

Vaccine Hesitancy, Who, Why and What to Do



With Robert Frenck, MD, FAAP



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Our Speaker

Robert Frenck, MD, FAAP

AAP Committee on Infectious Diseases and
current Chairperson of the Section on Infectious
Diseases





Learning Objectives

As a result of this webinar, participants will be able to:

Understand the historical and cultural context of vaccine hesitancy.

Explain the power of a provider recommendation in provider-parent conversations

State how developing strategies to combat vaccine hesitancy fit into a provider's duty to provide effective care

Describe communication strategies that may be helpful for different types of parents

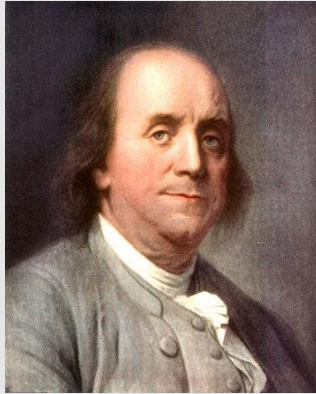


Concerns About Variolation

- Concept was counterintuitive
- Against God's will
- Natural disease is healthier
- Fear of side effects
- Will give you the disease



The “Right Side” of History



“I lost one of my sons, a fine boy of four years old, by the smallpox, taken the common way. I long regretted bitterly, and still regret, that I had not given it to him by inoculation.”

- Benjamin Franklin



Why are Vaccines Under Attack?

- Disease uncommon, most parents with young children have never seen the disease
- Thus parents only see the risks
- Leads to the FALSE perception that vaccines only have risk and no benefits





Parental Fears About Vaccines

- “Vaccines are not safe”
- “Vaccines or vaccine components cause autism”
- “Vaccines overload the immune system”
- “Vaccine-preventable diseases are gone and are not that bad anyhow”





Parental Refusal

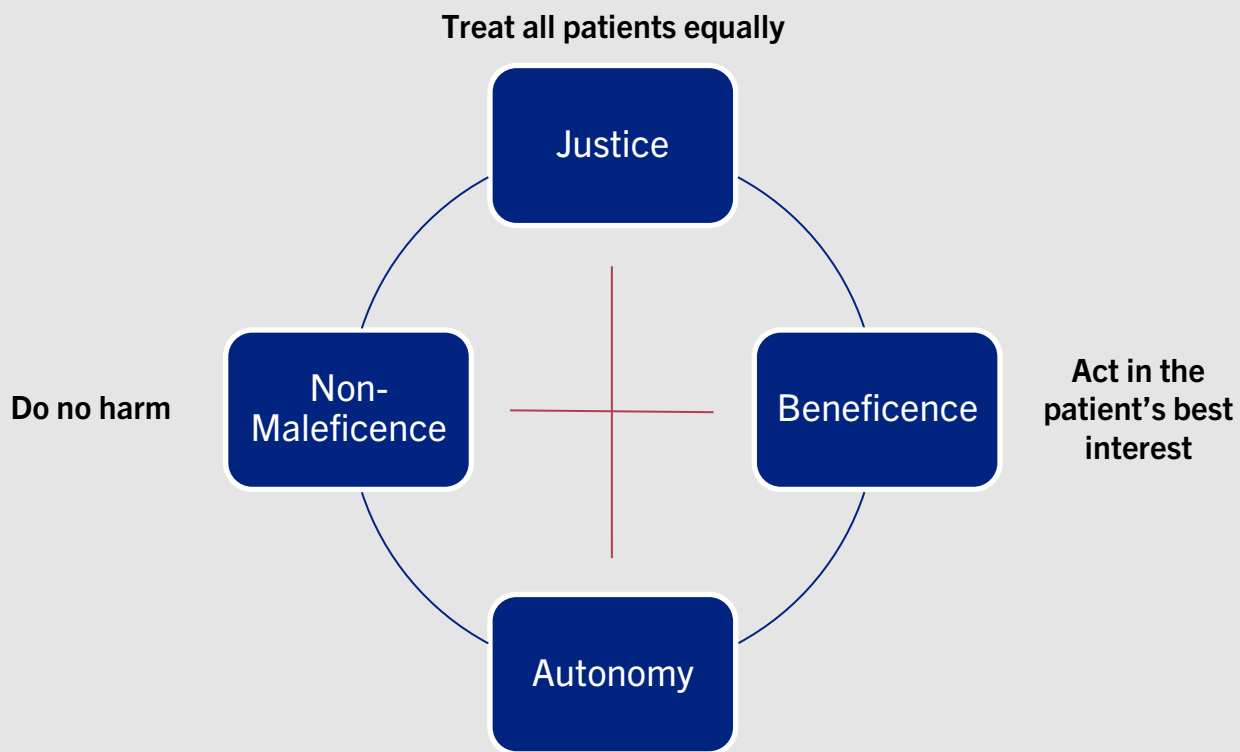
- Nationally, less than 1% of children have caregivers who refuse all vaccines.
- However, about 3% of children have caregivers who refuse some vaccines.
- AND, up to 40% request some limitation or delay in vaccine administration.
- Repeated studies have demonstrated that the medical team is the group parents trust the most. Thus, **a strong recommendation from the team about vaccines is critical**



Vaccine Hesitant Parents Tend to Be...

- White
- Married
- Highly educated
- Family income > \$75,000/year
- Live in a state allowing philosophical and/or religious exemptions





**The right of patients to make an informed,
un-coerced decision about their medical care**



PRINCIPLE	CLINICAL PERSPECTIVE
JUSTICE	<ul style="list-style-type: none">• Recommend vaccines to all eligible patients• Try to correct disparities in vaccine coverage



PRINCIPLE	CLINICAL PERSPECTIVE
NON-MALEFICENCE	<ul style="list-style-type: none">• Benefits of vaccination greatly outweigh the risks• Not vaccinating may harm the patient and the community



PRINCIPLE	CLINICAL PERSPECTIVE
BENEFICENCE	<ul style="list-style-type: none">• Vaccination is disease prevention• Vaccination guidelines serve as standard of care• Provider's duty to provide standard of care for patient



PRINCIPLE	CLINICAL PERSPECTIVE
AUTONOMY	<ul style="list-style-type: none">• Ability of parents to make informed decision which requires parents to have pertinent information• It is a provider's duty to address and correct misconceptions



Get to Know What Parents Think



Where do parents get information?



- Media, internet, social media
 - Highlight pro and anti-vaccine arguments regardless of the strength of the evidence
 - Difficult to communicate the truth behind the science in a short time
 - Power of visual imagery and anecdotes
 - Exploits parent's worst fears





Vaccine Hesitant Parents

- *“Uninformed but Educable”*
 - Influenced by skeptical friends/relatives. Unsure, looking for information
- *“Misinformed but Correctable”*
 - Educated by TV, magazines, “University of Google”. Have only heard anti-vaccine messages
- *“Well-read and Open-minded”*
 - Need help to assess merits of the arguments
- *“Convinced and Contented”*
 - Convinced vaccines are bad but go to provider to “prove” they are open-minded
- *“Committed and Missionary”*
 - Card-carrying anti-vaccine activists who try and convert you!



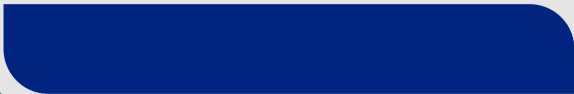
Correct Myths and Misinformation



Myth

- Vaccines cause autism.

FALSE





NONE of the following are true!

- MMR causes autism
- Thimerosal causes autism
- Vaccines overload the immune system
- Vaccines contain impurities



Science has Debunked the MMR Myth



- Original study could not establish causality
- Institute of Medicine rejected a “causal relationship” (2004)
- Special Masters judged the hypothesis implausible (2010)
- *Lancet* paper exposed as fraudulent and withdrawn (2011)

Nothing to fear but fear itself...

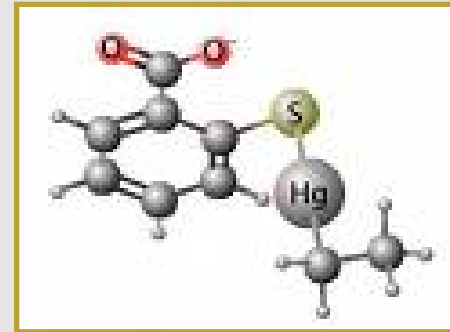


- Survey of 300 parents attending TCP clinic
- Although 84% believe MMR is safe and effective
 - 30% believe autism is a *potential* side effect
 - 24% believe MMR might *cause* autism
- 71% were aware of original *Lancet* article
 - Only 57% knew the article was retracted and proven false



What is Thimerosal?

- A preservative used in vaccines since 1930
- It is 49% ethyl mercury
- Ethyl mercury has a short half-life and does not cross the blood brain barrier





Science has Debunked the Thimerosal Myth

- Biologically implausible
- Features of mercury poisoning differ from autism
- Autism rates *increased* in California after thimerosal was removed from vaccines



"Although the names may sound the same, methyl mercury and ethyl mercury are very different. An analogy is the difference between methyl alcohol and ethyl alcohol: Methyl alcohol is antifreeze and ethyl alcohol is a Bud Light."

- Dr. Ari Brown



“There are so many vaccines now compared with the past. Is there any possibility that this is simply too much for the immune system to deal with?”



Fact

- Giving several vaccines at the same time has no adverse effect on a child's immune system.
- Advantages of receiving several vaccines at the same time include;
 - fewer clinic visits,
 - children are more likely to complete the recommended vaccinations on schedule.





Science Has Debunked These Myths

- *Vaccines do not overload the immune system:*
 - Immune system can respond to multiple antigens simultaneously
 - Immune system is not overwhelmed by vaccines
 - Mild or moderate illness does not alter immune response to vaccines
 - Immunized children do not have a higher rate of other infections in the weeks after immunization
 - Fewer antigens are encountered in vaccines today than 45 years ago



Number of Vaccine Antigens to Which Children are Exposed

TABLE 2. Number of Immunogenic Proteins and Polysaccharides Contained in Vaccines Over the Past 100 Years

Vaccine	1960		Vaccine	2000	
	Vaccine	Proteins		Vaccine	Proteins/ Polysaccharides
Smallpox†			Diphtheria	1	
Total			Tetanus	1	
	Smallpox	~200	WC-Pertussis¶	2-5	
	Diphtheriat	1	Polio	15	
	Tetanus‡	1	Measles¶¶	10	
	WC-Pertussis§	~3000	Mumps#	9	
	Polio	15	Rubella**	5	
	Total	~3217	Total	69	
			Varicella‡‡	69	
			Pneumococcus§§	8	
			Hepatitis B	1	
			Total	123-126	

Our Immune Systems Encounter Challenges Everyday



Each square inch of a cell phone contains roughly 25,000 germs.

Source: Al-Mudares FM, Al-Darzi WK, Mansour MG. Are we aware how contaminated our mobile phones with nosocomial pathogens? *Annals of Clinical Microbiology and Antimicrobials* 2009;8:7.



Association vs Causation

- Association

- A relationship exists between two or more variables.
 - The price of bread goes up every time the bird flies over the pier

- Causation

- A change in one variable directly caused a change in the other variable.
 - Turning on the furnace raised the room temperature





Measles Outbreak Colorado, 1994

- 17 students developed measles
- 10 had been immunized
- SO, Colorado newspaper said the vaccine was not effective since the school was highly vaccinated and 59% (10/17) of cases occurred in immunized students
- Made a lot of people worried about getting measles vaccination



Measles Outbreak, The **REST** of the Story!

- 625 children were exposed to the measles
- 609 exposed children had received MMR,
 - 10 developed measles (1.6% attack rate)
- 16 exposed children were UNimmunized,
 - 7 developed measles (44% attack rate)!





Myth

- Vaccination against HPV isn't needed, it is given at too young of an age, it increases sexual activity AND it isn't safe!

FALSE

HPV Vaccines Truths



- Vaccine is prophylactic NOT therapeutic
- Thus, vaccination should occur prior to HPV infection
- 6.2% of adolescents have sexual intercourse before 13 years of age
- Immunogenicity of vaccine highest in 9-11 yr olds





HPV Vaccine Communications During the Health Encounter

- HPV vaccine often presented as ‘optional’ whereas other vaccines are recommended
- Some providers express mixed or negative opinions about the ‘new vaccine’ and concerns over safety
- Providers were hesitant to engage in discussion about vaccine
- Some providers shared parents’ views that HPV vaccination could be delayed



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
 - Vaccination rate of 80% would prevent 98,800 cases of cervical cancer and 31,700 deaths



Sexual Activity—Related Outcomes After HPV Vaccination of 11-12 Yr-Olds

- HPV vaccine not associated with riskier sexual behavior
- HPV did not reduce concern about need for safer sexual behavior
- HPV vaccine not associated with markers of sexual behavior
 - Pregnancies
 - Counseling on contraceptives
 - Testing for, or diagnosis of, STI's

Myth



- Vaccine-preventable childhood illnesses are just an unfortunate fact of life.

FALSE



Fact

- Vaccine-preventable diseases do not have to be “facts of life”
- These diseases can cause severe morbidity and mortality.
- Failure to vaccinate against these diseases leaves children unnecessarily vulnerable



Decreases in Disease Risk



Disease	Pre-Vaccine Era*	2006 ^o	% Decrease
Diphtheria	175,886	0	100
Measles	503,282	55	99.9
Mumps	152,209	6,584	95.7
Pertussis	147,271	15,632	89.4
Polio (paralytic)	16,316	0	100
Rubella	47,745	11	99.9
Tetanus	1,314	41	99.9
Total	1,064,854	22,532	97.9
Vaccine Adverse Events	N/A	15,484	N/A

*Baseline 20th century annual morbidity

^oSource: MMWR 2007;56(33):851-64.

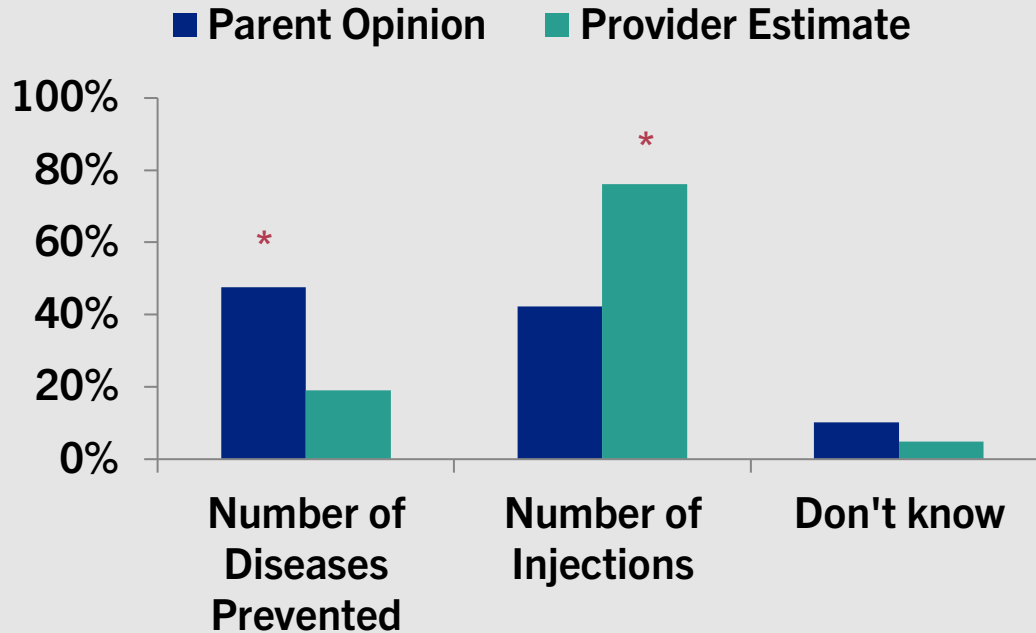


**LISTEN
CAREFULLY**



Don't Make Assumptions

Most important factor in deciding how many shots allowed

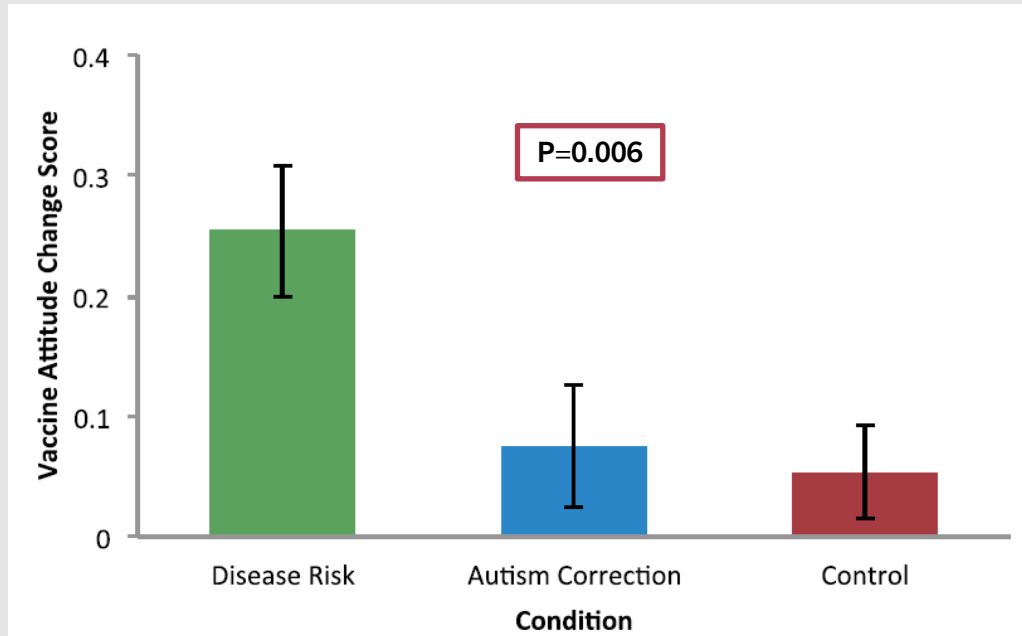


* P < 0.001

Vaccine 2014;32:579-84

Countering Antivaccination Attitudes

Replace an existing belief with an alternative belief





The Parent-Provider Conversation Matters



Positively Frame the Conversation



- Listen proactively
 - If necessary be ready to clarify the concern
- Assume you will be successful
 - Presumptive rather than participatory approach was associated with less resistance (26% vs 83%; $P < 0.001$)
- Questions or hesitancy is not an indication that you will not be successful, it's an opportunity!
- Be ready to re-address at a later stage



Addressing Parental Concerns

- Start honest dialogue early
- Listen to and understand parental concerns
- Identify what education is likely to be effective
- Acknowledge that vaccines may have adverse events but balance these events against disease risk
 - Risk of encephalopathy from natural measles is 1000 times greater than from MMR vaccine



Given Growing Concerns of Parents & Limited Time, What Can You Do?

- Strongly and confidently recommend vaccines.
- Share personal stories about vaccine-preventable diseases.
- Ensure consistent messages from staff
- Use culturally, educationally and language appropriate written materials.





Advocating for Vaccines: The **CASE** Approach

YOU are your patient's most effective advocate as 80% of parents place the **MOST TRUST** for vaccine information in their child's physician

- **Corroborate:** Acknowledge concern, find points of agreement, set the tone for a respectful, successful talk
- **About Me:** Establish yourself as a vaccine expert
- **Science:** Explain what the science says
- **Explain/Advise:** Give your advice





Tips for Communicating with Parents About Vaccines

Presumptive recommendations approach

- Start with a presumptive statement about the vaccines for which a child is due
- Your child needs three shots today: HPV, meningococcal and Tdap
- Establish that vaccination is the normative choice, which keeps the conversation brief for most families



Tips for Communicating with Parents About Vaccines

Motivational interviewing approach

- For hesitant parents, transition to a supportive discussion with open-ended questions to elicit parental concerns
- Ask permission to share information
- Keep it conversational—avoid launching into a lecture full of facts about vaccines



Tips for Communicating with Parents About Vaccines

Beware when debunking myths

- Focus on the facts
- State the core facts simply. If the truth seems more complicated than the myth, it remains easier to accept the simple information in the myth



Tips for Communicating with Parents About Vaccines

Disconfirmation bias

- People more easily accept evidence supporting existing belief and are critical of evidence that refutes the belief
- So, rather than refute, try to provide new information to replace existing beliefs
- Pivot the conversation to focus on the diseases that vaccines prevent



Tips for Communicating with Parents About Vaccines

Story-telling

- Personal anecdotes and stories are powerful communication tools
 - *The death of one man is a tragedy; the death of millions is a statistic*



Facts About Vaccines for School

- All requirements are State-based
- There is no law that children must be immunized.
- BUT, if they are not immunized, they may be sent home, particularly during outbreaks
- Thus, strong incentive to have children vaccinated





Exemptions from Vaccination

- Medical (all states have)
 - Physician states that the child is susceptible to adverse events of the vaccine (i.e. egg allergy)
- Religious (48 states have)
 - A “recognized” or “established” church or religious denomination has objection to vaccination
- Philosophical (19 states have)
 - Object due to “personal, moral or other belief”. Some states don’t make parent offer a belief



Results of Vaccine Exemptions



- States where easier to get exemption have more vaccine preventable infections than States with stricter rules
- States with easier rules for exemption
 - 90% more cases of pertussis
 - Children 3-18 yrs old, 22 to 25x increase risk of measles
 - Children 3-10 yrs old, 60x increase risk measles







**If we forget history we
are doomed to repeat it.**

Vaccines prevent diseases and save lives.

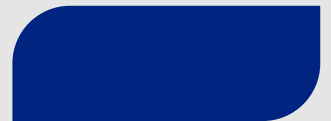
American Academy of Pediatrics





Thanks!

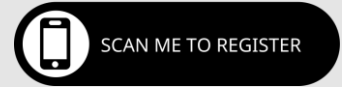
Questions?



Upcoming Events



- TONIGHT, 7PM – 8PM: ICAAP Town Hall – Understanding the Chapter’s Guiding Principles on Bias Awareness & Anti-Racism Pledge
- TOMORROW, 12 – 1PM: Managing Obesity in Adolescent Patients: The New Obesity Guidelines
- March 1, 8 – 9AM: Oral Health Disparities, Identifying High Risk Patients
- March 15, 8 – 9AM: Oral Health Quality Improvement, Introduction to the Model for Improvement
- March 19, 12 – 1PM: Preparing for Adolescent Immunization Week



Or visit illinoisaap.org/events