







#### Arizona State Office of Rural Health Webinar Series



#### Webinar Tips & Notes

- Mute your phone &/or computer microphone
- Time is reserved at the end for Q&A
- Please fill out the post-webinar survey
- Webinar is being recorded
- Recording will be posted on the SWTRC <u>www.southwesttrc.org/</u> and the AzCRH <u>www.crh.arizona.edu/</u>

#### Arizona State Office of Rural Health Monthly Webinar Series

Provides technical assistance to rural stakeholders to disseminate research findings, policy updates, best-practices and other rural health issues to statewide rural partners and stakeholders.



Thank you to our partners in delivering this webinar series:







Today's presentation:

#### Addressing Vaccine Hesitancy with Parents and Families



Presented by: A.D. Jacobson, MD, CPA Past Ambulatory Chief of Pediatrics- PCH Chairman of the Board, TAPI Professor, Pediatrics- U of A Medical School- Phoenix



Aleksandra Obradov, MD General Pediatrician MIHS Maryvale Family Health Center Former Pediatric Resident at Phoenix Children's/Maricopa Medical Center



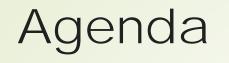


# Addressing Vaccine Hesitancy with Parents and Families

A.D. Jacobson, MD, CPA Past Ambulatory Chief of Pediatrics- PCH Chairman of the Board, TAPI Professor, Pediatrics- U of A Medical School- Phoenix

Aleksandra Obradov, MD

General Pediatrician MIHS Maryvale Family Health Center Former Pediatric Resident at Phoenix Children's/Maricopa Medical Center



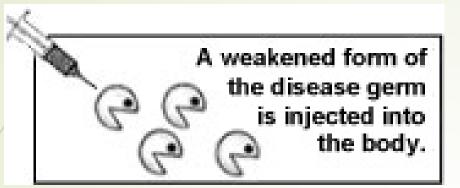
Why do we vaccinate?
What is vaccine hesitancy?
Vaccine myths and how to combat them.
Understanding the concerns of vaccine hesitation.

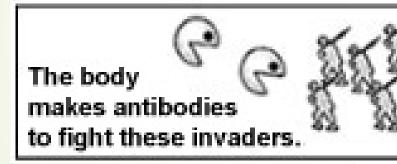
#### Why Do We Vaccinate?

- To keep healthy people healthy
- To prevent disease, death, and disability
- To stop diseases from spreading
- To protect those who cannot protect themselves because of age/allergies/medical conditions
  - It is not just about you!
- To save time and money

Vaccines have long been hailed as one of greatest public health achievements of the 20<sup>th</sup> century.

#### How Do Vaccines Work?





Source: Centers for Disease Control and Prevention, https://www.cdc.gov/vaccines/vac-gen/howvpd.htm



If the actual disease germs ever attack the body, the antibodies will return to destroy them.

### Know Arizona Laws, re-Vaccine Exemptions

- Now enhanced educational requirement for personal belief exemption
- Exemption Rates in Arizona

 Table 4: School Type Personal Belief Exemption (PBE) rates for <u>Kindergarten and 6<sup>th</sup> Grade</u> Students from 2015-2016 and 2016-2017 (school type

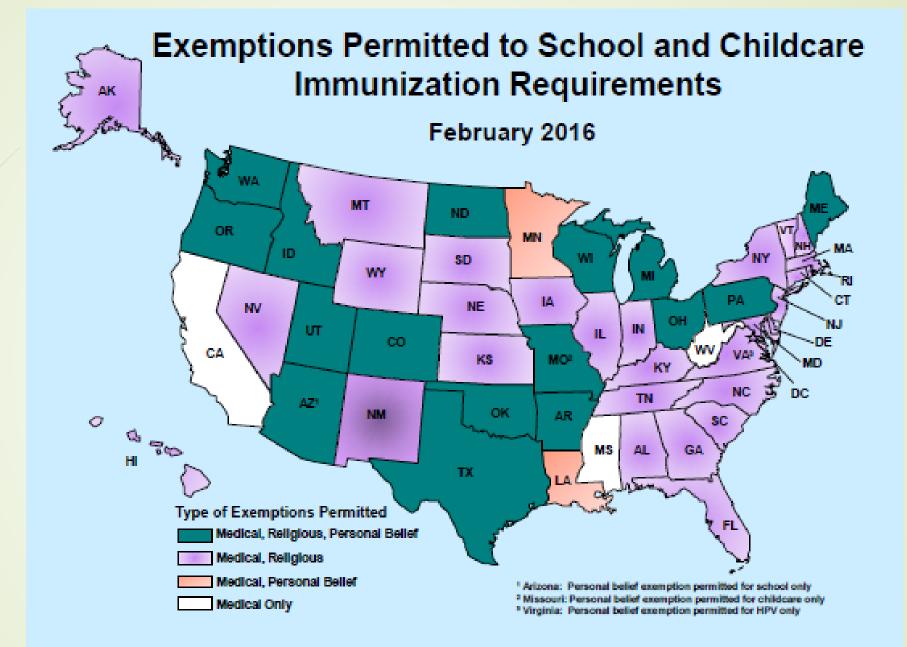
 data is not available for child care/preschool)

	Kindergarten Public	Kindergarten Private	Kindergarten Charter	Kindergarten All School Types	6 <sup>th</sup> Grade Public	6 <sup>th</sup> Grade Private	6 <sup>th</sup> Grade Charter	6 <sup>th</sup> Grade All School Types
2015-2016	3.3%	7.3%	8.6%	4.5%	3.4%	6.0%	9.3%	4.4%
2016-2017	3.8%	7.8%	8.9%	4.9%	4.2%	6.5%	9.5%	5.1%
% Change	0.5%	0.5%	0.3%	0.4%	0.8%	0.5%	0.2%	0.7%

**Source**: http://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/immunization/statistics-reports/2016-2017/2016-2017-az-trends-in-immunization.pdf

#### What Can YOU Do To Help Decrease Exemption Rates?

Health Care Provider	<ul> <li>Have a personal conversation with parents</li> <li>Make a strong recommendation for vaccination</li> <li>Educate self, staff and patients</li> <li>Nurture provider-patient relationships</li> </ul>
School Nurse or Health office personnel	<ul> <li>Become familiar with school requirements and the new exemption forms</li> <li>Have a personal conversation with the parents</li> <li>Minimize use of "convenience" exemptions</li> <li>Provide educational resources and materials to parents</li> </ul>
Parent or Guardian	<ul> <li>Speak to your child's physician or a health resource</li> <li>Protect your child's health - Educate yourself on vaccines</li> <li>Make your decision based on facts, research and sound judgment</li> <li>Keep a personal copy of your child's immunization record updated and readily available</li> </ul>



**Source:** http://www.azdhs.gov/documents/preparedness/epidemiology-diseasecontrol/immunization/statistics-reports/2016-2017/2016-2017-az-trends-in-immunization.pdf

#### AZ Vaccine Exemption form

<u>https://azdhs.gov/documents/preparedness/</u> <u>epidemiology-disease-</u> <u>control/immunization/school-</u> <u>childcare/personal-belief-exemption.pdf</u>

MERCK Vaccine insert

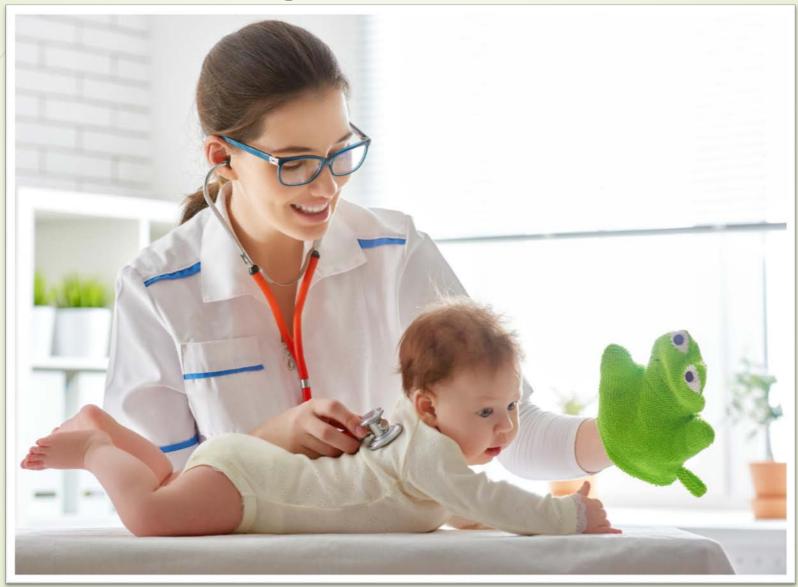
Https://www.merck.com/product/usa/pi\_circ ulars/m/mmr\_ii/mmr\_ii\_pi.pdf



#### **Reasons for Hesitancy Vary**

- Complacence
  - Belief that vaccines are unnecessary
- Convenience
  - Barriers to access
- Confidence
  - Concern about vaccine safety/side effects
- Calculation
  - Weighing the pros/cons of vaccinating

Source: Betsch C, Bohm R, Chapman G B. (2015). "Using Behavioral Insights to Increase Vaccination Policy Effectiveness." Accessed: http://journals.sagepub.com/doi/full/10.1177/2372732215600716



#### Sorting Out Good from Bad Information

- Good Information
- 1. CDC has a variety of information about vaccine safety: cdc.gov/acip (also available on T.A.P.I.'s website)
- 2. Children's Hospital of Philadelphia (vaccine.chop.edu) has great parent resources in their vaccine education center about vaccine safety including a parents PACK (Possessing, Accessing, and Communicating Knowledge about Vaccines), which is on the T.A.P.I. website, also a link to Education Center page.
- 3. TAPI's website: WhyImmunize.org
- 4. Every child by TWO: ecbt.org & VaccinateYourFamily.org
- 5. The National Network for Immunization Information: immunizationinfo.org
- 6. The Institute for Vaccine Safety at Johns Hopkins Hospital: vaccinesafety.edu
- 7. Parents of Kids with Infectious Diseases: pkids.org

#### Sorting Out Good from Bad Information

#### Bad information:

Parents confronted with information on TV, internet, magazines, and books that conflicts with that provided by health professionals.

#### Bad information:

Best way to understand vaccines, how they work, and whether they are effective and safe is to read the primary studies. To understand these, parents would need a background in microbiology, immunology, epidemiology, and statistics. This would enable them to separate good scientific studies from poor ones.

Few parents have this kind of expertise and frankly few doctors have to either. So, doctors rely on the expert guidance of specialists with experience and training in these disciplines. Vaccine package inserts can be misleading to parents trying to determine vaccine side effects. They often state that a vaccine might cause a particular side effect, even if it occurred with the same frequency in both vaccinated and unvaccinated children. This is probably because they are written by pharmaceutical company lawyers and therefore are more of a legal document than a medical one.

Question #1: "Do kids today get too many shots, too early? I mean, I didn't get that many."



Source: Addressing Parents' Concerns: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System? Paul A. Offit, Jessica Quarles, Michael A. Gerber, Charles J. Hackett, Edgar K. Marcuse, Tobias R. Kollman, Bruce G. Gellin, Sarah Landry. Pediatrics Jan 2002, 109 (1) 124-129; DOI: 10.1542/peds.109.1.124. Accessed: http://pediatrics.aappublications.org/content/109/1/124

- Question #1
  - Study showed if all vaccines are given according to the recommended schedule no neuropsychological delays have been noted.
  - If a new vaccine is added to the schedule, studies must show that neither vaccine interferes with the safety or ability of the other to work. These studies are numerous and extensive.
  - Studies of the immune system estimate that we can respond to about 10,000 different immunologic antigens at any one time. Today, the immunizations contain less than 150 antigens.

Question #2: "Are there toxins in vaccines?" NO. Mercury?

Aluminum?

Formaldehyde?

### There is more formaldehyde in a pear than in any one vaccine!

**Sources**: Children's Hospital of Philadelphia, Vaccine Education Center

 Thimerosal: <a href="http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-ingredients/thimerosal#.V87z0z4rK2w">http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-ingredients/aluminum#.V87z0j4rK2w</a>; Aluminum: <a href="http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-ingredients/aluminum#.V87z0j4rK2w">http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-ingredients/aluminum#.V87z0j4rK2w</a>; Formaldehyde: <a href="http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-ingredients/formaldehyde#.V87rQT4rK2y">http://www.chop.edu/centers-programs/vaccine-education-center/vaccine-ingredients/formaldehyde#.V87rQT4rK2y</a>; International Programmeon Chemical Safety, <a href="http://www.inchem.org/documents/ehc/ehc/ehc89.htm">http://www.inchem.org/documents/ehc/ehc89.htm</a>

#### Vaccine Ingredients: Mercury (thimerosal= form called ethylmercury)

- Present in some preparations of influenza as a preservative to prevent contamination with bacteria.
- Mercury is a naturally occurring element found in earth's crust, air, soil, and water; it is in the form of methylmercury and in high doses can be toxic.
- Ethylmercury is excreted rapidly compared to methylmercury. All studies showed that the level contained in vaccines did not cause any harm.
- Infants exclusively breast-fed will ingest more than 2x the quantity of mercury than was ever contained in vaccines, and 15x the quantity of mercury contained in the influenza vaccine.

### Mercury poisoning is very different from autism

- One of the worst mercury poisonings in history occurred in Iraq in 1971.
- Farmers and their families ate bread made from grain that had been fumigated with methylmercury.
- 6,500 hospitalized and 450 people died.
- Babies were born with epilepsy and mental retardation.
- But they didn't deliver babies with increased rates of autism.

#### Vaccine Ingredients: Formaldehyde

- Used in manufacture of some vaccines to inactivate virus (like polio and hepatitis A) or bacterial toxins (diphtheria and tetanus).
- Formaldehyde is a by-product of protein and DNA synthesis, so it is commonly found in the bloodstream.
- Quantity of formaldehyde found in blood is 10x greater than that found in any vaccine.

#### Vaccine Ingredients: Aluminum

- Used in vaccines as an adjuvant to enhance immune response.
- Aluminum salts have been used since the 1930s, and monophosphorly lipid A was approved for use in the US in 2009.
- Aluminum is present in the environment, in the air, water, and foods we eat.
- Aluminum quantity in vaccine is very small- 4mg in the first
   6 months of life total from all vaccines that are received.
- During this same time period, infants will receive 10mg aluminum in breast milk, 40mg from regular formulas, and up to 120mg if they are fed soy-based formula.

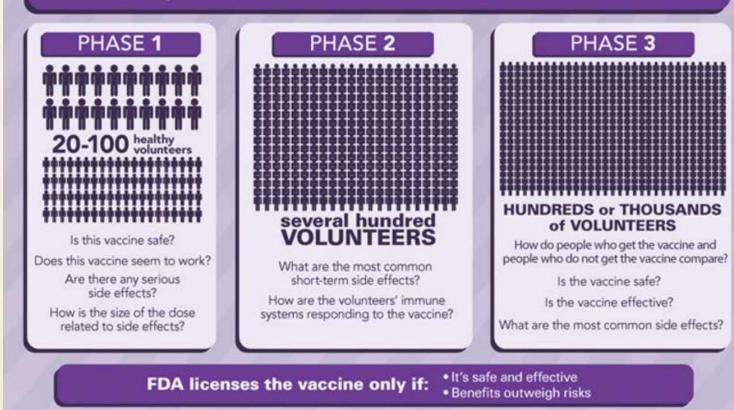
#### Vaccine Ingredients: Other

#### Gelatin

- Cumulative effects when receiving multiple doses
- Questions of allergic reactions from egg proteins, antibiotics, yeast, as well as gelatin.
- Fetal cells- used to make rubella, chicken pox, hepatitis A, shingles, and rabies vaccines.
- Refer to T.A.P.I.'s website whyimmunize.org for reasons that all of the above ingredients are safe.

Question #3: "Are vaccine side effects dangerous, more common, or worse than the disease?" NO.

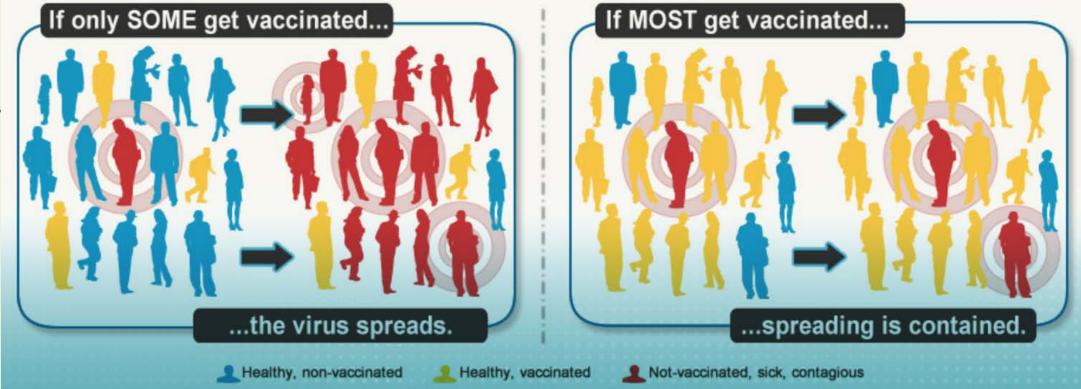
Food and Drug Administration (FDA) sets rules for the three phases of clinical trials to ensure the safety of the volunteers. Researchers test vaccines with adults first.



http://www.FDA.ORG/CBER

Question #4: "If vaccines work so well, why should you care if my kids aren't vaccinated?"

#### WE ABSOLUTELY SHOULD.



Source: Centers for Disease Control and Prevention, http://www.cdc.gov/vaccine/vac-gen/whatifstop.htm

#### CASE Method

#### **C**orroborate

Acknowledge the parent's concern and find some points on which you can agree. Set the tone for a respectful and successful talk

#### About me

Describe what you have done to build your knowledge base and expertise

#### **S**cience

Describe what the science says

#### Explain/Advise

Explain your advice to parent, based on the science

### CASE Example: Isn't my 11 year old is too young for an HPV shot?

#### **C**orroborate

That is a question many parents have. We need to give all vaccines before a person is exposed to diseases like HPV. It is important to me that your child stays healthy now and in his/her future

#### About me

I attended an immunization update and learned how effective HPV vaccine is in preventing cancer..... and that nearly all people are exposed to HPV

#### **<u>S</u>cience**

We know from scientific studies that HPV vaccine is effective in preventing HPV disease and reduces the chance that your child will develop an HPV related cancer later in life

#### Explain/Advise

The vaccines that are recommended at the 11-12 year old visit are HPV, Tdap and Meningicoccal and I recommend we get your child protected today.

OR

- "Choosing not to vaccinate is like playing Russian roulette, except instead of having a gun with five empty chambers and one bullet, it's like a gun with a million empty chambers and one bullet. But why take the chance? Why play this game at all if you don't have to? Parents who belong to these advocacy groups [Families Fighting Flu, National Meningitis Association, Meningitis Angels] ask themselves that question every day. The problem is, they never realized they were taking a risk."
- "One of the reasons that doctors are passionate about vaccines is that they see people with disease like whooping cough, chickenpox, pneumococcus, and meningococcus. They know what it looks like to be sick, to suffer, and to die from these infections. That's why it's so hard for them to conscience sending unvaccinated or under-vaccinated children out of their offices, knowing what being unprotected could mean."
  - "Vaccines and Your Child: Separating Fact from Fiction." by Paul A. Offit, MD and Charlotte A. Moser

## Concerns of Parents: Pain of the vaccine

- Topical anesthetic agents
- 1. EMLA (lidocaine 2.5%/prilocaine 2.5%)
  - Applied 60 minutes before injection
  - For patients older than 37 weeks gestational age
- 2. Lidocaine 4%
  - For children >2 years
  - Apply 30 minutes before injection
- There are no adverse effects of topical anesthetics on immune response.
- However, reduced immunogenicity of some vaccines may be associated with prophylactic use of acetaminophen. It may be used later for fever and local discomfort.

### Concerns of Parents: Pain of the vaccine

- Administer in the order of increasing painfulness, with most painful vaccine last.
- Administer rapidly.
- Feed babies during administration.
- Hold children 3 years or younger.
- Adolescents should be seated or lying down (Reduces risk of injury if syncopal).

## **Concerns of Parents:**

- Alternative Schedules:
  - Increase the time during which children are susceptible to vaccine-preventable disease.
  - Not tested.
  - Although children are clearly stressed by receiving a shot, two shots are NOT more stressful than one in one visit. More visits to the doctor created by separating or spacing out vaccines will likely only increase the trauma of getting shots.

## Adolescent Vaccine Strategies

- One population that is not included as often in vaccine discussions is the adolescents.
- There are several reasons that educating and involving adolescents should be a prime focus.
  - Adolescents have a more significant say in their healthcare than younger children do, and can influence their parents or often make their own decisions about their health.

Educating on importance of immunizations sets a foundation for a lifetime of healthy choices for the patient, as adolescents become adults and begin to make independent decisions.

At 18 years old, they can catch up on immunizations.

Many adolescents will become parents as well in the following decade or two, it is critical for them to understand importance and need for immunizations, to alleviate the fear surrounding immunizations of infants and children.

# Vaccines to specifically discuss with adolescent patients

- Tdap (tetanus-diphtheria-pertussis) vaccine
  - Pertussis cough can be very frustrating and long lasting ("100 day cough") in teens
    - More-so, it is easy to spread and can be very harmful and deadly for babies and grandparents.
  - Tetanus bacteria are usually found in soil, dust, and manure and enter the body through breaks in the skin.
    - In the US it is now uncommon, about 30 reported cases each year. Nearly all cases of tetanus are among people who have never received a tetanus vaccine, or adults who don't stay up to date on their 10-year booster shots.
  - Diphtheria once was a major cause of illness and death among children.
    - Globally, in 2014, 7,321 cases of diphtheria were reported to the World Health Organization, but there are likely many more cases.
    - However, in the past decade, there were less than five cases of diphtheria in the United States reported to CDC.

#### Meningococcal vaccines

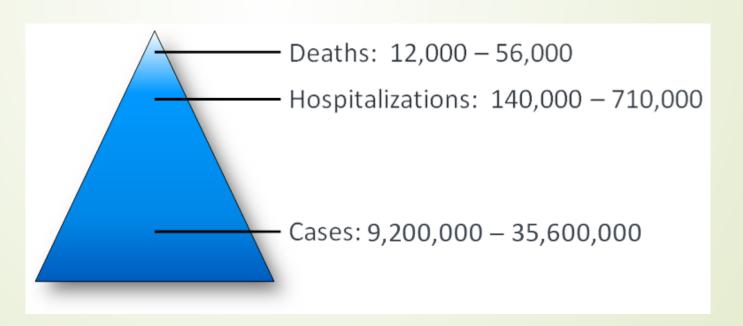
- 1 in 7 teens that get bacterial meningitis will die. Close contact with others increases your risk of meningitis, such as cough, sneeze, kiss, sharing a drink!
  - Can cause severe disease: meningitis, bacteremia or septicemia, and can result in permanent disabilities, loss of limbs.
- Meningococcal conjugate vaccines (Menactra<sup>®</sup> or Menveo<sup>®</sup>); protect against serogroups A, C, W, and Y.
  - First at 11 years old, then booster at 16 years old.
- Serogroup B meningococcal vaccines (Bexsero<sup>®</sup> or Trumenba<sup>®</sup>); protect against serogroup B.
  - At 16-18 years old, can be given at the same time as conjugate

### HPV (human papillomavirus) vaccine

- HPV is the most common sexually transmitted disease in the US
- 41,000 HPV-associated cancers occur in the United States each year: about 23,700 among women, and about 17,300 among men.
  - Cervical cancer is the most common HPV-associated cancer among women
  - Oropharyngeal cancers (cancers of the back of the throat, including the base of the tongue and tonsils) are the most common among men.
  - HPV causes most cervical cancers, some cancers of the vagina, vulva, penis, anus, rectum, and oropharynx.
- HPV can cause genital warts, which can be uncomfortable, irritating, and can reoccur.
  - Sometimes genital warts spread to a baby during birth and infect the baby's lungs and airway.

### Influenza

- Impact of flu varies by year
- CDC estimates that influenza, yearly since 2010, has resulted in:
  - 9.2 million to 35.6 million illnesses,
  - 140,000 to 710,000 hospitalizations,
  - 12,000 to 56,000 deaths.



# Why are adolescents and parents resistant to these vaccines?

- Belief that the patient was at low risk for acquiring the disease (eg. not sexually active)
- Concern about risks for adverse effects were "too great"
- Fear that there was not enough research on the vaccine
- Concern that the vaccine had not been on the market "long enough"
- Misinformation on internet/media
- ASK THE PARENT AND THE PATIENT- answer their concerns directly.

# Approaches to increase vaccine administration

- Offer concomitant vaccination with indicated vaccines during single patient encounter.
  - Some physicians preferred not to give multiple vaccines, without any scientific support.
- Brief explanation to parent and adolescent on the immune system and how vaccines work.
- Bundle the message "Today your child will receive Tdap, HPV and Meningococcal vaccines. Do you have any questions?"

- Express strong recommendation for immunizing as the provider.
  - Only ~60% of pediatricians and family medicine physicians strongly recommended HPV vaccine for 11-12 year old girls in a recent study.
- Have specific age at which to emphasize importance of these vaccinations, to make it more predictable and concrete for families. Especially for the booster doses.
- Discuss vaccine safety.

### **Resources for Adolescents**

- TAPI's teen page: <u>http://www.whyimmunize.org/takecontrol/</u>
- CDC: <u>https://www.cdc.gov/vaccines/parents/protecting-children/years-13-18.html</u>
- National Meningitis Association: <u>http://www.nmaus.org/</u>
- Meningitis Angels: <u>http://www.meningitis-angels.org/</u>
- Meningitis B Action Project: <u>www.meningitisbactionproject.org</u>

### Vaccines in Pregnancy. It's for the Babies. Tdap and Flu During Every Pregnancy

### Not Vaccinated? No Kisses!

Get the adult whooping cough vaccine. www.VaccinateYourFamily.org





Vaccines in Pregnancy – Flu During Every Pregnancy

Flu should be given as early as possible in the flu season.

- Studies show an increased risk of miscarriage due to the influenza virus illness and possible correlation with an increased risk of schizophrenia
- Pregnant women are high risk for respiratory illnesses due to diminished lung capacity from sharing space with the babies.

# Vaccines in Pregnancy – Tdap During Every Pregnancy

Tdap should be given in the third trimester

- Pertussis is most often passed to babies that are too young to be immunized through close family members like mom, and are often hospitalized with severe illness. A Tdap in pregnancy prevents the mom from being infectious at the time of delivery.
- Tdap is considered baby's first vaccine because vaccinating the mom builds immunity for the baby through maternal antibodies. Since babies are not fully protected until they've received 4 doses at age one, they rely on passive immunity to protect them while they are most vulnerable

Recent study confirms safety

# Approaches to increase vaccine administration

- Brief explanation to the pregnant mom on the immune system and how vaccines work for her and her baby.
- Express strong recommendation for immunizing as the provider.
  - Pregnant women are concerned about the impact to their babies from what they eat, what medications they take and certainly any injections.
- Discuss vaccine safety. Reassuring them will help them make the decision to protect their babies during pregnancy and later when their babies are growing up



### Surround Your Loved Ones With A Vaccinated Family

VACCINATE YOUR FAMILY MEMBERS AGAINST PERTUSSIS (WHOOPING COUGH)

## Improving Office Vaccine Rates

- 1. Missed opportunities.
- 2. Send reminders to parents about preventative appointments and missed or delayed vaccines.
- 3. Address vaccine hesitancy with parents, starting with the prenatal visit.
- 4. Provide information on each vaccine for parents, nurse or MA can do this as well.
- Discuss at each well check visit each vaccine the mom or child will get, specifically that day, and common possible side effects when appropriate.
- 6. Set the TAPI Outstanding Immunization Practice Award as a team goal!

### Let them know there are resources!

- Parent friendly resources are out there.
- Be willing to sit down and review the resources with them.
- Pediatric offices and parents can download a number of filters (such as vaccines and autism, ASIIS), postcards, posters.
- Resource materials are free for providers.



T.A.P.I. website is www.whyimmunize.org

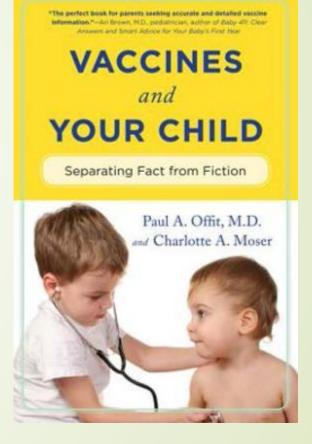
- Under vaccine headings download printable vaccine resources:
  - Vaccine ingredients
  - Facts about childhood vaccines
  - Aluminum in vaccines
  - Vaccines and autism
  - НерА
  - ► HPV

- Thimerosal
- Too many vaccines
- Influenza
- Meningococcus
- Rotavirus
- Shingles
- Pertussis
- Thimerosal
- Too many vaccines?
- Vaccines and your baby
- Outstanding Immunization Practice Award Brochure

### **References for Parents on Vaccines**

Best complete reference for parents (and providers!) is the paperback book:

"Vaccines and Your Child: Separating Fact from Fiction." by Paul A. Offit, MD and Charlotte A. Moser



# Summary

- Be compassionate.
- Share your story.
- Keep it simple.
- Be confident.

Science is on your side!

#### Contact TAPI for up to date immunization education and training

602.288.7567 TapiAdmin@tapi.org

Whylmmunize.org



#### Protect Your Family With HEALTHY HABITS!



Family members
Extended family members
Babysitters, nannies & child care workers

• Sneeze and cough inside our elbow

#### WASH YOUR HANDS

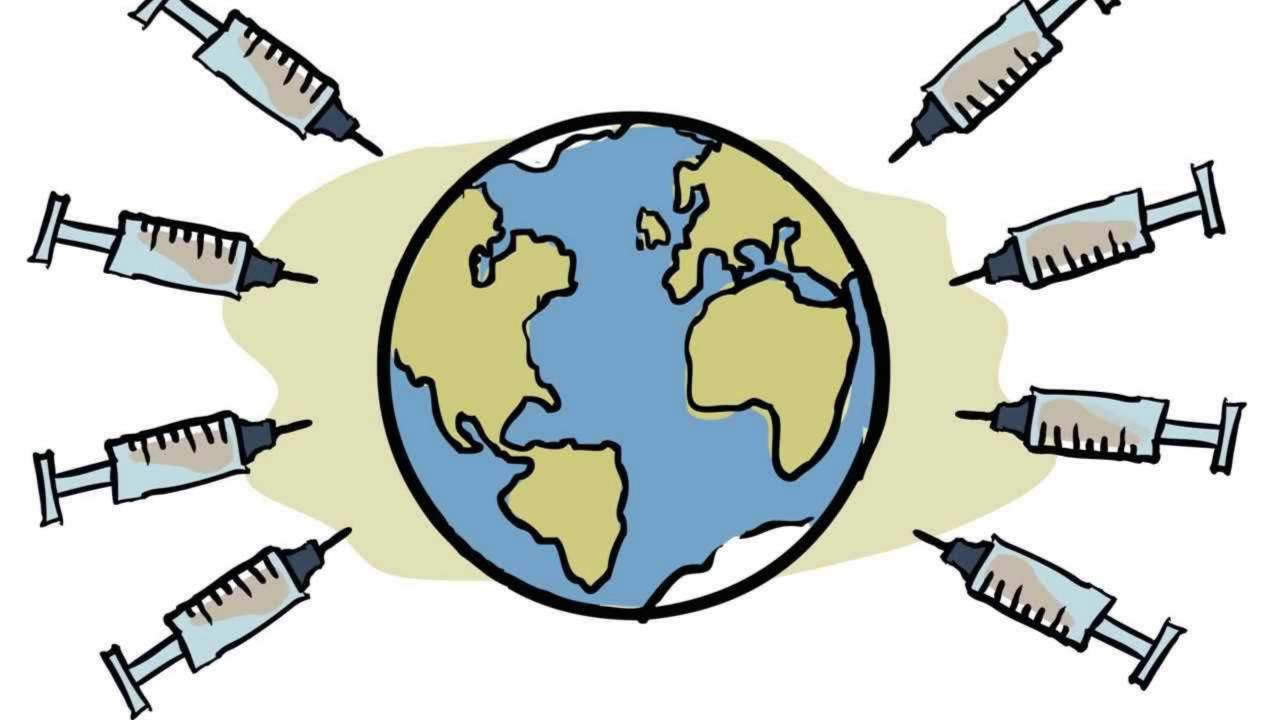
Before caring for babies
Before preparing & eating food
After changing diapers or going to the bathroom

• Stay away from others while sick











Thank you! Questions?

### Find this and our previous webinars at: http://www.crh.arizona.edu/programs/sorh/webinars



Your opinion is valuable to us Please participate in this brief survey:

This webinar is made possible through funding provided by Health Resources and Services Administration, Office for the Advancement of Telehealth (G22RH24749). Arizona State Office of Rural Health is funded granted through a grant from US Department of Health and Human Services. Grant number H95RH00102-25-00

This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, DHHS or the U.S. Government.