Strategies for Communicating with Vaccine Hesitant Parents

Sean O'Leary, MD, MPH, FAAP
May 24, 2022
New Jersey Immunization Conference

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Objectives

By the end of this talk, audience members will:

2

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1. Have new knowledge to use in discussions with vaccine hesitant parents
2. Have new ideas about the architecture of vaccine conversations with parents, in order to promote more effective and efficient communication

3

Outline

- Background
- Evidence regarding provider conversation techniques for increasing vaccine acceptance
- Ideas and strategies for the vaccine conversation
- Cases

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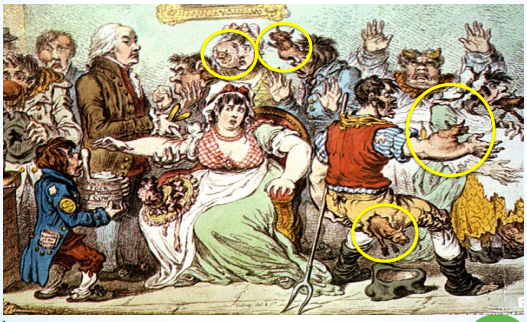
Historical Perspective

5

Historical Perspective

6

Historical Perspective



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Vaccine Acceptance Continuum

Pro-vaccine ⟶ Anti-vaccine

Acceptors	Hesitant	Rejectors
Agree with or do not question vaccines	Are unsure about, delay, or choose only some vaccines	Completely reject vaccines
Children fully immunized	Children under-immunized	Children un-immunized
High trust in provider	Desire a trustworthy provider	Low trust in provider
Interest in vaccine information from child's provider	Interest in vaccine information from child's provider	No interest in vaccine information
70%	30%	<1%

- Percentage refusing all vaccines remains low (1.3%)
- Prevalence of undervaccination has been rising
  - Increasing requests to "spread out" vaccines

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How is the US doing?

> MMWR Morb Mortal Wkly Rep. 2022 Apr 22;71(16):561-568. doi: 10.15585/mmwr.mm7116a1.

Vaccination Coverage with Selected Vaccines and Exemption Rates Among Children in Kindergarten – United States, 2020–21 School Year

Ranee Seither, Jessica Laury, Agnes Mugerwa-Kasujja, Cynthia L Knighton, Carla L Black

	MMR (2 doses)	DTaP (5 doses)	Varicella (2 dose)	Any exemption
National average	93.9	93.6	93.6	2.2

> MMWR Morb Mortal Wkly Rep. 2021 Oct 15;70(41):1435-1440. doi: 10.15585/mmwr.mm7041a1.

Vaccination Coverage by Age 24 Months Among Children Born in 2017 and 2018 – National Immunization Survey-Child, United States, 2018–2020

Holly A Hill [1], David Yankey [1], Laurie D Elam-Evans [1], James A Singleton [1], Natalie Sterrett [1]

	MMR (1 or more doses)	DTaP (4 or 5 doses)	Hep B birth dose	Rotavirus
National average	91.6	81.6	78.4	75.6

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What about New Jersey?

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New Jersey	89.6	78.4	77.8	74.0

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"Costs" of Vaccine Hesitancy

- Increased levels of under-vaccination
- Under-vaccinated tend to remain under-vaccinated
- Outbreaks of Vaccine Preventable Diseases
  - Pertussis
  - Varicella
  - Measles

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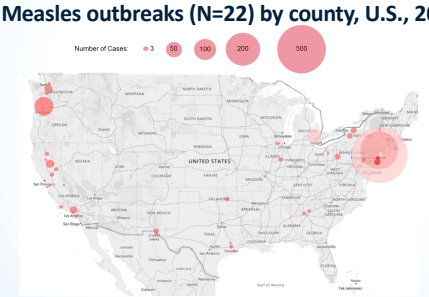
Measles outbreaks (N=22) by county, U.S., 2019



Based on *The Washington Post*. A record number of measles cases is hitting the U.S. this year. Who is being affected? (Keating, Mayes, Meko) (updated)

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Costs of Vaccine Hesitancy: Survey of Pediatricians

- 46% agreed that their job was less satisfying because of the need to discuss vaccines with vaccine hesitant parents
- 60% reported spending more than 10 minutes discussing vaccines in visits with vaccine hesitant parents
- Less time on other preventive care
  - Average well visit in the US = 18 minutes
  - What is being sacrificed?

Pediatrics
April 2015, VOLUME 135 / ISSUE 4

Physician Response to Parental Requests to Spread Out the Recommended Vaccine Schedule

Allison Kempe, Sean T. O'Leary, Allison Kennedy, Lori A. Crane, Mandy A. Allison, Brenda L. Beaty, Laura P. Hurley, Michaela Bitnikova, Andrea Jimenez-Zambrano, Shannon Stokley

13

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- 60% reported spending more than 10 minutes discussing vaccines in visits with vaccine hesitant parents
- Less time on other preventive care
  - Average well visit in the US = 18 minutes
  - What is being sacrificed?
- If we're going to talk with parents about vaccines, we want to be effective but also efficient

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How Did We Get Here?

- Vaccines as victims of their own success
  - Loss of diseases' visibility
  - Loss of a sense of urgency
  - Lack of fear
- The assault on science
  - Facts and evidence are seen as just a matter of opinion, rather than proven truth
  - Simple 'belief' is often considered as valid as critical thinking

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THE EVIDENCE

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Cochrane Reviews: Face to Face Communication

2013: "The limited evidence available is low quality and suggests that face to face interventions to inform or educate parents about childhood vaccination have little to no impact on immunisation status, or knowledge or understanding of vaccination."

2018: "There is low- to moderate-certainty evidence suggesting that face-to-face information or education may improve or slightly improve children's vaccination status, parents' knowledge, and parents' intention to vaccinate."

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Effective Messages in Vaccine Promotion: A Randomized Trial

- Parents randomly assigned to receive 1 of 4 interventions:
  - (1) info explaining lack of evidence that MMR causes autism from CDC;
  - (2) info about measles, mumps, rubella from VIS;
  - (3) images of children with measles, mumps, rubella;
  - (4) a dramatic narrative about severe case of measles; or to a control group.
- None of the interventions increased parental intent to vaccinate a future child, and they often BACKFIRED
  - For example, refuting claims of an MMR/autism link: reduced misperceptions that vaccines cause autism but **decreased** intent to vaccinate among parents who had the least favorable vaccine attitudes
  - Nyhan, Pediatrics, 2014

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The Backfire Effect

"I Immunise" campaign

Target audience: parents who are
- Hesitant
- Late/selective vaccinators

Campaign evaluated via online survey (304 respondents)

Parents with a history of vaccine refusal had a high level of negative response compared to those without
- 97.2% of those reporting negative thoughts
- 97.5% of those reporting negative feelings

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It's complicated! No easy solutions!

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Why Don't We Know More about How to Communicate with Parents and Patients about Vaccines?

- Tons of research on parents' knowledge, attitudes, beliefs
- Little research on what communication techniques actually *change parents' behavior*
- Research in this area is complicated!
- We've been focused on the '**what**' more than the '**how**'

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It's Not (just) About the Facts: The "What" and the "How"

- The **What** – *necessary, but often not sufficient*
  - Safety surveillance mechanisms, ingredients, facts about diseases prevented, immunology of vaccination, ACIP recommendations, misconceptions, etc
- The **How** – what is the best way to convey information so that a person who is already resistant will be receptive to the information?
- Conventional Wisdom: Improve knowledge and people will make the right decision
  - This educational approach assumes human decision making is always rational (has been called the 'Information Deficit Model')
- Becoming increasingly clear that simply correcting knowledge gaps – whether through informational brochures, community campaigns, or direct provider conversations – is often **not enough** to address people who have concerns about vaccines

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SOME IDEAS ABOUT "THE HOW" OF TALKING WITH PEOPLE ABOUT VACCINES

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Landmark Study

The Architecture of Provider-Parent Vaccine Discussions at Health Supervision Visits

Douglas J. Opel, John Heritage, James A. Taylor, Rita Mangione-Smith, Halle Showalter Salas, Victoria DeVere, Chuan Zhou and Jeffrey D. Robinson
Pediatrics 2013;132;1037; originally published online November 4, 2013;

- Investigators in Seattle videotaped well visit encounters for children 1-19 months old
- Oversampled "vaccine hesitant parents"
- 111 vaccine discussions, 50% with VHPs
- Tried to figure out what predicted uptake of vaccines

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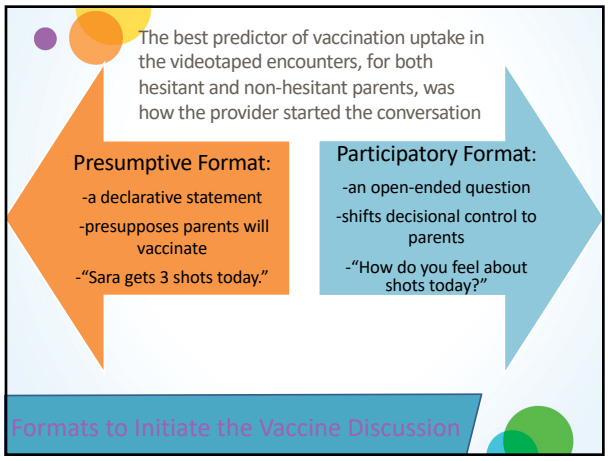
The best predictor of vaccination uptake in the videotaped encounters, for both hesitant and non-hesitant parents, was how the provider started the conversation
Presumptive Format:
-a declarative statement
-presupposes parents will vaccinate
-"Sara gets 3 shots today."
Participatory Format:
-an open-ended question
-shifts decisional control to parents
-"How do you feel about shots today?"
Formats to Initiate the Vaccine Discussion

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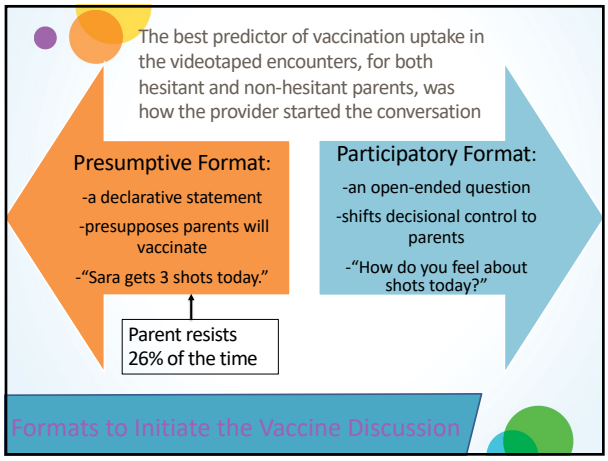
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Parent resists 26% of the time
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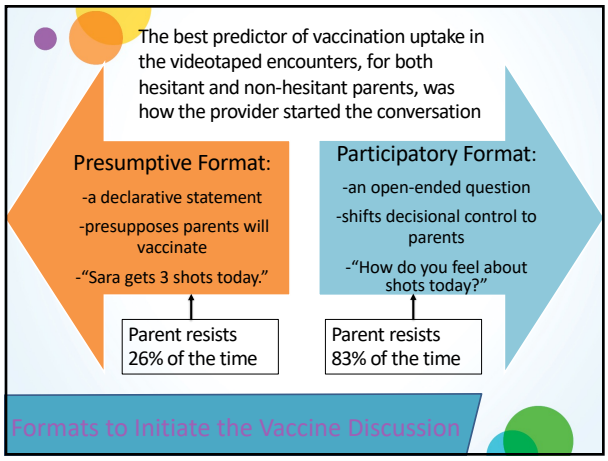
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Participatory Format:
-an open-ended question
-shifts decisional control to parents
-"How do you feel about shots today?"
Parent resists 83% of the time
Formats to Initiate the Vaccine Discussion

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Why use a presumptive format and why does it work?

- Vaccination is the clear standard of care
- It normalizes the vaccine decision
- For parents with mild or even moderate hesitancy about vaccines, a provider giving a strong recommendation in a presumptive format is often all that is needed, and, perhaps counterintuitively, may actually make parents more comfortable with the decision vaccinate
- Use of a presumptive format still leaves latitude for questions and concerns

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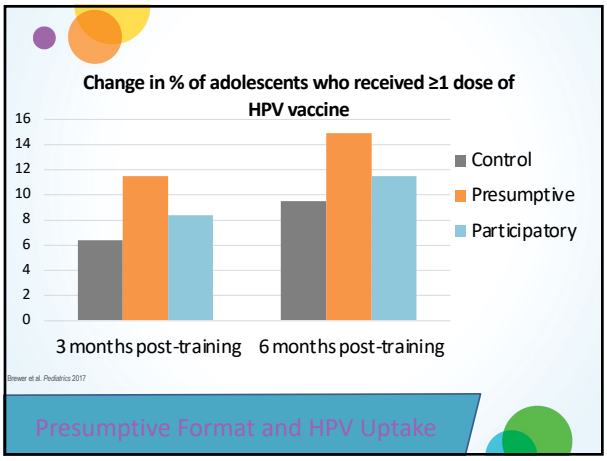

Presumptive Format and HPV Uptake

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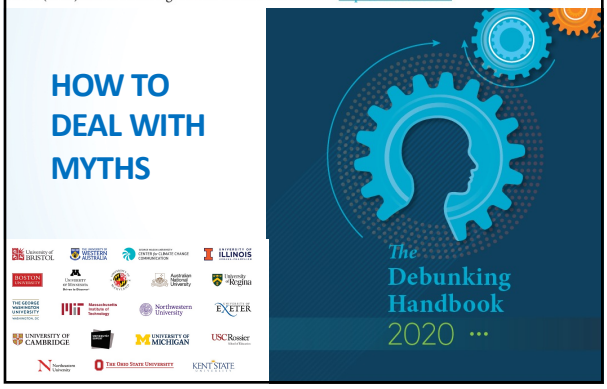
Lewandowsky, S., Cook, J., Ecker, U. K. H., Albarracín, D., Amazeen, M. A., Kendeou, P., Lombardi, D., Newman, E. J., Pennycook, G., Porter, E. Rand, D. G., Rapp, D. N., Reifler, J., Roozenbeek, J., Schmid, P., Seifert, C. M., Sinatra, G. M., Swire-Thompson, B., van der Linden, S., Vraga, E. K., Wood, T. J., Zaragoza, M. S. (2020). The Debunking Handbook 2020. Available at https://sks.to/db2020. DOI:10.17910/b7.1182



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The Illusory Truth Effect

- Objective truth is less important than familiarity; we tend to believe falsehoods when they are repeated sufficiently often.
- Misinformation can be intentionally suggested by "just asking questions"
  - Common technique on social media platforms to avoid being banned by the platform

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The Familiarity Backfire Effect

- Once people hear a myth, or misinformation, it's very difficult to remove that from their minds
- Debunking a myth can sometimes actually strengthen it

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Inoculation or "Pre-bunking"

- Because misinformation is sticky, it's best preempted
- Explain misleading or manipulative argumentation strategies to people
  - "This is what you're going to see if you look for this on the Internet…"
  - "This is how they will try to convince you that vaccines are bad…"
  - "The media sometimes does not check facts before publishing information that turns out to be inaccurate."
- Cultivate "cognitive antibodies"

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Inoculation or "Pre-bunking": Strategies

- "Buyer beware" stance towards all info on social media
- Slow down and think about the info provided
- Always consider the information sources, including track record, expertise, and motives
- Verify claims before sharing by checking other sources to evaluate the credibility of a website

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Debunk Often and Do It Properly

FACT	Lead with the fact if it's clear, pithy, and sticky—make it simple, concrete, and plausible. It must "fit" with the story.
WARN ABOUT THE MYTH	Warn beforehand that a myth is coming... mention it once only.
EXPLAIN FALLACY	Explain how the myth misleads.
FACT	Finish by reinforcing the fact—multiple times if possible. Make sure it provides an alternative causal explanation.

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Truth is Sometimes More Complicated Than Myths

Invest effort into translating complicated ideas so they are readily understood by parents and patients

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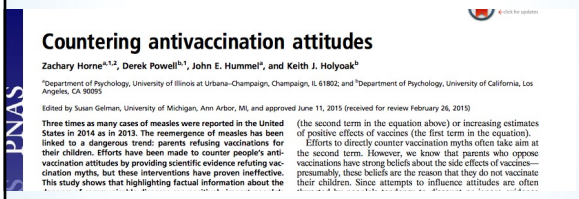
Demonstrative Study



Countering antivaccination attitudes

Zachary Horne[a,1,2], Derek Powell[b,1], John E. Hummel[a], and Keith J. Holyoak[b]

[a]Department of Psychology, University of Illinois at Urbana–Champaign, Champaign, IL 61802; and [b]Department of Psychology, University of California, Los Angeles, CA 90095

Edited by Susan Gelman, University of Michigan, Ann Arbor, MI, and approved June 11, 2015 (received for review February 26, 2015)

Three times as many cases of measles were reported in the United States in 2014 as in 2013. The reemergence of measles has been linked to a dangerous trend: parents refusing vaccinations for their children. Efforts have been made to counter people's anti-vaccination attitudes by providing scientific evidence refuting vaccination myths, but these interventions have proven ineffective. This study shows that highlighting factual information about the

(the second term in the equation above) or increasing estimates of positive effects of vaccines (the first term in the equation).

Efforts to directly counter vaccination myths often take aim at the second term. However, we know that parents who oppose vaccinations have strong beliefs about the side effects of vaccines—presumably, these beliefs are the reason that they do not vaccinate their children. Since attempts to influence attitudes are often

Rather than refuting incorrect elements of parents' beliefs, replace those elements with new information

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The Experiment

Measure vaccine attitudes

Randomize

- Disease risk – read a paragraph by a mother of child with measles; pictures of children with measles, mumps, rubella; 3 short warnings about how important it is for people to vaccinate their children
- Autism correction – CDC website about studies showing vaccines don't cause autism
- Control – unrelated scientific paragraph

Re-measure vaccine attitudes

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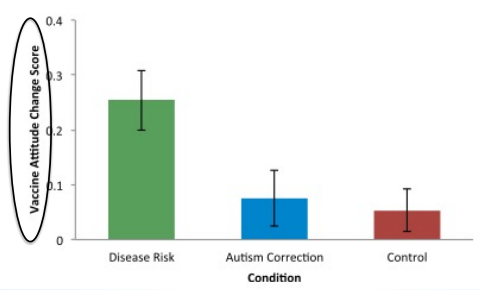
The Results



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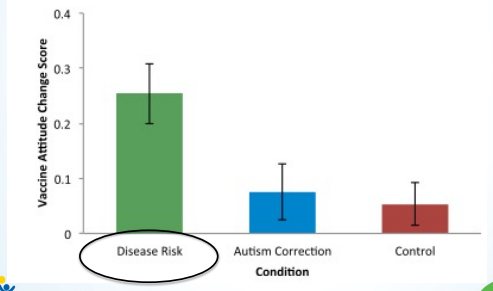
The Results



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ON TO THE CASES…

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Case

- You're seeing a 14-year-old boy for a well visit; the family has no specific concerns
- You note that he is up-to-date on all recommended adolescent vaccines and received his annual influenza vaccine a month ago

42

Case

- You're seeing a 14-year-old boy for a well visit; the family has no specific concerns
- You note that he is up-to-date on all recommended adolescent vaccines and received his annual influenza vaccine a month ago
- He has not, however, received a SARS-CoV-2 vaccine
- You mention to the patient and his mom that you are strongly recommending the vaccine to all of your patients and ask if you can give it to him today

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- You note that he is up-to-date on all recommended adolescent vaccines and received his annual influenza vaccine a month ago
- He has not, however, received a SARS-CoV-2 vaccine
- You mention to the patient and his mom that you are strongly recommending the vaccine to all of your patients and ask if you can give it to him today
- "Well… I'm not so sure…"

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What Usually Happens when a Parent is Resistant or Hesitant?

- The provider usually asks the parent why she does not want the vaccine
  - The parent will then begin to argue for all the reasons she does not want her child to be vaccinated
  - In the process, the parent strengthens her resolve against the vaccination
- The provider is now left open to falling into additional conversation traps

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Persuasion Trap

Persuasion Trap – when the provider becomes the champion for the vaccine and tries to convince the hesitant or resistant parent of the benefits. This usually ends up in an argumentative type of "yes, but" cycle.

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The Lecture Trap

- Lecture (Data Dump Trap)– the tendency here is to provide the full story about some aspect of the vaccine
  - Puts people off and raises resistance because it implies that they don't know the full story and you're going to give it to them
  - I.e., You're an expert and they're not
- Also, it can be counter-productive because you end up raising concerns that the patient had not previously considered

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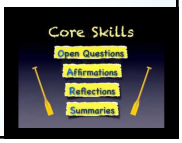
Motivational Interviewing Techniques for Vaccine Conversations



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MI for the Vaccine Conversation

JAMA Pediatrics | Original Investigation

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

Amanda F. Dempsey, MD, PhD, MPH; Jennifer Pyrznawoski, MSPH; Steven Lockhart, MPH; Juliana Barnard, MA; Elizabeth J. Campagna, MS; Kathleen Garrett, MA; Allison Fisher, MPH; L. Miriam Dickinson, PhD; Sean T. O'Leary, MD, MPH

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Strengthening Provider Communication for Increasing Uptake of HPV Vaccine

- Cluster RCT Among 16 public and private practices in Colorado
- Multi-component intervention which included **Motivational Interviewing Training**

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- Self-efficacy for changing parents minds about HPV vaccine improved among providers
- Time spent in HPV vaccine discussions was the same or decreased from baseline at 4 months after the training in intervention clinics
- **9.5% increase** in HPV initiation in intervention versus control practices

JAMA Pediatrics | Original Investigation
Effect of a Health Care Professional Communication Training Intervention on Adolescent Human Papillomavirus Vaccination
A Cluster Randomized Clinical Trial

Evidence that use of MI Increases Vaccine Uptake

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So what is Motivational Interviewing?

Motivational interviewing is a patient-centered, guiding communication style for enhancing a person's **own** motivation for change or behavioral activation.

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5 MI Skills for Vaccine Conversations

Open Ended Questions
helps explore and understand a parent's stance on vaccination

Affirmation
improves parent engagement in an open discussion with you by helping them feel supported, appreciated, and understood

Reflection
encourages partnerships, deepens rapport, and allows a parent to understand themselves and their motivations on a deeper level

Autonomy Support
enhances a parent's sense of control and makes them feel more at ease with the conversation

Ask Permission to Share
puts parents in a less defensive posture and makes them more receptive to the information you'd like to share

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Using Motivational Interviewing

The provider asks in a non-threatening way to share the parent's concerns.

Example:

Provider: *"So, you seem to have concerns about the vaccine. Well, that's perfectly understandable – I've had a number of questions about it. Would you mind sharing what your particular concerns are?"*

Parent: *"Well, I've heard that it can cause infertility, and that really worries me. We just don't know the long-term side effects..."*

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Directing the Conversation the MI way

The provider reflects back what the patient is saying to be sure he/she understands and summarizes what has been heard before proceeding, after asking permission, to make a recommendation.

Example:

Provider: *"So, I can hear that you're concerned that maybe the vaccine could lead to problems down the road. Well, I completely get that – there's a lot of information out there to digest. I've thought a lot about this and looked into it a great deal. Is it okay if I go over what I've found out?"*

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It is now that you make a clear and personalized recommendation

Example:

Provider: *"I heard some of those same rumors myself, so I looked into it. It turns out that the possible association with infertility is a complete myth. It started with two doctors in Europe known to be antivaccine and spread from there. There is no truth to it, and experts agree that there is really no plausible way this vaccine would lead to infertility."*

56

It is now that you make a clear and personalized recommendation

Example:

Provider: *"What we do know is that this virus is very dangerous for people of all ages, and it's become very clear to me the benefits of vaccination greatly outweigh any potential risks. If he were my son, I would not hesitate to recommend this vaccine for him, and most of my patients now are getting the vaccine. Having said that, this is a decision that only you and your son can make. What do you think?"*

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MI for the Vaccine Conversation

- Open ended questions
- Reflections, Affirmations
- Ask permission to share
- Autonomy support
- Use of behavior change principles like emphasizing social norms and focusing on the disease that is prevented rather than negatives (like side effects)
- A clear strong and personalized recommendation

58

Case

- An 11 year old girl comes to your office for a well check and her adolescent vaccines
- You offer a 'presumptive' recommendation for the vaccines, saying "Great, you're here for your vaccines, we can go ahead and do her tetanus/whooping cough vaccine, her HPV vaccine, and her meningitis vaccine"

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Not so fast…

Her mother says, "We're okay doing that tetanus shot and the meningitis one, but we're going to hold off on the HPV vaccine."

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Pivot to Motivational Interviewing

The provider asks in a non-threatening way to share the parent's concerns.

Example:

Provider: *"So you seem to have concerns about the HPV vaccine. Well, that's perfectly understandable – I've had a number of questions about this one. Would you mind sharing what your particular concerns are?"*

Parent: *"Well, I've heard that it's a vaccine to prevent a disease that's transmitted by having sex, and she is a looooong way from having sex."*

61

Directing the Conversation the MI way

The provider reflects back what the patient is saying to be sure he/she understands and summarizes what has been heard before proceeding, after asking permission, to make a recommendation.

Example:

Provider: *"So I can hear that you're concerned that she's too young for the HPV vaccine because HPV is transmitted by sexual activity. Well, I completely get that – she is only 11 after all. I've thought a lot about this. Is it okay if I go over how I've come to think about this vaccine?"*

62

It is now that you make a clear and personalized recommendation

Example:

Provider: *"I used to think of this vaccine as something to prevent a sexually transmitted disease, but realized it's really about preventing cancer. Almost everyone gets this virus, so I think it's important for everyone."*

63

It is now that you make a clear and personalized recommendation

Example:

Provider: *"If she were my daughter I would not hesitate to recommend this vaccine for her, and most of my patients now are getting the vaccine. Having said that, this is a decision that only you and your daughter can make. What do you think?"*

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65

Case

- Your next patient is a one year old girl in for her well child check
- She has received all her recommended vaccines up to this point
- She is due for MMR, varicella, PCV, HiB, and Hepatitis A
- Her mother, however, says, "We're not going to do the MMR vaccine today."

66

Case

- Provider: *"It sounds like you're okay with the other vaccines. Would you mind telling me what your concerns are with the MMR vaccine?"*
- Parent: *"Well, I know there's a measles outbreak going on right now, but I'm really worried that the vaccine might trigger autism. I know scientists say it doesn't but my best friend's little boy has autism and she told me not to get it."*

67

Case

You reflect back the concern to be sure you understand and summarize what has been heard before proceeding, again with permission, to make a recommendation.

Provider: *"So it sounds like you're worried about the safety of the MMR vaccine. Would you mind if I shared with you why I think this is such an important vaccine?"*

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The Facts: The MMR/Autism Story

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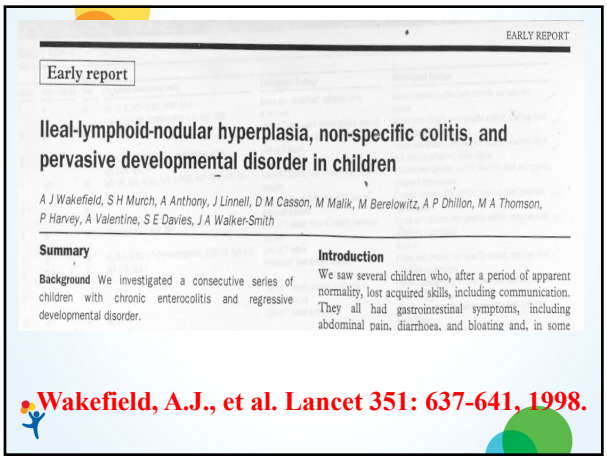

EARLY REPORT

Early report

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

Summary

Background We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Introduction

We saw several children who, after a period of apparent normality, lost acquired skills, including communication. They all had gastrointestinal symptoms, including abdominal pain, diarrhoea, and bloating and, in some

Wakefield, A.J., et al. Lancet 351: 637-641, 1998.

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Wakefield's Hypothesis

Persistent sub-clinical measles infection following vaccination, related to an underlying immunological abnormality, leads to an inflamed and dysfunctional intestine allowing excessive absorption of certain substances that negatively influence neuroregulation.

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The "Study"

- Case series of 11 boys and 1 girl, ages 3-9
- 9 with "regressive" autism
- 11 with "non-specific colitis"
- Ileocolonoscopies with biopsies, LPs, EEGs, Barium series
- "Onset of behavioural symptoms was associated, by the parents, with measles, mumps, and rubella vaccination in eight of the 12 children…"
- "We identified associated gastrointestinal disease and developmental regression in a group of previously normal children, which was generally associated in time with possible environmental triggers."

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Problems with the "Study"

- Case series methodology
- Lack of consent for invasive procedures, no IRB approval
- Several cases called autism didn't actually have it, and only one actually had "regressive autism"
- Several cases' symptoms began before (5) or long after (3) MMR vaccine
- -timing was grossly misrepresented in manuscript
- Colonic histopathology in nine of the cases was changed after medical school "research review" from "unremarkable" to "non-specific colitis"
- Most cases were self-referrals from anti-vaccine groups, and 11 of 12 blamed MMR vaccine for developmental concerns

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Egregious Conflicts of Interest

- In press conference, Wakefield suggested using single vaccines instead of combo MMR – major coverage in British tabloids
- Prior to submission, Wakefield had applied for patents on a vaccine to rival MMR vaccine
- Later revelation that he received >£400,000 from lawyers to prove that the MMR vaccine was dangerous, with undisclosed payments beginning 2 years prior to publication
- Wakefield predicted he and colleagues could make >$43 million/year from diagnostic kits for "autistic enterocolitis"

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EARLY REPORT

Early report

Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

A J Wakefield, S H Murch, A Anthony, J Linnell, D M Casson, M Malik, M Berelowitz, A P Dhillon, M A Thomson, P Harvey, A Valentine, S E Davies, J A Walker-Smith

Summary

Background We investigated a consecutive series of children with chronic enterocolitis and regressive developmental disorder.

Methods 12 children (mean age 6 years [range 3–10], 11 boys) were referred to a paediatric gastroenterology unit with a history of normal development followed by loss of acquired skills, including language, together with diarrhoea and abdominal pain. Children underwent gastroenterological, neurological, and developmental assessment and review of developmental records. Ileocolonoscopy and biopsy sampling, magnetic-resonance imaging (MRI), electroencephalography (EEG), and lumbar puncture were done under sedation. Barium follow-through radiography was done where possible. Biochemical, ...

Introduction

We saw several children who, after a period of apparent normality, lost acquired skills, including communication. ...

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Studies Do Not Support Association Between MMR and Autism

Table 1. Studies that fail to support an association between measles-mumps-rubella vaccine and autism.

Source	Study design	Study location
Taylor et al., 1999 [5]	Ecological	United Kingdom
Farrington et al., 2001 [6]	Ecological	United Kingdom
Kaye et al., 2001 [7]	Ecological	United Kingdom
Dales et al., 2001 [8]	Ecological	United States
Fombonne et al., 2006 [9]	Ecological	Canada
Fombonne and Chakrabarti, 2001 [10]	Ecological	United Kingdom
Taylor et al., 2002 [11]	Ecological	United Kingdom
DeWilde et al., 2001 [12]	Case-control	United Kingdom
Makela et al., 2002 [13]	Retrospective cohort	Finland
Madsen et al., 2002 [14]	Retrospective cohort	Denmark
DeStefano et al., 2004 [15]	Case-control	United States
Peltola et al., 1998 [16]	Prospective cohort	Finland
Patja et al., 2000 [17]	Prospective cohort	Finland

Gerber and Offit. CID 2009:48;456-61

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Back to the case…

Now, after getting permission, you proceed with your response.

Example:

Provider: *"To address you specific concern, it turns out that the whole MMR/autism thing was based on a study that turned out to be a fraud, and the doctor who lead it has since lost his medical license [and should probably be in jail!].*

Personally, though, I think it's most important to think about why we're giving the vaccine in the first place. The diseases we're trying to prevent are very serious, and I would feel terrible if one of my patients got one of them. That said, this is your decision, and I want you to be comfortable with it."

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Techniques

- Empathy
- Debunk the myth without reinforcing it
  - Simple facts, replacing the myth with a compelling alternative
- Asking permission to share
- Turn the focus from the side effect to the disease
- Personal recommendation
- Autonomy

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Case

- After using your new found MI skills, she agrees to all of the recommended vaccines.
- Your next patient is a healthy, happy 5 year and is in for her well check and is due for her MMR, Varicella, DTaP, and IPV vaccines.

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Case

- However, after explaining that she is due for these vaccines, her mother says that after thinking about it, she doesn't want to give them today.
- "I've been doing a lot of research on vaccines and from what I can tell, we should stop giving them because of all the toxins in them. I mean, I always buy organic and stuff, so why should this be any different?"

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Case

- However, after explaining that she is due for these vaccines, her mother says that after thinking about it, she doesn't want to give them today.
- "I've been doing a lot of research on vaccines and from what I can tell, we should stop giving them because of all the toxins in them. I mean, I always buy organic and stuff, so why should this be any different?"
- Deep breath

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The Facts: Thimerosal

- Thimerosal: ethylmercury-containing preservative used in multidose vaccine vials since the 1930s
  - No evidence of safety issues as quantity of ethylmercury is very low
- In 1999, the FDA determined in a review that it was theoretically possible for an infant to receive, in one day depending on the combination of vaccines given, a dose of *ethylmercury* that would exceed the FDA safe intake level of 0.1 micrograms/kg/day of *methylmercury*
- Although there was no evidence that thimerosal caused harm, the AAP and the U.S. Public Health Service issued a joint statement saying that it would be prudent to take all mercury out of vaccines

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The Facts: Thimerosal

- The hope at the time was that the public perception of this action would be that public health authorities are extraordinarily cautious with the safety of vaccines
- This message was not what was received however – "there must be something wrong, and there's a cover up!"
- Many pseudo-scientific hypotheses came after this, the most common being that children with autism metabolize mercury differently and therefore are more prone to its effects
- The evidence: there is no scientific evidence to support this hypothesis, and many studies refuting it
- Still used as a preservative in vaccine vials throughout the (rest of) the world

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Table 2. Studies that fail to support an association between thimerosal in vaccines and autism.

Source	Study design	Location
Stehr-Green et al., 2003 [22]	Ecological	Sweden and Denmark
Madsen et al., 2003 [23]	Ecological	Denmark
Fombonne et al., 2006 [9]	Ecological	Canada
Hviid et al., 2003 [24]	Retrospective cohort	Denmark
Verstraeten et al., 2003 [25]	Retrospective cohort	United States
Heron and Golding, 2004 [26]	Prospective cohort	United Kingdom
Andrews et al., 2004 [27]	Retrospective cohort	United Kingdom

Gerber and Offit. CID 2009:48;456-61

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There are different forms of mercury!

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Aluminum is Somehow Just Bad

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Aluminum is Somehow Just Bad

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The Facts: Aluminum Adjuvants

- Al+ used as vaccine adjuvant 80+ years;
  - Remarkable safety record
- Adverse reactions: sterile abscesses, granulomatous inflammation, contact hypersensitivity
- Vaccines that include Al+ adjuvant:
  - DTP, DTaP, some HIB, Hepatitis A & B, HPV, anthrax, rabies
- No aluminum: IPV, influenza

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So what about aluminum?

- Found in numerous foods and beverages, baby formulas, honey
  - Typical adults ingest 7-9 milligrams of aluminum per day
- Aluminum contained in vaccines is similar to that found in a liter of infant formula
- We ingest orders of magnitude more aluminum than the amount contained in vaccines

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"But it's injected into my baby!"

- About 1% of ingested aluminum reaches the bloodstream (all injected aluminum does)
- Once in bloodstream, though, processed exactly the same whether injected or ingested
  - Most eliminated by the kidney quickly
  - Small amounts retained in tissues
  - By adulthood, 50-100 milligrams have accumulated, almost all of which comes from food
- Levels of aluminum in tissues no different when comparing vaccinated and unvaccinated subjects (Goulle et al, 2020)
- Blood and hair aluminum levels have no association with vaccine history or development (Karwowski et al, Acad Peds, 2018)
- Burden of aluminum from diet and vaccines well within levels considered safe (Mitkus et al, Vaccine, 2011)

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Back to the Case…

The provider reflects back what the patient is saying to be sure he/she understands and summarizes what has been heard before proceeding, again with permission, to make a recommendation.

Example:

Provider: ***"So you seem to be concerned about potential effects of the ingredients in the vaccines. I get that – you care a lot about making sure your daughter only takes in things that are good for her and safe. I've looked into this a great deal. Would it be okay to share what I've found out about this?"***

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Back to the Case…

You now can proceed to briefly share information about the ingredients but pivot to the importance of the vaccines.

Example:

Provider: ***"Vaccines are held to a higher safety standard than other medications. We have to know they are safe because we give them to healthy children. So there is extensive research and testing that is done before a new vaccine can be used.***

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Back to the Case…

You now can proceed to briefly share information about the ingredients but pivot to the importance of the vaccines.

Example:

Provider: *It turns out that the ingredients in vaccines are there in tiny quantities, and they actually are all there to make the vaccines as safe as possible. I feel better knowing my children and my patients get all of these vaccines in as soon as they can, because the diseases we're talking about are so serious. That said, this is your decision, and I want you to be comfortable with that. What do you think? "*

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Techniques

- Empathy
- Asking permission to share
- Turn the focus from the side effect to the disease
- Personal recommendation
- Autonomy support

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Case

- Your next patient comes in for her two month vaccines
- Her mother, however, only wants to do one at a time…
- "I'm worried because I've heard that too many vaccines at once can hurt the immune system. We'd like to only do one at a time. Which one do you think we should do today?"

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Case

- Your next patient comes in for her two month vaccines
- Her mother, however, only wants to do one at a time…
- "I'm worried because I've heard that too many vaccines at once can hurt the immune system. We'd like to only do one at a time. Which one do you think we should do today?"
- Deep breath

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Forbes

Pediatrician Bob Sears Punished For Questionable Vaccine Exemption

Tara Haelle Senior Contributor
Pharma & Healthcare
I offer straight talk on science, medicine, health and vaccines.

Sears, left, discusses a vaccination schedule with Jessica Byers and her daughter Keaton, 7, during a checkup for her 1-month-old daughter, Olivia, on April 17, 2006, in San Clemente, California. LEONARD ORTIZ/ORTIZNEWS.COM

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The Facts: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System?

- One hundred years ago children received one vaccine- smallpox
- Forty years ago children received 5 vaccines- diphtheria, pertussis, tetanus, polio, smallpox
- Today- children receive 11 vaccines routinely and as many as 20 shots by 2 yrs of age
- Parents are concerned about the number of shots kids get

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The Facts: Do Multiple Vaccines Overwhelm or Weaken the Infant's Immune System?

- Infant has theoretical capacity to respond to about 100,000 vaccines at any one time!
  - (10^7 B cells per mL by 10^3 epitopes per vaccine)
  - Cohn and Langman, Immuno Rev 1990
- Most vaccines contain fewer than 100 antigens, therefore if 11 vaccines given at one time then 0.1% of the immune system would be "used up"

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Children's immune systems regularly encounter thousands of antigens, and the antigens in vaccines are actually far less than they used to be

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

1900		1960		1980		2000	
Vaccine	Proteins	Vaccine	Proteins	Vaccine	Proteins	Vaccine	Proteins/ Polysaccharides
Smallpox*	~200	Smallpox	~200	Diphtheria	1	Diphtheria	1
Total	~200	Diphtheria†	1	Tetanus	1	Tetanus	1
		Tetanus‡	1	WC-Pertussis	~3000	AC-Pertussis¶¶	2–5
		WC-Pertussis§	~3000	Polio	15	Polio	15
		Polio‖	15	Measles¶	10	Measles	10
		Total	~3217	Mumps#	9	Mumps	9
				Rubella**	5	Rubella	5
				Total	~3041	Hib††	2
						Varicella‡‡	69
						Pneumococcus§§	8
						Hepatitis B‖‖	1
						Total	123–126

Offit PA et al, *Pediatrics* (2002) 109:124-9

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Most nurses and parents prefer multiple injections at once, and pain may be worse with spreading out

- Nurses prefer to give multiple injections at once to reduce pain and distress (Horn & McCarthy, Journal of Pediatric Health Care, 1999)
- Most parents prefer simultaneous (Bogin et al, Pediatric Resident, 2004)
- Salivary cortisol levels similar with simultaneous and sequential injections ("hurts with 1, hurts with 3"), and pain scores lower in simultaneous (Hanson et al, Infant Behavior and Development, 2010)

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Back to the case…

After reflecting back the mother's concern, and asking if it's okay to share what you know about vaccines harming the immune system, using analogies she can relate to, she agrees to follow the recommended schedule

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Case

- It's 5 o'clock, but you've got one more patient to see
- This time, it's 14 year old boy with several comorbid conditions who hasn't been in to see you in quite some time

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Case

- It's 5 o'clock, but you've got one more patient to see
- This time, it's 14 year old boy with several comorbid conditions who hasn't been in to see you in quite some time
- An hour later, after addressing his medical and behavioral issues, filling out several school forms, getting him back on appropriate medications, and offering empathic support to the family, you realize that he hasn't been vaccinated against SARS-CoV-2
- You recognize that he is a particularly high risk because of his chronic conditions and explain to the family that you would strongly recommend it for him

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Again, not so fast…

His mother seems a little uncomfortable. "I don't want him to get that COVID vaccine. It's so new, and I don't want him to be a guinea pig for a new vaccine."

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Case

After taking another deep breath – it's 6 o'clock after all – you reflect back the concern to be sure you understand and summarize what has been heard before proceeding, again with permission, to make a recommendation.

Example:

Provider: ***"I hear you – I had some of the same concerns when this vaccine first came out – that maybe it hadn't been tested enough. Would you mind if I went over why I think this vaccine is so important?"***

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Using Motivational Interviewing

You now can proceed to briefly share information about the development of these vaccines, emphasizing safety.

Example:

Provider: *"Vaccines are held to a higher safety standard than other medications. We have to know they are safe because we give them to people to prevent illness rather than treat a specific condition. These COVID-19 vaccines are no different. There was extensive research and testing done before these vaccines went into common use, and now we have safety information after hundreds of millions of doses given showing that they are very safe. In fact, in some ways, these vaccines have undergone more safety evaluations than pretty much any medicine, vaccine or otherwise, in history!"*

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Using Motivational Interviewing

Example:

Provider: *"I feel better knowing my own children and my patients are getting vaccinated because the disease we're talking about is so serious. That said, this is your decision, and I want you to be comfortable with that. What do you think? "*

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Motivational Interviewing doesn't always work!

The mother and son decide they still want to wait, but will think more about it, and thank you for going over it with them. But there's one thing left for you to do…

117

Motivational Interviewing doesn't always work!

The mother and son decide they still want to wait, but will think more about it, and thank you for going over it with them. But there's one thing left for you to do…

Example:

"As you're looking into this further, be really careful about your sources of information. There's a lot of incorrect and misleading information out there that frankly can be pretty convincing, and it can be really hard to sort out good sources from bad sources. I'd suggest completely avoiding social media for information about vaccines and encourage you to really verify any sources you use. Professional organizations like AAP have great information, as does CDC and many academic medical centers. I have a list of sources I trust that I can share with you."

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Techniques

- Empathy
- Asking permission to share
- Debunk the myth without reinforcing it
- Turn the focus to the disease
- Personal recommendation
- Autonomy support
- Prebunking

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And Finally…

- Recognize that you are parents' and patients' most trusted source of information, but communication techniques are only one method for increasing vaccination uptake, be it SARS-CoV-2 vaccines or routine vaccines
- Don't forget about tried-and-true evidence-based techniques to increase vaccination uptake, like standing orders for vaccination, reminder/recall, provider assessment and feedback, etc
  - https://www.thecommunityguide.org/
- The combination of multiple evidence-based techniques, including communication techniques, will lead to the highest vaccination uptake
- Make sure your entire staff, including the front desk, administrative staff, medical assistants, nurses, and clinicians are all on the same page about vaccination

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Conclusions

- Presumptive recommendations work! (most of the time)
- Implement evidence-based techniques for increasing vaccination uptake
- Be mindful of the structure of the conversation
- Avoid arguments
  - Spend as little time as you can 'refuting'
- Pivot to the diseases we're trying to prevent
- Emphasize social norms
- Open-ended questions
- Don't forget to pre-bunk
- Remember to 'ask permission to share!'

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It's Worth Your Time!

- People still respect the opinion of healthcare providers
- Remember that you all really are the experts!

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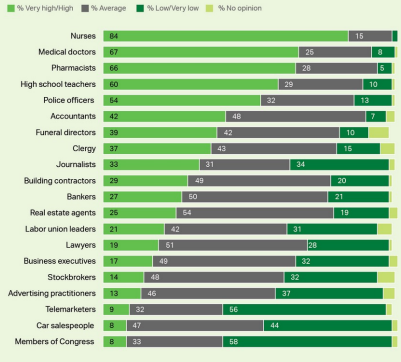
Please tell me how you would rate the honesty and ethical standards of people in these different fields -- very high, high, average, low or very low?



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Good Resources for Providers

- CDC's vaccine web section www.cdc.gov/vaccines
- CDC's "Provider Resources for Vaccine Conversations with Parents" www.cdc.gov/vaccines/conversations
- IAC's Responding to Concerns web section www.immunize.org/concerns and Talking with Parents web section www.immunize.org/concerns/comm_talk.asp
- Vaccine Education Center www.vaccine.chop.edu
- AAP's immunization website www.aap.org/immunization

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Good Resources for Parents

- Handouts for communicating with parents and patients from IAC www.immunize.org/handouts/discussing-vaccines-parents.asp
- IAC's website for the public www.vaccineinformation.org
- CDC's "Parents Guide to Childhood Immunization" www.cdc.gov/vaccines/pubs/parents-guide
- CDC's "Provider Resources for Vaccine Conversations with Parents" www.cdc.gov/vaccines/conversations
- Every Child By Two's websites: http://www.ecbt.org and www.vaccinateyourbaby.org

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Bad Links (that look like Good Links!)

www.vaccines.net
www.nvic.org (National Vaccine Information Center)
www.vaccinationnews.com

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"VACCINES DON'T SAVE LIVES; VACCINATION SAVES LIVES"

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