4) between 35 and 44


Age-adjusted rate per 100,000 females

- White: 7.4
- Black: 9.9
- American Indian/Alaska Native: 6.5
- Asian/Pacific Islander: 7.1
- Non-Hispanic: 7.4
- Hispanic: 11.3

HPV-Associated Cervical Cancer Incidence Rates by State, United States, 2004-2008

Rates of HPV-Associated Cancer and Median Age at Diagnosis Among Females, United States, 2004–2008

*The vaginal cancer statistics for women between the ages of 20 and 39 is not shown because there were fewer than 16 cases.

Annual Report to the Nation on the Status of Cancer: HPV-Associated Cancers

- From 2000 to 2009, oral cancer rates increased
  - 4.9% for Native American men
  - 3.9% for white men
  - 1.7% for white women
  - 1% for Asian men

- Anal cancer rates doubled from 1975 to 2009

- Vulvar cancer rates rose for white and African-American women

- Penile cancer rates increased among Asian men

Age-adjusted rate per 100,000 females and males

- **Race**
  - White: 2.0
  - Black: 1.4
  - American Indian/Alaska Native: 1.6

- **Ethnicity**
  - Asian/Pacific Islander: 0.7
  - Non-Hispanic: 1.9
  - Hispanic: 1.4

Females = solid
Males = diagonal

HPV-Associated Oropharyngeal Cancer Rates by Race and Ethnicity, United States, 2004–2008

Age-adjusted rate per 100,000 females and males

Race

<table>
<thead>
<tr>
<th>Race</th>
<th>White</th>
<th>Black</th>
<th>Al/AN</th>
<th>A/PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>1.4</td>
<td>1.4</td>
<td>0.8</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Non-Hispanic</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>1.5</td>
<td>0.7</td>
</tr>
</tbody>
</table>

Females = solid
Males = diagonal

Rates of HPV-Associated Cancer and Median Age at Diagnosis Among Males, United States, 2004–2008

*The penile cancer statistics for men between the ages of 20 and 39 is not shown because there were fewer than 16 cases.

Without vaccination, annual burden of genital HPV-related disease in U.S. females:

- 4,000 cervical cancer deaths
- 10,846 new cases of cervical cancer
- 330,000 new cases of HSIL: CIN2/3 (high grade cervical dysplasia)
- 1 million new cases of genital warts
- 1.4 million new cases of LSIL: CIN1 (low grade cervical dysplasia)
- 3 million cases and $7 billion

American Cancer Society. 2008; Schiffman *Arch Pathol Lab Med.* 2003; Koshiol *Sex Transm Dis.* 2004; Insinga, Pharmacoeconomics, 2005
Evidence-Based HPV Prevention

HPV VACCINE
HPV Prophylactic Vaccines

- Recombinant L1 capsid proteins that form “virus-like” particles (VLP)
- Non-infectious and non-oncogenic
- Produce higher levels of neutralizing antibody than natural infection
# HPV Vaccine

<table>
<thead>
<tr>
<th>Quadrivalent/HPV4 (Gardasil)</th>
<th>Name</th>
<th>Bivalent/HPV2 (Cervarix)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merck</td>
<td>Manufacturer</td>
<td>GlaxoSmithKline</td>
</tr>
<tr>
<td>6, 11, 16, 18</td>
<td>Types</td>
<td>16, 18</td>
</tr>
</tbody>
</table>
| **Females**: Anal, cervical, vaginal and vulvar precancer and cancer; Genital warts | Indications | **Females**: Cervical precancer and cancer  
**Males**: Anal precancer and cancer; Genital warts | Hypersensitivity to yeast | Contraindications | Hypersensitivity to latex (latex only contained in pre-filled syringes, not single-dose vials) |
| 3 dose series: 0, 2, 6 months | Schedule (IM) | 3 dose series: 0, 1, 6 months |
Evolution of recommendations for HPV vaccination in the United States

**Quadrivalent Routine**, females 11 or 12 yrs* and 13-26 yrs not previously vaccinated

**Quadrivalent or Bivalent Routine**, females 11 or 12 yrs* and 13-26 yrs not previously vaccinated

**Quadrivalent May be given**, males 9-26 yrs*

**Quadrivalent Routine**, males 11 or 12 yrs* and 13-21 yrs not previously vaccinated

**Quadrivalent May be given, 22-26 yrs**

Quadrivalent (HPV 6,11,16,18) vaccine; Bivalent (HPV 16,18) vaccine

Can be given starting at 9 years of age;

** For MSM and immunocompromised males, quadrivalent HPV vaccine through 26 years of age
ACIP Recommendation and AAP Guidelines for HPV Vaccine

- Routine HPV vaccination recommended for both males and females ages 11-12 years
- Also ages 13-21 years for males; 13-26 for females
- Vaccine can be given starting at age 9 years of age for both males and females; vaccine can be given ages 22-26 years for males

HPV Vaccination Schedule

- ACIP Recommended schedule is 0, 1-2*, 6 months
  - Following the recommended schedule is preferred
- Minimum intervals
  - 4 weeks between doses 1 and 2
  - 12 weeks between doses 2 and 3
  - 24 weeks between doses 1 and 3
- Administer IM

HPV Vaccine is an Anti-Cancer Vaccine

Reduction in prevalence of vaccine-type HPV by 56% in girls age 14-19 with vaccination rate of just ~30%

Our low vaccination rates will lead to 50,000 girls developing cervical cancer – that would be prevented if we reach 80% vaccination rates

For every year we delay increasing vaccination rates to this level, another 4,400 women will develop cervical cancer

Markowitz et al. JID 2013;208:385-393. CDC unpublished model – H. Chesson et al - for girls in US <13 at present, diff. betw 30% vs. 80% 3-dose coverage, lifetime cerv. ca. risk
HPV Vaccine Is Safe, Effective, and Provides Lasting Protection

- **HPV Vaccine is SAFE**
  - Safety studies findings for HPV vaccine similar to safety reviews of MCV4 and Tdap vaccines

- **HPV Vaccine WORKS**
  - High grade cervical lesions decline in Australia (80% of school aged girls vaccinated)
  - Prevalence of vaccine types declines by more than half in United States (33% of teens fully vaccinated)

- **HPV Vaccine LASTS**
  - Studies suggest that vaccine protection is long-lasting; no evidence of waning immunity

HPV VACCINE SAFETY
HPV Vaccine Safety Data Sources

- Post-licensure safety data (VAERS)$^1$
- Post-licensure observational comparative studies (VSD)$^2$
- Ongoing monitoring by CDC and FDA
- Post-licensure commitments from manufacturers
  - Vaccine in pregnancy registries
  - Long term follow-up in Nordic countries
- Official reviews
  - WHO’s Global Advisory Committee on Vaccine Safety $^3$
  - Institute of Medicine’s report on adverse effects and vaccines, 2011$^4$

$^1$Vaccine Adverse Events Reporting System, http://vaers.hhs.gov/index
HPV Vaccine Safety Monitoring

The Vaccine Adverse Event Reporting System (VAERS)
- An early warning public health system where people can report adverse health events following vaccination, that helps CDC and FDA detect possible new, unexpected, or increased trends in reported adverse events.

The Vaccine Safety Datalink (VSD)
- Collaboration between CDC and several healthcare organizations which uses de-identified health records to monitor and evaluate adverse events following vaccination.

The Clinical Immunization Safety Assessment (CISA)
- Collaboration between CDC and several medical research centers in the United States to conduct research to understand how adverse events might be caused by vaccines.
HPV Vaccine Safety Monitoring: VAERS

No new safety concerns have been identified in post-licensure vaccine safety surveillance among male or female recipients of HPV4 vaccine.

Among the 7.9% of reports coded as “serious”, most frequently cited are headache, nausea, vomiting, fatigue, dizziness, syncope, generalized weakness.

Syncope continues to be a frequently reported adverse event following immunization among adolescents.

Adherence to a 15-minute observation period after vaccination is encouraged.

http://www.cdc.gov/vaccinesafety/vaccines/HPV/Index.html#monitor
Trends in Total and Serious Female HPV4 Vaccine Reports to VAERS by Year, June 2006 – March 2013 (N=21,194)

Year Report Received

- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013

Number of Reports

- Female Serious HPV4 reports
- Female Total HPV4 Reports
HPV4 Rapid Cycle Analysis Results: Vaccine Safety Datalink

- VSD active surveillance of HPV4 among females confirmed no significant risk for any of the pre-specified adverse events after vaccination
  - GBS, seizures, syncope, appendicitis, stroke, venous thromboembolism, and other allergic reactions
  - Additional study is needed for a possible non-statistical association between HPV4 and venous thromboembolism
- No increase in rate of anaphylaxis following HPV4 as compared to previous VSD studies
- Extended follow-up for GBS and stroke among females 9-26 years of age found no increased risk

Markowitz L, ACIP presentation, June 2013
Institute of Medicine Report

*Adverse Effects of Vaccines: Evidence and Causality*

- IOM reviewed possible associations between adverse health events and eight vaccines
  - Evidence “favors acceptance” of a causal relationship between HPV vaccine and anaphylaxis (yeast and latex components)
  - Evidence “convincingly supports” a causal relationship between the injection of a vaccine and syncope
  - Inadequate evidence was found for causal relationships between HPV vaccination and 12 other specific health events studied

Inadvertent Administration of HPV Vaccine during Pregnancy

- No safety concerns* raised by HPV4 in pregnancy registry
- CDC/FDA continue to monitor the safety of HPV vaccine, including reports in pregnant women through VAERS
- A retrospective analysis of pregnancy-associated HPV4 VAERS reports is in progress (2005-2012)
  - >85% of reports were submitted from the Merck Pregnancy Registry so anticipate a similar safety profile
- For VSD, descriptive data of adverse events following inadvertent exposure to HPV4 during pregnancy by 2015

*death, life-threatening illness, hospitalization, prolongation of existing hospitalization, persistent or significant disability, congenital malformations
HPV VACCINE IMPACT
HPV Vaccine
Duration of Immunity

Studies suggest that vaccine protection is long-lasting; no evidence of waning immunity

- Available evidence indicates protection for at least 8-10 years
- Multiple cohort studies are in progress to monitor the duration of immunity

Monitoring Impact of HPV Vaccine Programs: HPV-associated Outcomes

**Early Outcomes** (Years)
- HPV Prevalence
- Genital warts

**Mid Outcomes** (Years to Decades)
- CIN/Precancers

**Late Outcomes** (Decades)
- HPV-associated cancers
HPV Vaccine Impact: HPV Prevalence Studies

**NHANES Study**

- National Health and Nutrition Examination Survey (NHANES) data used to compare HPV prevalence before the start of the HPV vaccination program with prevalence from the first four years after vaccine introduction.
- In 14-19 year olds, vaccine-type HPV prevalence decreased 56 percent, from 11.5 percent in 2003-2006 to 5.1 percent in 2007-2010.
- Other age groups did not show a statistically significant difference over time.
- The research showed that vaccine effectiveness for prevention of infection was an estimated 82 percent.


*weighted prevalence

HPV Vaccine Impact: HPV Prevalence Studies, continued

Clinic-Based Studies

- Significant decrease from 24.0% to 5.3% in HPV vaccine type prevalence in at-risk sexually active females 14-17 years of age attending 3 urban primary care clinics from 1999-2005, compared to a similar group of women who attended the same 3 clinics in 2010.

- Significant declines in vaccine type HPV prevalence in both vaccinated and unvaccinated women aged 13-26 years who attended primary care clinics from 2009-2010 compared to those from the pre-vaccine period (2006-2007).

Impact of HPV vaccination in Australia

Proportion of Australian born females and males diagnosed as having genital warts at first visit, by age group, 2004-11

Impact of HPV Vaccine on HPV 16/18 Precancers

- CIN2+ cases women 18 to 31 years of age were reported from pathology laboratories in 5 states from 2008 to 2011
  - Of 5083 CIN2+ cases, 3855 had vaccination histories investigated, and 1900 had vaccine history documented

- Among women with CIN2+ who had started HPV vaccine more than 24 months before their Pap smear, there was a significant reduction in HPV 16/18-related lesions
  - These results suggest an early impact of the HPV vaccine on vaccine-type precancers

Anogenital Wart Prevalence per 1000 person-years, US Private Insurance Enrollees, by Age, 2003-2010

Flagg, et al. AJPH 2013
Impact of Bivalent HPV Vaccine on Oral HPV Infection

Of 7,466 women 18-25 years of age randomized to receive HPV vaccine or hepatitis A vaccine, 5,840 provided oral specimens at the final 4-year study visit.

- Oral prevalence of identifiable mucosal HPV was relatively low (1.7%).

There were 15 HPV 16/18 infections in the hepatitis A comparison group and 1 in the HPV vaccine group, for an estimated vaccine efficacy of 93.3%.

- These results suggest that the vaccine provides strong protection against oral HPV 16/18 infection and may prevent HPV 16/18-associated oropharyngeal cancers.

Herrero R, et al. Reduced prevalence of oral human papillomavirus (HPV) 4 years after bivalent HPV vaccination in a randomized clinical trial in Costa Rica. PLOS ONE 2013;8:e68329
HPV VACCINE COVERAGE
Strong Start?
Adolescent Immunization Coverage, US 13-17 year olds

National Immunization Survey-Teen (NIS-Teen) 2006 vs. 2007

- MCV4: 11.7% in 2006, 32.4% in 2007
- Tdap: 10.8% in 2006, 30.4% in 2007
- HPV (females only): 25.1% in 2007

CDC. National and State Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2012
MMWR 2013; 62(34);685-693.
National Estimated Vaccination Coverage Levels among Adolescents 13-17 Years, National Immunization Survey-Teen, 2006-2012

Actual and Achievable Vaccination Coverage if Missed Opportunities Were Eliminated: Adolescents 13-17 Years, NIS-Teen 2012

Among girls unvaccinated for HPV, 84% had a missed opportunity

Missed opportunity: Healthcare encounter when some, but not all ACIP-recommended vaccines are given. HPV-1: Receipt of at least one dose of HPV.

26 million: number of girls under 13 years of age in the United States

168,400: number who will develop cervical cancer if none are vaccinated

54,100: number will die from cervical cancer if none are vaccinated

For each year we stay at 30% coverage instead of achieving 80%

4,400: number of future cervical cancer cases we will not prevent

1,400: number of cervical cancer deaths we will not prevent

Adapted from Chesson HW et al, Vaccine 2011;29:8443-50
HPV Vaccination Coverage (≥1 dose) among Girls 13-17 Years, by State, 2012 NIS-Teen, U.S.
Evidence-based strategies to improve vaccination coverage

- **Reminder/recall system**
  - Provider level (e.g., EMR prompts)
  - Parent/patient level (e.g., postcards, telephone calls, text messaging)

- **Standing orders**

- **Provider assessment and feedback**
  - Assessment of vaccination coverage levels within the practice and discussion of strategies to improve vaccine delivery

- **Utilizing immunization information systems**

[www.thecommunityguide.org/vaccines/universally/index.html](http://www.thecommunityguide.org/vaccines/universally/index.html)
Impact of Reminder/Recall on Vaccination Rates among Adolescents

![Bar chart showing vaccination rates for Tdap, MCV4, and HPV-1 with intervention and control groups.](chart.png)

*Impact of Reminder/Recall on Vaccination Rates among Adolescents

**Percent**

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tdap</td>
<td>49.5*</td>
<td>40.8</td>
</tr>
<tr>
<td>MCV4</td>
<td>44.3*</td>
<td>29.5</td>
</tr>
<tr>
<td>HPV-1</td>
<td>26.5*</td>
<td>15.3</td>
</tr>
</tbody>
</table>

*p<0.05

Percentages of adolescents 11-18 years of age who received any vaccination at 4, 12, and 24 weeks: Text4Health-Adolescents, New York City, 2009
AFIX: Quality Improvement

Assessment

Incentives

Feedback

eXchange
**Suggestions to Improve Your Immunization Services**

Following are several ideas that healthcare professionals and practices can use to improve their efficiency in administering vaccines and increase their immunization rates. Read each idea and check the response that applies to your work setting.

- **Yes** = We already practice this.
- **No** = We don’t like this idea, or it couldn’t work in our practice setting.
- **Partly** = We do some of this (or do it sometimes); we will consider it.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Partly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In all exam rooms, we post the current, official U.S. immunization schedule for children and/or adults or variations thereof (for example, the official schedule of a medical society or of a state health department).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. We use the official “catch-up” schedule for children for advice on how to bring children up to date on their vaccinations when they have fallen behind.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. We are familiar with special vaccination recommendations for high-risk patients (e.g., special groups who need hepatitis A, hepatitis B, pneumococcal, influenza vaccines).</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. When scheduling appointments, we remind patients/parents to bring along their (or their</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Prior to patient visits, we review the immunization record for each patient and flag charts of those who are due or overdue.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. We provide vaccination services during some evening and/or weekend hours.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Patients can walk in during office hours for a “nurse only” visit and get vaccinated.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. We use all patient encounters (including acute-care and follow-up visits) to assess and provide vaccinations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Whenever a patient comes in, the staff routinely asks to see his/her immunization record to determine if the patient received vaccinations at another healthcare site.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. If a patient tells us “I’m up to date with my</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
URGENT CALL TO PREVENT CANCER – TAKE THE HPV VACCINE CHALLENGE

YOUR HELP IS NEEDED TO INCREASE HPV VACCINATION RATES
Health care providers and public health professionals in Massachusetts and across the country have started a campaign to dramatically increase adolescent vaccination rates against HPV. For each year we stay at current vaccination rates, girls and boys will go on to acquire cervical, oral, anal and other HPV-related cancers.

THE PROBLEM
Our three-dose HPV vaccine coverage has stagnated at 33% nationally and missed opportunities for vaccination are high. The CDC, AAP and AAFP recommend that all 11-12 year-olds receive HPV, meningococcal, and Tdap vaccines together.

WHAT CAN PROVIDERS DO?
The most significant factor in parents’ decision to vaccinate their children with HPV vaccine is a clear, brief, and strong recommendation from the child’s healthcare provider. Research shows that simply changing the wording used to introduce the HPV vaccine makes a tremendous difference. Try changing your discussion for one week, and see how it improves your vaccine acceptance.

| Providers: TAKE THE HPV VACCINE CHALLENGE | Start your vaccine discussion with all 11 and 12 year-olds and their parents by saying: “Your child needs 3 vaccines today – HPV, Tdap, and meningococcal.” |

This simple change works because by putting HPV first, parents perceive that it’s a normal, recommended vaccine, not a controversial or optional vaccine. CDC provides a “Tips and Time-savers for Talking with Parents about HPV Vaccine” resource that translates research into effective communication tools: [http://www.cdc.gov/vaccines/who/teens/for-hcp-tipsheet-hpv.pdf](http://www.cdc.gov/vaccines/who/teens/for-hcp-tipsheet-hpv.pdf)
Talking about HPV vaccine

FRAMING THE CONVERSATION
Evidence-Based Messages

Parents should:
- Realize HPV vaccine is CANCER PREVENTION
- Understand HPV vaccine is best at 11 or 12 years old
- Recognize importance of getting all 3 shots

Healthcare Professionals should:
- Be familiar with all of the indications for HPV vaccine
- Make strong recommendations for receiving vaccine at 11 or 12
- Be aware of, and interested in, systems that can improve practice vaccination rates
HPV Vaccine Communications During the Healthcare Encounter

- HPV vaccine is often presented as ‘optional’ whereas other adolescent vaccines are recommended.
- Some expressed mixed or negative opinions about the ‘new vaccine’ and concerns over safety/efficacy.
- When parents expressed reluctance, providers were hesitant to engage in discussion.
- Some providers shared parents’ views that teen was not at risk for HPV and could delay vaccination until older.

Goff S et al. Vaccine 2011;10:7343-9
Hughes C et al. BMC Pediatrics 2011;11:74
Top 5 reasons for not vaccinating daughter, among parents with no intention to vaccinate in the next 12 months, NIS-Teen 2012

- Not sexually active
- Lack of knowledge
- Safety concerns/side effects
- Not recommended by provider
- Not needed or necessary**

* Not mutually exclusive.
** Did not know much about HPV or HPV vaccine.

National and State Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2012
MMWR 2013; 62(34);685-693.
Is she really too young? Take 1
(a conversation you may be familiar with)

**Provider:** Meghan is due for some shots today: Tdap and the meningococcal vaccine. There is also the HPV vaccine...

**Parent:** Why does she need an HPV vaccine? She’s only 11!

**Provider:** We want to make sure she gets the shots before she becomes sexually active.

**Parent:** Well I can assure you Meghan is not like other girls-she’s a long way off from that!

**Provider:** We can certainly wait if that would make you feel more comfortable.
Framing the HPV Vaccine Conversation

Tips and Time-savers for Talking with Parents about HPV Vaccine

Recommend the HPV vaccine series the same way you recommend the other adolescent vaccines. For example, you can say “Your child needs these shots today,” and name all of the vaccines recommended for the child’s age.

Parents may be interested in vaccinating, yet still have questions. Taking the time to listen to parents’ questions helps you save time and give an effective response. CDC research shows these straightforward messages work with parents when discussing HPV vaccine—and are easy for you or your staff to deliver.

CDC RESEARCH SHOWS:
The “HPV vaccine is cancer prevention” message resonates strongly with parents. In addition, studies show that a strong recommendation from you is the single best predictor of vaccination.

TRY SAYING:
- HPV vaccine is very important because it prevents cancer. I want your child to be protected from cancer. That’s why I’m recommending that your daughter/son receive the first dose of HPV vaccine today.

CDC RESEARCH SHOWS:
Disease prevalence is not understood, and parents are unclear about what the vaccine actually protects against.

TRY SAYING:
- HPV can cause cancers of the cervix, vagina, and vulva in women, cancer of the penis in men, and cancers of the anus and the mouth or throat in both women and men. There are about 26,000 of these cancers each year—and most could be prevented with HPV vaccine. There are also many more precancerous conditions requiring treatment that can have lasting effects.

CDC RESEARCH SHOWS:
Parents want a concrete reason to understand the recommendation that 11–12 year olds receive HPV vaccine.

TRY SAYING:
- We’re vaccinating today so your child will have the best protection possible long before the start of any kind of sexual activity. We vaccinate people well before they are exposed to an infection, as is the case with measles and the other recommended childhood vaccines. Similarly, we want to vaccinate children well before they get exposed to HPV.

CDC RESEARCH SHOWS:
Parents may be concerned that vaccinating may be perceived by the child as permission to have sex.

TRY SAYING:
- Research has shown that getting the HPV vaccine does not make kids more likely to be sexually active or start having sex at a younger age.

You are the key to cancer prevention.
What’s in a recommendation?

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

- In focus groups and surveys with moms, having a doctor recommend or not recommend the vaccine was an important factor in parents’ decision to vaccinate their child with the HPV vaccine

- Not receiving a recommendation for HPV vaccine was listed as a barrier by mothers

Unpublished CDC data, 2013.
Just another adolescent vaccine

Successful recommendations group all of the adolescent vaccines

- Recommend the HPV vaccine series the same way you recommend the other adolescent vaccines
- Moms in focus groups who had not received a doctor’s recommendation stated that they questioned why they had not been told or *if the vaccine was truly necessary*
- Many parents responded that they trusted their child’s doctor and would get the vaccine for their child as long as they received a recommendation from the doctor

Unpublished CDC data, 2013.
Providers underestimate the value parents place on HPV vaccine

Try saying:

Your child needs three shots today: HPV vaccine, meningococcal vaccine and Tdap vaccine.

You child will get three shots today that will protect him/her from many cancers caused by HPV, as well as to prevent tetanus, diphtheria, pertussis and meningitis.
A case of vaccine hesitancy?

- Parents may be interested in vaccinating, yet still have questions
  - However, many parents didn’t have questions or concerns about HPV vaccine
  - A question from a parent does not mean they are refusing or delaying
  - Taking the time to listen to parents’ questions helps you save time and give an effective response
  - CDC research shows these straightforward messages work with parents when discussing HPV vaccine—and are easy for you or your staff to deliver

Unpublished CDC data, 2013.
An anti-cancer vaccine

- The “HPV vaccine is cancer prevention” message resonates strongly with parents
  - In focus groups and online panels, mothers wanted more information on the types of HPV cancers
  - In focus groups mothers stated they were influenced to vaccinate their child because HPV vaccine prevents cancer, they had a family history of cervical cancers, and/or because they had a personal experience with cervical cancer

Unpublished CDC data, 2013.
Try saying:

**HPV vaccine is very important because it prevents cancer.**

**I want your child to be protected from cancer.**

**That’s why I’m recommending that your daughter/son receive the first dose of the HPV vaccine series today.**
Tell me doctor, how bad is it?

- Parents don’t know that HPV is very common
- Disease prevalence is not understood
- Parents are unclear about what the vaccine actually protects against

Unpublished CDC data, 2013.
Try saying:

Persistent HPV infection can cause cancers of the cervix, vagina, and vulva in women, cancer of the penis in men, and cancers of the anus and the mouth or throat in both women and men.

There are about 26,000 of these cancers each year—and most could be prevented with HPV vaccine.

There are also many more precancerous conditions requiring treatment that can have lasting effects.
HPV Transmission

- Almost everyone will be infected but most people will never know
- 47% of high school students have already engaged in sexual (vaginal-penile) intercourse
  - 6% of students had sexual intercourse before age 13
  - 1/3 of 9th graders and 2/3 of 12th graders have engaged in sexual intercourse
  - 1 in 7 high school students (all grades) have had sexual intercourse with 4 or more partners

Kahn. MMWR. 2014; 63(4)
Try saying:

HPV is so common that almost everyone will be infected at some point. It is estimated that 79 million Americans are currently infected with 14 million new HPV infections each year.

Most people infected will never know. Even if your child waits until marriage to have sex, or only has one partner in the future, he/she could still be exposed, if their partner has already been exposed.
Parents want a concrete reason why 11-12 year olds should receive HPV vaccine

In audience research with moms, almost all respondents were unaware of the correct age range the vaccine was recommended.

Respondents also missed the concept of vaccinating before sexual activity.

Unpublished CDC data, 2013.
Rationale for vaccinating early:
Protection prior to exposure to HPV

Teen Sexual Activity

Adolescence is a time of rapid change.

% of adolescents who have had sex by each age

- Female
- Male

www.guttmacher.org
Try saying:

We're vaccinating today so your child will have the best protection possible long before the start of any kind of sexual activity.

We vaccinate people well before they are exposed to an infection, as is the case with measles and the other routinely recommended childhood vaccines. Similarly, we want to vaccinate children long before they begin any type of sexual activity and are exposed to HPV.

Also HPV vaccine produces a better immune response in preteens than it does in older teens and young women.
A green light for sexual activity?

Parents may be concerned that vaccinating may be perceived by the child as permission to have sex

- In focus groups, some parents expressed concern that in getting HPV vaccine for their child, they would be giving their child permission to have sex.
- This was one of the top four reasons respondents gave when asked why they would not vaccinate their daughter.
- A few parents expressed that while they wanted their child to “wait to have sex” they understood that might not be the case.

Unpublished CDC data, 2013.
Receipt of HPV vaccine does not increase sexual activity or decrease age of sexual debut

- Kaiser Permanente Center for Health Research
- 1,398 girls who were 11 or 12 in 2006, 30% of whom were vaccinated, followed through 2010
- No difference in markers of sexual activity, including
  - Pregnancies
  - Counseling on contraceptives
  - Testing for, or diagnoses of, sexually transmitted infections
Try saying:

Multiple research studies have shown that getting the HPV vaccine does not make kids more likely to be sexually active.

These studies have also shown that getting the HPV vaccine does not make kids more likely to start having sex a younger age.
But she’s too young!

Parents might believe their child won't be exposed to HPV because they aren't sexually active or may not be for a long time.

In focus groups, some moms couldn’t understand how their child could become infected even if they waited until marriage to have sex.

Some moms stated that they didn’t think HPV infection was very common because they had never heard that it was or didn’t know anyone who had an HPV infection or HPV disease.

Unpublished CDC data, 2013.
Strength of HPV Vaccine Recommendation for Female Patients, Pediatricians and Family Physicians (N=609)

- **11-12 y.o. females**
  - Strongly recommend: 51%
  - Recommend, but not strongly: 36%
  - Recommend against: 8%

- **13-15 y.o. females**
  - Strongly recommend: 79%
  - Recommend, but not strongly: 15%

- **16-18 y.o. females**
  - Strongly recommend: 85%
  - Recommend, but not strongly: 10%
Try saying:

We don’t wait until exposure occurs to give any other routinely recommended vaccine. HPV vaccine is also given when kids are 11 or 12 years old because it produces a better immune response at that age. That’s why it is so important to start the shots now and finish them in the next 6 months.
Would you give it to your child?

- Emphasizing your personal belief in the importance of HPV vaccine helps parents feel secure in their decision.
  - Some respondents in focus groups stated that they would feel more comfortable knowing that the doctor had vaccinated their own child or was planning to (if the child was <11).
  - Respondents in an online survey stated that knowing that oncologists supported the recommendation made them more likely to get their child vaccinated.

Try saying:

I strongly believe in the importance of this cancer-preventing vaccine.

I have given HPV vaccine to my son/daughter (or grandchild/niece/nephew/friend's children).

Experts, such as the American Academy of Pediatrics, cancer doctors, and the CDC, also agree that getting the HPV vaccine is very important for your child.
Scared of side effects

Understanding that the side effects are minor and emphasizing the extensive research that vaccines must undergo can help parents feel reassured.

- Moms in focus groups stated concerns about both short term and long term vaccine safety as a reason that they would not vaccinate their child.

- Respondents were not aware that HPV vaccine was tested in adolescents and adults and were concerned that their child’s fertility could be affected by the vaccine.

Unpublished CDC data, 2013.
Try saying:

HPV vaccine has been very carefully studied by scientific experts and it’s safety is continually monitored.

This is not a new vaccine and for years HPV vaccine has been shown to be very effective and very safe. HPV vaccine has a similar safety profile to the meningococcal and Tdap vaccines.

Like other shots, side effects can happen, but most are mild, primarily pain or redness in the arm. This should go away quickly, and HPV vaccine has not been associated with any long-term side effects.
Try saying:

Since 2006, about 62 million doses of HPV vaccine have been distributed in the U.S., and in the years of HPV vaccine safety studies and monitoring, no serious safety concerns have been identified.

There is no data to suggest that getting HPV vaccine will have an effect on future fertility. However, persistent HPV infection can cause cervical cancer and the treatment of cervical cancer can leave women unable to have children.

Even treatment for cervical pre-cancer can put a woman at risk for problems with her cervix during pregnancy which could cause preterm delivery or problems.
When do we come back?

Many parents do not know that the full vaccine series requires 3 shots.

Your reminder will help them to complete the series.

In focus groups, most respondents did not know the dosing schedule for HPV vaccine.

Unpublished CDC data, 2013.
Try saying:

I want to make sure that your son/daughter receives all 3 shots of HPV vaccine to give them the best possible protection from cancer caused by HPV infection.

Please make sure to make appointments for the second and third shots on the way out, and put those appointments on your calendar before you leave the office today!
**Addressing all concerns in 45 seconds**

**Provider:** Meghan is due for some shots today: HPV, meningococcal vaccine, and Tdap.

**Parent:** Why does she need an HPV vaccine? She’s only 11!

**Provider:** The HPV vaccine will help protect Meghan from cancer caused by HPV infection. We know that HPV infection is dangerous—33,000 people in the US get cancer from HPV every year. And we know that the HPV vaccine is safe—over 100 million doses have been given and there haven’t been any serious side effects.

**Parent:** But it just seems so young...

**Provider:** Vaccines only work if they’re given before exposure—we never wait until a child is at risk to give any recommended vaccines. HPV vaccine is also given when kids are 11 or 12 years old because it produces a better immune response at that age. That’s why it is so important to start the shots now and finish all 3 of them in the next 6 months.
Parents weigh risks and benefits

- Parents who declined vaccine and those who accepted had similar concerns
- Both had concerns related to safety and sexuality but accepters weighed cancer prevention more heavily
- Most parents also believed their daughters would at some point be at risk for STIs
- Providers overestimated parents concerns

Perkins et al, Clin Peds 2013
Perkins et al J of Peds 2010
Perkins et al J Healthcare Poor Underserved 2013
HPV Vaccine is Cancer Prevention

1. HPV vaccine is safe, effective, and lasting protection against most cancers caused by HPV infection
2. HPV vaccination is best when given at 11 or 12 years of age
3. HPV vaccination rates have plateaued, leaving another generation at risk for HPV cancers
Clear, Concise, and Consistent Communication

HPV VACCINE MESSAGES
1. HPV Vaccine Is Safe, Effective, and Provides Lasting Protection

A. HPV Vaccine is SAFE
   - No serious sides effects
   - HPV vaccine safety similar to MCV4 and Tdap vaccine safety

B. HPV Vaccine WORKS
   - High grade cervical lesions decline in Australia
   - Prevalence of vaccine types declined by 56% in U.S.

C. HPV Vaccine LASTS
   - No evidence of waning immunity

2. HPV Vaccination is best at 11 or 12

A. HPV vaccine works best when the entire series has been given before exposure to HPV
   - Very little exposure to HPV at 11 and 12 years of age
   - 1/3 of 9th graders and 2/3 of 12th graders have engaged in sexual intercourse
   - 24% of high school seniors have had sexual intercourse with four or more partners

B. Higher immune response from HPV vaccine in preteens than in older teens
3. HPV Vaccination Rates have Plateaued

A. Stagnant HPV vaccination rates are leaving another generation vulnerable to devastating HPV cancers
   ➤ Most of these cancers could be prevented with vaccination

B. HPV vaccination rates are lagging behind the rates of the other vaccines for preteens and teens
   ➤ In 2012, 8 in 10 girls who had not yet started the HPV vaccine series saw a healthcare provider and received at least one vaccine, but not HPV vaccine; if these girls all received HPV vaccine, first dose coverage could be be 93%

C. High HPV vaccination coverage is possible with the current healthcare structure
High-Impact Statements

 HPV cancers are devastating to men and women
  ➤ This is especially true for the cancers that are not routinely screened (cancers of the anus, mouth/throat, penis, vagina, and vulva); these cancers are difficult to treat and can result in tremendous pain, disfigurement, and even death

 We finally have a vaccine for cancer
  ➤ Yet only one third of girls have finished the HPV vaccine series

 How often do we really get the chance to prevent cancer?
  ➤ HPV vaccine is cancer prevention.
1. **Give a STRONG recommendation**
   - Ask yourself, how often do you get a chance to prevent cancer?

2. **Start conversation early and focus on cancer prevention**
   - Vaccination given well before sexual experimentation begins
   - Better antibody response in preteens

3. **Offer a personal story**
   - Own children/Grandchildren/Close friends’ children
   - HPV-related cancer case

4. **Welcome questions from parents, especially about safety**
   - Remind parents that the HPV vaccine is safe and not associated with increased sexual activity
Review Question #1

HPV vaccine is recommended for the following persons:

A. All adolescents at the 11 to 12 year old visit.
B. Females only at the 13 year old visit.
C. Males only at the 11 to 12 year old visit.
D. Females only at the 11 to 12 year old visit.
Review Question #1

HPV vaccine is recommended for the following persons:

A. All adolescents at the 11 to 12 year old visit.
B. Females only at the 13 year old visit.
C. Males only at the 11 to 12 year old visit.
D. Females only at the 11 to 12 year old visit.
Review Question #2

Why should males receive quadrivalent HPV vaccine?

A. Prevention of infection with HPV types 6, 11, 16, 18.
B. Prevention of genital warts caused by HPV types 6 and 11.
C. Prevention of anal cancer caused by HPV types 16 and 18.
D. All of the above.
Review Question #2

Why should males receive quadrivalent HPV vaccine?

A. Prevention of infection with HPV types 6, 11, 16, 18.
B. Prevention of genital warts caused by HPV types 6 and 11.
C. Prevention of anal cancer caused by HPV types 16 and 18.
D. All of the above.
Review Question #3

Which of the following HPV vaccine recommendations for a child aged 11 or 12 years is the most likely to be successful?

A. Ask parent if child is sexually active and then discuss importance of HPV vaccination.
B. Tell parent that their child needs three vaccinations: HPV, MCV4, and Tdap.
C. Tell parent about the vaccinations that are mandatory for school entry and ask if they also want HPV vaccine.
D. Ask parent if they want to get HPV vaccination for their child or wait until the child is older.
Review Question #3

Which of the following HPV vaccine recommendations for a child aged 11 or 12 years is the most likely to be successful?

A. Ask parent if child is sexually active and then discuss importance of HPV vaccination.
B. Tell parent that their child needs three vaccinations: HPV, MCV4, and Tdap.
C. Tell parent about the vaccinations that are mandatory for school entry and ask if they also want HPV vaccine.
D. Ask parent if they want to get HPV vaccination for their child or wait until the child is older.
Resources for HPV vaccine conversations

COMMUNICATION TOOLS
HPV Vaccine Resources for Healthcare Professionals

HPV Vaccine is Cancer Prevention

Overview | Tools for Your Practice | Handouts to Give to Patients & Parents

Watch a short video to remind you why YOU are the key to preventing HPV-related cancers. [5:35 mins]

- HPV is so common that almost everyone will be infected with HPV at some point in their lives; however most people will never know they have been infected.

cdc.gov/vaccines/YouAreTheKey
Tips for Talking to Parents about HPV Vaccine

Tips and Time-savers for Talking with Parents about HPV Vaccine

Recommend the HPV vaccine series the same way you recommend the other adolescent vaccines. For example, you can say "Your child needs these shots today" and name all of the vaccines recommended for the child's age.

Parents may be interested in vaccinating, yet still have questions. Taking the time to listen to parents' questions helps you save time and give an effective response. CDC research shows these straightforward messages work with parents when discussing HPV vaccine—and are easy for you or your staff to deliver.

**Tips and Time-savers for Talking with Parents about HPV Vaccine**

**CDC Research Shows:**
- The "HPV vaccine is cancer prevention" message resonates strongly with parents. In addition, studies show that a strong recommendation from you is the single best predictor of vaccination.
- Disease prevalence is not understood, and parents are unclear about what the vaccine actually protects against.
- HPV can cause cancers of the cervix, vagina, and vulva in women, cancer of the penis in men, and cancers of the anus and the mouth or throat in both women and men. There are about 26,000 of these cancers each year—and most could be prevented with HPV vaccine. There are also many more precancerous conditions requiring treatment that can have lasting effects.
- Parents want a concrete reason to understand the recommendation that 11–12 year olds receive HPV vaccine.
- We're vaccinating today so your child will have the best protection possible long before the start of any kind of sexual activity. We vaccinate people well before they are exposed to an infection, as is the case with measles and the other recommended childhood vaccines. Similarly, we want to vaccinate children well before they get exposed to HPV.
- Parents may be concerned that vaccinating may be perceived by the child as permission to have sex.
- Research has shown that getting the HPV vaccine does not make kids more likely to be sexually active or start having sex at a younger age.
- Parents might believe their child won't be exposed to HPV because they aren't sexually active or may not be for a long time.

**Try Saying:**
- HPV vaccine is very important because it prevents cancer. I want your child to be protected from cancer. That's why I'm recommending that your daughter/son receive the first dose of HPV vaccine today.
- Disease prevalence is not understood, and parents are unclear about what the vaccine actually protects against.
- HPV can cause cancers of the cervix, vagina, and vulva in women, cancer of the penis in men, and cancers of the anus and the mouth or throat in both women and men. There are about 26,000 of these cancers each year—and most could be prevented with HPV vaccine. There are also many more precancerous conditions requiring treatment that can have lasting effects.
- Parents want a concrete reason to understand the recommendation that 11–12 year olds receive HPV vaccine.
- We're vaccinating today so your child will have the best protection possible long before the start of any kind of sexual activity. We vaccinate people well before they are exposed to an infection, as is the case with measles and the other recommended childhood vaccines. Similarly, we want to vaccinate children well before they get exposed to HPV.
- Parents may be concerned that vaccinating may be perceived by the child as permission to have sex.
- Research has shown that getting the HPV vaccine does not make kids more likely to be sexually active or start having sex at a younger age.
- Parents might believe their child won't be exposed to HPV because they aren't sexually active or may not be for a long time.

CDC.gov/vaccines/hpv-tipsheet
HPV Vaccine Information for Clinicians - Fact Sheet

CDC and partners, including the American Academy of Pediatrics, recommend HPV vaccination of both girls and boys at ages 11 or 12 years and suggest that clinicians strongly recommend HPV vaccination for preteens and teens who have not yet been fully vaccinated.

Background
Approximately 20 million people are currently infected with genital human papillomavirus (HPV) in the United States (U.S.). As many as half of these infections are among adolescents and young adults, ages 15 through 24 years of age. HPV is so common that most sexually active adults become infected at some point in their lives.

Of the more than 40 HPV types that infect human mucosal surfaces, most infections are asymptomatic and transient. However, certain oncogenic types that persist can cause cervical cancer and other, less common cancers, including cancers of the anus, penis, vulva, vagina, and oropharynx (back of throat including base of tongue and tonsils). Other, non-oncogenic HPV types can cause genital warts and, rarely, respiratory tract warts in children which is a condition called juvenile-onset recurrent respiratory papillomatosis (JRRP).
HPV Portal

Human Papillomavirus (HPV)

Cervical Cancer Screening
The Pap test is recommended for women 21 to 65 years.

Human papillomavirus (pah-ah-LO-mah-VYE-rus) (HPV) is the most common sexually transmitted virus in the United States. Almost every sexually active person will acquire HPV at some point in their lives.

HPV Topics
- What is HPV?
  Learn about the health problems caused by HPV and how the infection is spread.
- Signs and Symptoms
  Discover the signs and symptoms of HPV and related conditions.
- HPV Vaccines
  Get information about the vaccines that can prevent HPV infection.
- HPV Vaccine Safety
  Find answers to your vaccine safety questions.

News & Information
- New study shows HPV vaccine helping lower HPV infection rates in teen girls
- HPV vaccine coverage in the U.S.

Professional Resources

cdc.gov/hpv
AAP—HPV Vaccine Can't Wait

HPV vaccine can’t wait
Immunization of younger teens is critical to preventing serious cancers later in life

Anne Schuchat, M.D. and Michael T. Brady, M.D., FAAP

Administering immunizations during adolescence provides unique challenges. A recently released report from the National Immunization Survey—Teen (NIS—Teen) provides evidence that there has been more difficulty in obtaining acceptance of the human papillomavirus (HPV) vaccine compared to two other vaccines recently introduced to adolescents: tetanus, diphtheria and acellular pertussis (Tdap) vaccine and meningococcal conjugate (MVC4) vaccine.

“HPV vaccine is different.” “HPV vaccine can wait.” “I won’t go to the mat for this one.” That’s what is frequently heard from pediatricians across the country. Perhaps you have said the same things yourself.
Continuing Education

Medscape Education

Adolescent Immunizations: A Back-to-School Checklist
Moderator
William Schaffner, MD
Chair, Department of Preventive Medicine
Division of Infectious Diseases

HPV Vaccine: A Shot of Cancer Prevention
Moderator
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You are the Key to HPV Cancer Prevention

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Health Communication Science Office
National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention

cdc.gov/vaccines/who/teens/for-hcp/hpv-resources.html
Immunization Schedules, Recommendations, and more

cdc.gov/vaccines/who/teens/for-hcp/hpv-resources.html
Patient and Parent Handouts

CDC.gov/Vaccines/Who/Teens/Products/Print-Materials.html
Adolescent Immunization Schedule

2013 Recommended Immunizations for Children from 7 Through 18 Years Old

7–10 YEARS
- Tdap
- MCV4

11–12 YEARS
- Tetanus, Diphtheria, Pertussis (Tdap) Vaccine
- HPV
- Meningococcal Conjugate Vaccine (MCV4) Dose 1
- Influenza (Yearly)
- Pneumococcal Vaccine

13–18 YEARS
- Tdap
- HPV
- MCV4 Dose 1
- Booster at age 16 years

FOOTNOTES
1 Tdap vaccine is combination vaccine that is recommended at age 11 or 12 to protect against tetanus, diphtheria and pertussis. If your child has not received any or all of the DTPA vaccine series, or if you don’t know if your child has received these shots, your child needs a single dose of Tdap when they are 7–10 years old. Talk to your child’s health care provider to find out if they need additional catch-up vaccines.
2 All 11 or 12 year olds—both girls and boys—should receive 3 doses of HPV vaccine to protect against HPV-related disease. Either HPV vaccine (Gardasil® or Gardasil®) can be given to girls and young women; only one HPV vaccine (Gardasil®) can be given to boys and young men.
3 Meningococcal conjugate vaccine (MCV) is recommended at age 11 or 12. A booster shot is recommended at age 16. Teens who received MCV for the first time at age 13 through 15 years will need a one-time booster dose between the ages of 16 and 18 years. If your teenager missed getting the vaccine altogether, ask their health care provider about getting it now, especially if your teenager is about to move into a college dorm or military barracks.
4 Everyone 6 months of age and older—including preteens and teens—should get a flu vaccine every year. Children under the age of 9 years may require more than one dose. Talk to your child’s health care provider to find out if they need more than one dose.
5 A single dose of Pneumococcal Conjugate Vaccine (PCV) is recommended for children who are 6–18 years old with certain medical conditions that place them at high risk. Talk to your healthcare provider about pneumococcal vaccine and what factors may place your child at high risk for pneumococcal disease.
6 Hepatitis A vaccination is recommended for older children with certain medical conditions that place them at high risk. Hepatitis A vaccine is licensed, safe, and effective for all children of all ages. Even if your child is not at high risk, you may decide you want your child protected against HepA. Talk to your healthcare provider about HepA vaccine and what factors may place your child at high risk for HepA.

For more information, call toll free 1-800-CDC-INFO (1-800-232-4636) or visit http://www.cdc.gov/vaccines/teens

Resources for Patients

cdc.gov/vaccines/schedules/easy-to-read/preteen-teen.html
HPV Vaccine Information Sheets

VACCINE INFORMATION STATEMENT

HPV Vaccine Cervarix® (Human Papillomavirus)

What You Need to Know

1. What is HPV?
   Genital human papillomavirus (HPV) is the most common sexually transmitted virus in the United States. More than half of sexually active men and women are infected with HPV at some time in their lives. About 20 million Americans are currently infected, and about 6 million more get infected each year. HPV is usually spread through sexual contact. Most HPV infections don’t cause any symptoms, and go away on their own. But HPV can cause cervical cancer in women. Cervical cancer is the 2nd leading cause of cancer deaths among women around the world. In the United States, about 12,000 women get cervical cancer every year and about 4,000 are expected to die from it. HPV is also associated with several less common cancers, such as vaginal and vulvar cancers in women and other types of cancer in both men and women. It can also cause genital warts and warts in the throat. There is no cure for HPV infections, but some of the problems it causes can be treated.

2. HPV vaccine: Why get vaccinated?
   HPV vaccine is important because it can prevent most cases of cervical cancer in females, if it is given before a person is exposed to the virus. Protection from HPV vaccine is expected to last for many years. But vaccination is not a substitute for cervical cancer screening. Women should still get regular Pap tests. The vaccine you are getting is one of two HPV vaccines that can be given to prevent cervical cancer. It is given to females only. The other vaccine may be given to both males and females. It can also prevent most genital warts. It has also been shown to prevent some vaginal, vulvar and anal cancers.

3. Who should get this HPV vaccine and when?
   Routine vaccination:
   - HPV vaccine is recommended for girls 11 or 12 years of age or younger at their first visit to a health care provider. The first dose should be given by 13 years of age. If the first dose is given after 13 years of age, the second dose should be given by age 15 years, and the third dose should be given by age 18 years.
   - For boys, HPV vaccine is recommended if they are 11 or 12 years of age. If the first dose is given after 13 years of age, the second dose should be given by age 15 years, and the third dose should be given by age 18 years.

4. Some people should not get HPV vaccine or should wait:
   • Anyone who has ever had a life-threatening allergic reaction to any component of HPV vaccine, or to a previous dose of the vaccine, should not get the vaccine. Tell your doctor if you or your child has had any severe allergic reactions, including an allergy to latex.
   • HPV vaccine is not recommended for pregnant women. However, receiving HPV vaccine when pregnant is not a reason to consider terminating the pregnancy. Women who are breastfeeding may get the vaccine.

VACCINE INFORMATION STATEMENT

HPV Vaccine Gardasil® (Human Papillomavirus)

What You Need to Know

1. What is HPV?
   Genital human papillomavirus (HPV) is the most common sexually transmitted virus in the United States. More than half of sexually active men and women are infected with HPV at some time in their lives. About 20 million Americans are currently infected, and about 6 million more get infected each year. HPV is usually spread through sexual contact. Most HPV infections don’t cause any symptoms, and go away on their own. But HPV can cause cervical cancer in women. Cervical cancer is the 2nd leading cause of cancer deaths among women around the world. In the United States, about 12,000 women get cervical cancer every year and about 4,000 are expected to die from it. HPV is also associated with several less common cancers, such as vaginal and vulvar cancers in women, and anal and oropharyngeal (back of the throat, including base of tongue and tonsils) cancers in both men and women. HPV can also cause genital warts and warts in the throat. There is no cure for HPV infection, but some of the problems it causes can be treated.

2. HPV vaccine: Why get vaccinated?
   The HPV vaccine you are getting is one of two vaccines that can be given to prevent HPV. It may be given to both males and females. This vaccine can prevent most cases of cervical cancer in females, if it is given before exposure to the virus. In addition, it can prevent vaginal and vulvar cancer in females, and genital warts and anal cancer in both males and females. Protection from HPV vaccine is expected to last for many years. But vaccination is not a substitute for cervical cancer screening. Women should still get regular Pap tests.

3. Who should get this HPV vaccine and when?
   HPV vaccine is given as a 3-dose series:
   1st Dose: Now
   2nd Dose: 1 to 2 months after Dose 1
   3rd Dose: 6 months after Dose 1
   Additional (booster) doses are not recommended.
   Routine vaccination:
   This HPV vaccine is recommended for girls and boys 11 or 12 years of age. It may be given starting at age 9.
   Why is HPV vaccine recommended at 11 or 12 years of age?
   HPV infection is most easily acquired, even with only one sex partner. That is why it is important to get HPV vaccine before any sexual contact takes place. Also, response to the vaccine is better at this age than at older ages.
   Catch-up vaccination:
   This vaccine is recommended for the following people who have not completed the 3-dose series:
   - Females 13 through 26 years of age.
   - Males 13 through 21 years of age.
   This vaccine may be given to men 22 through 26 years of age who have not completed the 3-dose series. It is recommended for men through age 26 who have sex with men or whose immune system is weakened because of HPV infection, other illnesses, or medications. HPV vaccine may be given at the same time as other vaccines.

cdc.gov/vaccines/hcp/vis/
HPV Vaccine Resources in Spanish

cdc.gov/spanish/inmunizacion/index.html
For more information, including free resources for yourself and your patients/clients, visit:
cdc.gov/vaccines/YouAreTheKey

Email questions or comments to CDC Vaccines for Preteens and Teens:
PreteenVaccines@cdc.gov
HPV VACCINE IS CANCER PREVENTION
And YOU are the key!