



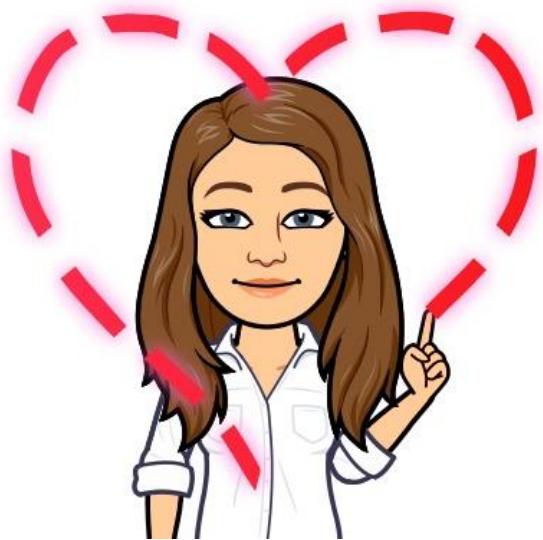
HPV 101

Human Papillomavirus & HPV Vaccine

**DENVER METRO ALLIANCE
FOR HPV PREVENTION**

HPVFreeCO.org

Your Training Guides



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CME Statement

The Denver STD/HIV Prevention Training Center is accredited by the Colorado Medical Society to provide continuing medical education for physicians. The Denver STD/HIV Prevention Training Center designates this educational activity for a maximum of 1-2 PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Disclosures

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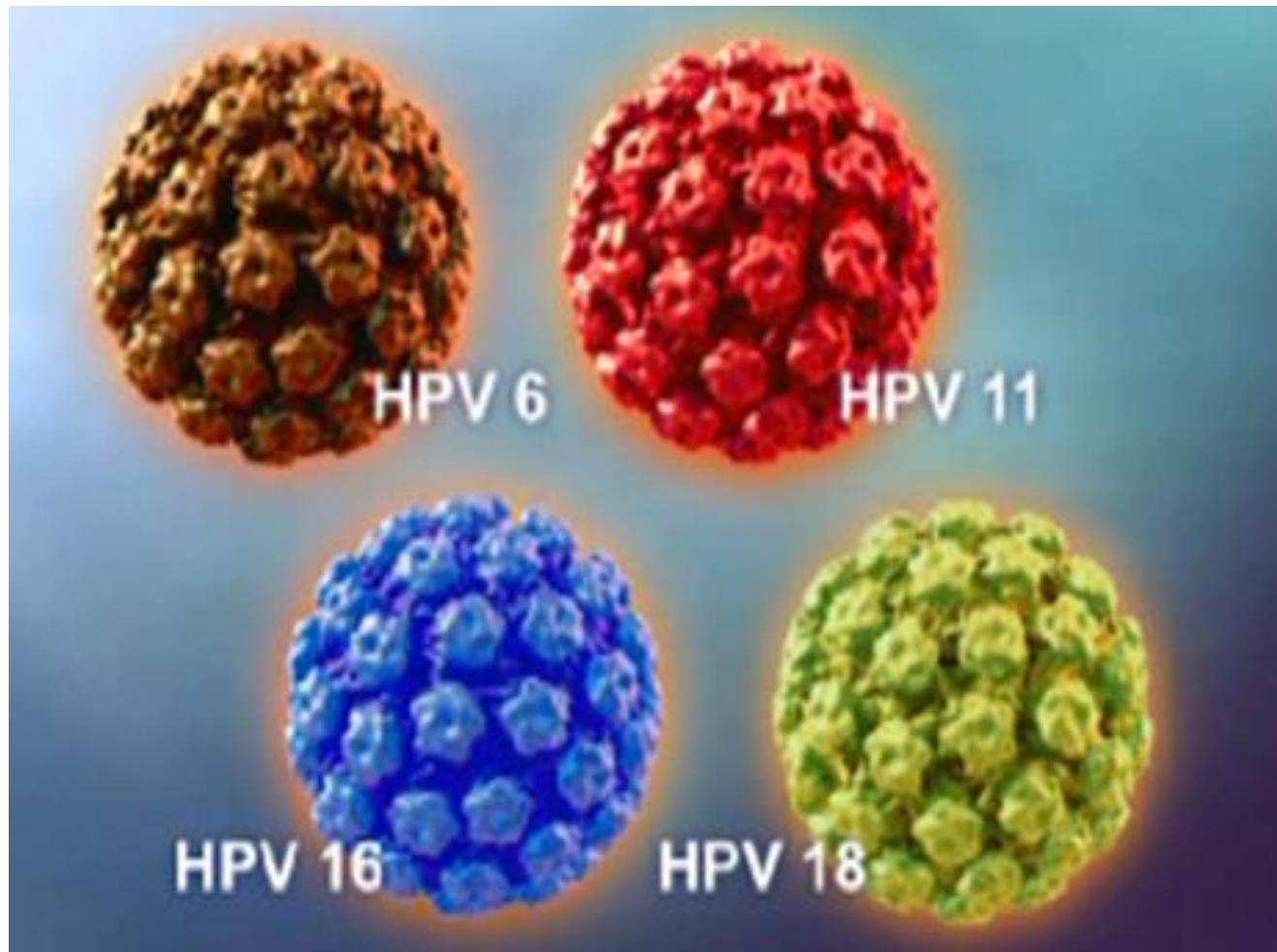
The Denver Metro Alliance for HPV Prevention is funded by the 2016-2018 Cancer, Cardiovascular and Chronic Pulmonary Disease (CCPD) Grants Program from the Colorado Department of Public Health and Environment.

Training Objectives

- Explore the burden of HPV infection and related disease
- Discuss HPV transmission & adolescent sexual behaviors
- Discuss the HPV vaccine – safety and efficacy
- Identify ways can we talk to our patients and families about HPV & the vaccine

HPV Facts

- HPV is the most common STI
- About 14 million new genital HPV infections each year
- Most HPV infections clear without signs or symptoms
- Over 100 types of HPV, 40 HPV types are spread through sexual contact
- Low-risk types (non-oncogenic) & high-risk types (oncogenic)
- 5% of all cancers are found to be HPV related
- 90% of men and 80% of women will be infected with at least one type of HPV in their lives, and half of the infections are with a high-risk HPV type



Is there a test for HPV?



- HPV DNA
 - Tests for many high-risk HPV types
- Approved for routine screening with Pap test for women >30 years old.
 - Negative tests = repeat in 3 years
- Used after an abnormal Pap for women 21 and older and plan follow-up care.
- Currently, no test for men or other associated cancers

Burden of Disease – Cancers

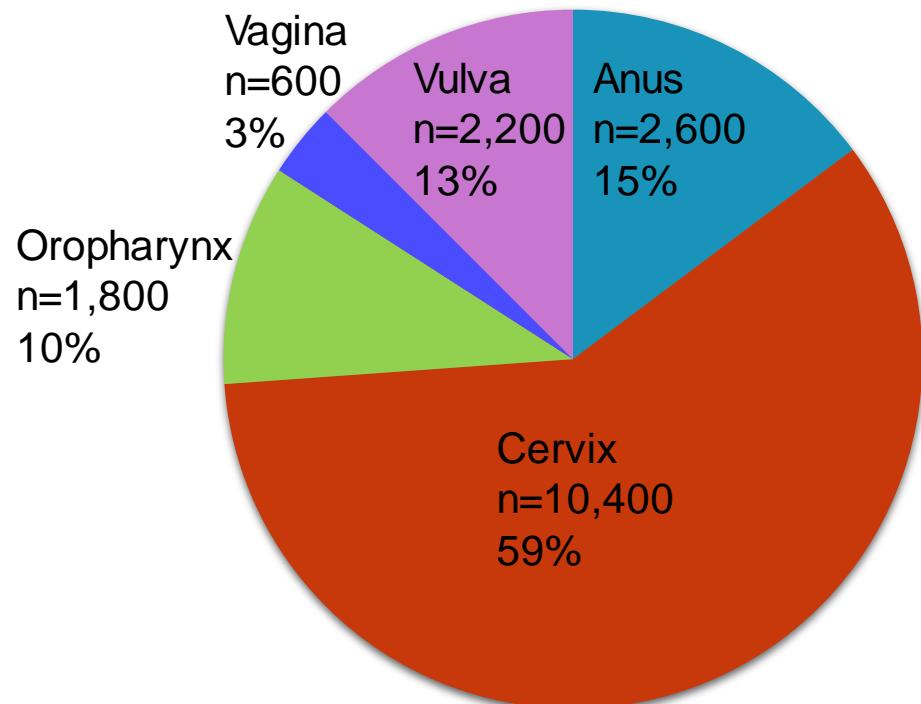
- **Causes cancer in females AND males**
- Cervical cancer
 - Most common HPV-associated cancer
 - 70 % caused by HPV types 16 & 18
- Anal cancer
 - 90% caused by HPV, and most from type 16
- Oropharyngeal cancers
 - 60-70% caused by HPV
- Other cancers
 - Vaginal
 - Vulvar
 - Penile

**Every year in the US > 30,000
people are diagnosed with a
cancer caused by HPV**

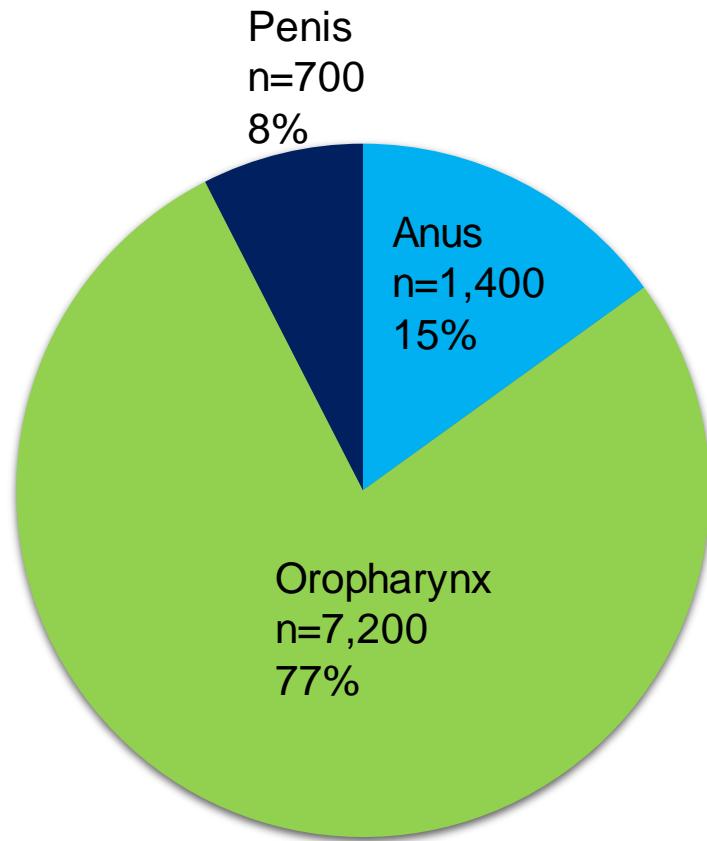


That's 1 case every 20 minutes

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

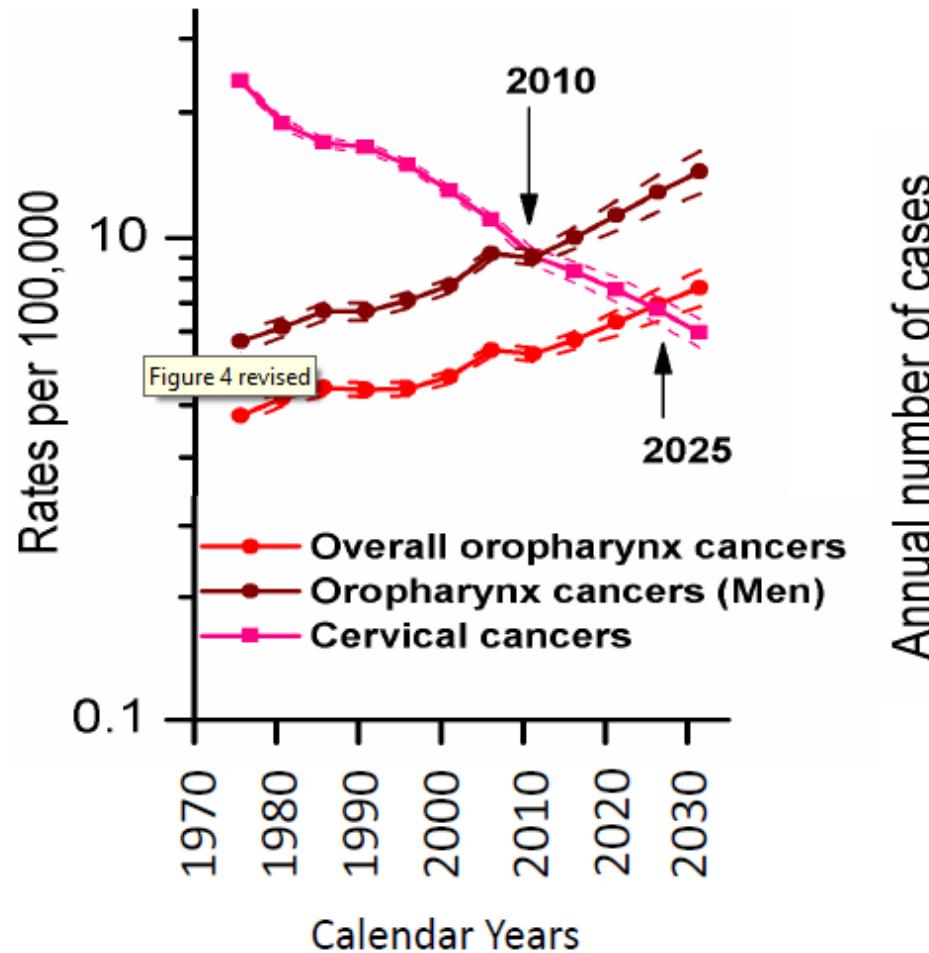


Women (n = 17,600)



Men (n = 9,300)

Oropharyngeal cancers on the rise



HPV Transmission

- Spread through **skin-to-skin sexual contact** including vaginal, anal/or oral sex
- Transmission does **NOT** require signs/symptoms
- A person can develop symptoms years after exposure
- HPV can clear on its own and not progress into disease, however it also can cause genital warts and/or cancer

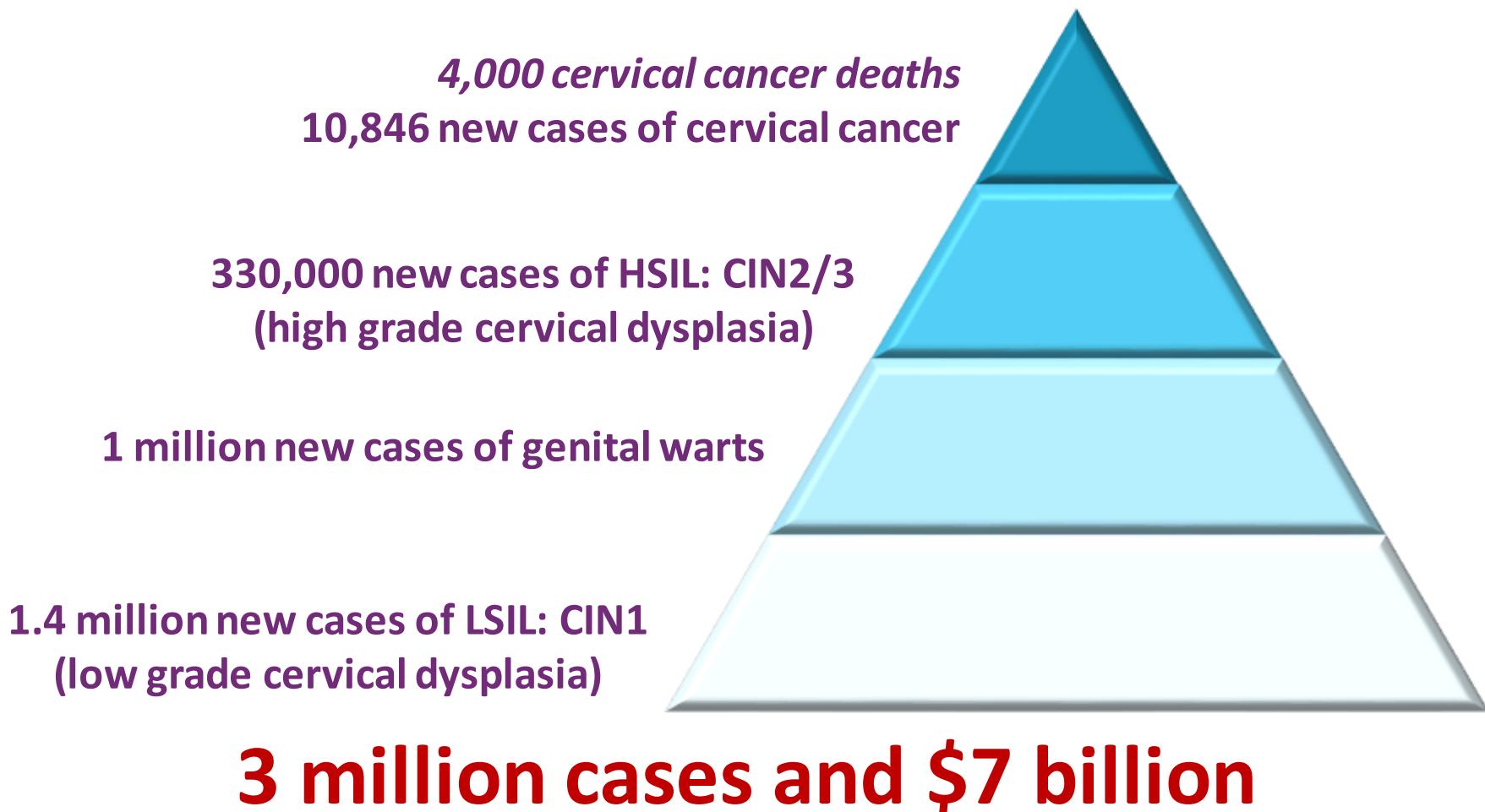
Adolescents & Sexual Behaviors (2015)

- 41% have had sexual intercourse ↓
- 30% have had sexual intercourse during the previous 3 months and of them:
 - 43% did **NOT** use condoms
 - 14% did **NOT** use contraception
 - 21% used alcohol or drugs before last sexual encounter

HPV vaccination is cancer prevention!

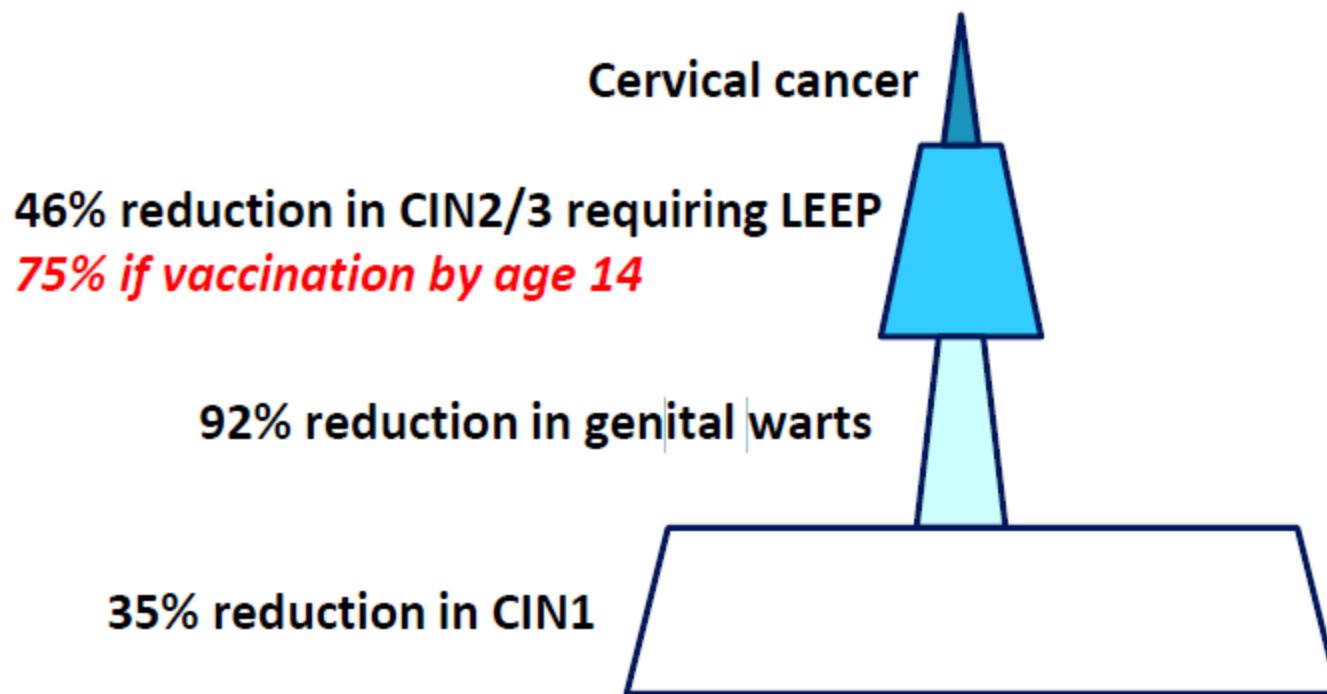


Annual burden of genital HPV-related disease in unvaccinated U.S. females:



Meeting the Healthy People 2020 Goal

80% completion for boys and girls



HPV Vaccine & Effectiveness



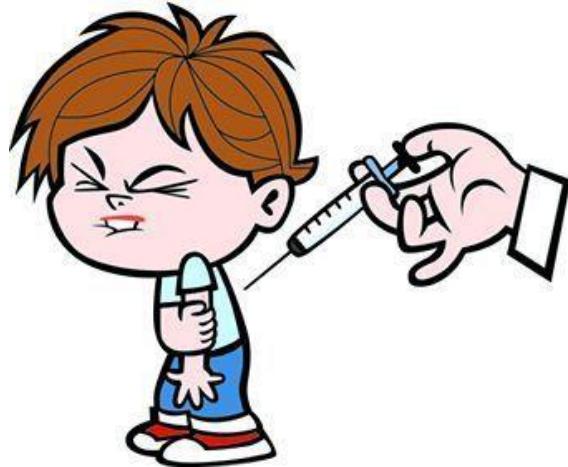
The HPV Vaccine

- Quadrivalent – (2006) approved for girls 9-26: covered strains 6,11,16 &18; 2010 approved for boys
- Bivalent – (2010) approved for girls 9-26: covered strains 16 & 18
- 9-valent (Gardasil) – (2014-2015), **boys and girls:**
 - Only HPV vaccine available in US
 - Coverage:
 - 6 & 11,16 & 18, 31, 33, 45, 52, & 58

The HPV Vaccine Schedule

Age	Doses	Schedule
9-14	2*	1st shot: Today 2nd shot: 5-12 months after first shot *3 shots if 2nd dose was given prior to 5 months
15-26 & immunocompromised patients of any age	3	1st shot: Today 2nd shot: 2 months after first shot 3rd shot: 6 months after first shot

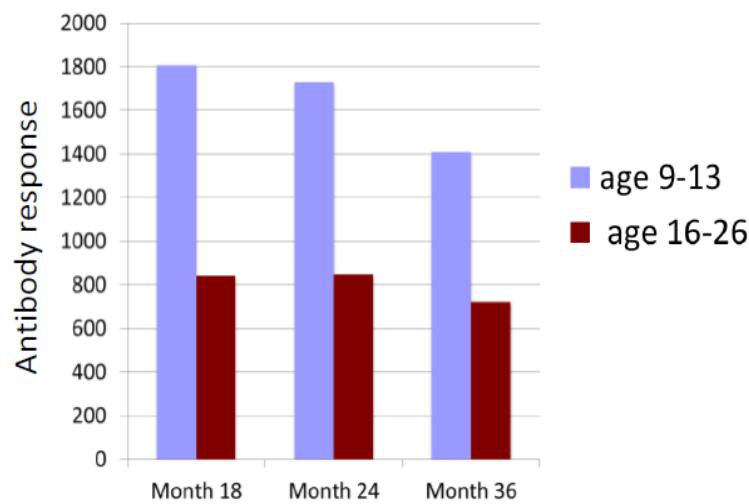
Why males/boys?



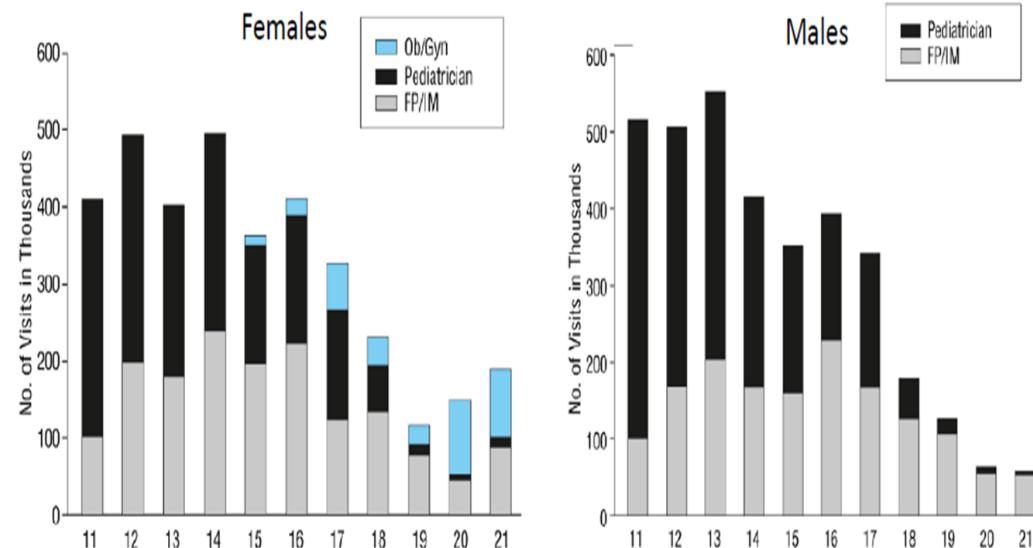
- Recommended for males 11-26 years old
- At risk for cancers of mouth, throat, penis and anus
- Increased risk of OP cancer
- Prevents genital warts
- Benefits females by reducing spread of HPV virus

Why ages 11 – 12?

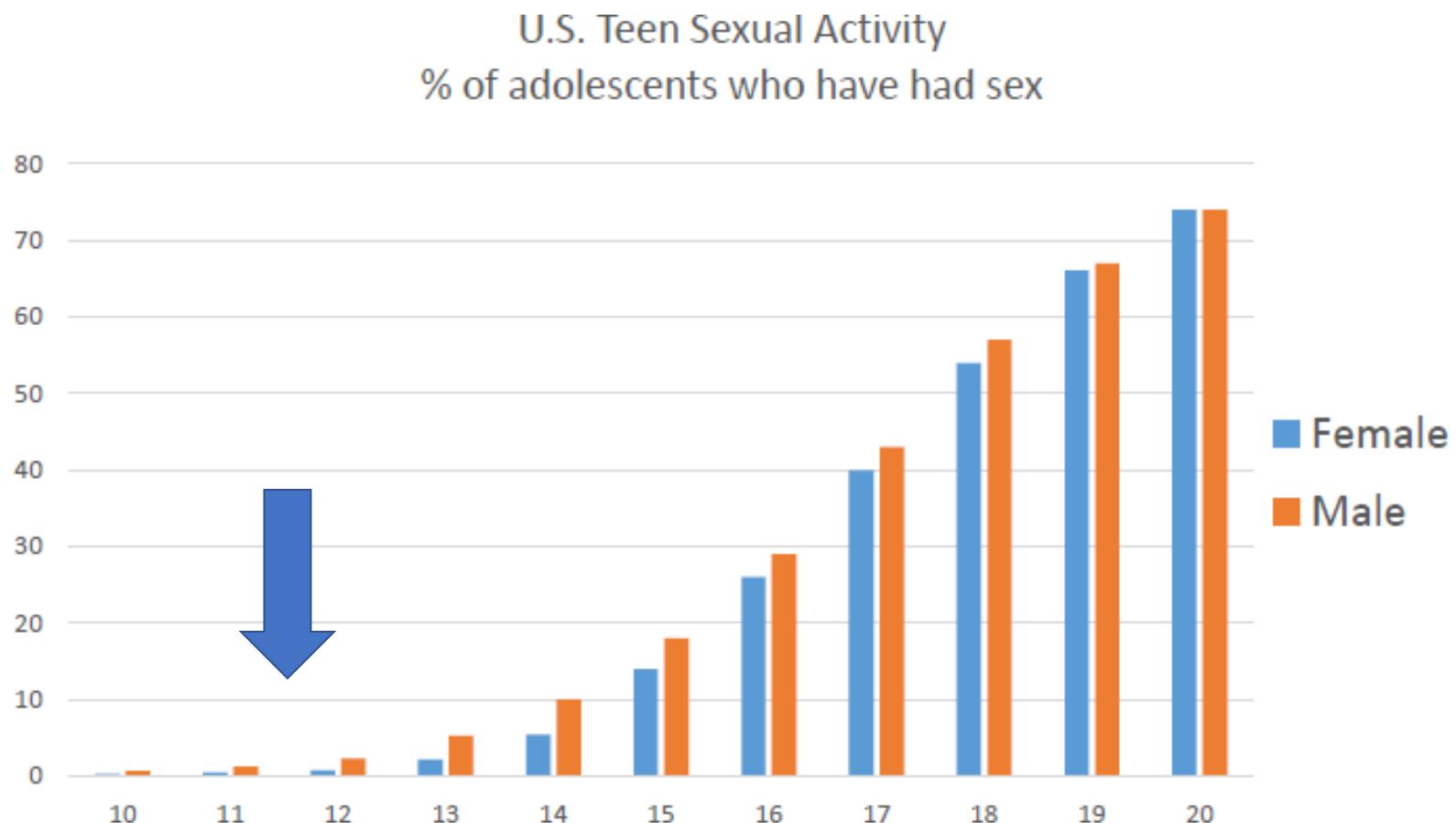
Better Immune Response



**More chances to vaccinate:
Early adolescents have 3x
more preventative care
visits than late adolescents**



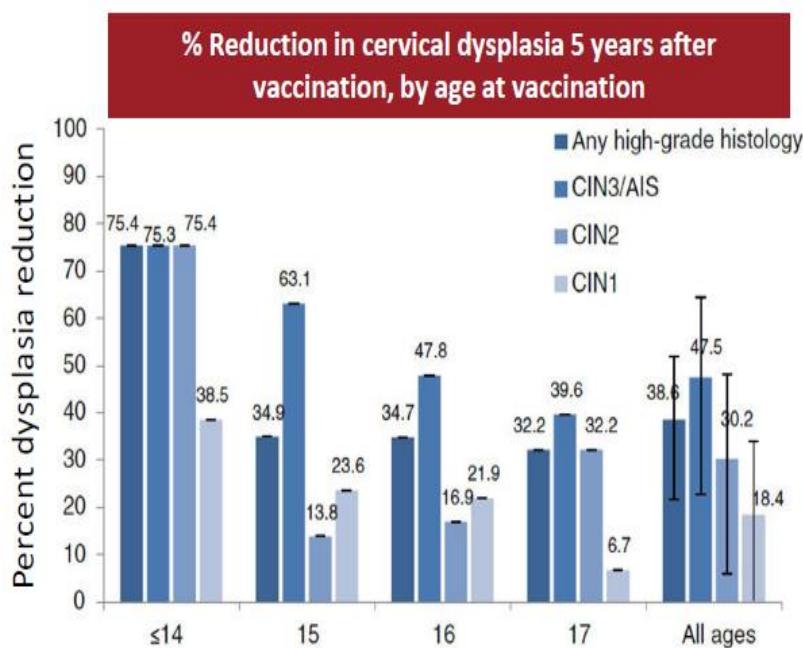
Lack of exposure



Cancer prevention & immunity

Prevents twice as much pre-cancer

Long duration of immunity



- No evidence of waning immunity 10 years after 3-dose schedule
- Similar antibody kinetics for 2 dose schedule, suggesting similar protection

How are we doing?

Initiation rates: 15-17 year olds (November 2017)

County	1+ HPV	1+ Tdap	1+ MCV4
Adams	69.62%	88.0%	82.01%
Arapahoe	67.01%	87.06%	82.07%
Denver	76.01%	87.09%	85.09%
Douglas	56.69%	87.04%	80.03%
Jefferson	62.31%	88.05%	85.02%

Healthy People 2020 target:
80% coverage

How effective is 2 doses?

9vHPV 2-Dose Immunogenicity Trial

Non-inferior GMT at 1 month post-last dose in
2-dose girls/boys vs. 3-dose women

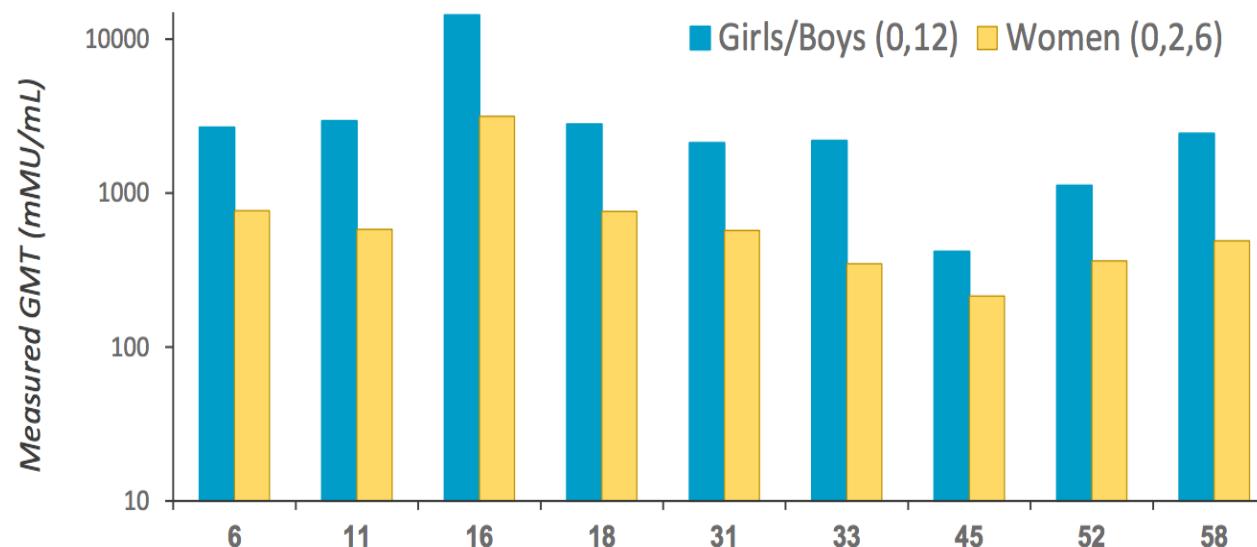
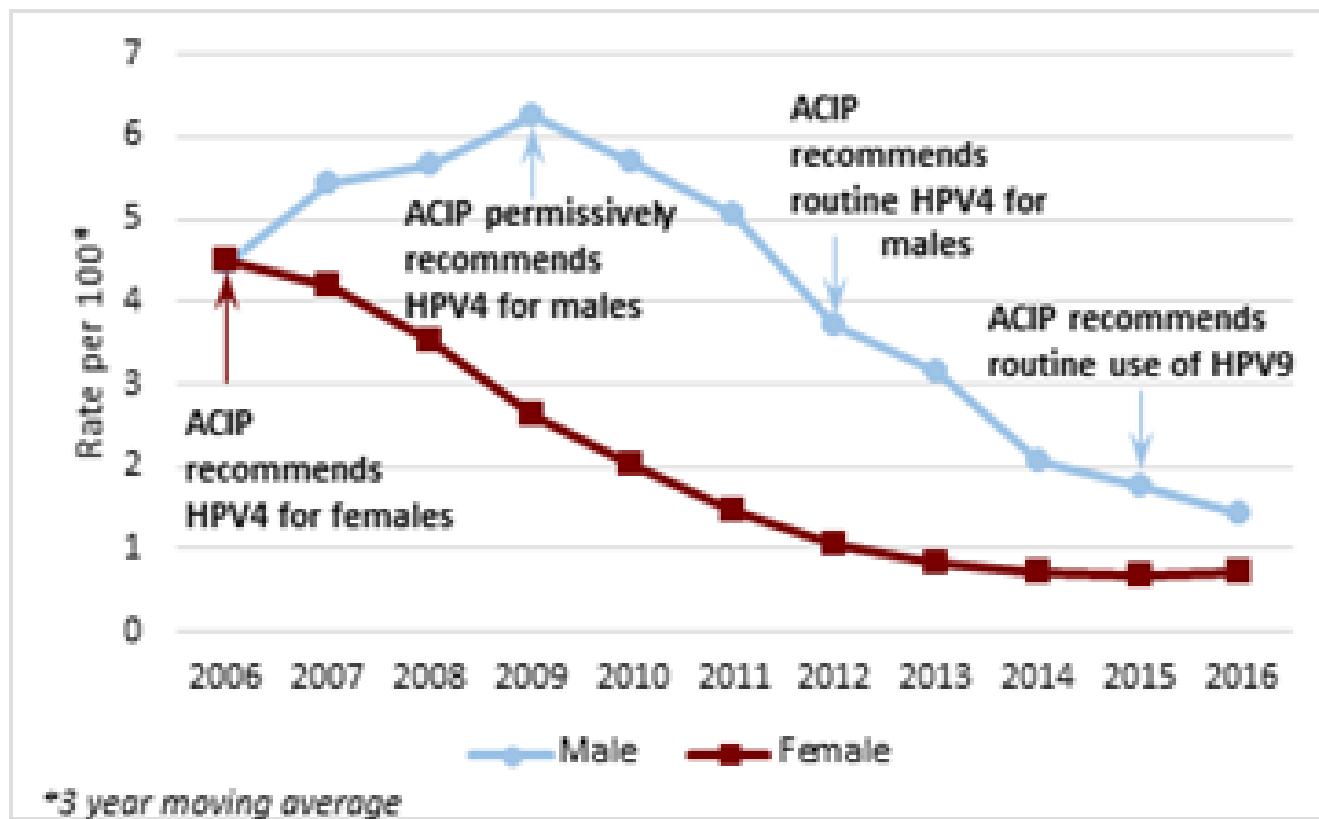


Figure 1: Incidence of genital warts at DPH STD/Family Planning Clinic among patients under 21 years old, 2006-2016



Safety

- Is the HPV vaccine safe? **Yes!**
- About 90 million doses of HPV vaccine have been given
- No serious side effects reported
 - Most common - soreness at injection site



Most common side effects

- Pain
- Swelling
- Redness
- Itching
- Bruising
- Bleeding
- Headache
- Fever
- Nausea
- Dizziness



A few reminders....

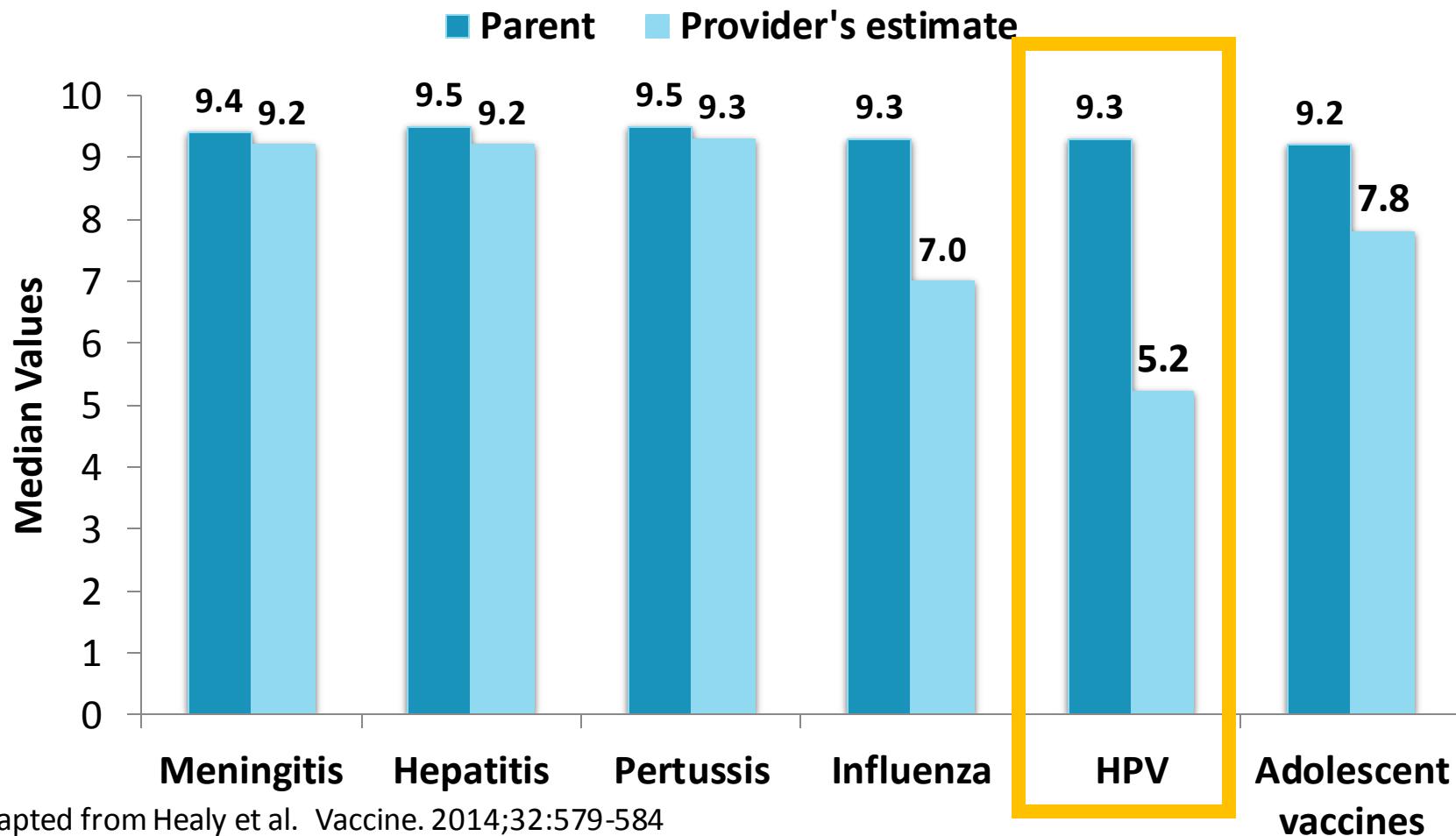


- Women who are vaccinated will still need routine cervical cancer screening
- Maximum benefit if vaccinate BEFORE becoming sexually active (**females & males**)
- The vaccine will not treat an HPV infection, but can still provide residual benefits

Talking to patients & parents about the HPV vaccine



Providers Underestimate the Value Parents Place on HPV Vaccine



Adapted from Healy et al. Vaccine. 2014;32:579-584

Introducing/announcing the vaccine

- Make a **strong provider recommendation**
 - Presumptive – not conversational
 - Bundle with other vaccines due
 - Per CDC “**not recommended**” was amongst the top 5 reasons for not receiving the HPV vaccine for both boys AND girls.

Same day, Same way

Strong Provider Recommendation

Make a Personalized, Strong Provider Recommendation

“So I see that Mary has just turned 12. Since you’re here, this would be a great time for her to get those vaccines which are recommended at that age. These are Tdap, HPV and Meningococcal. What questions, if any, do you have?

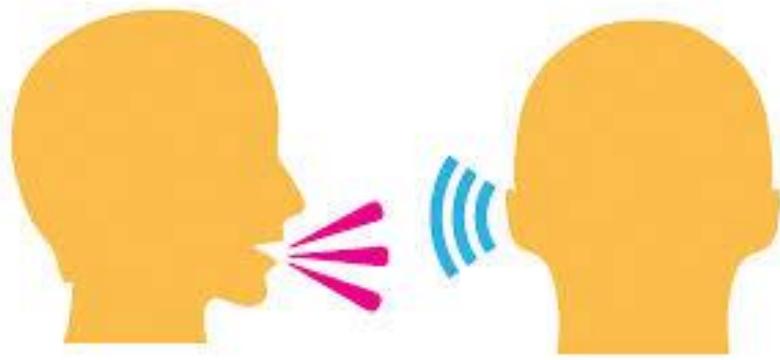
Strong Provider Recommendation:

What if I'm not a provider?

- Recommend all vaccines the patient is due for, encouraging all shots on the same day if applicable
- Consult the clinical staff for additional information
- Avoid assuming the parent will decline vaccines
- Place equal importance on recommended AND required (ex. school) vaccines

Strong provider recommendation for 11-12 year old girls AND boys

“The HPV vaccine works better at younger ages. If your son/daughter gets the vaccine today she will only need 2 doses, but if we wait until they are, older he/she may need 3 doses.”



Hitting all the relevant points in 45 seconds

Provider: Meghan is due for some shots today: meningococcal vaccine, HPV, 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 the 2 of them in the next 6 months.

A few reminders for why ages 11-12



- Better immune response
- More chances to vaccinate
- Lack of exposure
- Prevents 2x more pre-cancer
- Long duration of immunity

FAQ's

- Why stop vaccinating for HPV at age 26?
 - *Better immune response at younger ages*
 - *Vaccination at older ages is less effective in lowering cancer risk (American Cancer Society)*
 - *Insurance*
- Pre-cancer test for males?
 - *Anal pap test is available for high risk men, however it hasn't been studied enough for guidelines and recommendations (American Cancer Society)*

Talking to Parents about HPV Vaccine

Recommend HPV vaccination in the **same way** and on the **same day** as all adolescent vaccines. You can say, **“Now that your son is 11, he is due for vaccinations today to help protect him from meningitis, HPV cancers, and pertussis.”** Remind parents of the follow-up shots their child will need and ask them to make appointments before they leave.

Why does my child need HPV vaccine?

HPV vaccine is important because it prevents infections that can cause cancer. That's why we need to start the shot series today.

Is my child really at risk for HPV?

HPV is a very common infection in women and men that can cause cancer. Starting the vaccine series today will help protect your child from the cancers and diseases caused by HPV.

Why do they need HPV vaccine at such a young age?

Like all vaccines, we want to give HPV vaccine earlier rather than later. If you wait, your child may need three shots instead of two.

I'm worried about the safety of HPV vaccine. Do you think it's safe?

Yes, HPV vaccination is very safe. Like any medication, vaccines can cause side effects, including pain, swelling, or redness where the shot was given. That's normal for HPV vaccine too and should go away in a day or two.

Sometimes kids faint after they get shots and they could be injured if they fall from fainting. We'll protect your child by having them stay seated after the shot.

Would you get HPV vaccine for your kids?

Yes, I gave HPV vaccine to my child (or grandchild, etc.) when he was 11, because it's important for preventing cancer.

Why do boys need HPV vaccine?

HPV vaccination can help prevent future infection that can lead to cancers of the penis, anus, and back of the throat in men.

What diseases are caused by HPV?

Some HPV infections can cause cancer—like cancer of the cervix or in the back of the throat—but we can protect your child from these cancers in the future by getting the first HPV shot today.

How do you know the vaccine works?

Studies continue to prove HPV vaccination works extremely well, decreasing the number of infections and HPV precancers in young people since it has been available.

I'm worried my child will think that getting this vaccine makes it OK to have sex.

Studies tell us that getting HPV vaccine doesn't make kids more likely to start having sex. I recommend we give your child her first HPV shot today.

Can HPV vaccine cause infertility in my child?

There is no known link between HPV vaccination and the inability to have children in the future. However, women who develop an HPV precancer or cancer could require treatment that would limit their ability to have children.

What vaccines are actually required?

I strongly recommend each of these vaccines and so do experts at the CDC and major medical organizations. School entry requirements are developed for public health and safety, but don't always reflect the most current medical recommendations for your child's health.



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

**HPV VACCINE
IS CANCER PREVENTION**

December, 2016 | CS269453B



Questions? Comments?



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