The Importance of HPV Vaccination and a Strong Provider Recommendation

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Disclosure

I serve on advisory boards for Merck and Pfizer. These companies played no role in this presentation.

Objectives

1. Describe the burden of HPV infection and related disease – why is vaccination so important?
2. Provide information about HPV vaccination, including recommendations and safety.
3. Share and employ best practices for HPV vaccine communication and strong recommendations.

AAP—HPV Vaccine Can't Wait

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NEWS AND FEATURES

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 (MCV4) 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.

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Understanding the Burden

HPV INFECTION & DISEASE

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 HPV infections are asymptomatic

Jemal A et al. J Natl Cancer Inst 2013;105:175-201

HPV Transmission

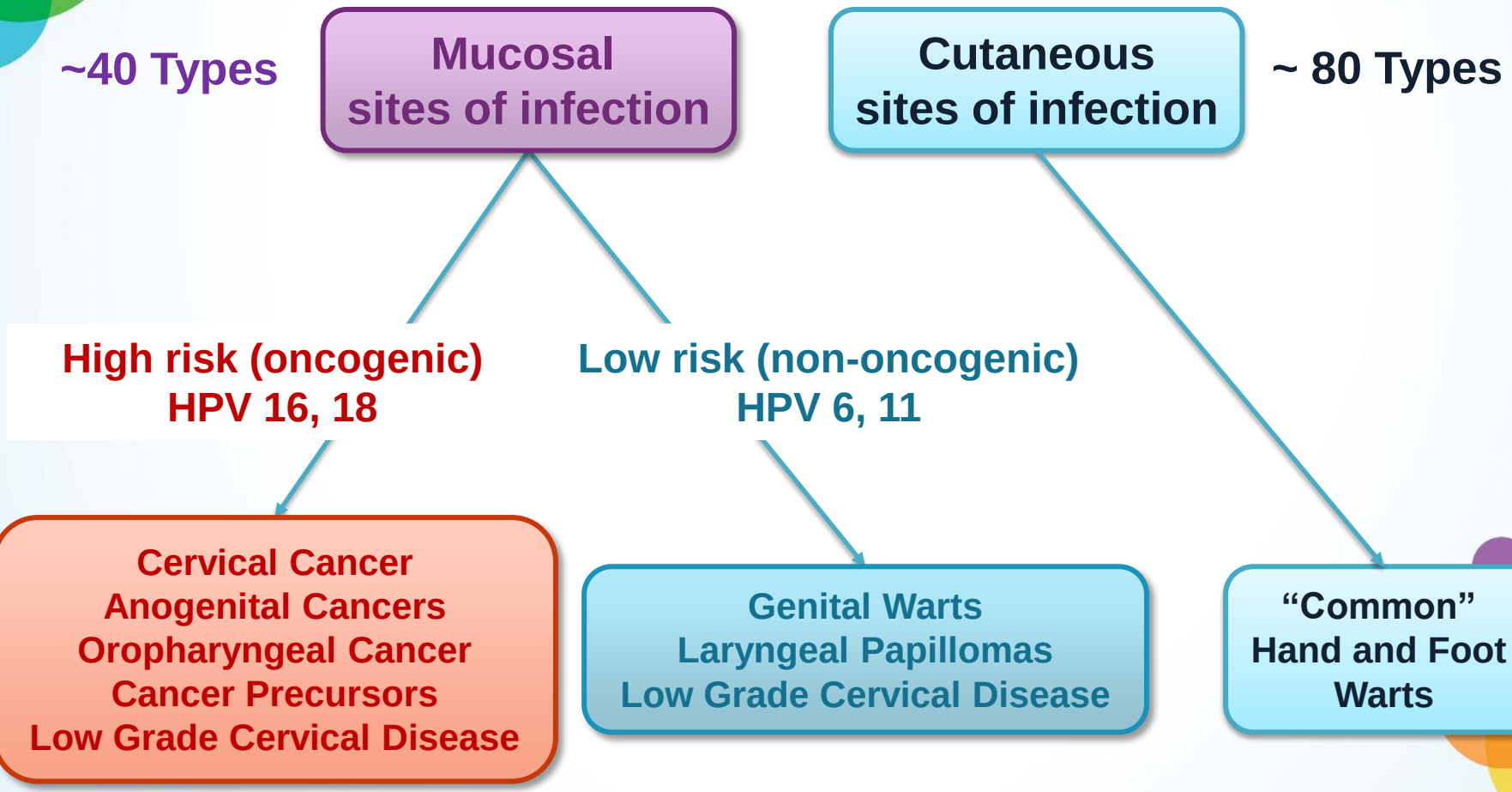
Almost everyone will be infected but most people will never know

47% of high school students have already engaged in sexual (vaginal-penile) intercourse

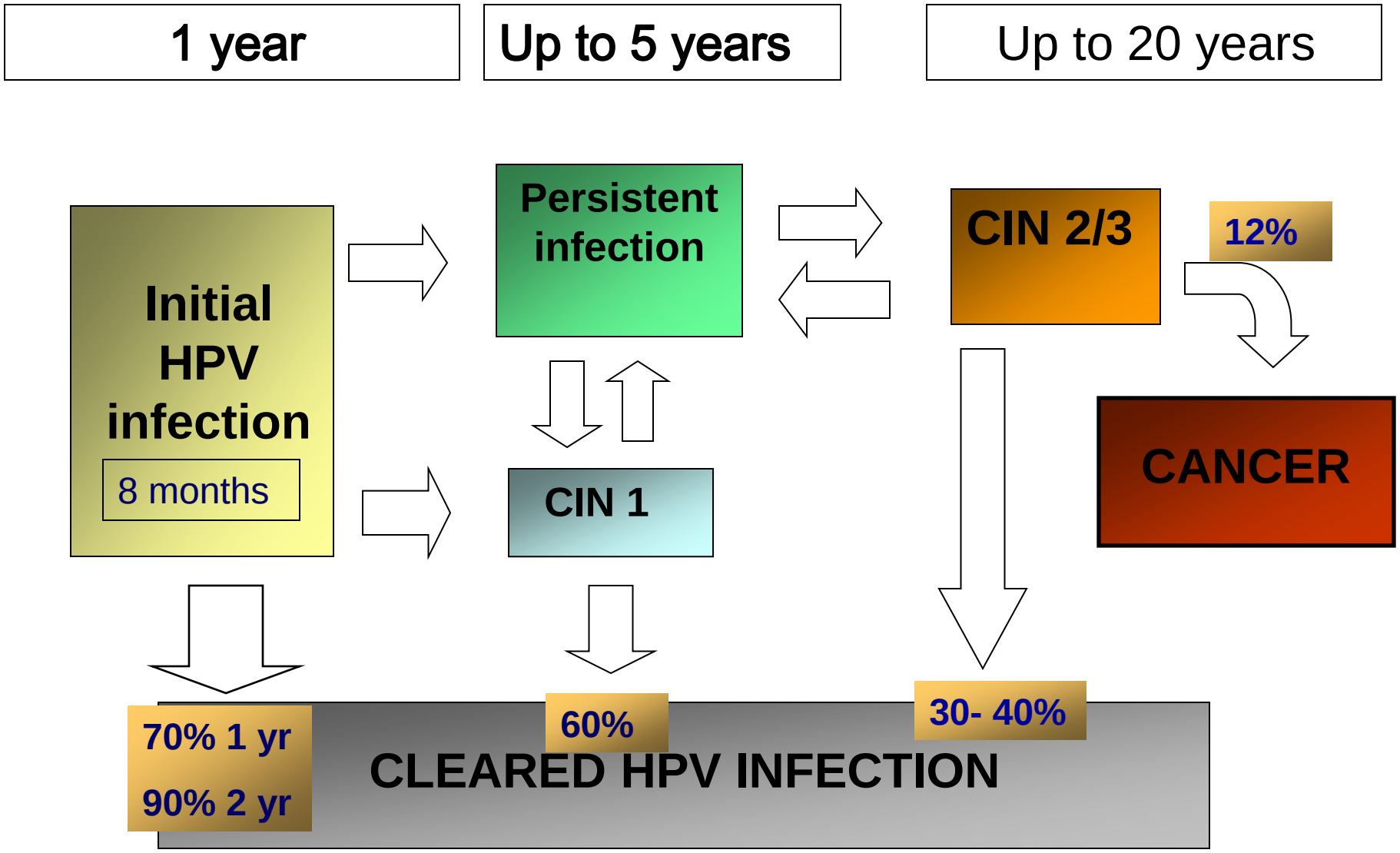
- 6% of students had sexual intercourse before age 13
- 1/3 of 9th graders and 2/3 of 12th graders have engaged in sexual intercourse
- 1 in 7 high school students (all grades) have had sexual intercourse with 4 or more partners

Jemal A et al. J Natl Cancer Inst 2013;105:175-201
Kahn. MMWR. 2014; 63(4)

HPV Types Differ in their Disease Associations



Natural history of HPV infection



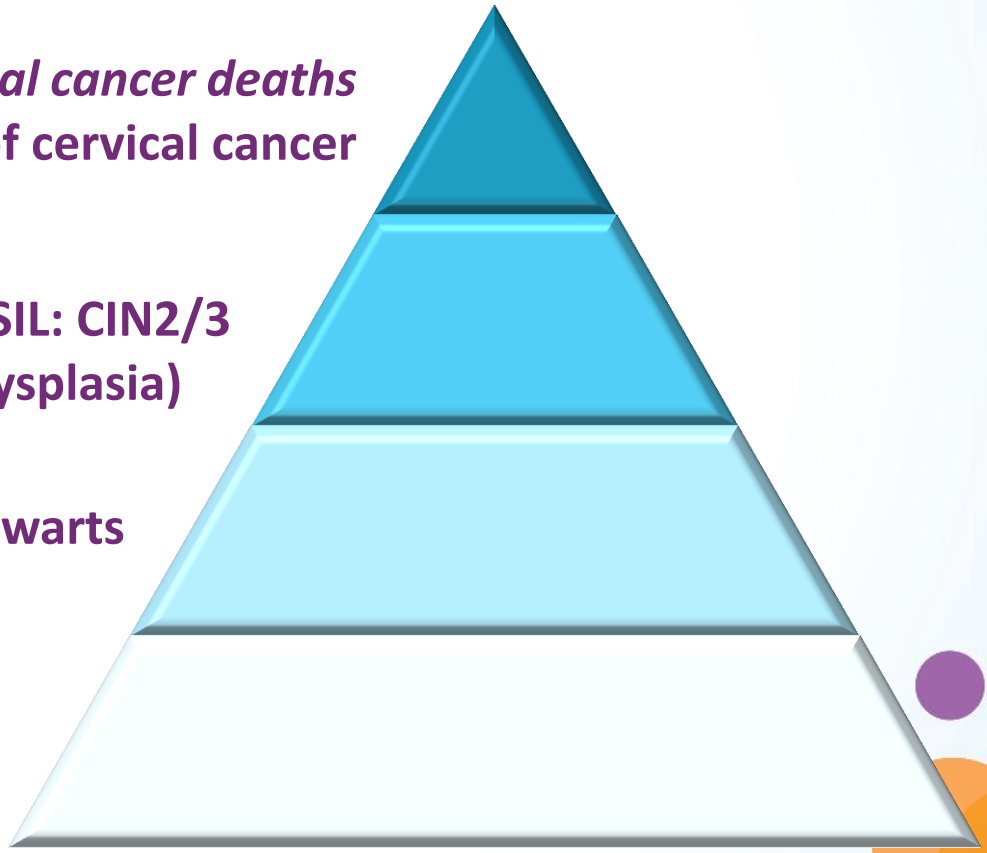
Without vaccination, annual burden of genital HPV-related disease in U.S. females:

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)

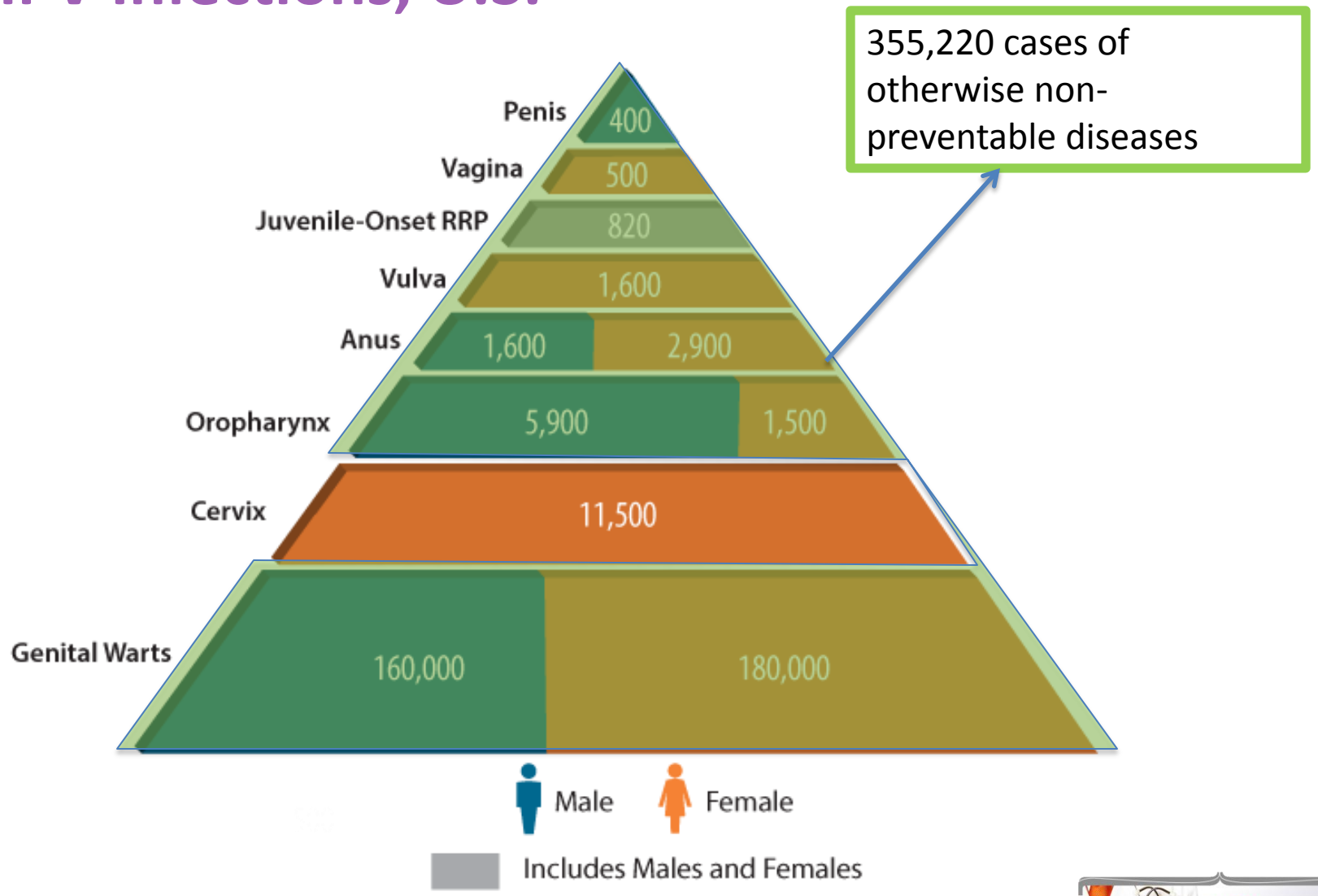


3 million cases and $7 billion

American Cancer Society. 2008; *Sex Transm Dis*. 2004;

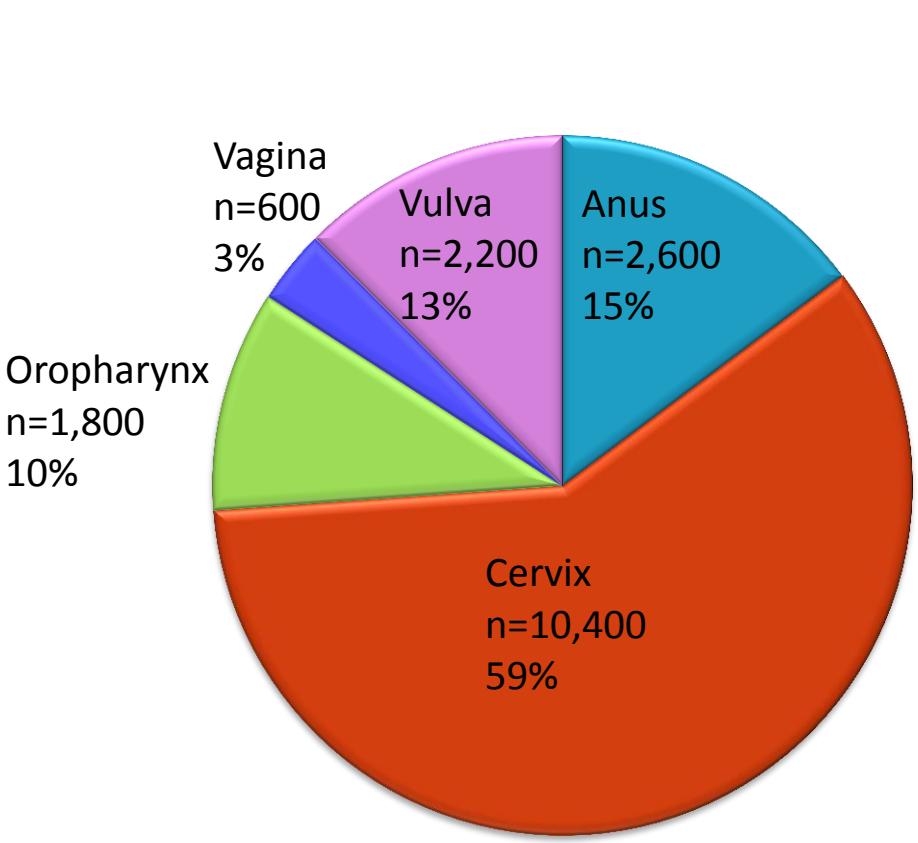
Schiffman *Arch Pathol Lab Med*. 2003; Koshiol
Insinga, Pharmacoeconomics, 2005

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

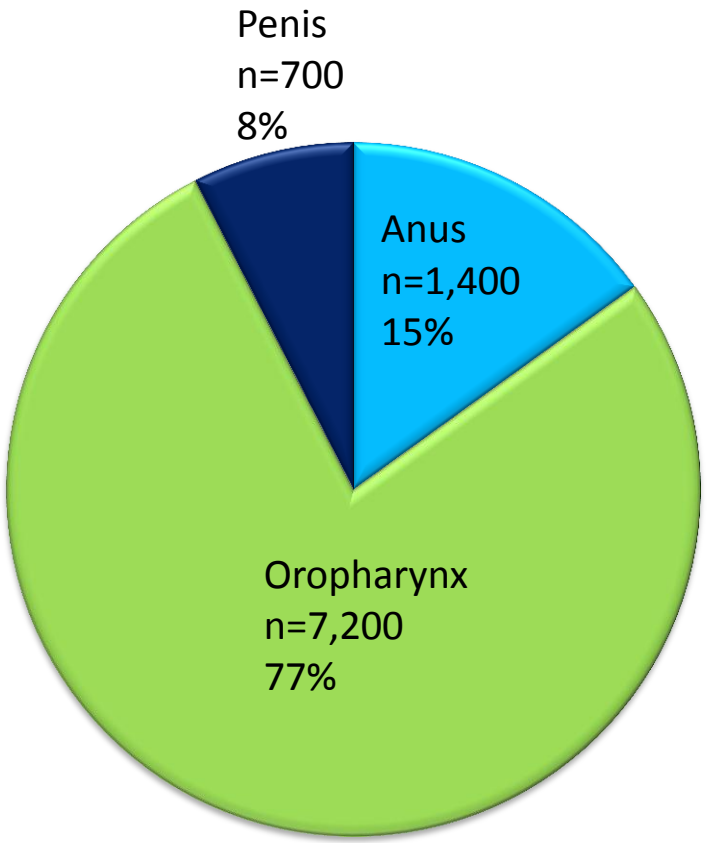


CDC. Human papillomavirus (HPV)-associated cancers. Atlanta, GA: US Department of Health and Human Services, CDC; 2013. Available at http://www.cdc.gov/cancer/hpv/statistics/cases.htm

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



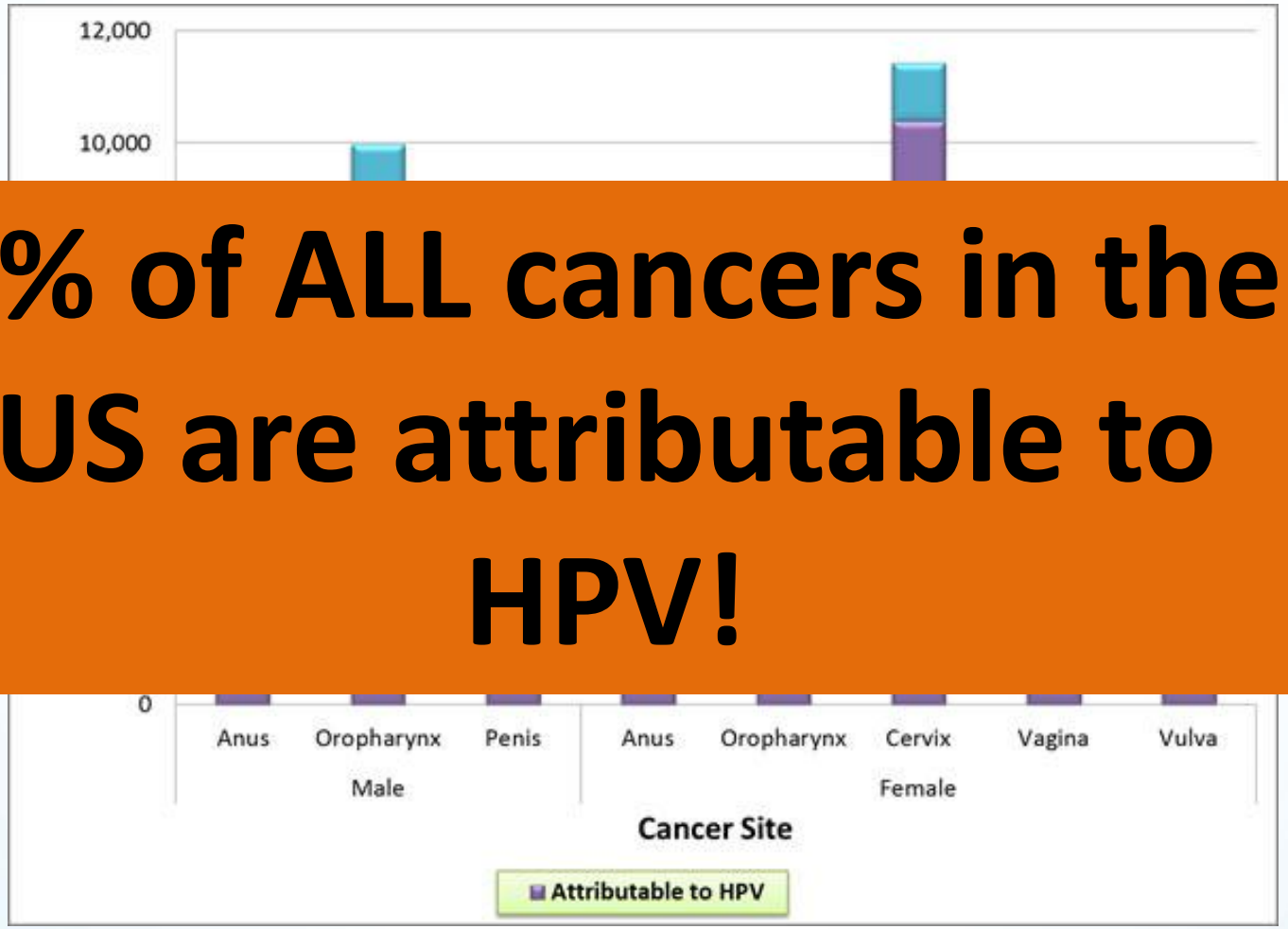
Women (n = 17,600)



Men (n = 9,300)

CDC, United States Cancer Statistics (USCS), 2006-2010

How Many Cancers Are Linked with HPV Each Year?



5% of ALL cancers in the US are attributable to HPV!

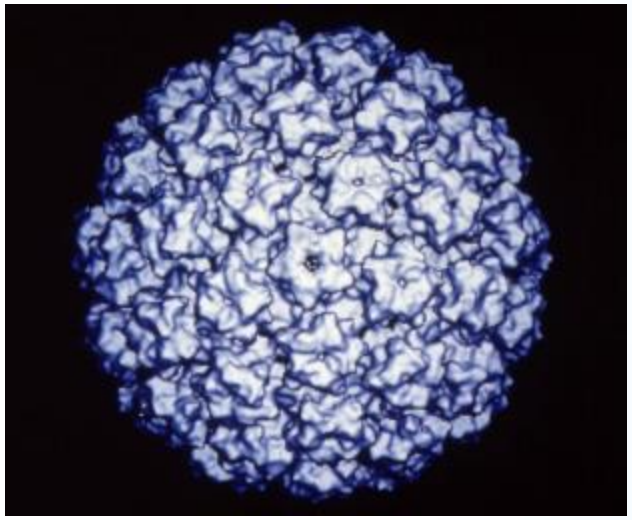
HPV VACCINE

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 Virus-Like Particle

HPV Vaccine

Quadrivalent/HPV4 (Gardasil)	Name	Bivalent/HPV2 (Cervarix)
Merck	**Manufacturer**	GlaxoSmithKline
6, 11, 16, 18	**Types**	16, 18
Females: Anal, cervical, vaginal and vulvar precancer and cancer; Genital warts **Males:** Anal precancer and cancer; Genital warts	**Indications**	**Females:** Cervical precancer and cancer **Males:** Not approved for use in males
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

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 (catch-up)
- 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

CDC. Quadrivalent Human Papillomavirus Vaccine: Recommendations of ACIP. MMWR 2007;56(RR02):1-24.

Adverse Events Following Any Dose of HPV Vaccine Among Females

Adverse Event	HPV4 Vaccine	Adjuvant placebo	HPV2 Vaccine	Adjuvant placebo
Pain	84	75	92	87
Swelling	25	16	44	21
Erythema	25	18	48	24
Temp 100-101	4	--	13	14
Temp >102	.4	.4		
Nausea	7	7		
Malaise	1.4	1.2	55	54

FDA product approval data, CDC

9-Valent HPV Vaccines

FDA approved a 9-valent HPV vaccine December 2014

- "Gardasil 9"
- Includes 31, 33, 45, 52, 58
- Still has 6, 11, 16, 18

Why is the 9-Valent Vaccine Important?

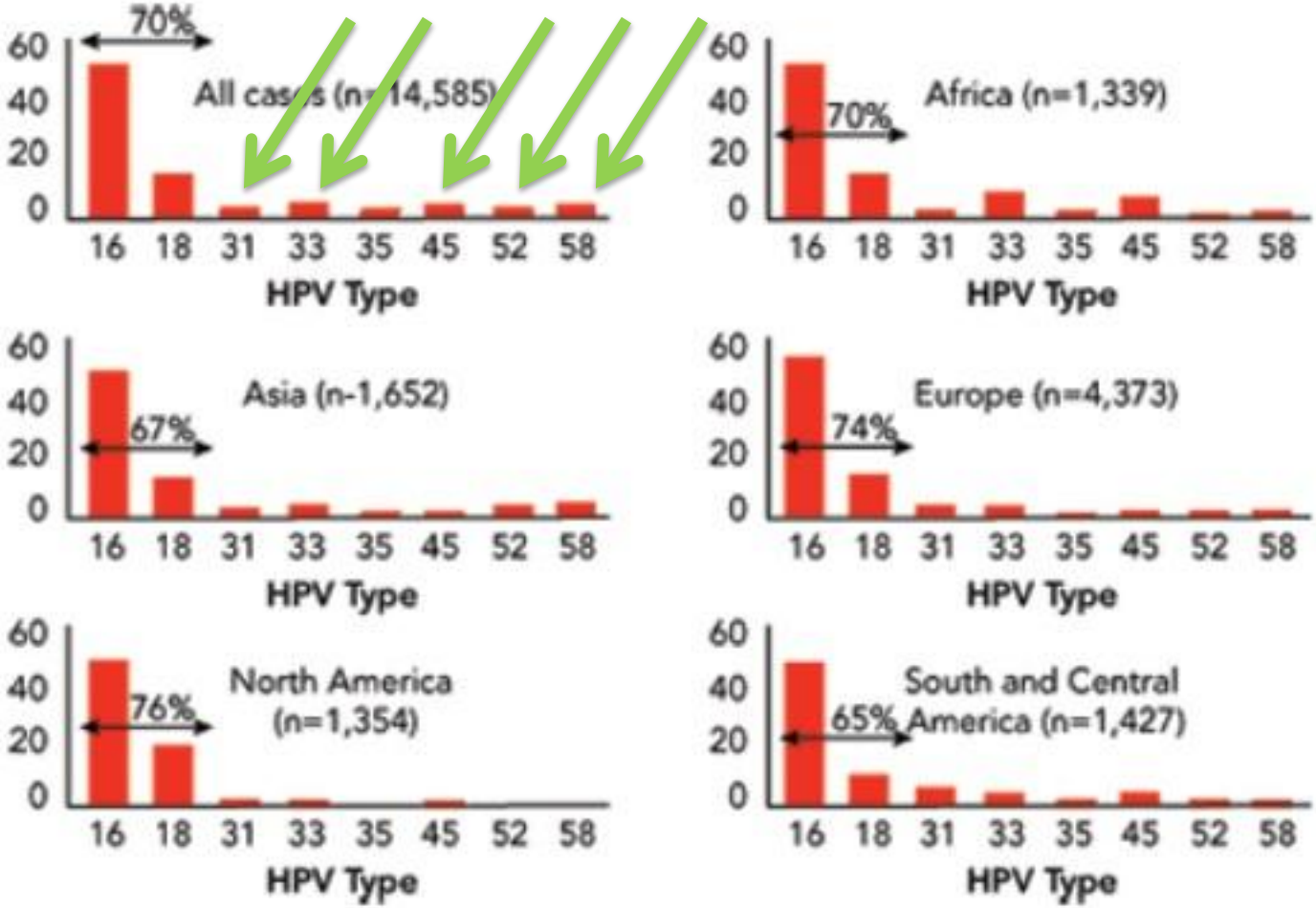


Fig 1. Prevalence of the eight most common HPV types in 14595 cases of invasive cervical cancer by region. Originally published in the Int J Cancer. 2007;121:621-32.

Gardasil vs Gardasil 9 - Components

	Gardasil	Gardasil 9
HPV 6 protein	20 µg	30 µg
HPV 11 protein	40 µg	40 µg
HPV 16 protein	40 µg	60 µg
HPV 18 protein	20 µg	40 µg
HPV 31, 33, 45, 52, 58 protein	n/a	20 µg each
Aluminum adjuvant	225 µg	500 µg

Gardasil 9 has 2.25 fold more total protein antigen (270µg vs 120 µg) and 2.22 fold more aluminum adjuvant (500µg vs. 225 µg)

Gardasil vs Gardasil 9 - Administration

	Gardasil	Gardasil 9
Dosing Schedule	0, 2, 6 months	0, 2, 6 months
Female population	9-26 years	9-26 years
Male population	9-26 years	9-15 years
Female indication	Cervical, vulvar, vaginal, anal cancer, genital, warts, AIN, cervical, vaginal and vulvar dysplastic lesions	Cervical, vulvar, vaginal, anal cancer, genital, warts, AIN, cervical, vaginal and vulvar dysplastic lesions
Male indication	Anal cancer, genital warts, AIN	Anal cancer, genital warts, AIN
OK to give with MCV/Tdap?	Yes	Yes

Efficacy of Gardasil9

	Gardasil	Gardasil 9
HPV 16/18 CIN	98.2%	immunobridge
HPV 16/18 VIN/VAIN	100%	immunobridge
Genital Warts Female	99%	immunobridge
Genital Warts Male	100%	immunobridge
AIN (male)	77.5%	immunobridge
Any female precancer endpoint from 31, 33, 45, 52, or 58	n/a	96.7%

Safety of Gardasil9

	Gardasil	Gardasil 9
Injection site pain	83.5%	89.9%
Swelling	28.8%	40.0%
Redness	25.6%	34.0%
Headache (girls only)	28.2%	14.6%
Fever	5.9%	6.0%
Nausea	3.7%	4.4%
Dizziness	3.0%	2.8%

What About in Those Already Vaccinated with Gardasil

- Safety of Gardasil 9 was assessed in those having already received 3 doses of Gardasil
  - 921 females age 12-26
  - 99% had had three doses within a 12 month period
  - Gardasil 9 provided 12-26 months after last Gardasil dose

For the 5 new HPV types, girls who had received Gardasil previously had **25%-63% the GMT** of those who had not received Gardasil previously.

The clinical implications of this lower GMT is not known. These lower levels are still orders of magnitude higher than "natural" HPV infection.

Key Messages About HPV Vaccine Safety

- Safety studies for HPV4 vaccine similar to safety reviews of MCV4 and Tdap vaccines
- More than 100 MILLION doses of HPV 4have been given
- The safety of this vaccine has been scrutinized more than any other vaccine because of the “controversy.”
  - Not just in the US but in many countries
  - NO unusual safety concerns have been found
  - Media reports are unfounded – not linked to the vaccine

Garland et al, Prev Med 2011; Ali et al, BMJ 2013; Markowitz JID 2013; Nsouli-Maktabi MSMR 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

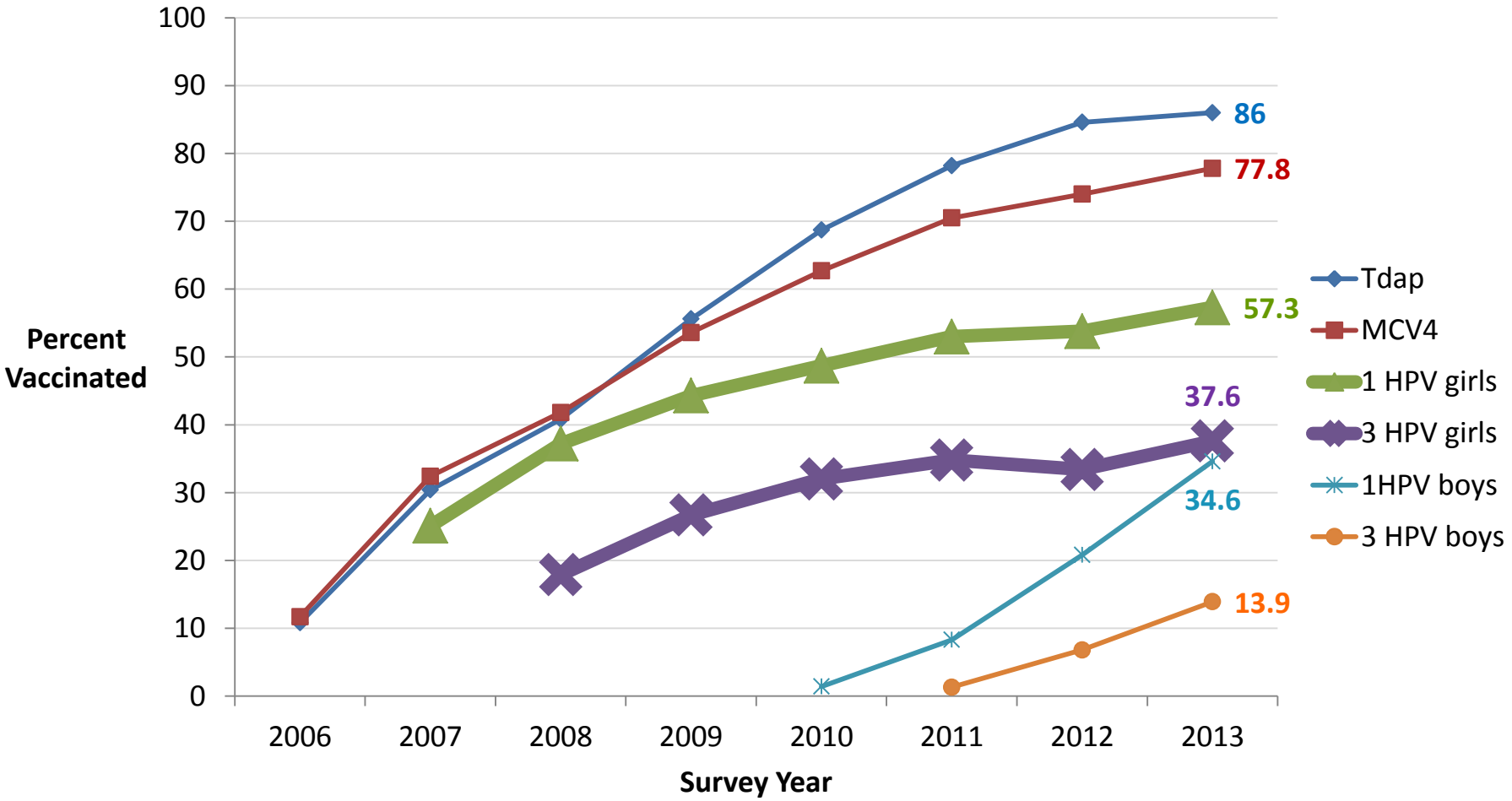
Inadequate evidence was found for causal relationships between HPV vaccination and 12 other specific health events studied

Syncope can occur among adolescents who receive vaccines, including HPV vaccine. The ACIP recommends providers observe patients for 15 minutes after vaccination

Institute of Medicine. Adverse Effects of Vaccines: Evidence and Causality. Washington DC. The National Academies Press, 2012.

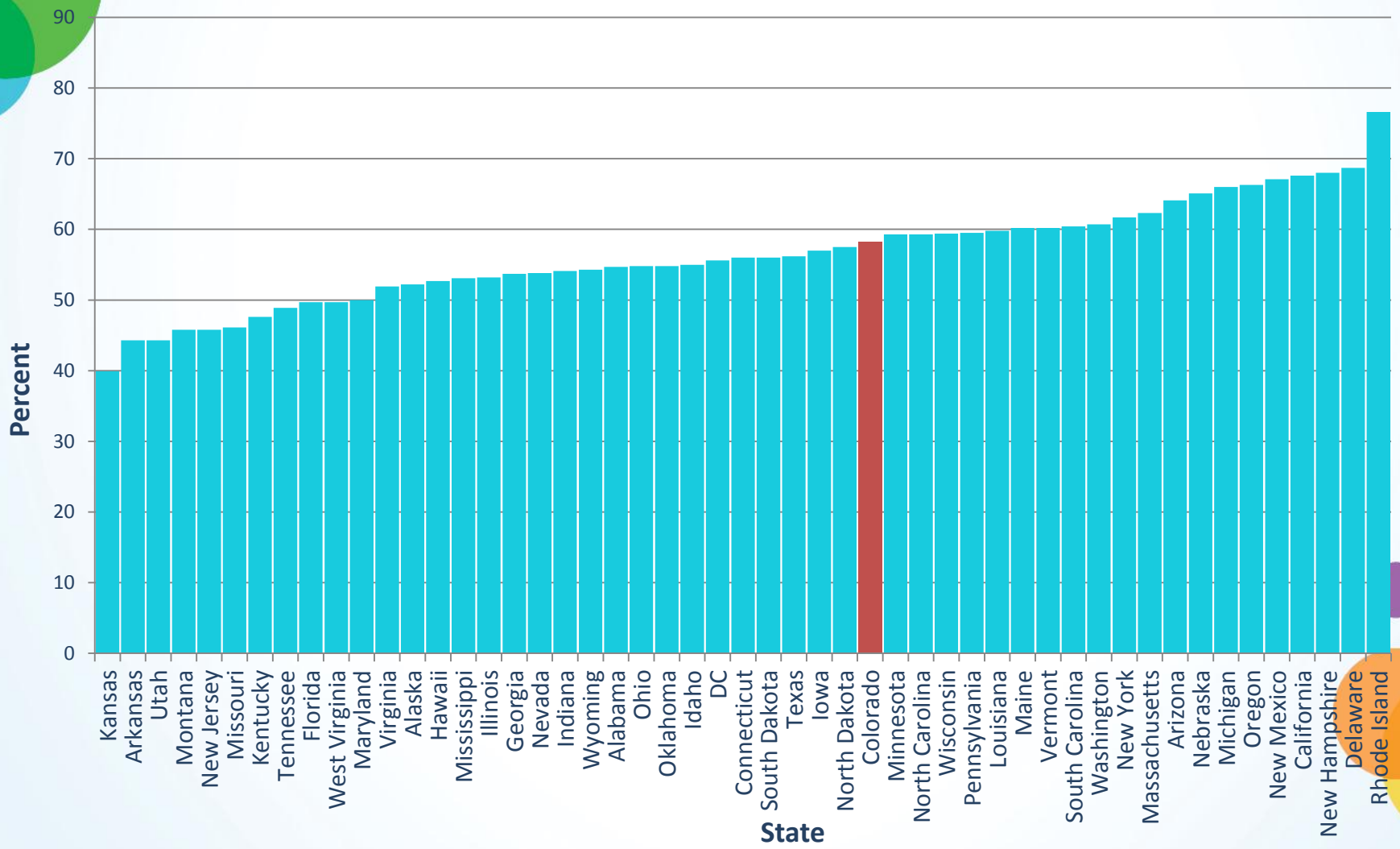
HPV VACCINE COVERAGE

Adolescent Vaccination Coverage United States, 2006-2013

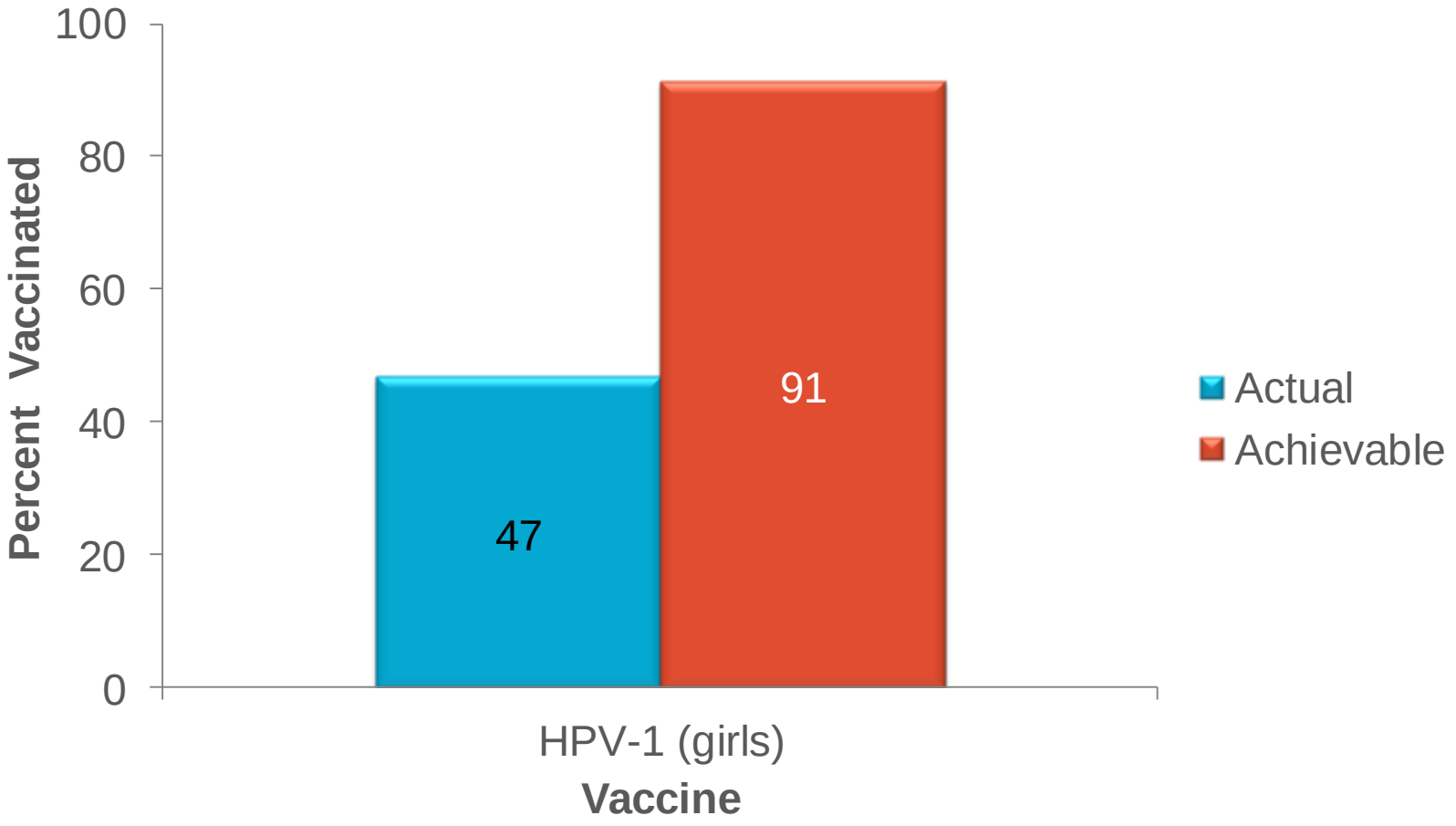


MMWR 2014; 63(29);625-633.

HPV Vaccine Series Initiation
Girls 13-17 Years, by State, 2013



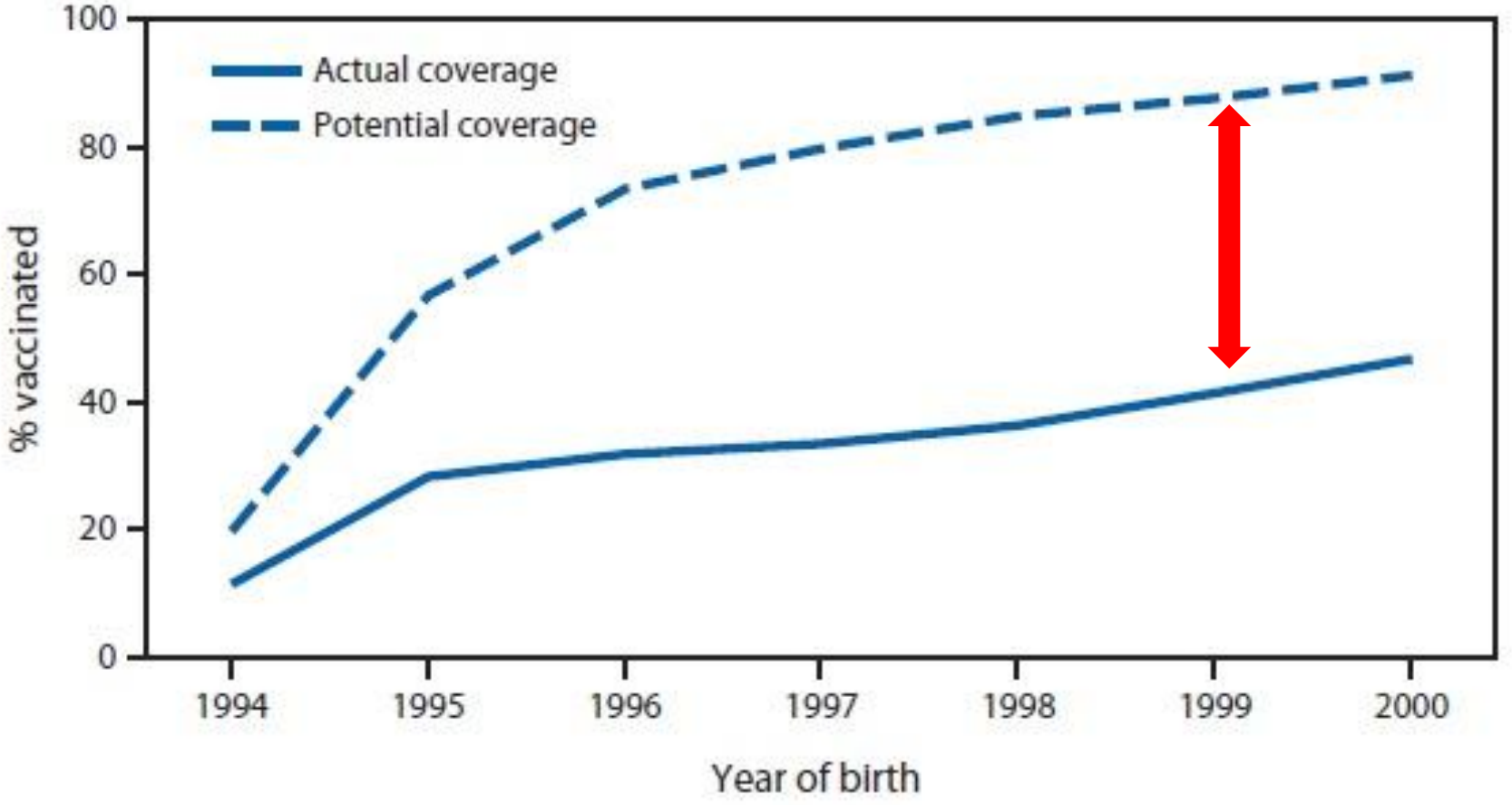
Impact of Eliminating Missed Opportunities by Age 13 Years in Girls Born in 2000



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.

FIGURE. Actual and potentially achievable vaccination coverage with ≥1 dose of human papillomavirus (HPV) vaccine if missed vaccination opportunities had been eliminated among girls by age 13 years,* by birth cohort (1994–2000) — National Immunization Survey-Teen, United States, 2007–2013 combined



* Missed opportunity was defined as a health care encounter occurring on or after a girl's 11th birthday and before her 13th birthday, and on or after March 23, 2007, during which a girl received at least one vaccination, but not the first dose of the HPV vaccine series.

2013. MMWR Morb Mortal Wkly Rep 2014 Jul 25;63(29):625-33.

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

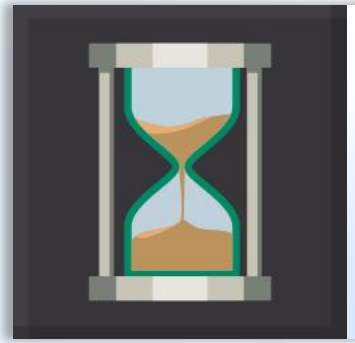
1,400: number of cervical cancer deaths we will not prevent

Adapted from Chesson HW et al, Vaccine 2011;29:8443-50

HPV Vaccine 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 YOU ARE THE KEY TO CANCER PREVENTION

What's coming?

- **9-valent vaccine**
  - Includes 5 additional HPV types
  - Prevent 90% of cervical cancer
- **Possibility of two dose recommendation**
- Unclear how availability of different vaccines will be reconciled
  - Finish with what you started?
  - Interchange vaccines?

http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-oct-2013/03-HPV-Luxembourg.pdf

Vaccine Recommendations – 2 vs. 3 dose

Approval for 2 dose schedule:

HPV2

- EU
- 18 in Africa
- 13 in Latin America
- 14 in Asia

HPV4

- EU
- 1 in Africa
- 8 in Latin America
- 1 in Asia

http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2014-06/HPV-04-Markowitz.pdf

Current Vaccine Recommendations

Country	Age	Schedule
USA	11-12, M and F 13-26 F catch up 13-21 M catch up	3 doses 3 doses 3 doses
EU	Variable 9-13/14 15-26 F only	 2 doses, 0, 6 months 3 doses
Australia	12-13 M and F 14-15 M catch up	3 doses 3 doses
Canada	9-26 M and F 27-45 (HPV4) F at high risk	3 doses 2 doses in some areas
Mexico	9-12 F	3 doses, 0, 6, 60 months
WHO	9-13 F routine 15+ F Catch up	2 doses, 0, 6 months 3 doses

http://vaccine-schedule.ecdc.europa.eu/Pages/Scheduler.aspx;
http://www.ecdc.europa.eu/en/activities/sciadvice/_layouts/forms/Review_DispForm.aspx?List=a3216f4c-f040-4f51-9f77-a96046dbfd72&ID=758;
http://www.phac-aspc.gc.ca/publicat/cig-gci/p01-12-eng.php; http://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html;
http://www.who.int/immunization/policy/Immunization_routine_table2.pdf?ua=1, http://www.cdc.gov/vaccines/acip/meetings/downloads/slides-2014-06/HPV-04-Markowitz.pdf

SO WHAT CAN WE DO?

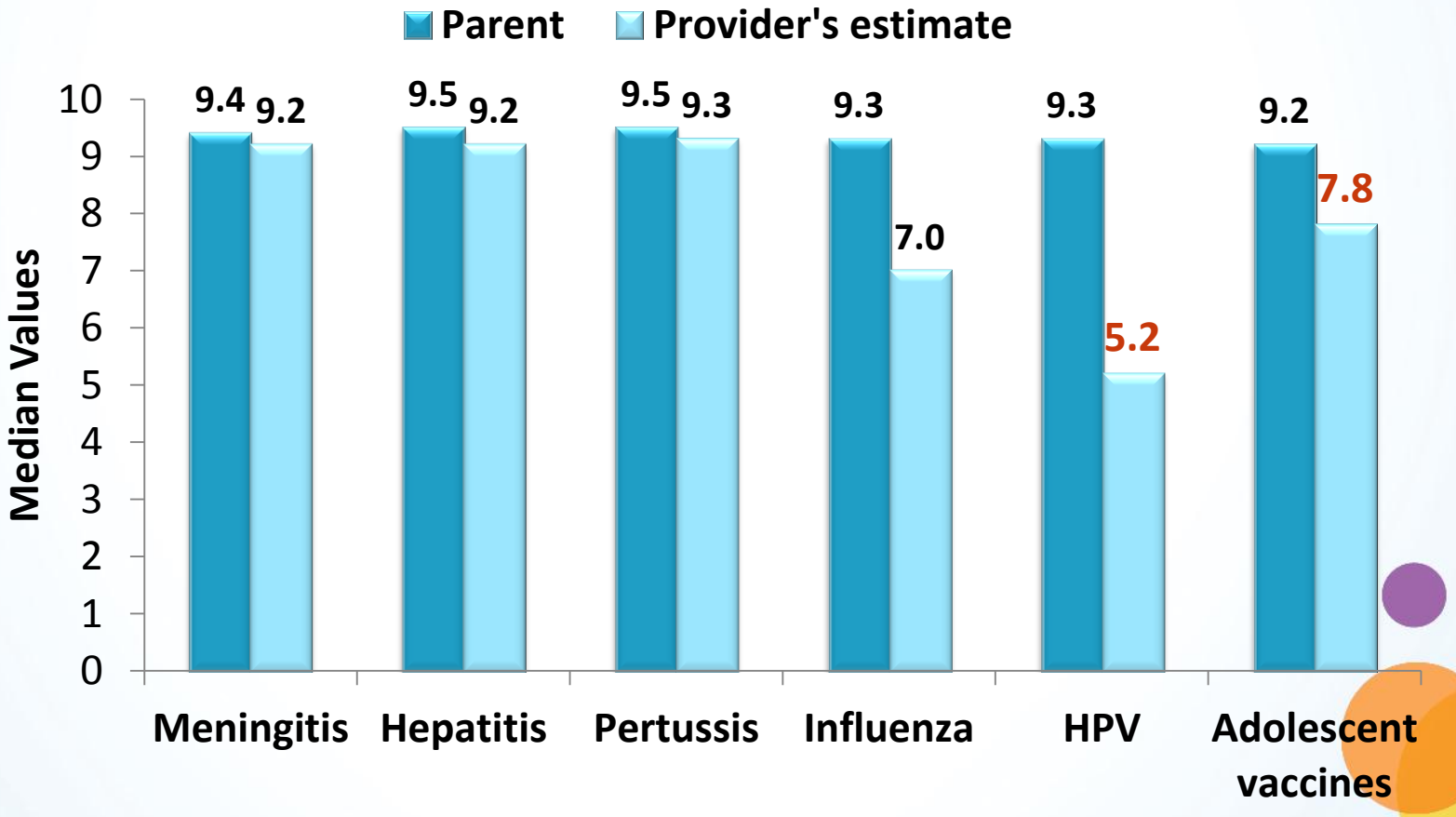
A Strong Provider Recommendation is Key!

Top Five Reasons for Not Vaccinating Adolescents with HPV Vaccine

2013 Top five reasons for not vaccinating adolescents			
Parents of girls		Parents of boys	
Reason	%	Reason	%
Lack of knowledge	15.5	Not recommended	22.8
Not needed or necessary	14.7	Not needed or necessary	17.9
Safety concern/Side effects	14.2	Lack of knowledge	15.5
Not recommended	13.0	Not sexually active	7.7
Not sexually active	11.3	Safety concern/Side effects	6.9

MMWR July 25, 2014
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6329a3.htm#tab2

Providers underestimate the value parents place on HPV vaccine



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

Role of Provider Recommendation

Variable	Odd Ratio	95% CI
Is a student		
Personally Believes Vaccine is Important		
Physician Discussed and Recommended		

Strength of Physician Recommendation	% Got HPV Vaccine	% Not Vaccinated
1 (low)	3%	6%
2	3%	8%
3	13%	36%
4	25%	26%
5 (high)	56%	25%

Rosenthal SL, Weiss TW, Zimet GD, Ma L, Good MB, Vichnin MD. Predictors of HPV vaccine uptake among women aged 19-26: importance of a physician's recommendation. Vaccine 2011 Jan 29;29(5):890-5.

“BLANKET” Recommendation:

Recommend HPV the same way as you would recommend other adolescent vaccines

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

How you recommend matters: Permissive Vs. Presumptive Recommendation

Presumptive: "We have to do some shots today"

Permissive: "What do you want to do about shots?"

Analysis of 111 vaccine conversations (50% of parents vaccine hesitant).

- 17.5 higher odds of resisting recommendation if permissive approach used.
- 47% of parents let go of their initial resistance when continued presumptive recommendations were made

Opel DJ, Heritage J, Taylor JA, et al. The architecture of provider-parent vaccine discussions at health supervision visits. *Pediatrics.* Dec 2013;132(6):1037-1046.

Physician Communication About HPV Study

RCT of PC "Toolkit"

Response to RFA from CDC to improve "the frequency with which primary care physicians provide strong HPV vaccine recommendations to adolescents, particularly 11-12 year olds."

3- year project – currently in middle of year 2

Cluster randomized at practice level

- 17 practices
- Includes FM and Peds
- Includes public and private
- >20,000 adolescents served/year

Toolkit Components

1. HPV information website that provides individually tailored educational materials
2. “Fact Sheet” developed by each practice
3. Motivational Interviewing Training
4. Decision Aid for still-reluctant parents.

HPV Fact Sheet

1-2 sided

Practices choose from library of facts, images and pictures

Implementation varies based on practice needs

Some also offering in Spanish

HUMAN PAPILLOMAVIRUS (HPV) FACTS

The risk of HPV infection is high.
Even with just **one partner** the chances of being infected with HPV after starting to have sex are:

More than 1 out of 5 within 6 months.

More than 1 out of 3 within a year.

HPV is Common & May Lead to Serious Disease

- Up to **75%** of HPV infections occur among people **15 through 24 years old.**
- HPV infection is equally common among both males and females.
- Because most of the symptoms of HPV cannot be seen, a person could contract or transmit HPV without knowing
- HPV infection can lead to genital warts, abnormal pap smear tests, and/or cancer of the cervix, vagina, penis, anus, tonsils, and throat.
- There is NO CURE for HPV Infection.

8 OUT OF 10 PEOPLE WILL HAVE HPV BEFORE THEY TURN 50

The HPV Vaccine Safely Protects Boys & Girls from HPV

Why get vaccinated?

The HPV vaccine is safe. The vaccine doesn't cause the HPV virus. After more than 76 million doses, there is no evidence that the safety of HPV vaccines is any different from the other vaccines routinely given to adolescents. Vaccine side effects have been closely monitored. Common side effects include mild pain and redness where the vaccine was injected. Rarely those vaccinated have reported fainting, dizziness, nausea, and/or headache.

Treatment of problems associated with HPV, like genital warts, are painful and often require multiple treatments.

The HPV vaccine works almost 100% of the time at preventing the most common HPVs from causing disease.

HPV is so common that most sexually-active men and women will get at least one type of HPV at some point in their lives.

HPV is transmitted through intimate (genital area) skin-to-skin contact. "Having sex" (actual penetration) is not needed to contract or transmit the virus.

Getting the HPV vaccine doesn't increase likelihood of sexual activity. Scientific studies show that vaccinating adolescents against HPV is not related to sexual activity.

Most men will never know they had an HPV infection since there is no routine test for HPV in men.

Who should get vaccinated?

Adolescent Medicine Clinic providers agree, **THE BEST** time for your son or daughter to get the vaccine is when they are 11 —12 years old. Boys 13-21 and girls 13-26 years old who have not had the vaccine should get the vaccine ASAP.

Benefits of vaccinating at a young age:

1. The immune response in preteens is stronger, so protection from the disease may be longer.
2. Your child will be protected before he or she even thinks about sexual activity.

Boys 13-21 and girls 13-26 years old who have not had the vaccine should get the vaccine ASAP

iVac Website

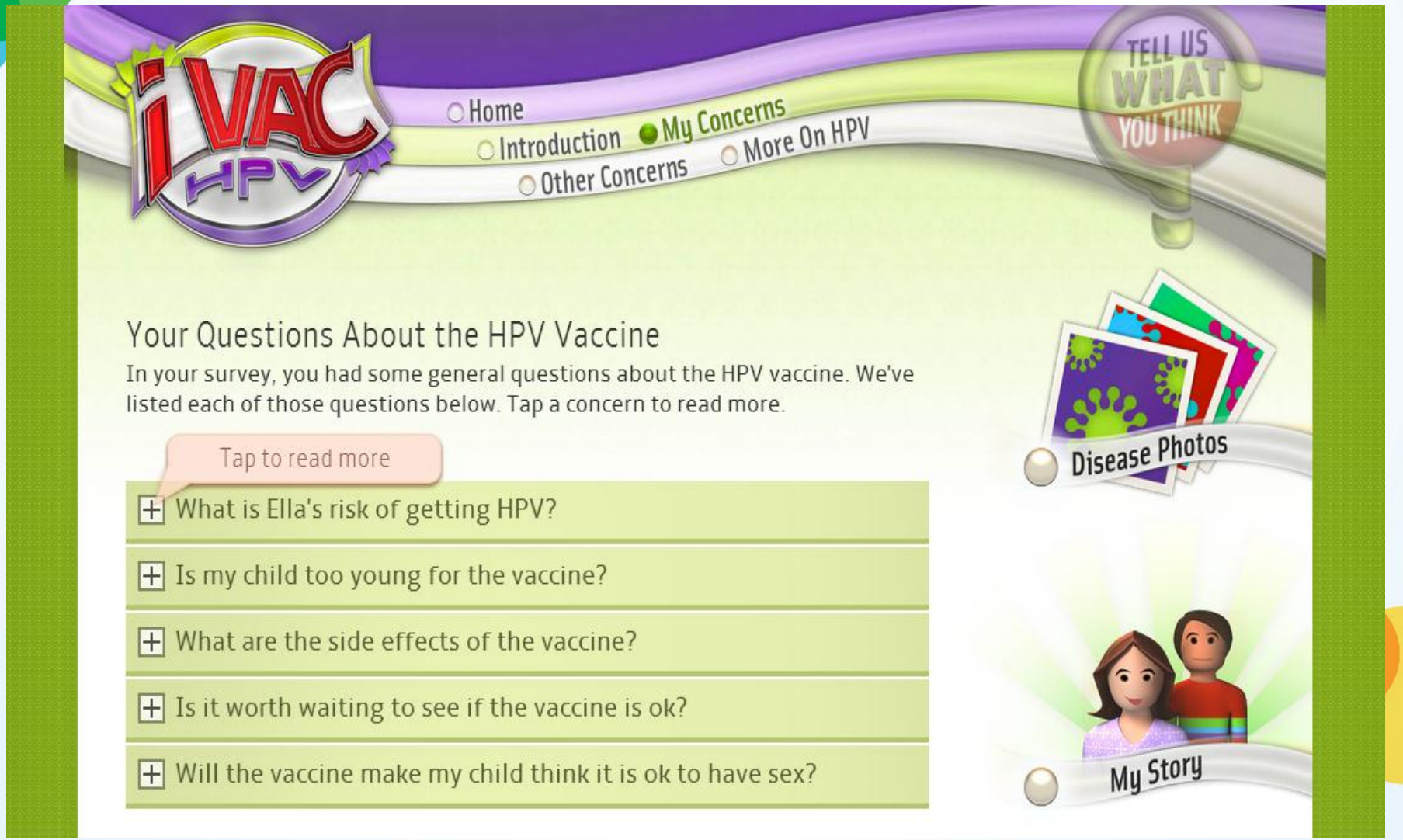
Baseline Survey

There are many reasons why parents may or may not want their adolescents to get the HPV vaccine.

For each statement, **please indicate how much you agree or disagree**.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I'm worried that Ella might get infected with HPV someday.	○	○	○	✓	○
I am worried that Ella might get genital warts someday.	○	○	○	✓	○
I am worried that Ella might get cervical cancer someday.	○	○	○	✓	○
I am worried that Ella might get the HPV virus from the vaccine.	○	○	○	✓	○

Tailored Content



Decision Aid

Making Decisions About HPV Vaccines

This worksheet is being provided by your doctor's office for young adults (up to age 26) or parents of adolescents (9-18) who have not yet gotten vaccinated against human papillomavirus (also known as HPV).

HPV occurs in 80% of adults, but generally causes no health problems. However, in some people **HPV causes cancers of the cervix, vagina, penis, and anus and also causes genital warts** (a non-cancerous condition). In fact, the only way you can get cervical cancer and genital warts is from an HPV infection.

Getting vaccinated against HPV can decrease the chance of getting these diseases. The HPV vaccine is given as a series of 3 shots, ideally over a 6-12 month period. Many people have

1 What Matters Most To You

Personal feelings are just as important as the medical facts when deciding about HPV vaccination. Think about what matters most to you in this decision and mark it below.

I am not that worried about HPV-related cancers	Trying to prevent HPV-related cancers is really important to me
I am not that concerned about genital warts	Preventing genital warts is really important to me
I am not that concerned about the possibility of spreading HPV to others	I want to minimize the chances that HPV can be spread to others
I really want to avoid pain from shots	I am not that concerned about pain from shots
It is OK if I sometimes don't do what the doctor recommends	It is important to me to follow all the advice given by the doctor

Motivational Interviewing Training

TOOLS FOR ADVANCING PHARMACY PRACTICE

Using motivational interviewing in the community pharmacy to increase adult immunization readiness: A pilot evaluation

Amber Brackett, Michell Butler, and Liza Chapman

Current Progress

Full toolkit launched Feb 2, 2015

Interim vaccination assessment March, 2015 (MOC)

Final vaccination assessment in March 2016

- HPV vaccination of 11-12 year olds
- HPV vaccination of 13-17 year olds
- Series initiation and completion
- Physician report of making strong recommendation
- Time spent discussing the vaccine
- Utilization of toolkit components

Future Directions

CDPHE grant to disseminate toolkit

Future dissemination grants

Tweaking toolkit components

Assessment of related “CHICOs” website

- 632/1100 enrolled
- Interim analysis: improved vaccination intention after either tailored or untailored website, YA>parents

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.

4 Take-home Messages

1. HPV Vaccine is SAFE

   More than 100 MILLION doses have been given. Safety studies findings for HPV vaccine similar to other vaccines

2. HPV Vaccine WORKS

   Vaccination can reduce HPV related cancer by 70%

3. HPV Vaccine LASTS

   Immunity lasts at least 9 years with no evidence of waning

4. The way you recommend the vaccine is important!

   Strong recommendation for all the vaccines without differentiating HPV from the others

Garland et al, Prev Med 2011; Ali et al, BMJ 2013; Markowitz JID 2013; Nsouli-Maktabi MSMR 2013

Questions?

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Cancers Attributed to HPV, U.S.

Cancer site	Average number of cancers per year in sites where HPV is often found			Percentage of cancers per year probably caused by HPV	Average number of cancers per year probably caused by HPV†		
	Male	Female	Both Sexes		Male	Female	Both Sexes
Anus	1,549	2,821	4,370	**91%**	1,400	2,600	4,000
Cervix	0	11,422	11,422	**91%**	0	10,400	10,400
Oropharynx	9,974	2,443	12,417	**72%**	7,200	1,800	9,000
Penis	1,048	0	1,048	**63%**	700	0	700
Vagina	0	735	735	**75%**	0	600	600
Vulva	0	3,168	3,168	**69%**	0	2,200	2,200
TOTAL	**12,571**	**20,589**	**33,160**		**9,300**	**17,600**	**26,900**

CDC, United States Cancer Statistics (USCS), 2006-2010

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

Cervical Cancer

Cervical cancer is the most common HPV-associated cancer among women

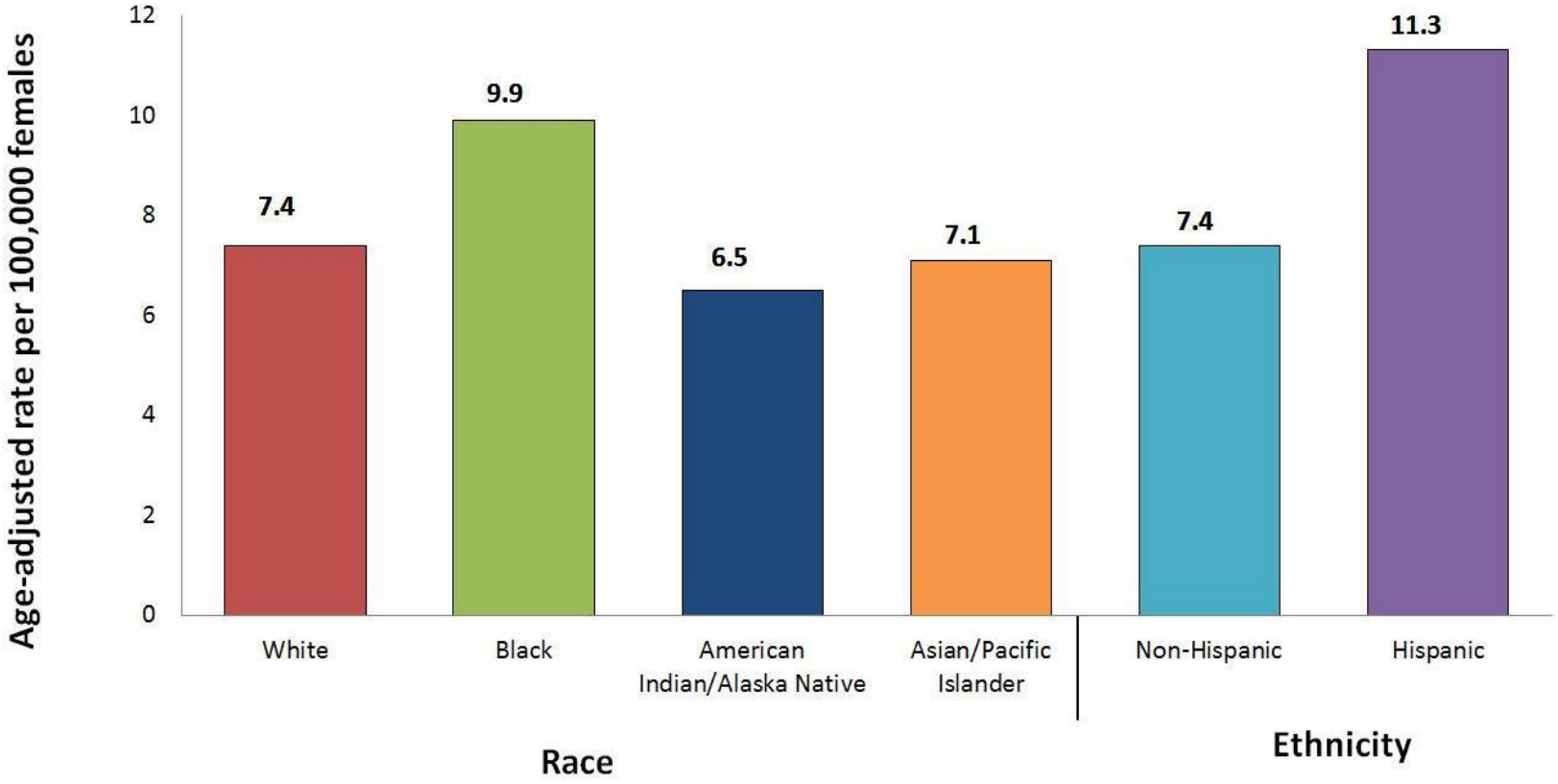
- 500,000+ new cases and 275,000 attributable deaths world-wide in 2008
- 11,000+ new cases and 4,000 attributable deaths in 2011 in the U.S.

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

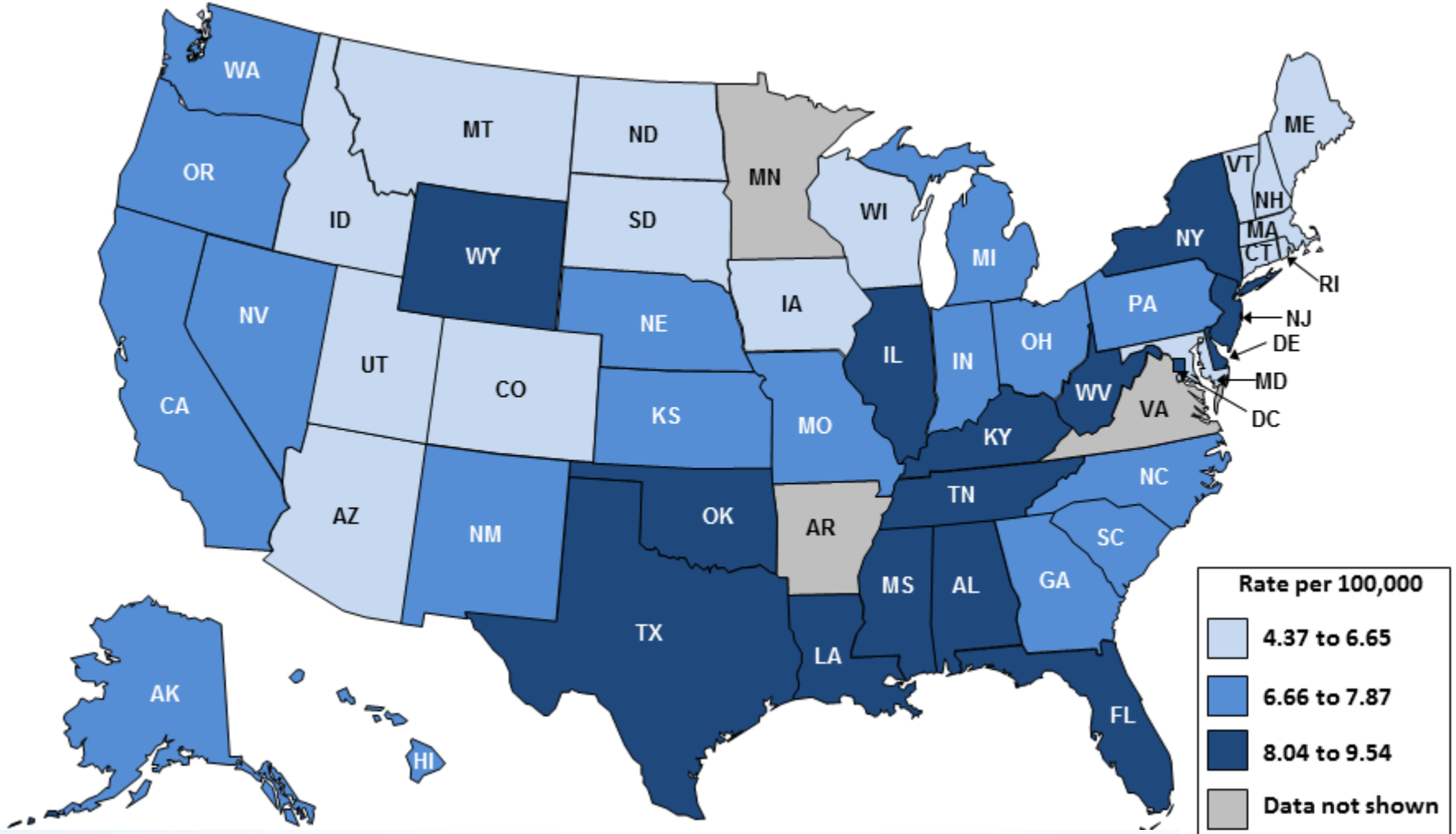
CDC. HPV–associated cancers—US, 2004–2008. MMWR 2012;61(15):258–261.
Cervical Cancer Counts by Age. US Cancer Statistics data from 2010, CDC.gov.

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

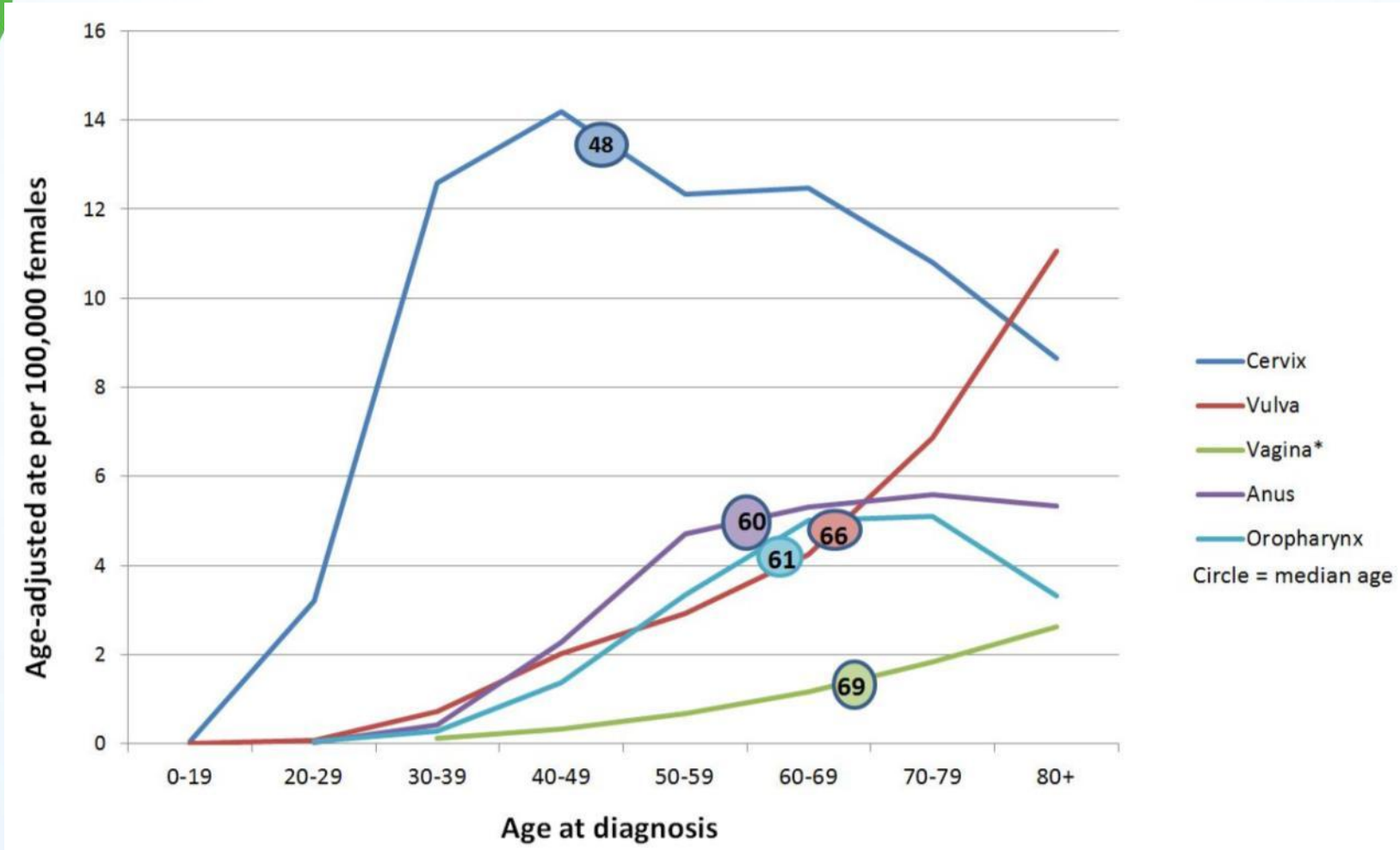


Watson et al. Human papillomavirus-associated cancers—United States, 2004-2008. *MMWR* 2012;61:258-261.

HPV-Associated Cervical Cancer Incidence Rates by State, United States, 2006-2010



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.

Watson et al. Human papillomavirus-associated cancers—United States, 2004-2008. *MMWR* 2012;61:258-261.

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

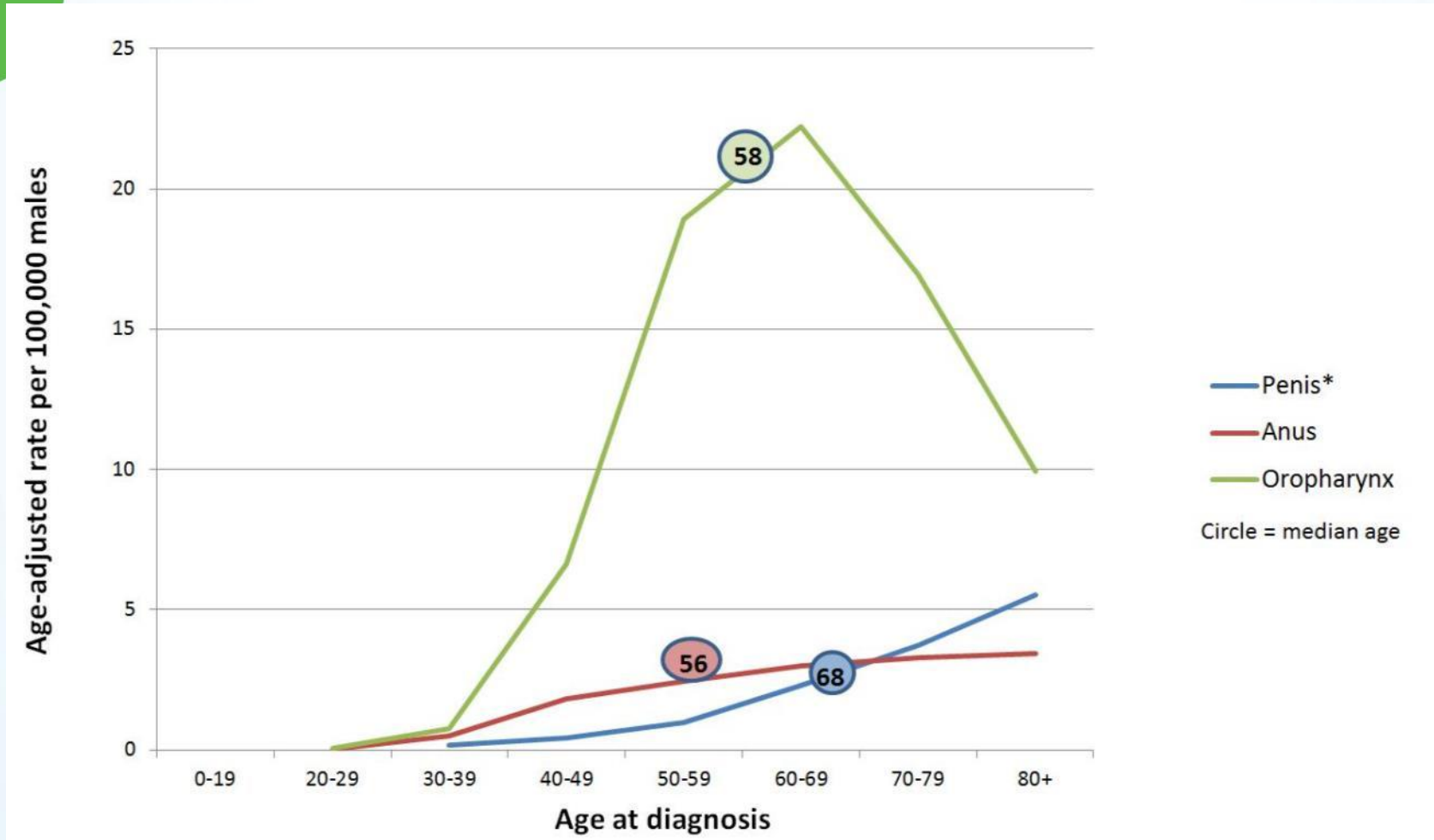
Anal cancer rates doubled from 1975 to 2009

Vulvar cancer rates rose for white and African-American women

Penile cancer rates increased among Asian men

Jemal A et al. J Natl Cancer Inst 2013;105:175-201

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.

Watson et al. Human papillomavirus-associated cancers—United States, 2004-2008. *MMWR* 2012;61:258-261.