Vaccine Acceptance:
How to talk so parents will listen and
listen so parents will talk

Barbara Pahud MD, MPH

Disclosures

- Pfizer Grants for Independent Learning and Change - CoVER
- Pfizer and Sanofi - non-branded speaker
- Sequirus, Pfizer and Sanofi advisory board
- GSK, Alere, Clinical trials
- CDC, NIH
Objectives

• Recognize the range of parental attitudes on immunization
• Identify effective approaches to discuss immunizations with specific parents
• Apply above mentioned approaches to increase HPV acceptance

What do parents know?

• Belief that vitamin K is a vaccine
• Belief that their 3-6 month old infant had received vaccines against chickenpox, smallpox, or measles, mumps, and rubella
• Belief that they themselves had received a vaccination against chickenpox as a child
• Belief that their infant could become infected with HIV from vaccines
• Belief that infants develop influenza from the vaccine
Historical Perspective

Parent Types
Spend Your Time Wisely

Believers
Vaccine-hesitant or cautious
Rejecters

Know Your Audience

• Tailor your dialogue to match the needs of your patient/parent

• Hesitancy: 34% of parents with up-to-date children had major concerns regarding vaccines
What is a Parent to do?

Love them. Protect them. Never reject them. There are NO safe vaccines!

- Mumps
- Measles
- Pertussis
- Polio
- Chickenpox
- German measles
- Meningitis
- Tetanus
- Rabies

Call 1-888-269-1421

Thus...

SCARY STORIES ABOUT VACCINES

© The Children's Mercy Hospital, 2014-2016
Parents worry about the well being of their children

Objectives

- Recognize the range of parental attitudes on immunization
- Identify effective approaches to discuss immunizations with specific parents
- Apply above mentioned approaches to increase HPV acceptance

Listen

Two ears
One mouth
Make a “CASE” for Vaccines

• Corroborate
  – Acknowledge the parent’s concern
  – Find some point of agreement between you and the parent
  – Set the tone for a respectful conversation
• About me
  – Talk about what you’ve done to enhance your knowledge and expertise (e.g., attended a conference)
• Science*
  – Describe what science has to say about the topic in question
• Explain and advise
  – Offer your recommendation, based on the science
  – Personal recommendation

Case 1


Make a “CASE” for Vaccines

• Corroborate
  – Acknowledge the parent’s concern
  – Find some point of agreement between you and the parent
  – Set the tone for a respectful conversation
• About me
  – Talk about what you’ve done to enhance your knowledge and expertise (e.g., attended a conference)
• Science*
  – Describe what science has to say about the topic in question
• Explain and advise
  – Offer your recommendation, based on the science
  – Personal recommendation

A Touch of Humanity

- **Resist the righting reflex**
  - Otherwise you run the risk of increasing a vaccine-hesitant parent’s commitment to the status quo
- **Understand motivations**
  - Ask questions that elicit values and concerns
- **Listen**
  - Realize that simply providing the vaccine-hesitant parent with information doesn’t automatically bring about change
- **Empower**
  - Remember: you are guiding the parent through the process of thinking aloud and deciding whether to change


When faced with parents who are hesitant with regards to vaccinating their children, physicians often trot out the same aphorisms:

- "vaccines protect your children from harm"
- "vaccines protect society"

New research shows that, far from being persuasive, individuals who are hesitant with vaccination to begin with may become more entrenched in their beliefs when they are confronted with these types of arguments.

https://www.medpagetoday.com/blogs/themethodsman/69649?xid=nl_mpt_weeklyvideo_2017-12-09&eun=g967364d0r#
• Hesitant parents put high value on the concept of purity – they don’t like the idea of putting something "unnatural" into their children.
• They value liberty – they want the choice of what goes into their kids.
• Appeals to authority – i.e., doctors – are not going to be very effective.

Tips

• Appeal to concepts like purity and liberty.
Instead of saying
"vaccines protect your children"
Say
"Keep your child pure of infections – Vaccinate!"
### A Touch of Reality

<table>
<thead>
<tr>
<th>What We're Afraid Of</th>
<th>What The Real Risk Is</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shark attacks (38)</td>
<td>Dog bites (4.4 million)</td>
</tr>
<tr>
<td>Murder (14, 655)</td>
<td>Suicide (32,499)</td>
</tr>
<tr>
<td>Death by peanut allergy (60)</td>
<td>Death by poisoning (27,511)</td>
</tr>
<tr>
<td>Death by plane crash (123)</td>
<td>Death by car crash (24,917)</td>
</tr>
</tbody>
</table>

Figures shown in parentheses are annual averages.

### Case 2

- **A touch of – just tell them what to do!**
  - Use a **presumptive** format (eg, “Well, we have some shots to give today”)
    - Presupposes patient will be immunized, increasing the likelihood of vaccine acceptance
  - Avoid a **participatory** format (eg, “What do you want to do about shots?”)
    - Implies that choosing not to vaccinate is medically acceptable
  - Be persistent in cases of initial resistance (eg, “He really needs these shots” or “If she were my child, I’d definitely go ahead”)
Don’t Be Afraid to Use a Presumptive Approach to Immunization Communication

Who initiated the vaccine discussion/plan specifically? (n=111)
- No plan verbalized (2%; n=2)
- Parent (13%; n=15)
- Provider (84%; n=93)

How does the PROVIDER initiate the vaccine discussion/plan? (n=93)
- Presumptive (74%; n=69)
- Participatory (26%; n=24)

How does the PARENT respond to the provider’s initiation?
- Accepts (74%; n=51)
- Provides own plan (13%; n=9)
- Resists (26%; n=18)

* Reproduced with permission from Pediatrics, Vol. 132, Pages 1037-1046, Copyright © 2013 by the American Academy of Pediatrics.

From: Effect of a Health Care Professional Communication Training Intervention on Adolescent Human Papillomavirus Vaccination: A Cluster Randomized Clinical Trial

5 Interventions:
- HPV fact sheet library to create customized information sheets relevant to each practice’s patient population
- Tailored parent education website
- A set of HPV-related disease images
- An HPV vaccine decision aid
- 2½ hours of communication training on using a presumptive vaccine recommendation, followed by motivational interviewing if parents were resistant to vaccination.
  - self-guided, 30-minute webinar; plus 2 in-person, group training sessions that lasted 1 hour each

* JAMA Pediatr. Published online March 05, 2018. e18020160.10.1001/jamapediatrics.2018.0206
© The Children’s Mercy Hospital, 2014. 03/14

Did it work?
- Adolescents in the intervention practices had significantly higher odds of HPV vaccine series initiation (adjusted odds ratio [aOR], 1.46; 95% CI, 1.31-1.62) and completion (aOR, 1.56; 95% CI, 1.27-1.92) than those in the control practices (a 9.5–absolute percentage point increase in HPV vaccine series initiation and a 4.4–absolute percentage point increase in HPV vaccine series completion in intervention practices).
- The intervention had a greater effect in pediatric practices compared with family medicine practices and in private practices compared with public ones.
What can I do?

• Health care professionals reported that communication training and the fact sheets were the most used and useful intervention components.

Of 1447 residents invited, 746 completed the survey (52% response rate). Among participants, 12 were excluded due to inability to determine residency type and or year. The final cohort consisted of 734 residents.

• Knowledge: The proportion of correct answers increased with residency year from PGY1 to PGY4 (49%, [95% CI 47-51]; 64% [95% CI 58-70]; test for trend p<.001). Compared to Family Medicine residents, Pediatric residents were more likely to answer knowledge questions correctly (56%; 49%; p<.001).

• Attitudes: Confidence in communicating with parents increased with training year (p<.001), but confidence in vaccination did not.

• Hesitancy: Three percent of residents (n=21) self-reported as vaccine hesitant. They were more likely to be FM (75%, p<.001). Residents were more likely to delay a vaccine in a vaccine eligible patient (i.e., someone without a medical contraindication) with increased year of training (p<0.001).
Objectives

- Recognize the range of parental attitudes on immunization
- Identify effective approaches to discuss immunizations with specific parents
- Apply above mentioned approaches to increase HPV acceptance

HPV INFECTION & DISEASE

Understanding the Burden

HPV (Human papillomavirus)

HPV Infection

- Almost all 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
HPV Transmission

- HPV exposure can occur with any type of intimate sexual contact
- Intercourse is not necessary to become infected
- Nearly 50% of high school students have already engaged in sexual (vaginal-penile) intercourse
  - 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 4 or more partners

HPV is found in virgins

- Study examined the frequency of vaginal HPV and the association with non-coital sexual behavior in longitudinally followed cohort of adolescent women without prior vaginal intercourse
- HPV was detected in 46% of women prior to first vaginal sex
- 70% of these women reported non-coital behaviors that may in part explain genital transmission

Cervical Cancer

- Cervical cancer is the most common HPV-associated cancer among women
  - 528,000 new cases and 266,000 deaths world-wide in 2012
  - 12,000 new cases and 4,000 deaths in the U.S. in 2013
- Half of cervical cancers occur in women <50 years
  - A quarter of cervical cancers occur in women 25-39 years
HPV Types That Cause Cervical Cancer: A Worldwide Survey

- HPV 16: 13%
- HPV 18: 53%
- HPV 45: 45%
- HPV 31: 9%
- HPV 33: 8%
- HPV negative: 4%
- All other HPV types: 13%

The Pap smear in the 21st Century

- Sensitivity of pap smear is problematic
- 50% of women diagnosed with cervical cancer never had cytology screening
- HPV testing is extremely sensitive, but less specific than Pap
  - All cervical cancers are due to HPV
  - But most HPV resolves without clinical disease
- Combinations of tests may emphasize strengths and decrease weaknesses

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)

Nearly 3 million cases and $7 billion
Average Number of New HPV-Associated Cancers by Sex, in the United States, 2015

- Men N = 15,346
  - Anus: 8%
  - Oropharynx: 14%
  - Vulva & Vagina: 17%
  - Penis: 19%
  - Cervix: 78%

- Women N = 23,875
  - Anus: 9%
  - Oropharynx: 55%
  - Vulva & Vagina: 17%
  - Cervix: 19%

See Pahud & Ault 2015 and Saraiya et al 2015

HPV-Associated Oropharyngeal Cancers

- Prevalence increased from 16.3% (1984-89) to 71.7% (2000-04)
- Population-level incidence of HPV-positive cancers increased by 225% while HPV-negative cancers declined by 50%

If trends continue, the annual number of HPV-positive oropharyngeal cancers is expected to surpass the annual number of cervical cancers by the year 2020

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 Comparison

HPV Types Included in Vaccine

<table>
<thead>
<tr>
<th>6</th>
<th>11</th>
<th>16</th>
<th>18</th>
<th>31</th>
<th>33</th>
<th>45</th>
<th>52</th>
<th>58</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blivalent</td>
<td>Quadivalent</td>
<td>9-valent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

These HPV Types Cause:
- Genital warts
- *66% of Cervical Cancers
- *15% of Cervical Cancers

HPV Vaccine Recommendation

CDC recommends routine vaccination at age 11 or 12 years to prevent HPV cancers

- The vaccination series can be started at age 9 years
- Two doses of vaccine are recommended
- The second dose of the vaccine should be administered 6 to 12 months after the first dose.

HPV Vaccine Recommendations: Catch Up/Late

- **Cat B**: Vaccination for females through age 26 years and for males through age 21 years who were not previously adequately vaccinated. Males aged 22 through 26 years may be vaccinated.
- Vaccination is also recommended through age 26 for gay, bisexual, and other men who have sex with men (MSM), transgender people, and people with certain immunocompromising conditions (including HIV infection).
Dosing Schedules

Before 15th birthday

Recommended schedule is 2 doses of HPV vaccine

- 2nd dose: 6–12 months after 1st

(0, 6–12 month schedule)

On or after 15th birthday OR Immunocompromised 9-26 years

Recommended schedule is 3 doses of HPV vaccine

- 2nd dose: 1–2 months after 1st
- 3rd dose: 6 months after 1st

(0, 1–2, 6 month schedule)

Meites et al. MMWR. 2016.


HPV Vaccination Is Safe, Effective, and Provides Lasting Protection

- HPV Vaccine is SAFE
  - Benefits of HPV vaccination far outweigh any potential risks
  - Safety studies findings for HPV vaccination similar to safety reviews of MCV4 and Tdap vaccination

- HPV Vaccine WORKS
  - Population impact against early and mid outcomes have been reported in multiple countries

- HPV Vaccine LASTS
  - Studies suggest that vaccine protection is long-lasting
  - No evidence of waning protection

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

Talking about HPV vaccine

FRAMING THE CONVERSATION
Value Parents Place on the Vaccines

Parent

Meningitis 9.4
Hepatitis 9.5
Pertussis 9.5
Influenza 9.3
HPV 9.3
Adolescent 9.2

Median Values

Adapted from Healy et al., Vaccine, 2014.

Eye contact!
 Clinicians underestimate the value parents place on HPV vaccine

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Median Parent</th>
<th>Median Clinician's estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meningitis</td>
<td>9.4</td>
<td>9.2</td>
</tr>
<tr>
<td>Hepatitis</td>
<td>9.5</td>
<td>9.2</td>
</tr>
<tr>
<td>Pertussis</td>
<td>9.5</td>
<td>9.3</td>
</tr>
<tr>
<td>Influenza</td>
<td>9.3</td>
<td>7.8</td>
</tr>
<tr>
<td>HPV</td>
<td>9.3</td>
<td>5.2</td>
</tr>
<tr>
<td>Adolescent</td>
<td>9.2</td>
<td>7.8</td>
</tr>
</tbody>
</table>

*Adapted from Healy et al. Vaccine. 2014.*

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
Rationale for vaccinating early:
Protection prior to exposure to HPV

Markowitz MMWR 2007
Holl Henry J Kaiser Found 2003
Mosher Adv Data 2006

HPV vaccine effectiveness for cervical histological outcome by age
(a) Completed vaccine course
(b) Any vaccine dose

Vaccine effectiveness is defined as (1-adjusted hazard rate) x 100.
Age in years, as of 2007.

When do we put our seat belts on?
A. Before turning on car
B. When leaving driveway
C. After a near accident
Give a Strong Recommendation to Receive HPV Vaccine at Ages 11 or 12

- A strong recommendation from you is the main reason parents decide to vaccinate
- Many moms in focus groups stated that they trust their child’s doctor and would get the vaccine for their child as long as they received a recommendation from the doctor

“The perceived and real concerns of parents influence how the clinician recommends and administers HPV vaccine.”

Some Parents Need Reassurance
- Many parents simply accept of this bundled recommendation
- Some parents may be interested in vaccinating, yet still have questions. Interpret a question as they need additional reassurance from YOU, the clinician they trust with their child’s health care
- Ask parents about their main concern (be sure you are addressing their real concern)
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

Make an Effective Recommendation

- **Same way:** Effective recommendations group all of the adolescent vaccines
  Recommend HPV vaccination the *same way* you recommend Tdap & meningococcal vaccines.

- **Same day:** Recommend HPV vaccine *today*
  Recommend HPV vaccination the *same day* you recommend Tdap & meningococcal vaccines or at any visit.
Is it safe?
Frequently Asked Questions about HPV Vaccine Safety

- Is HPV vaccine safe?
- Why is HPV vaccine included in the National Immunization Program?
- Because vaccines can affect how certain HPV vaccines work?
- Is there someone who should not get the HPV vaccine?
- Home or town advice over who should get the HPV vaccine (CAV)?
- Can HPV vaccines cause serious adverse events?
- Are HPV vaccines given in the arm or in the thigh?
- Can HPV vaccines cause cancer?
- Can HPV vaccines cause meningitis?
- How many times does a child need to get the HPV vaccine?
- Where can I find more information about HPV vaccines?

HPV Vaccine Safety Data Sources

- Over 60 million doses of HPV vaccine distributed in US since 2006
- Over 200 million doses of the quadrivalent and 80 million doses of the bivalent vaccines have been administered globally (2015)
- The vaccine surveillance systems in countries regularly monitor and report the serious and the non-serious adverse events after HPV vaccination

Over 10 Years of HPV Vaccine Safety Data

- HPV vaccine is safe
- Reactions after vaccination may include
  - Injection site reactions: pain, redness, and/or swelling in the arm where the shot was given
  - Systemic: fever, headaches
  - Brief fainting spells (syncpe) and related symptoms (such as jerking movements) can happen soon after any injection, including HPV vaccine
  - Patients should be seated (or lay down) during vaccination and remain in that position for 15 minutes
Evaluating and Monitoring 9-valent HPV Vaccine Safety in the United States

Monitoring of VAERS Reports
- Clinical review of deaths and other pre-specified adverse events
- Data mining to identify disproportional reporting

Vaccine Safety Datalink
- Near real time monitoring of 10 pre-specified outcomes
- Evaluation of spontaneous abortion

Manufacturer post-marketing commitments
- Two, 10-year studies to assess long term safety
- Observational study to further characterize the safety profile in 10,000 persons
- Pregnancy registry

Monitoring Impact of HPV Vaccine Programs on HPV-Associated Outcomes

HPV VACCINE IMPACT

HPV vaccine impact monitoring
- Post licensure evaluations are important to evaluate real world effectiveness of vaccines
- Population impact against early and mid outcomes have been reported:
  - Genital warts
    - Australia, New Zealand, Denmark, Sweden, Germany, Quebec, US
  - HPV prevalence
    - Australia, Norway, Denmark, Sweden, UK, US
  - Cervical lesions
    - Australia, British Columbia, Denmark, Sweden, US
Prevalence of HPV before & after introduction of HPV vaccination in the United States


HPV Vaccine Impact:
High HPV Vaccine Coverage in Australia
- 80% of school-age girls in Australia are fully vaccinated
- High-grade cervical lesions have declined in women less than 18 years of age
- For vaccine-eligible females, the proportion of genital warts cases declined dramatically by 93%
- Genital warts have declined by 82% among males of the same age, indicating herd 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

Systematic Review and Meta-Analysis:
Population-Level Impact of HPV Vaccination

- Review of 20 studies in 9 high income countries
- In countries with >50% coverage, among 13-19 year olds
  - HPV 16/18 prevalence decreased at least 68%
  - Anogenital warts decreased by ~61%
- Evidence of herd effects
- Some evidence of cross protection against other types

HPV Vaccine
Duration of Protection

- Studies suggest that vaccine protection is long-lasting
- No evidence of waning protection
  - Available evidence indicates protection for at least 10 years
  - Multiple studies are in progress to monitor

Why We Need to Do Better in HPV Vaccination of 12 year olds

- Currently 26 million girls <13 yo in the US; If none of these girls are vaccinated then:
  - 168,400 will develop cervical cancer and
  - 54,100 will die from it
- Vaccinating 30% would prevent 45,500 of these cases and 14,600 deaths
- Vaccinating 80% would prevent 98,800 cases and 31,700 deaths

For each year we stay at 30% coverage instead of achieving 80%, 4,400 future cervical cancer cases and 1,400 cervical cancer deaths will occur.
Avoid Missed Opportunities

- HPV vaccine can safely be given at the same time as the other recommended adolescent vaccines
- Provide HPV vaccine during routine sports, or camp physicals
- Review immunization record even at acute care visits
- Systems interventions depend on clinician commitment - determine what would work best for YOUR practice

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

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
“How long can we wait and still give just two doses?”

The two-dose schedule is recommended if the series is started before the 15th birthday. However, I don’t recommend waiting to give this cancer-preventing vaccine. As children get older and have busier schedules, it becomes more difficult to get them back in. I’d feel best if we started the series today to get your child protected as soon as possible.

How Can Clinicians Help?

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