



**Mount  
Sinai**

# Techniques and Talking Points to Address Vaccine Hesitancy

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Worldwide  
prevent 2-3  
million deaths  
every year.

In US prevent  
42,000 deaths  
per birth  
cohort.

I   
**VACCINES**

# Objectives



Discuss reasons for vaccine hesitancy.



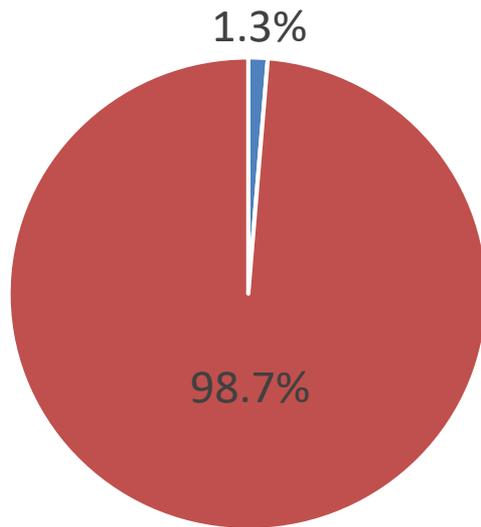
Answer the most common questions and concerns surrounding vaccines.



Apply Motivational Interviewing (MI) strategies to address vaccine hesitancy.

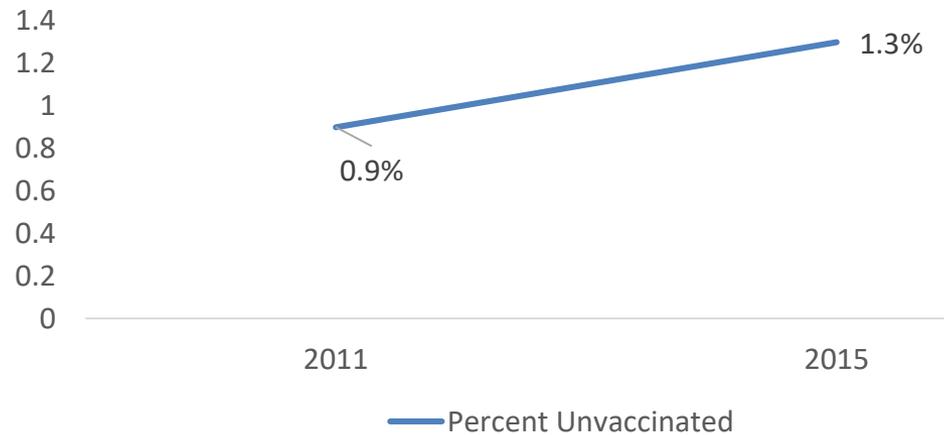
# Most Parents Vaccinate

Percent children age 24 months who received vaccinations, 2017

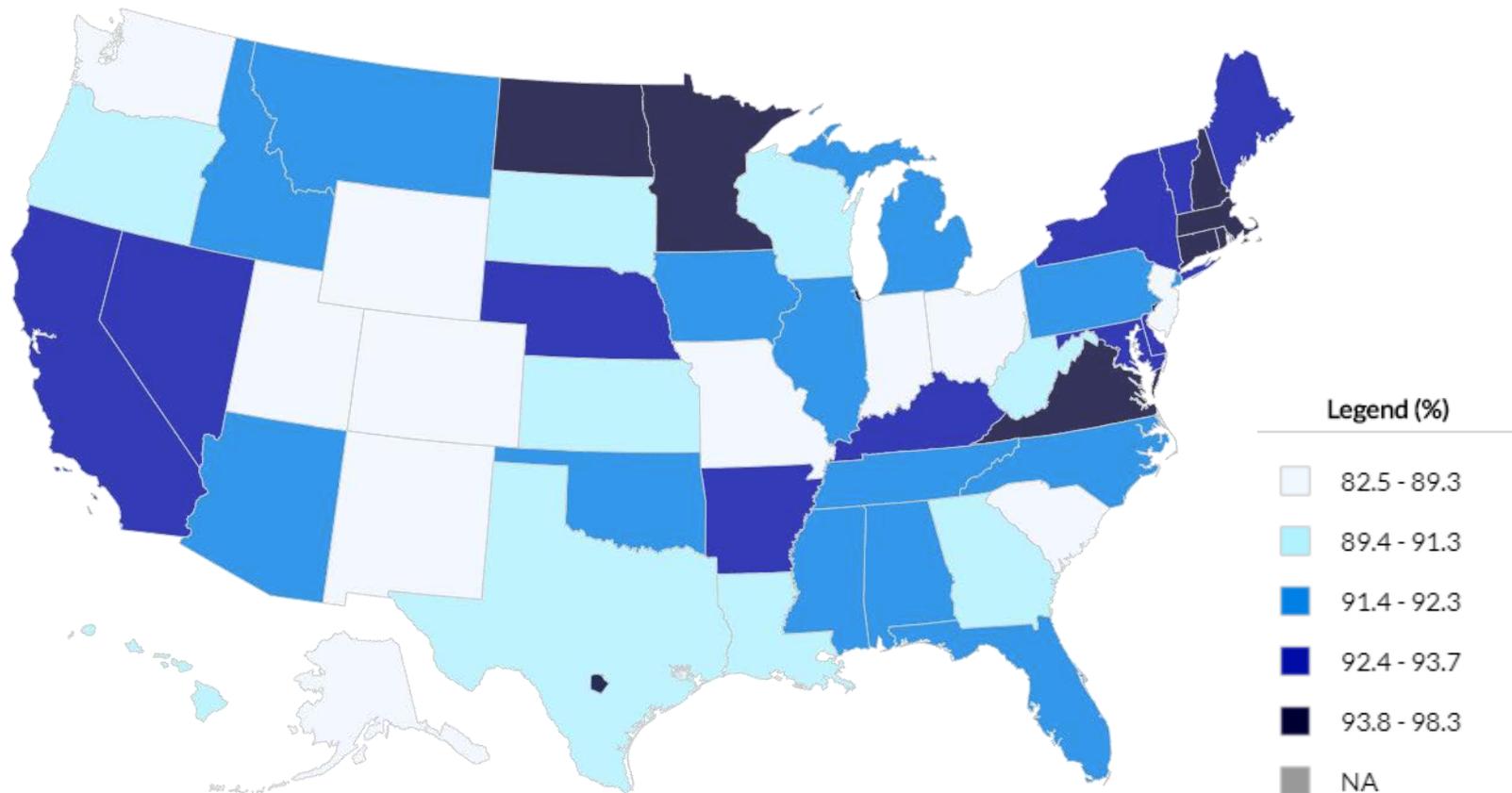


■ Unvaccinated ■ Vaccinated

Percent Unvaccinated

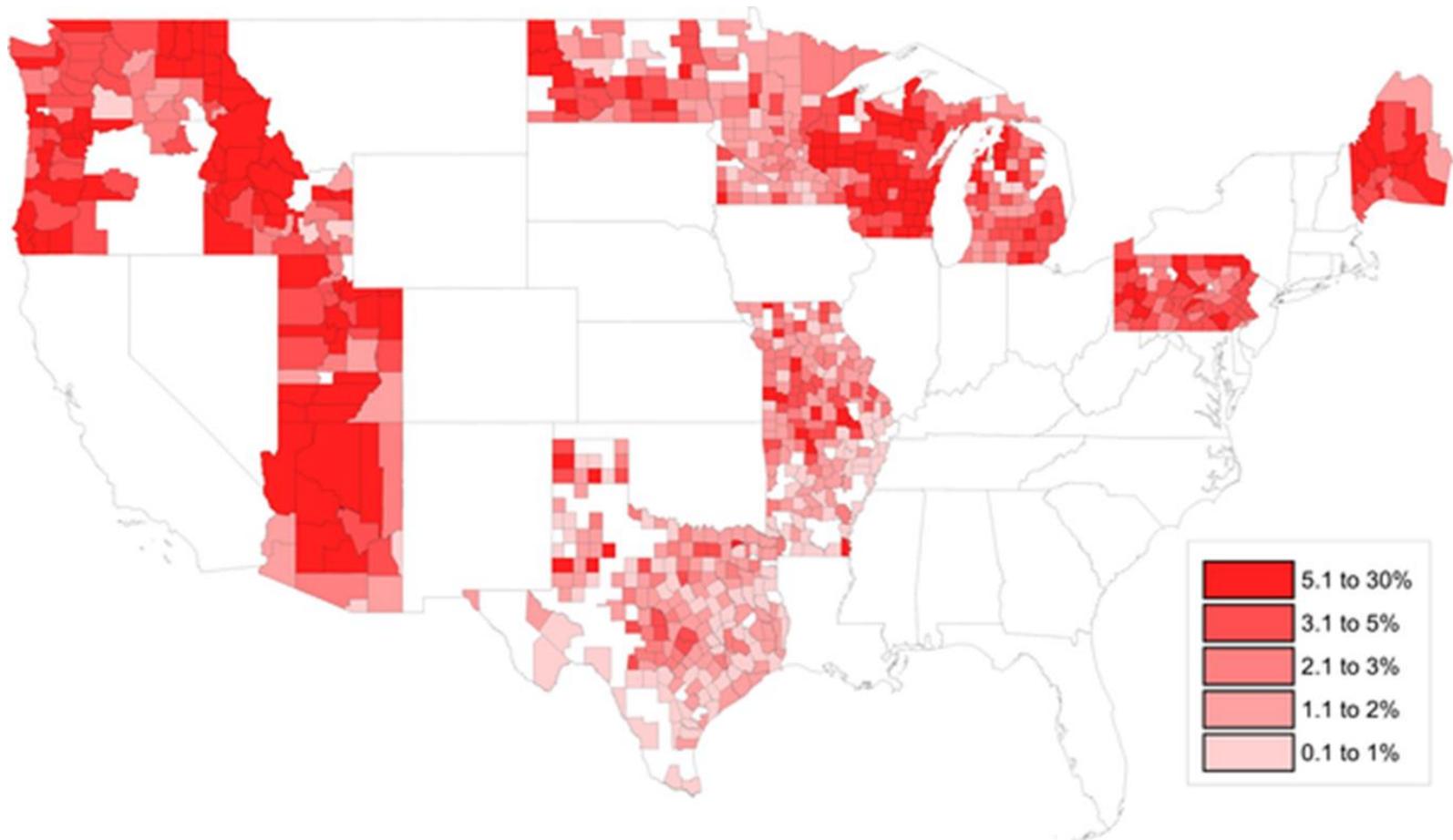


# ≥ 1 MMR Vaccination Coverage Among Children 19-35 Months 2017



Content source: [National Center for Immunization and Respiratory Diseases](https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/data-reports/mmr/trend/index.html)  
<https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/data-reports/mmr/trend/index.html>

# Heat Map of Select County Non-Medical Exemption Rates, 2016-2017

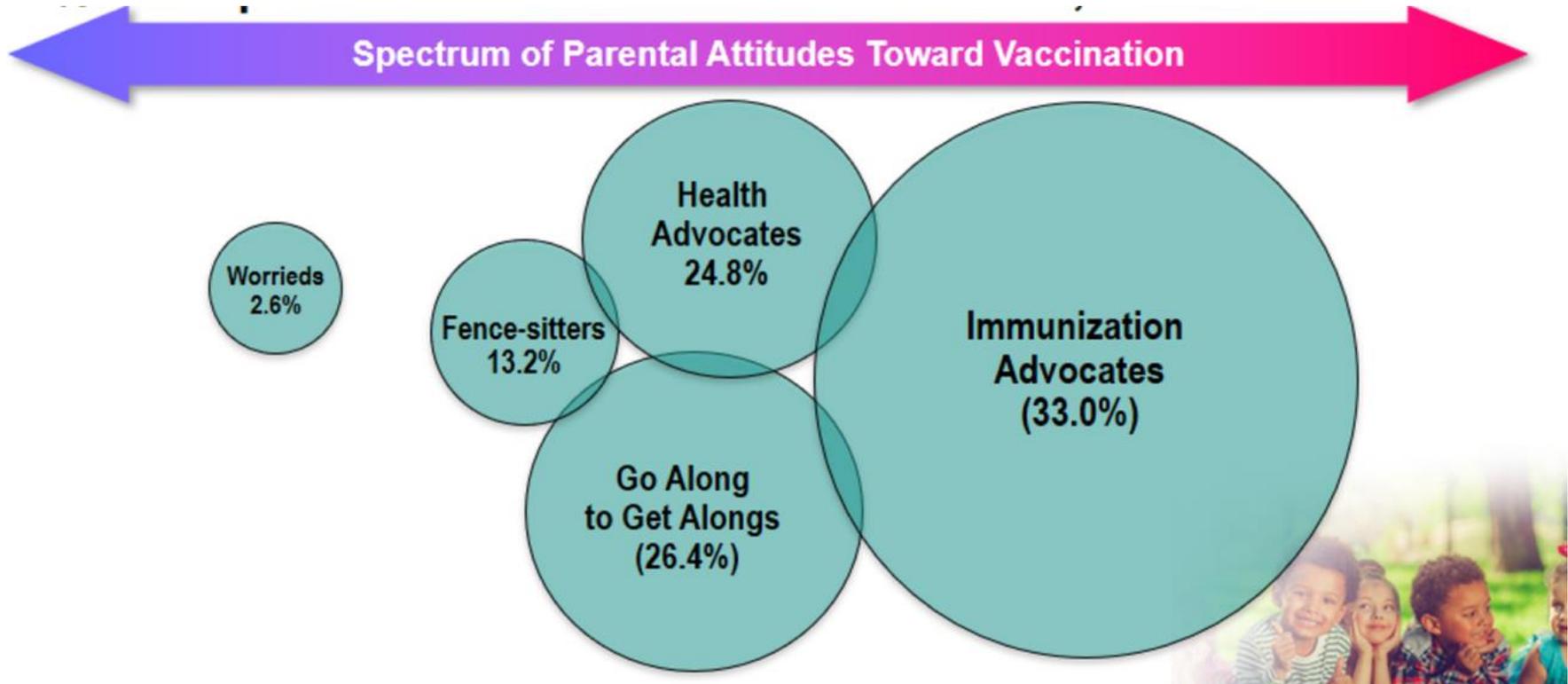


Olive JK, Hotez PJ, Damania A, Nolan MS (2018) The state of the antivaccine movement in the United States: A focused examination of nonmedical exemptions in states and counties. *PLOS Medicine* 15(6): e1002578.

<https://doi.org/10.1371/journal.pmed.1002578>

<https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1002578>

# Parents Differ in Attitudes Towards Vaccination



# Common Questions From Vaccine Hesitant Families

(and their friends and neighbors and strangers at cocktail parties)



Will too many vaccines overwhelm the immune system?



Isn't it better to space vaccines out?



Does MMR vaccine cause autism?



Are there harmful ingredients in vaccines?



Isn't it better to get the natural infection?

# Children Receive More Vaccines Than in the Past, but Today They Contain Fewer Antigens

Vaccine	1960	1980	2000	2014
Smallpox	200			
Diphtheria	1	1	1	1
Tetanus	1	1	1	1
Pertussis	3000	3000	5	5
Polio	15	15	15	15
MMR		24	24	24
Hib			2	2
Varicella			69	69
PCV7/PCV13			8	14
HepB			1	1
HepA				4
HPV4				4
Rotavirus				20
MCV4				5
Influenza				16
<b>Total</b>	<b>3217</b>	<b>3041</b>	<b>126</b>	<b>181</b>

Sources: Gary Marshall. U of Louisville

Immunization Action Coalition. Quick Answers to Tough Questions. 2018. Item #58030

# Alternative Schedules

25%

NY state children  $\leq$  9 months old followed alternative schedule

93%

Physicians reported parents requested spreading out vaccines

74%

Physicians sometimes/often/always agreed to spread out vaccines

# MMR Vaccine Does Not Cause Autism

- Many large, well-designed studies have found no link b/w MMR and autism.
- The 1998 study that started this concern was based on 12 children who were preselected.
- In 2010 *The Lancet* retracted the paper and the author Andrew Wakefield's license to practice medicine in UK was revoked.

Annals of Internal Medicine

ORIGINAL RESEARCH

## Measles, Mumps, Rubella Vaccination and Autism A Nationwide Cohort Study

Anders Hviid, DrMedSci; Jørgen Vinslev Hansen, PhD; Morten Frisch, DrMedSci; and Mads Melbye, DrMedSci

**Background:** The hypothesized link between the measles, mumps, rubella (MMR) vaccine and autism continues to cause concern and challenge vaccine uptake.

**Objective:** To evaluate whether the MMR vaccine increases the risk for autism in children, subgroups of children, or time periods after vaccination.

**Design:** Nationwide cohort study.

**Setting:** Denmark.

**Participants:** 657 461 children born in Denmark from 1999 through 31 December 2010, with follow-up from 1 year of age and through 31 August 2013.

**Measurements:** Danish population registries were used to link information on MMR vaccination, autism diagnoses, other childhood vaccines, sibling history of autism, and autism risk factors to children in the cohort. Survival analysis of the time to autism diagnosis with Cox proportional hazards regression was used to estimate hazard ratios of autism according to MMR vaccination.

**Results:** During 5 025 754 person-years of follow-up, 6517 children were diagnosed with autism (incidence rate, 129.7 per 100 000 person-years). Comparing MMR-vaccinated with MMR-unvaccinated children yielded a fully adjusted autism hazard ratio of 0.93 (95% CI, 0.85 to 1.02). Similarly, no increased risk for autism after MMR vaccination was consistently observed in subgroups of children defined according to sibling history of autism, autism risk factors (based on a disease risk score) or other childhood vaccinations, or during specified time periods after vaccination.

**Limitation:** No individual medical charts were reviewed.

**Conclusion:** The study strongly supports that MMR vaccination does not increase the risk for autism, does not trigger autism in susceptible children, and is not associated with clustering of autism cases after vaccination. It adds to previous studies through significant additional statistical power and by addressing hypotheses of susceptible subgroups and clustering of cases.

**Primary Funding Source:** Novo Nordisk Foundation and Danish Ministry of Health.



Contents lists available at ScienceDirect

Vaccine

journal homepage: [www.elsevier.com/locate/vaccine](http://www.elsevier.com/locate/vaccine)



## Vaccines are not associated with autism: An evidence-based meta-analysis of case-control and cohort studies

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### ABSTRACT

There has been enormous debate regarding the possibility of a link between childhood vaccinations and the subsequent development of autism. This has in recent times become a major public health issue with vaccine preventable diseases increasing in the community due to the fear of a 'link' between vaccinations and autism. We performed a meta-analysis to summarise available evidence from case-control and cohort studies on this topic (MEDLINE, PubMed, EMBASE, Google Scholar up to April, 2014). Eligible studies assessed the relationship between vaccine administration and the subsequent development of autism or autism spectrum disorders (ASD). Two reviewers extracted data on study characteristics, methods, and outcomes. Disagreement was resolved by consensus with another author. Five cohort studies involving 1,256,407 children, and five case-control studies involving 9,920 children were included in this analysis.

# Mercury



The form of mercury found in thimerosal is ethylmercury (not methylmercury, which is the form that has been shown to damage the nervous system).



Although no evidence of harm has been proven, thimerosal was taken out of vaccines in the U.S. as a precaution.



Since 2001, with the exception of some influenza vaccines, thimerosal has not been used as a preservative in routinely recommended childhood vaccines in the U.S..

# Aluminum



Aluminum is used in some vaccines as an adjuvant— an ingredient that improves the immune response.



Aluminum is the most common metal found in nature. It is in the air and in food and drink. Infants get more aluminum through breast milk or formula than vaccines.



Most of the aluminum in the body is quickly eliminated.

# The Price Paid for Natural Disease

## **Measles Complications**

- Hospitalization: 1 in 4
- Pneumonia: 1 in 20
- Encephalitis: 1 in 1,000
- Death: 1 to 2 in 1,000

## **Side Effects from MMR**

- Fever: 5 to 15 in 100
- Rash: 5 in 100
- Arthralgia: 15 in 100 (adult women)
- Thrombocytopenia: 1 in 30,000 to 40,000

Vaccination  
Initiation Rates  
Depend on a High  
Quality  
Recommendation

If no recommendation or  
presented as optional: 20-  
30%

If low-quality  
recommendation: 50%

If high-quality  
recommendation (same  
way, same day): 70-90%

## Optional Versus Announcement Recommendation

**Optional:** *“Have you thought about what shots you’d like to get today?”*

- *May unintentionally imply shot is not important or few people do it*
- *20-30% vaccination rate in studies of both childhood and adolescent vaccines*

**High quality:** *“We have some shots to do today”*

- *Implies shot is important and most people get it*
- *70-90% vaccination rate in studies of both childhood and adolescent vaccines*



Keep Entire Office Staff On Message

# What is Motivational Interviewing (MI)?

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Patient-centered method for enhancing intrinsic motivation to change health behavior by exploring and resolving ambivalence

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Studies have illustrated the efficacy of MI as a promising strategy to encourage positive health behavior change around substance abuse, oral health and diet and exercise

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MI now being applied to help healthcare workers address parental vaccine hesitancy

# Motivational Interviewing Tools



Asking open-ended questions



Reflective listening



Eliciting pros and cons of change



Inquiring about the importance and confidence of making a change



Summarizing the conversation

## Clinical Challenge

You are seeing an 15 month old who has not received the MMR vaccine or the 4<sup>th</sup> DTaP dose. When you said,

***“Today we will have two vaccines for David—measles, mumps, rubella and the DTaP vaccine,”***

the mother replied,

***“I don’t want the measles one.”***

**How should we handle this?**

# Motivational Interviewing: 4 Steps

## Step 1: Ask the patient to share concern(s)

– *“So you seem to have questions about the MMR vaccine. I want to make sure I answer all your questions, so let’s talk about it. Would you mind sharing what your particular concerns are?”*

(Note: non-threatening)

– Mom: *“Well, I don’t think it’s safe. I heard that’s the one that causes autism.”*

# Motivational Interviewing: 4 Steps

## Step 2: Ask permission to share information

- The provider reflects back what the parent is saying to be sure he/she understands (empathy), summarizes, asks permission to share their own perspective.
- Example: *“So I can hear that you’re concerned that the MMR vaccine can cause autism. I’ve also heard some stories about this vaccine and I follow vaccine safety closely. Is it okay if I go over what I know about this vaccine?”*

# Motivational Interviewing: 4 Steps

## Step 3: Provide info to change a parent's perspective

- 1) *“Autism is a challenge for many families and people want answers- including me. But well conducted studies show that MMR vaccine is not a cause of autism.”*
- 2) *“But I have treated kids who got very sick from diseases we can prevent with vaccines. Tell me what you’ve heard about measles complications.”*

**Avoid  
arguing  
and focus  
on disease  
prevention.**

## Motivational Interviewing: 4 Steps

### **Step 4: Make a personalized recommendation to vaccinate today**

- Provider: *“I strongly believe in this important vaccine, which is why I gave it to my daughters and I recommend it to all my patients. I think David should get it today. Having said that, this is a decision that only you can make. What do you think?”*

# Communication Tips

The provider should

- ✓ Ask
- ✓ Listen
- ✓ Use body language
- ✓ Check back
- ✓ Summarize
- ✓ Affirm the parent

## Clinical Challenge: Part 2

You are seeing an 15 month old who has not received the MMR vaccine or the 4<sup>th</sup> DTaP dose.

When you said,

***“Today we will have two vaccines for David—measles, mumps, rubella and the DTaP vaccine,”***

the mother refused. She continued to refuse after you tried your motivational interviewing techniques.

**How should we handle this?**

# Tips in case of declination or delay



**Let the patient know you will offer it again. Many parents who decline at first will vaccination later.**



**Offer reading material**



**Don't over-remember this**



**Relax. You've done your best for this patient.**

# Take Home Points



Most parents vaccinate  
They just have questions



A strong vaccine  
recommendation works



Try Motivational  
Interviewing techniques  
for more hesitant  
parents

## Resources

### Immunization Action Coalition

<http://www.immunize.org/>

### Vaccine Education Center- CHOP

[https://www.chop.edu/centers-  
programs/vaccine-education-center](https://www.chop.edu/centers-programs/vaccine-education-center)