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

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Disclosure

- Cottonwood Pediatrics is involved with ongoing immunization clinical trials.
- I receive a several hundred dollar stipend each year, for that work. This research has not involved HPV vaccines.
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.
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

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

Low risk (non-oncogenic)
HPV 6, 11

Genital Warts
Laryngeal Papillomas
Low Grade Cervical Disease

~ 80 Types

Cutaneous sites of infection

“Common”
Hand and Foot Warts
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.

Average Number of New Cancers Probably Caused by HPV, by Sex, United States 2006-2010

Women (n = 17,600)

- Cervix: n=10,400 (59%)
- Oropharynx: n=1,800 (10%)
- Vulva: n=2,200 (13%)
- Anus: n=2,600 (15%)
- Vagina: n=600 (3%)

Men (n = 9,300)

- Oropharynx: n=7,200 (77%)
- Anus: n=1,400 (15%)
- Penis: n=700 (8%)

CDC, United States Cancer Statistics (USCS), 2006-2010
How Many Cancers Are Linked with HPV Each Year?

![Bar chart showing the average number of cases per year for different cancer sites attributable 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 world-wide 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

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.

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
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>9-Valent 9vHPV (Gardasil 9)</th>
<th>Bivalent/HPV2 (Cervarix)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merck</td>
<td>Merck</td>
<td>GlaxoSmithKline</td>
</tr>
<tr>
<td>6, 11, 16, 18</td>
<td>6, 11, <strong>16, 18</strong>, 31, 33, 45, 52, 58</td>
<td>16, 18</td>
</tr>
<tr>
<td>Hypersensitivity to yeast</td>
<td>Hypersensitivity to yeast</td>
<td>Hypersensitivity to latex (latex only contained in pre-filled syringes, not single-dose vials)</td>
</tr>
<tr>
<td>3 dose series: 0, 2, 6 months</td>
<td>3 dose series: 0, 2, 6 months</td>
<td>3 dose series: 0, 1, 6 months</td>
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</table>
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

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

June

October

2006 2007 2008 2009 2010 2011 2012

2015

9- valent

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 Vaccination Schedule

- As of October 2016, new schedule ages 9-14
- Two dose schedule
- 0 and 6 months later
- Still need 3-dose schedule if older than 14
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\(^4\)

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\(^1\) Vaccine Adverse Events Reporting System, http://vaers.hhs.gov/index  
\(^2\) Vaccine Safety Datalink, http://www.cdc.gov/vaccinesafety/Activities/VSD.html  
\(^3\) http://www.who.int/vaccine_safety/Jun_2009/en/  
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

http://www.cdc.gov/vaccinesafety/vaccines/HPV/Index.html#monitor
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)
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
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
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

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

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

Flagg, et al. AJPH 2013
HPV VACCINE COVERAGE
Adolescent Vaccination Coverage
United States, 2006-2013

Survey Year

Percent Vaccinated

Tdap
MCV4
1 HPV girls
3 HPV girls
1 HPV boys
3 HPV boys

MMWR 2014; 63(29);625-633.
Impact of Eliminating Missed Opportunities by Age 13 Years in Girls Born in 2000

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

MMWR. 63(29);620-624.
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 Vaccine Series Initiation
Girls 13-17 Years, by State, 2013

Percent

State
So, Why should we care?

- 80% of your teen patients will get these viruses.
- Almost all will then give this “gift” to a loved one.
- About 1 in 10 will develop genital warts.
- About 1 in 5 women will endure the prolonged fear from an abnormal pap smear.
- Many will experience the intimacy issues, shame and fear associated with this.
- About 1 in 156 women will develop cervical cancer.
- A few will die.
- All are preventable.
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
Impact of Reminder/Recall on Vaccination Rates among Adolescents


*\( p<0.05 \)
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 recommended: 13%
- Safety concern/Side effects
- Not needed or necessary
- Lack of knowledge
- Not sexually active
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 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.
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 parents 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.
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.
Why at 11 or 12 years old?

- 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

Age:
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20

www.guttmacher.org
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 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.

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%
  - Make no recommendation: 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%

Allison et al. [https://cdc.confex.com/cdc/nic2011/webprogram/Paper25181.html](https://cdc.confex.com/cdc/nic2011/webprogram/Paper25181.html)
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 80 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 either 2 or 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 be 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
Selling Vaccination

- You, Doctor, are the salesperson (not just the delivery guy)
- To effectively sell, you have to understand your audience.
- You have to care enough to commit to winning this family over....like lives are at stake in this.
“Three” C model of vaccine hesitancy

WHO, Strategic Advisory Group Of Experts on Immunization:
- Complacency
- Convenience
- Confidence
- Calculating
- Conspiracies

Using Behavioral Insights to Increase Vaccination Policy Effectiveness. Betsch, Bohm and Chapman. 2015
First Know Your Audience

��道你的受众

- 知识缺口？
  - 不要过度负载，但要将他们从太少的知识移动到足够的知识。

- 情绪在决定中起作用？
  - 认识（尊重）父母的恐惧作为一件好事，并温柔地将他们从恐惧移动到勇气。

- 动机来做决定？
  - 将他们从安逸移动到承诺（动机访谈）
Hardest group. Conspiracists

- With this group of parents the issue is *locus of control*. Not about HPV. Not about fear. Not about needing more data.
- “You can’t be the boss of me.”
- Gen Xers already have access to all democratized knowledge on their i-phone.
- They don’t trust “experts”. They interpret more info as manipulation.
Conspiracists

These folks may be swayed by the “number of likes”. “80 Million American parents have chosen to give this vaccine for their children.”

Don’t push. Let them be in charge, because they need to be in charge.

Just ask “How do you want to protect your child from these cancers?”

Then wait…….

Silence is a powerful tool.
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 side 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.
Review

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
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!