Evidence-Based Strategies for Addressing Vaccine Hesitancy in Busy Pediatric Offices

Children's National Hospital

Pediatric Health Network

Sarah Schaffer DeRoo MD

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Children's National®

Introduction and Welcome

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All lines are muted throughout the presentation.

Please use the Q&A to ask questions or make comments.

We will be recording the session.

Today's recording and materials will be posted to the PHN website following the presentation:
https://pediatrichealthnetwork.org/

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Pediatric Health Network Grand Rounds

5-13-2026

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Today's Speakers

Sarah Schaffer DeRoo, MD

Eduardo Fox, MD

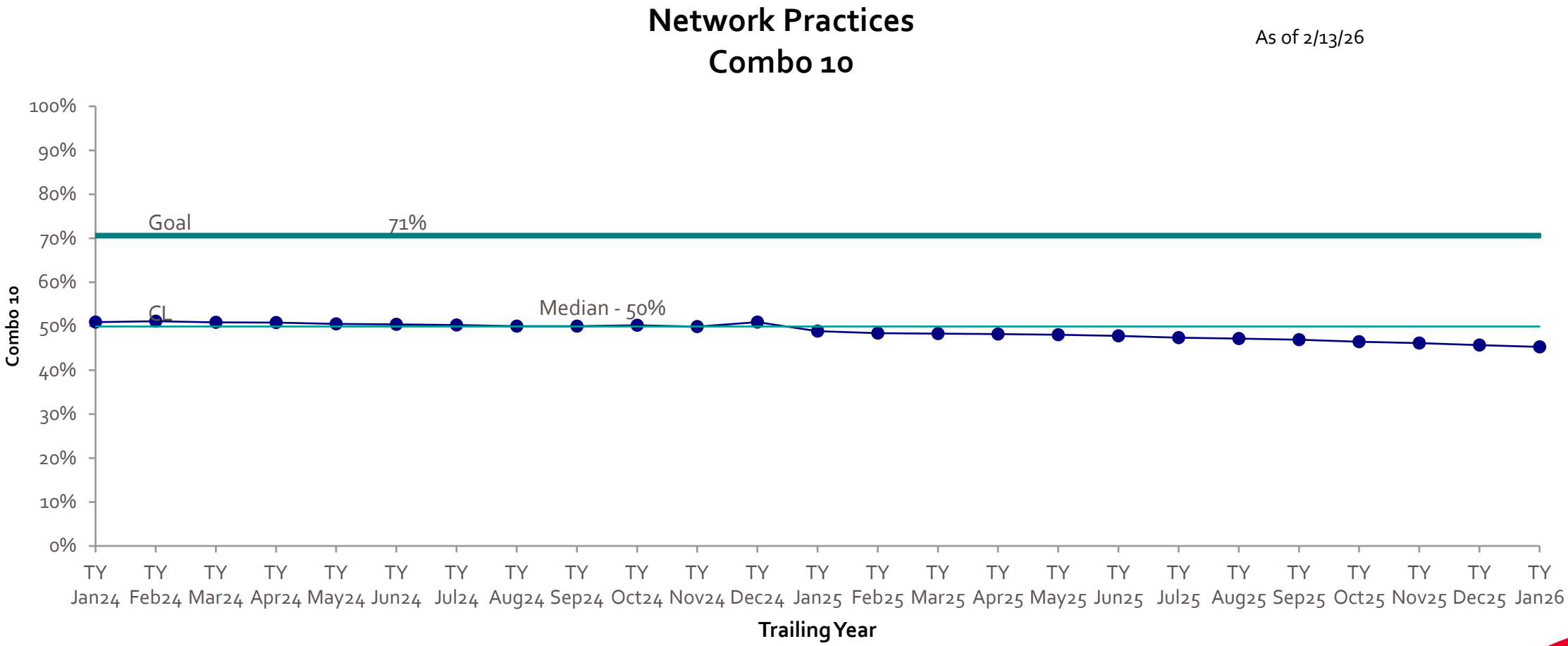
Learning Objectives

1. Describe vaccination rates, historical trends, and gaps in care for Pediatric Health Network patients
2. Define vaccine hesitancy and common archetypes of parental vaccine attitudes
3. Identify and implement evidence-based communication strategies for addressing vaccine hesitancy

Learning Objective #1

Describe vaccination rates, historical trends, and gaps in care for Pediatric Health Network patients

CIS E (Combo 10): PHN Trend



Combo 10	4 DTaP	3 IPV	1 MMR	3 HiB	3 HepB	1 VZV	4 PCV	1 HepA	2-3 RV	2 Flu

NCQA National Averages

CIS-E Combination	Measurement Year	Commercial HMO	Commercial PPO	Medicaid HMO
Combo 10	2024	49.1	44.3	28.2

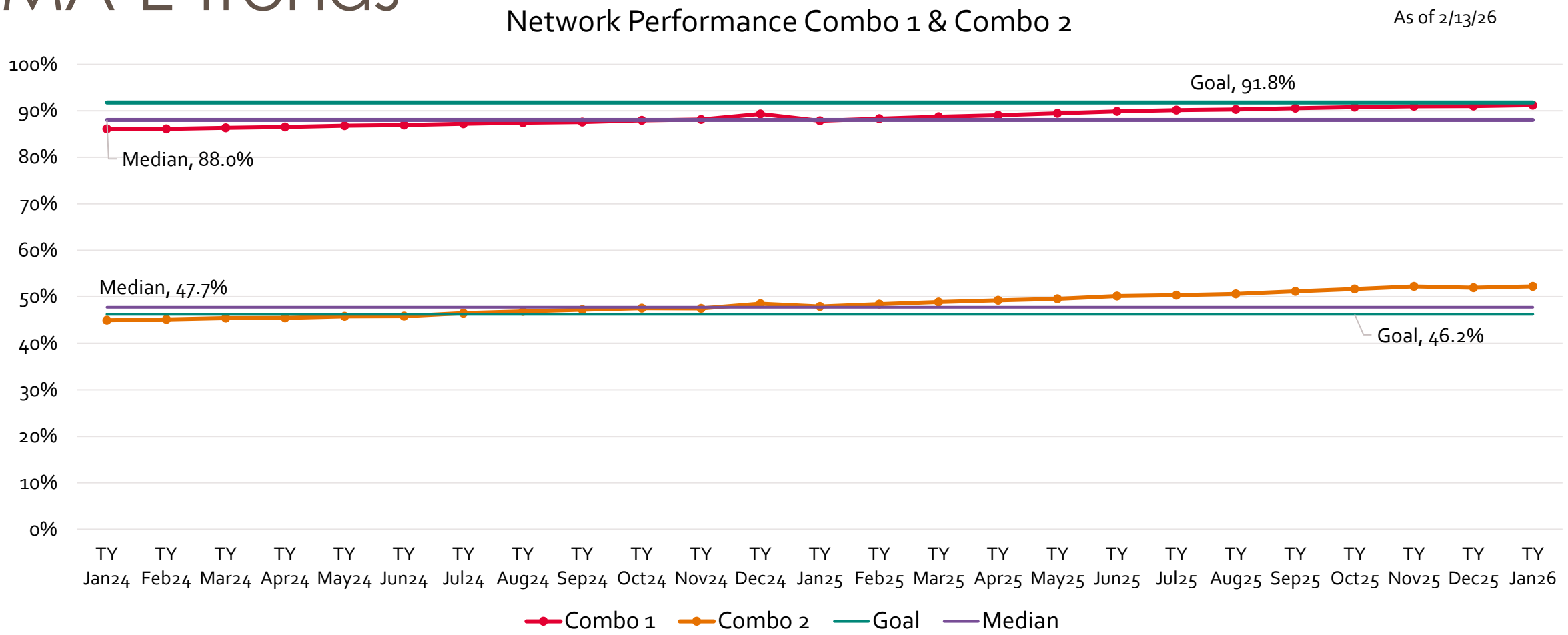
Drilling down on CIS-E and IMA

CareFirst performance data Jan-Aug 2025

Childhood Immunizations Status (Combo 10)	**2205**	**3756**	**58.71**
- Hepatitis B Vaccine (Hep B)	3351	3756	89.22
- Diphtheria, Tetanus, and Pertussis Vaccine (DTaP)	3493	3756	93
- Inactivated Poliovirus Vaccine (IPV)	3668	3756	97.66
- Haemophilus Influenzae Type B Vaccine (HiB)	3672	3756	97.76
- Pneumococcal Conjugate Vaccine (PCV)	3442	3756	91.64
- Rotavirus Vaccine (RV)	3493	3756	93
- Hepatitis A Vaccine (HepA)	3617	3756	96.3
- Measles, Mumps, & Rubella Vaccine (MMR)	3654	3756	97.28
- Varicella-Zoster-Virus Vaccine (VZV)	3636	3756	96.81
- Influenza Vaccine (Influenza)	2628	3756	69.97
Immunizations for Adolescents - Combination 2	**2416**	**4599**	**52.53**
- Tetanus, Diphtheria Toxoids and Acellular Pertussis (Tdap)	4486	4599	97.54
- Meningococcal	4432	4599	96.37
- Human Papillomavirus Vaccine (HPV)	2466	4599	53.62

Combo 10	4 DTaP	3 IPV	1 MMR	3 HiB	3 HepB	1 VZV	4 PCV	1 HepA	2-3 RV	2 Flu

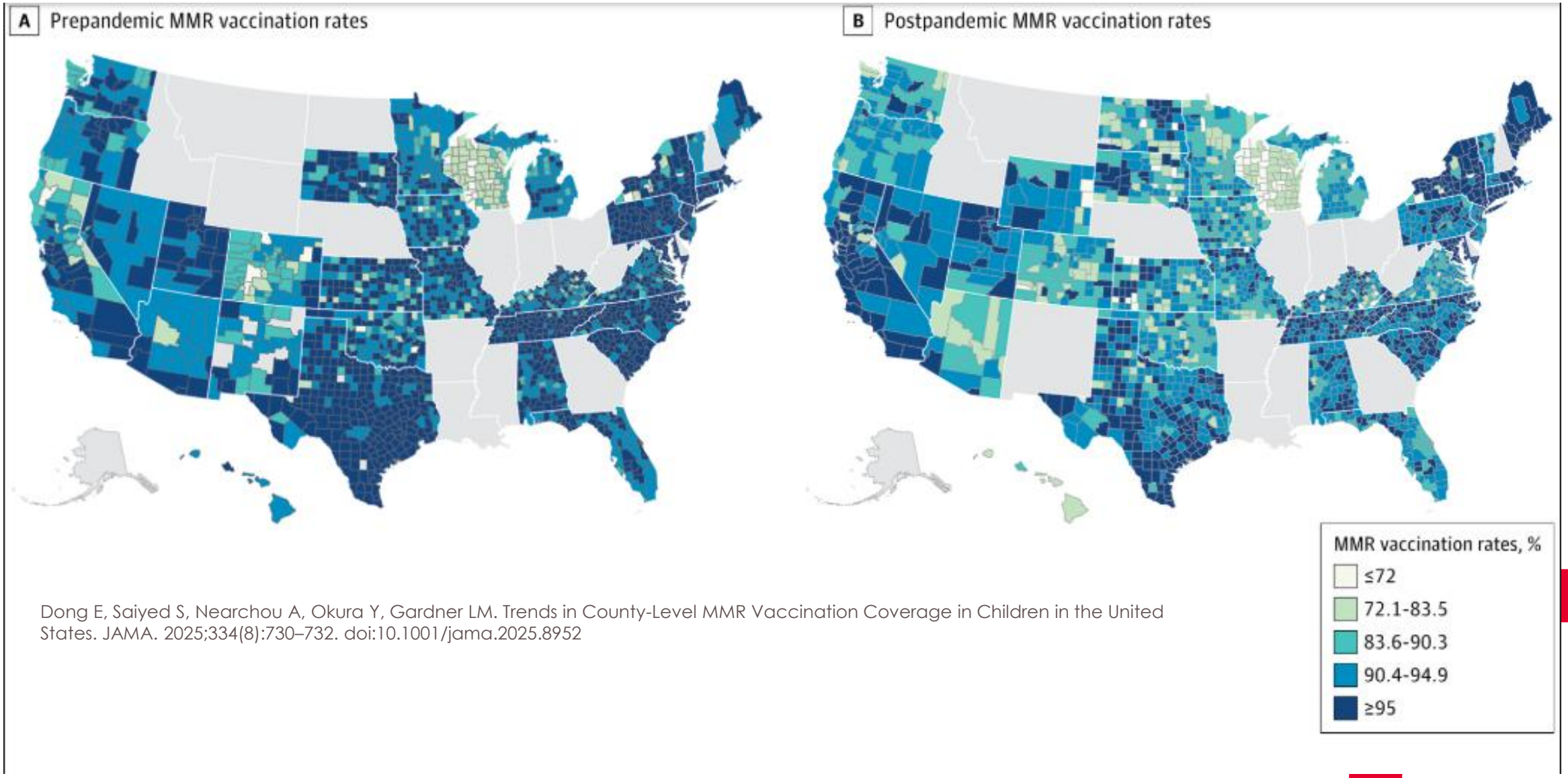
IMA-E Trends



NCQA National Averages

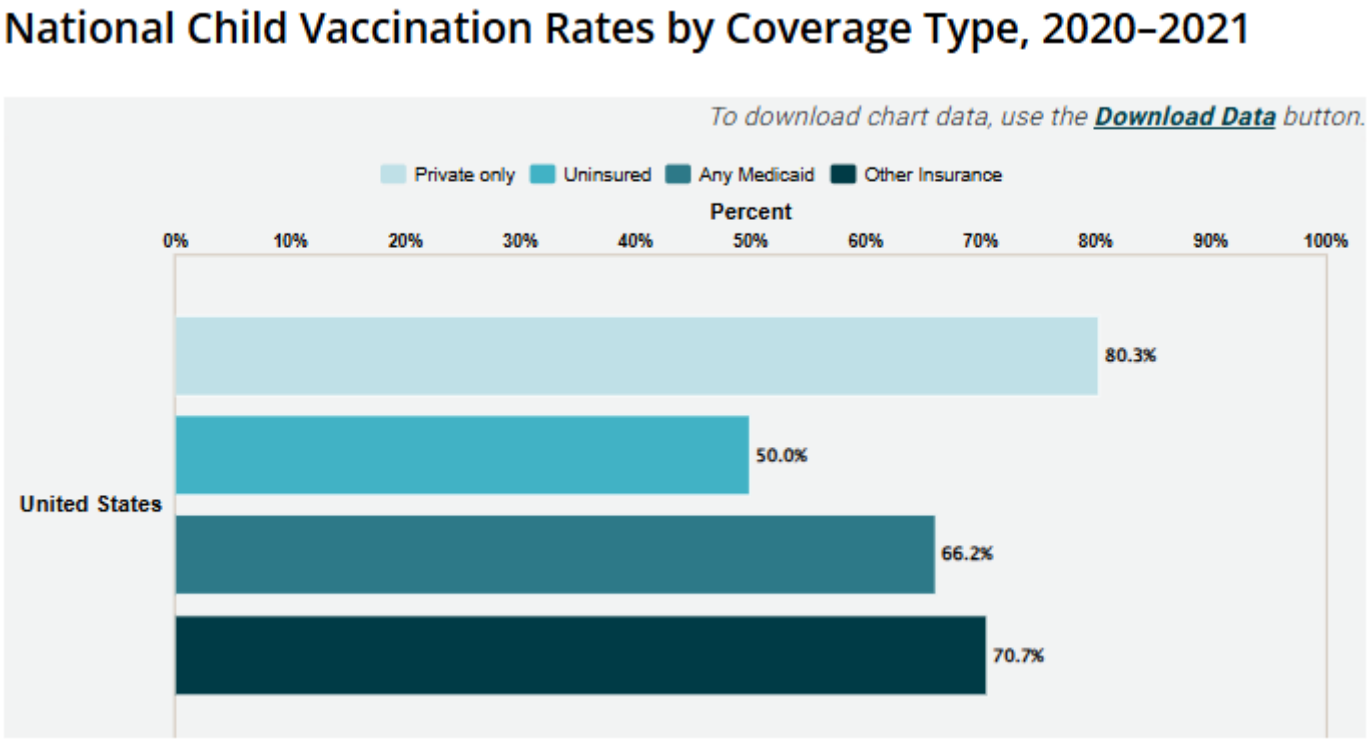
IMA-E Combination	Measurement Year	Commercial HMO	Commercial PPO	Medicaid HMO	MCV	Tdap	HPV
Combo 1	2024	80.6	77.4	77.5	✓	✓	
Combo 2	2024	32.9	29.4	35.1	✓	✓	✓

MMR Vaccination Rates



Dong E, Saiyed S, Nearchou A, Okura Y, Gardner LM. Trends in County-Level MMR Vaccination Coverage in Children in the United States. JAMA. 2025;334(8):730–732. doi:10.1001/jama.2025.8952

National Subgroup Analysis



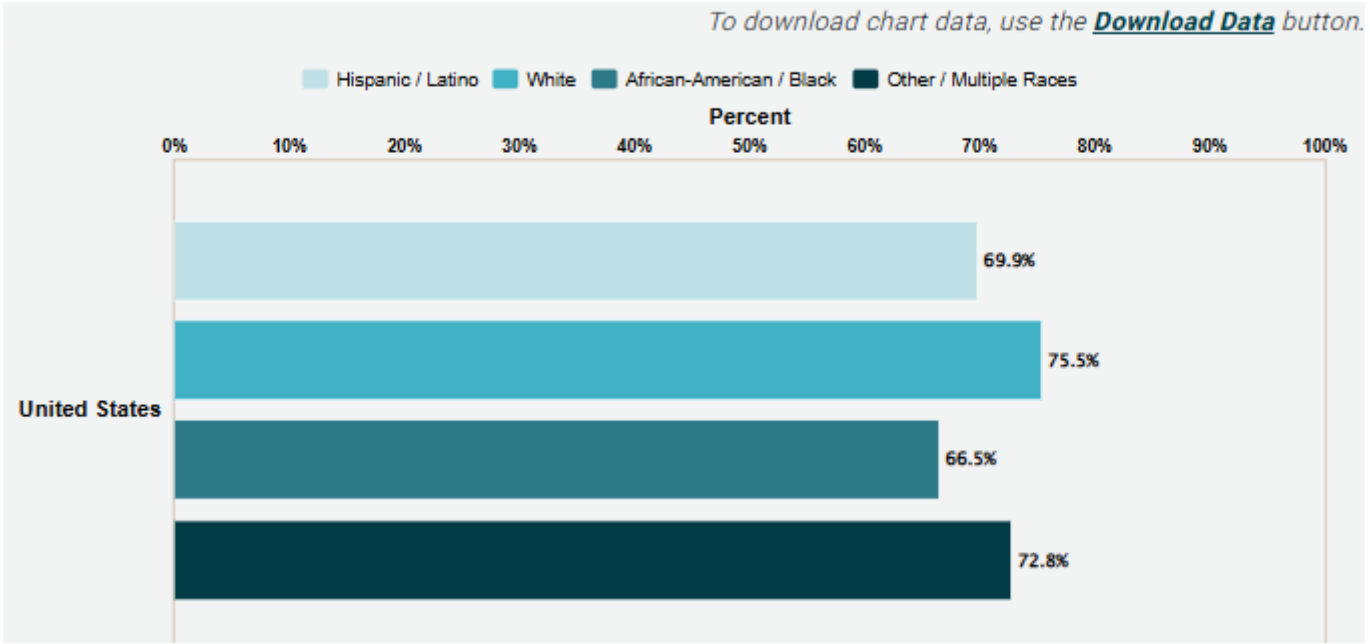
The State Health Access Data Assistance Center (SHADAC) is a program of the Robert Wood Johnson Foundation and a part of the Health Policy and Management Division of the School of Public Health at the University of Minnesota.

State	Private Only (%)	Any Medicaid (%)	Difference (%)
District of Columbia	75.1	67.8	7.3
Maryland	87.8	71.1	16.7*
Virginia	81.3	72.6	8.7

https://www.shadac.org/news/childhood-vaccinations-rate-by-state-ethnicity-insurance

National Subgroup Analysis

National Child Vaccination Rates by Race and Ethnicity, 2019–2021



The State Health Access Data Assistance Center (SHADAC) is a program of the Robert Wood Johnson Foundation and a part of the Health Policy and Management Division of the School of Public Health at the University of Minnesota.

States with statistically significant gaps in child vaccination rates by race and ethnicity, 2019–2021

* Statistically significant difference (95% confidence level) in state estimate compared to Whites

	State	White	African-American/ Black	Hispanic/ Latino	Other/ Multiple Races
#1	District of Columbia	82.5%	68.1%*	62.1%*	70.8%
#6	Maryland	84.5%	75.7%*	71.4%*	77.7%

https://www.shadac.org/news/childhood-vaccinations-rate-by-state-ethnicity-insurance

Learning Objective #2

Define vaccine hesitancy and common archetypes of parental vaccine attitudes

Overview of Vaccine Hesitancy

- Define vaccine hesitancy
- Identify determinants of vaccine hesitancy
- Characterize the vaccine hesitancy spectrum
- Identify trends in vaccine hesitancy

Vaccine Hesitancy Defined

- No consensus on a single definition
- "Vaccine hesitancy refers to **delay in acceptance or refusal of vaccines despite availability** of vaccination services. Vaccine hesitancy is complex and context specific, varying across time, place, and vaccines. It is influenced by factors such as complacency, convenience and confidence." (MacDonald 2015)
- "A motivational state of **being conflicted about, or opposed to, getting vaccinated**." (O'Leary 2024)

Determinants of Vaccine Hesitancy

- 3 Cs Model
- Vaccine Hesitancy Determinants Matrix

3 Cs Model

Complacency:
- Low perceived risk of infection
- Low perceived vaccine necessity

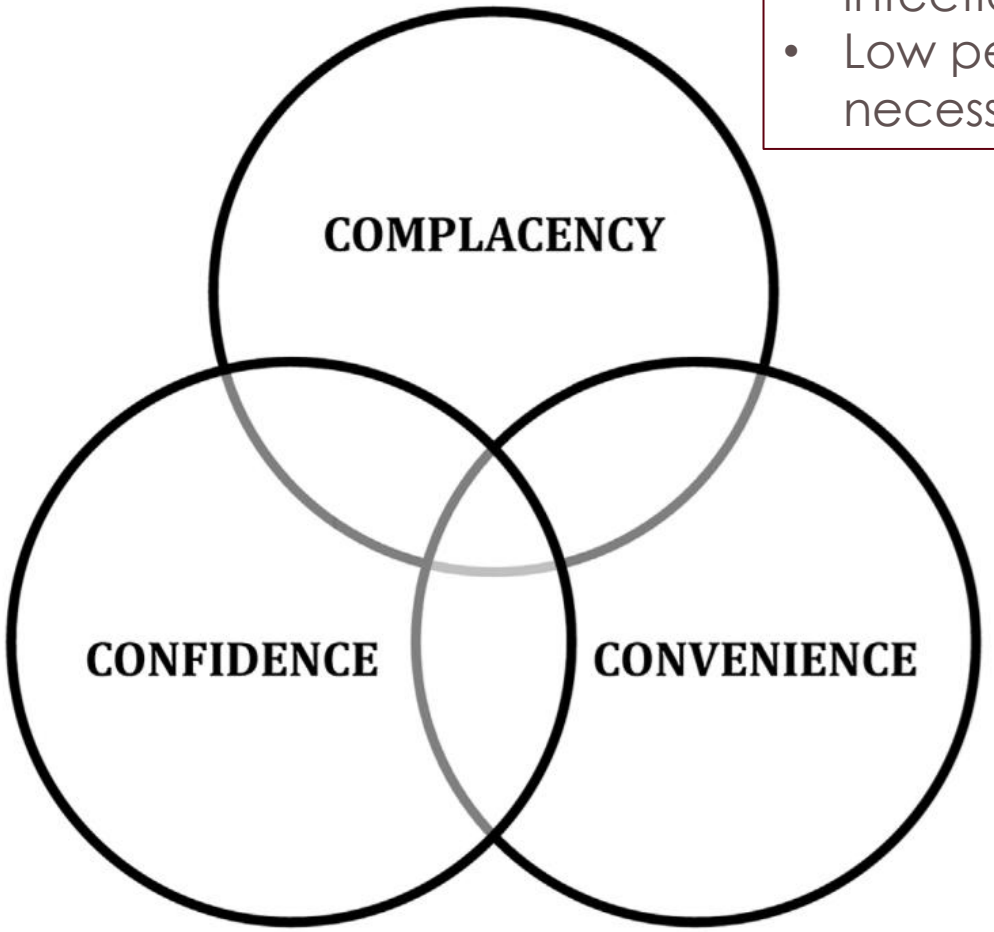


Fig. 2. "Three Cs" model of vaccine hesitancy.

Convenience:
- Availability
- Affordability/willingness to pay
- Geographical accessibility
- Ability to understand
- Appeal of immunization services

Confidence: Trust in vaccine:
- Effectiveness
- Safety
- Institutions delivering vaccines

Source: MacDonald 2015.

Vaccine Hesitancy Determinants Matrix

TABLE 2 Determinants of Vaccine Hesitancy Matrix (World Health Organization)[3]

Determinants	
Contextual influences: influences from historic, sociocultural, environmental, health, system or institutional, economic, or political factors	• Communication and media environment; • influential leaders, immunization program gatekeepers, and anti- or provaccination lobbies; • historical influences; • religion, culture, gender, or socioeconomic; • politics or policies; • geographic barriers; • perception of the pharmaceutical industry
Individual and group influences: influences from personal perception of the vaccine or influences of the social or peer environment	• Personal, family, and/or community members' experience with vaccination, including pain; • beliefs, attitudes about health and prevention; • knowledge and awareness; • health system and providers—trust and personal experience; • risk and benefit (perceived, heuristic); • immunization as a social norm versus not needed or harmful
Vaccine or vaccination–specific issues: Directly related to vaccine or vaccination	• Risk and benefit (epidemiologic and scientific evidence); • introduction of a new vaccine or new formulation or a new recommendation for an existing vaccine; • mode of administration; • design of vaccination program or mode of delivery (eg, routine program or mass vaccination campaign); • reliability and/or source of supply of vaccine and/or vaccination equipment; • vaccination schedule; • costs; • the strength of the recommendation and/or knowledge base and/or attitude of health care professionals

Adapted from: World Health Organization, SAGE Working Group. *Report of the SAGE Working Group on Vaccine Hesitancy.* World Health Organization; 2014.

Vaccine Hesitancy Continuum

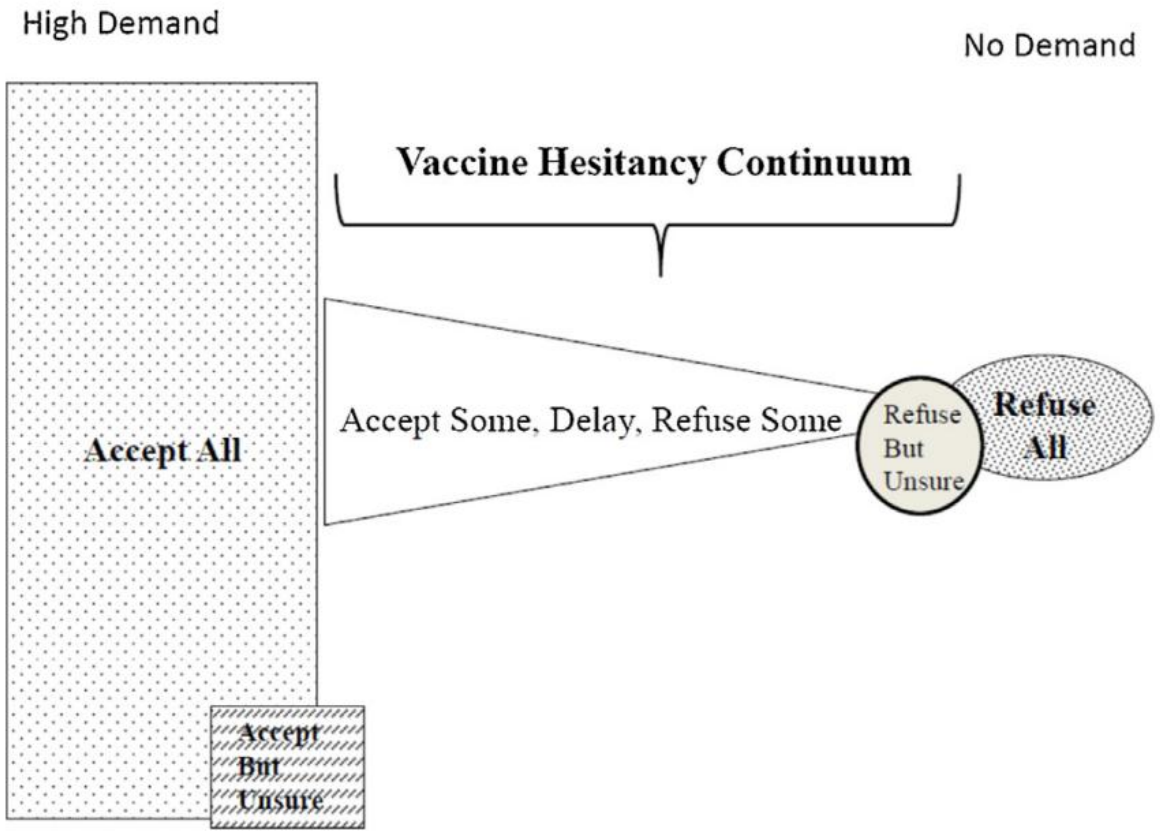


Fig. 1. The continuum of vaccine hesitancy between full acceptance and outright refusal of all vaccines.

Source: MacDonald 2015.

Vaccine Hesitancy Continuum

TABLE 1 Example Archetypes of Parental Attitudes, Intentions, and Behaviors Toward Vaccines[5,11]

Example Archetypes	
Immunization supporter	Parents recognize the importance of vaccines and vaccinate their children. Parents generally have a strong relationship with their health care provider or have strong trust in health care systems.
Go along to get along	Parents do not question vaccines and generally vaccinate their children but may lack a detailed knowledge of vaccines.
Cautious acceptor	Parents may have minor concerns about vaccines but ultimately vaccinate their children.
Fence-sitter	Parents have significant concerns about vaccines. Parents may be knowledgeable about or have spent time thinking about vaccines. Parents may vaccinate their child with some or all vaccines or may refuse or delay vaccines. Parents may not demonstrate trust in their health care provider regarding vaccine information.
Refuser	Parents refuse all vaccines for their child. Their reasons for refusal may include distrust in the medical system, safety concerns, and religious or other personal beliefs.

Source: O'Leary 2024.

Vaccine Hesitancy Continuum

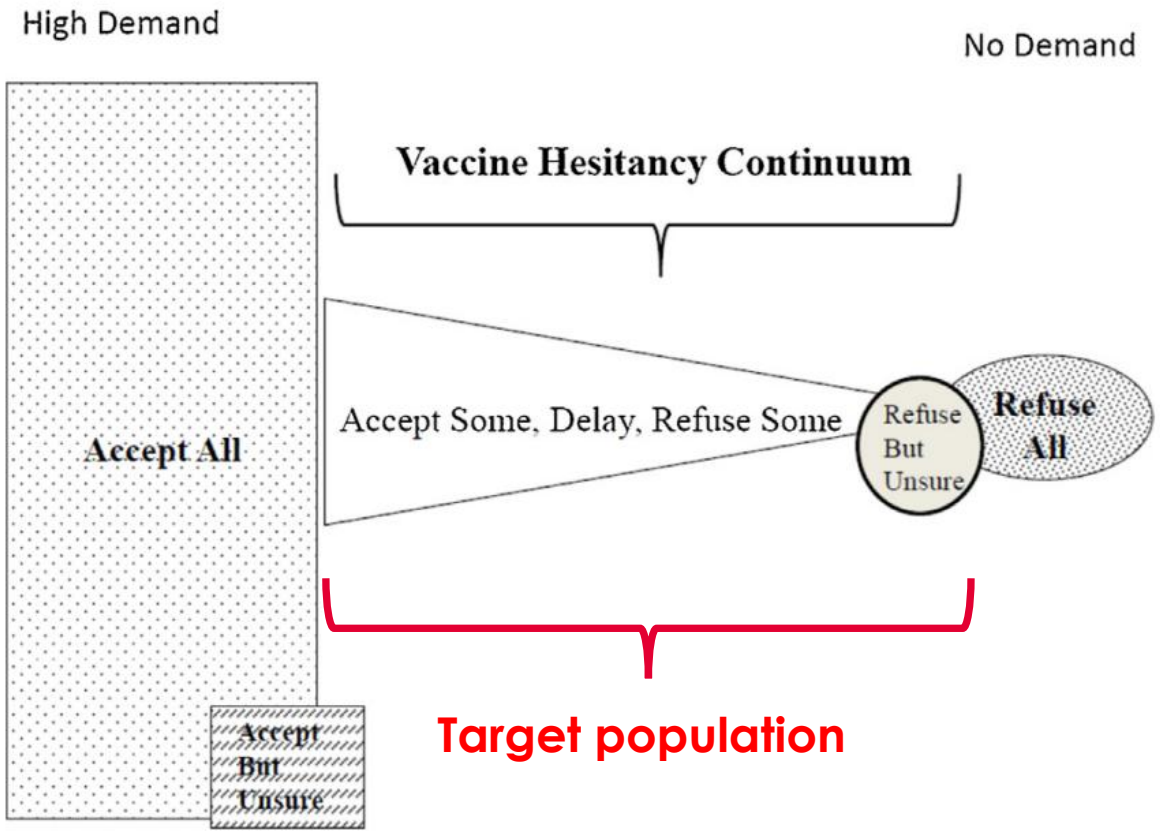


Fig. 1. The continuum of vaccine hesitancy between full acceptance and outright refusal of all vaccines.

Source: MacDonald 2015.

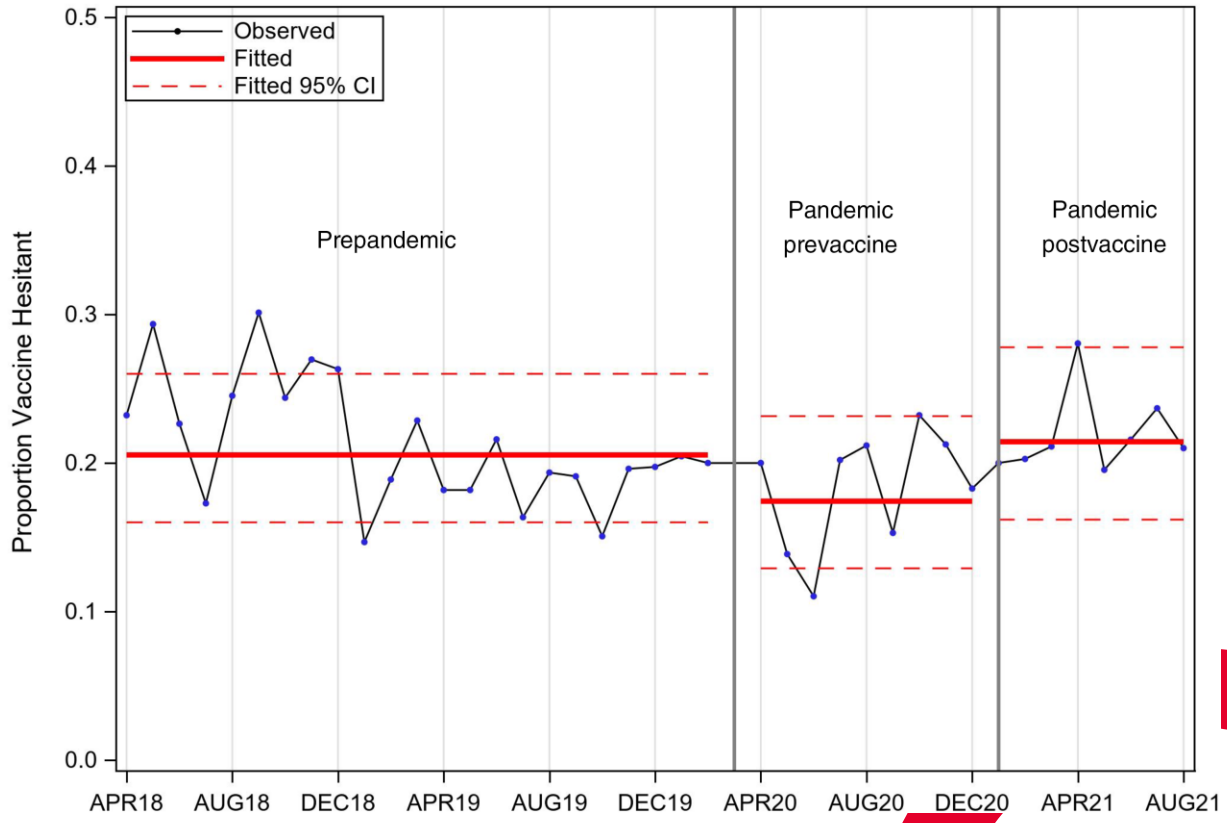
Vaccine Hesitancy in the US – Why it matters

- Between the 2019-2020 and 2022-2023 school years, vaccination coverage fell from 95% to 93% among US Kindergarteners.
- Coverage dropped below 93% during the 2023-2024 school year.
- During the 2024-2025 school year, coverage ranged from 92.1% for DTaP and 92.5% for MMR.
- Exemption rates increased from 3.3% to 3.6% nationally, and exceeded 5% in 17 states.

Source: CDC 2025.

Vaccine Hesitancy in the US – Opportunities

- Support for routine childhood vaccines is largely unchanged in the US (Higgins 2023)
- However, there are changes in trust and vaccine attitudes

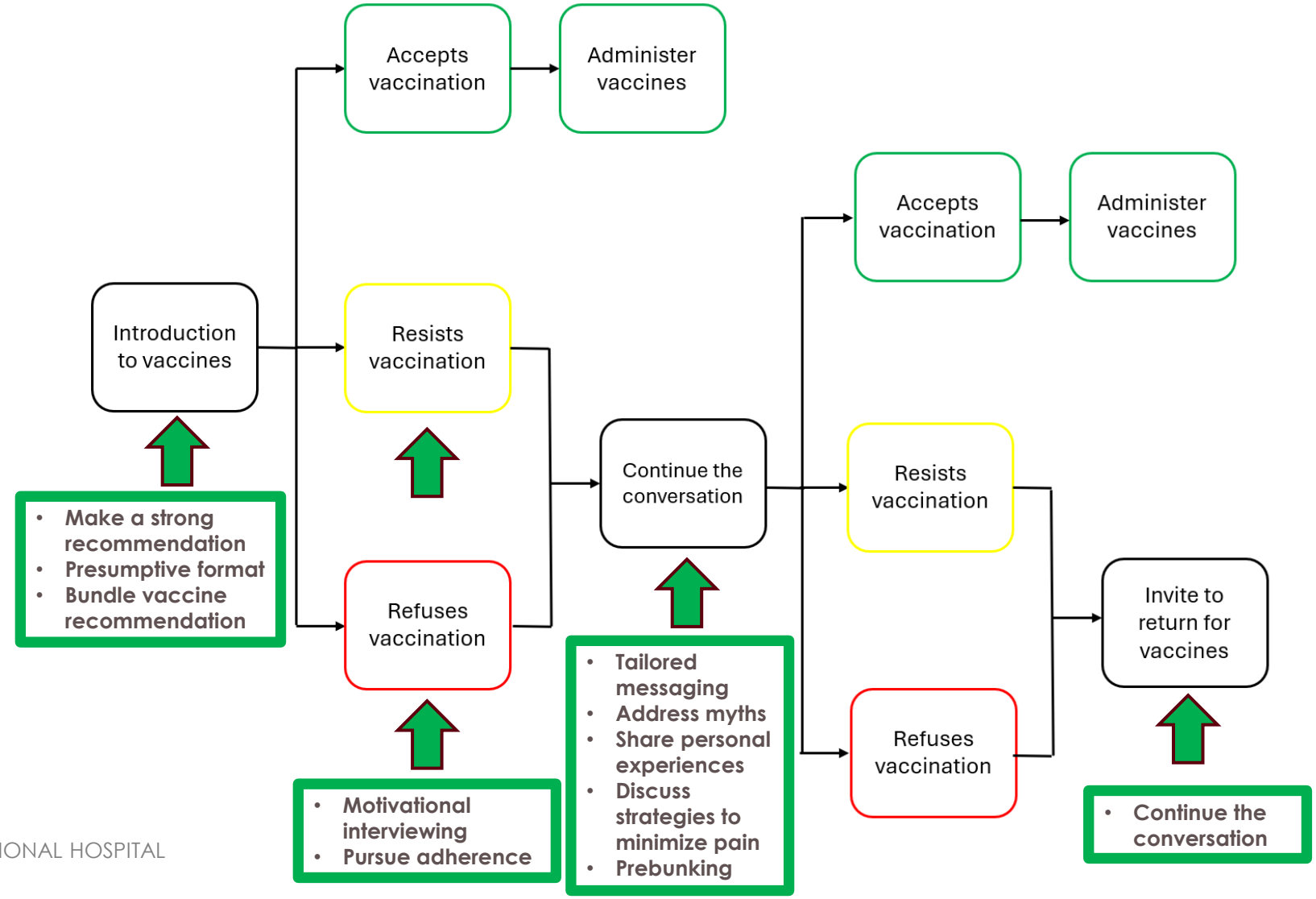


Source: Higgins 2023.

Learning Objective #3

Identify and implement evidence-based communication strategies for addressing vaccine hesitancy

Blueprint of a Vaccine Conversation

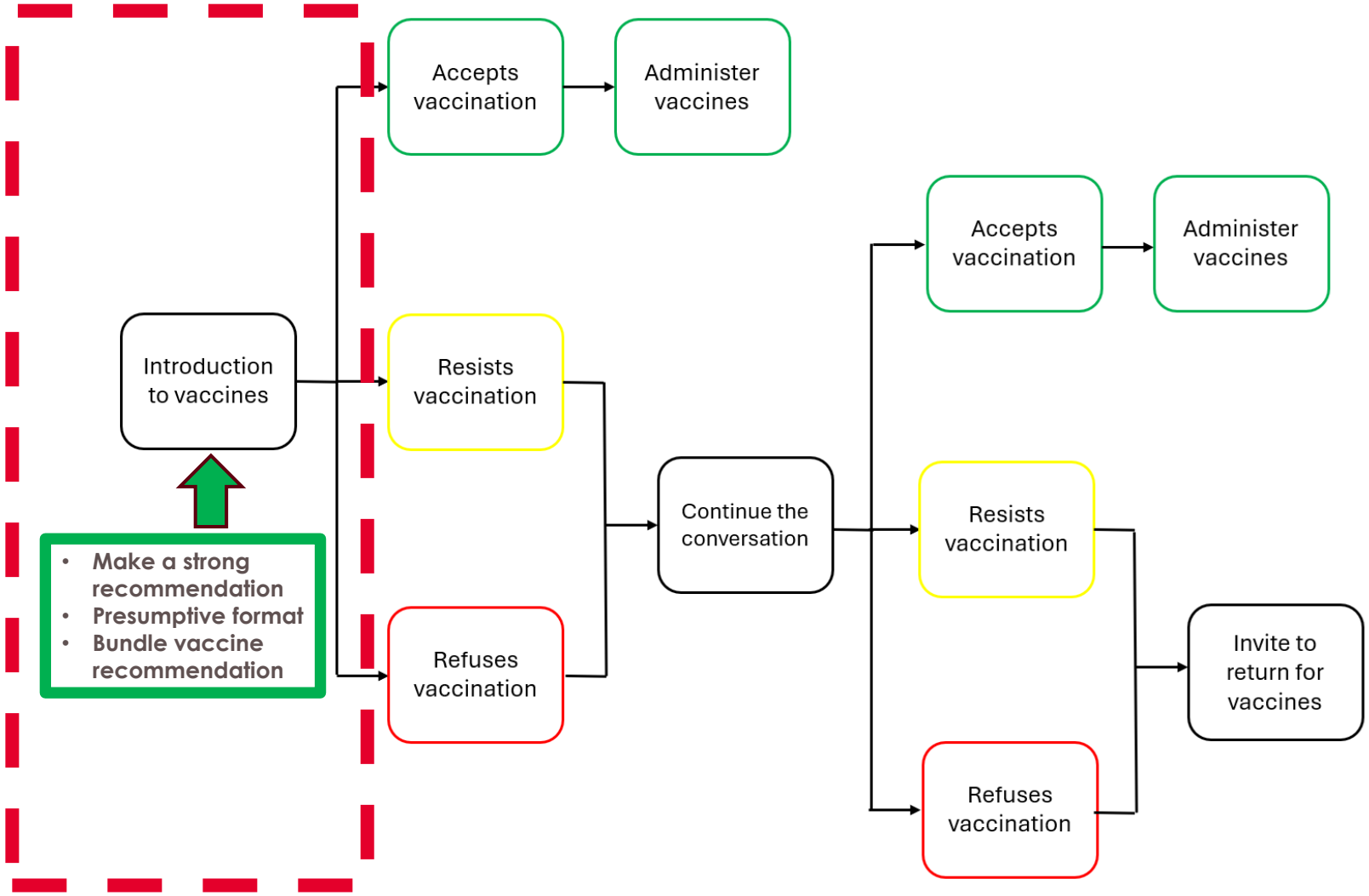


Continuing the Vaccine Conversation

Communication Strategies Toolbox

- Make a strong vaccine recommendation
- Presumptive format
- Bundle vaccine recommendations
- Motivational interviewing
- Pursue adherence despite initial reluctance
- Address myths and misinformation
- Tailored messaging
- Prebunking and the theory of psychological inoculation
- Discuss strategies to minimize pain
- Share personal experiences with vaccination

Blueprint of a Vaccine Conversation



Starting the Vaccine Conversation

- **Key principles**
  - Presume vaccine acceptance → Presumptive format
  - Make a strong vaccine recommendation
  - Bundle vaccine recommendations

Starting the Vaccine Conversation

Case 1: Newborn hepatitis B birth dose

- You are examining a newborn a few hours after an uneventful vaginal delivery.
- Infant was born at 39 weeks, no complications.
- Mother received routine prenatal care, including maternal Tdap and influenza vaccines.
- Infant is due for the birth dose of the hepatitis B vaccine.

Starting the Vaccine Conversation

Congratulations on your new baby! Today he's due for the hepatitis B shot and we will do a routine blood test. We'll go ahead and get those ordered.

Presumptive format

- Presumes families will accept vaccination
- Vaccination as the default
- Employs closed-ended statements to convey a strong vaccine recommendation

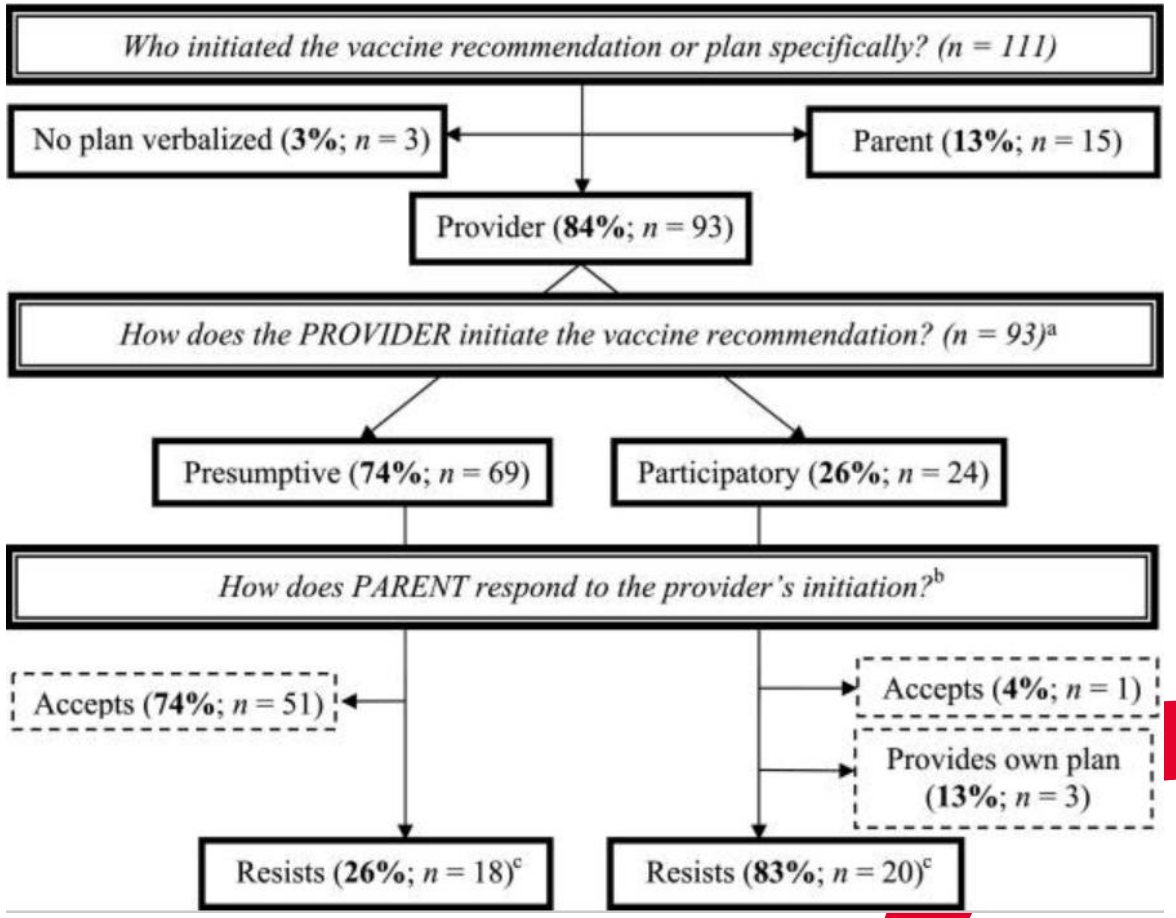
Congratulations on your new baby! What do you think about giving the hepatitis B shot and doing a blood test?

Participatory format

- Conveys a neutral position
- Requires families to opt-in

Evidence-based Communication Strategies: **Presumptive Format**

- Observational study of 111 vaccine discussions
- When presumptive format was used, parents resisted vaccination 26% of the time
- When participatory format was used, parents resisted vaccination 83% of the time



Source: Opel 2013.

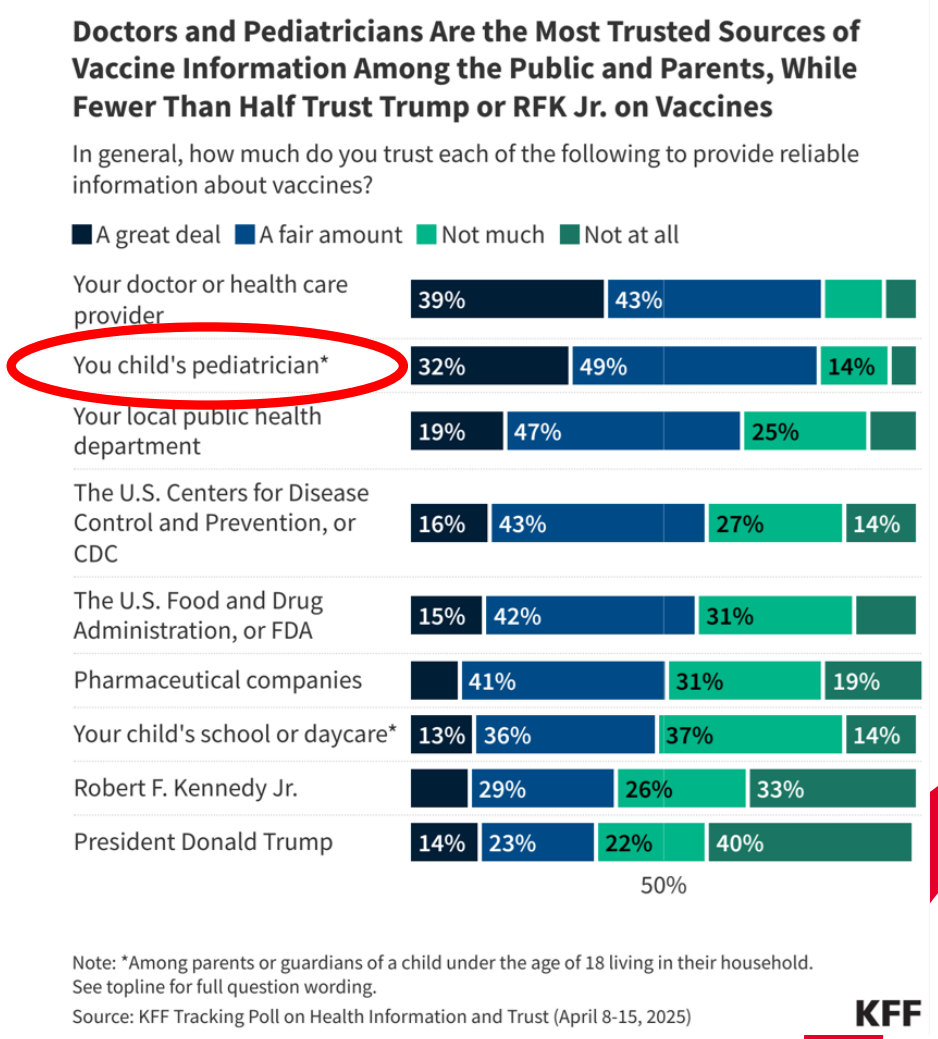
Evidence-based Communication Strategies: **Presumptive Format**

- Clinical considerations:
  - Use clinical judgement, as some authors have suggested that use of presumptive format may be counterproductive and undermine trust

Source: Cole 2022.

Evidence-based Communication Strategies: **Make a Strong Recommendation**

- Pediatricians remain among the most trusted messengers of vaccine information in the US.
- Usually, making a strong vaccine recommendation is all it takes.



Source: Montero 2025.

Evidence-based Communication Strategies: **Make a Strong Recommendation**

- Parents receiving a recommendation to vaccinate their child were twice as likely to have their child vaccinated against influenza after controlling for sociodemographic variables

Association of receiving influenza vaccination with parental receipt of a provider recommendation for their child to receive influenza vaccination, controlling for sociodemographic characteristics,* among children 6 months–17 years who had a provider visit since July 1st during the influenza season, United States, National Immunization Survey-Influenza (NIS-Flu), 2013–14 through 2015–16 influenza seasons

Kahn et al.

Characteristics	2013–14		2014–15		2015–16	
	APR† ± 95% CI‡	AP§ %	APR ± 95% CI	AP %	APR ± 95% CI	AP %
Provider recommendation						
Yes	**1.80 (1.61–2.01)**	70.7 (68.4–73.0)	**1.91 (1.79–2.04)**	71.2 (69.8–72.7)	**2.12 (1.98–2.28)**	71.5 (70.0–73.1)
No	Referent	39.3 (35.0–43.8)	Referent	37.3 (35.0–39.6)	Referent	33.7 (31.4–36.0)

*The model included the following sociodemographic variables: child's age, child's sex, child's race/ethnicity, language survey completed, mother's education, poverty/annual household income, number of children in household, urban/rural residence, and region of residence.

†APR = adjusted prevalence ratio. Estimates in bold are statistically significantly different from the referent ($P < 0.05$).

‡CI = confidence interval.

§AP = adjusted prevalence.

Source: Kahn 2018.

Starting the Vaccine Conversation

Congratulations on your new baby! Today he's due for the hepatitis B shot and we will do a routine blood test. We'll go ahead and get those ordered.

We heard about the shot and newborn screening as we prepared for the delivery and that all sounds good to us if that's what you recommend.

Starting the Vaccine Conversation

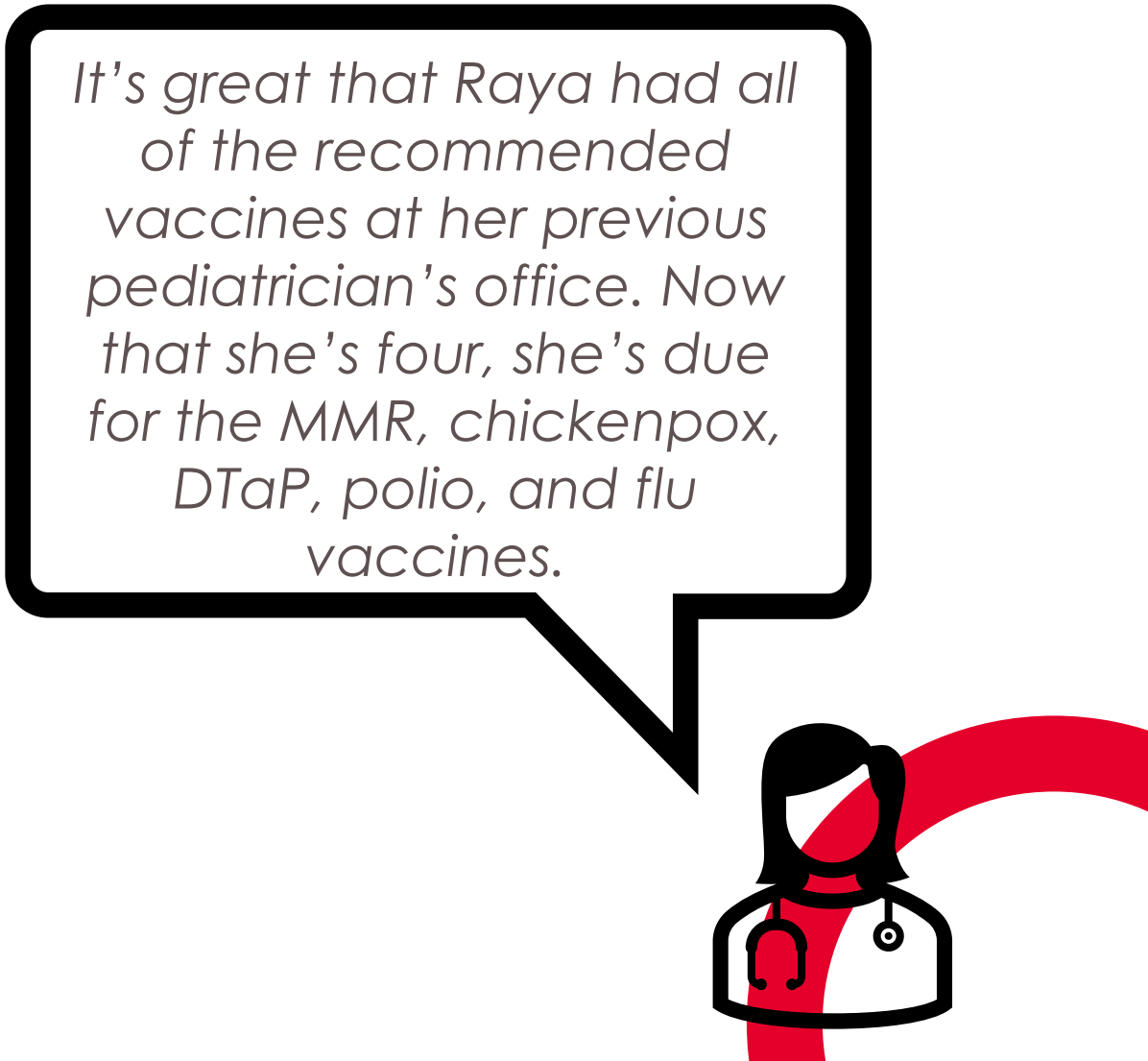
- The parents agree to vaccination and the lab work.
- **Next step:** Vaccinate!
- If only it was always so straightforward…

We heard about the shot and newborn screening as we prepared for the delivery and that all sounds good to us if that's what you recommend.

Starting the Vaccine Conversation

Case 2: Seasonal influenza vaccination

- A 4-year-old presents to establish care in September.
- She received routine pediatric care out-of-state before the family relocated.
- She is due for routine vaccines, including the influenza vaccine.
- You presumptively recommend vaccines.



Evidence-based Communication Strategies: **Bundling Vaccine Recommendations**

- 50 health supervision visits were video-recorded.
- When influenza vaccine was recommended concurrently rather than separately from other vaccines, a higher proportion of parents accepted influenza vaccine for their child by the visit's end (83% vs. 33%, p<0.01).

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Vaccine

Volume 35, Issue 20, 9 May 2017, Pages 2709-2715

Clinician-parent discussions about influenza vaccination of children and their association with vaccine acceptance

Annika M. Hofstetter [a b], Jeffrey D. Robinson [c], Katherine Lepere [b], Morgan Cunningham [b], Nicole Etsekson [b], Douglas J. Opel [a b]

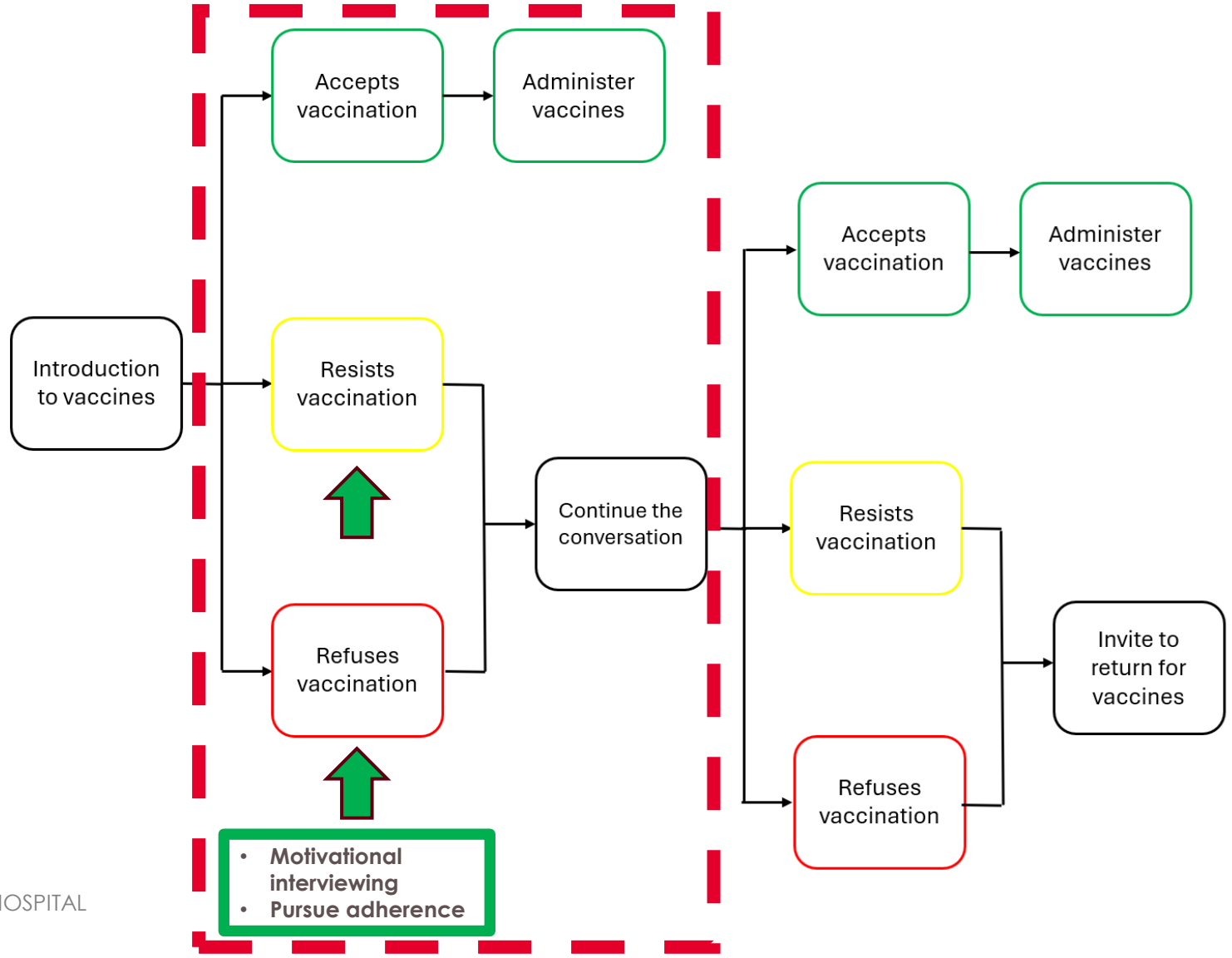
Source: Hofstetter 2017.

Starting the Vaccine Conversation

- Despite presuming vaccine acceptance and bundling your vaccine recommendations, Raya's parent expresses reluctance to vaccinate.

Oh, our family doesn't get the flu shot. I got it for Raya when she was a baby and it made her super sick – that's the sickest she's ever been! I decided then that we won't get that shot anymore.

Blueprint of a Vaccine Conversation

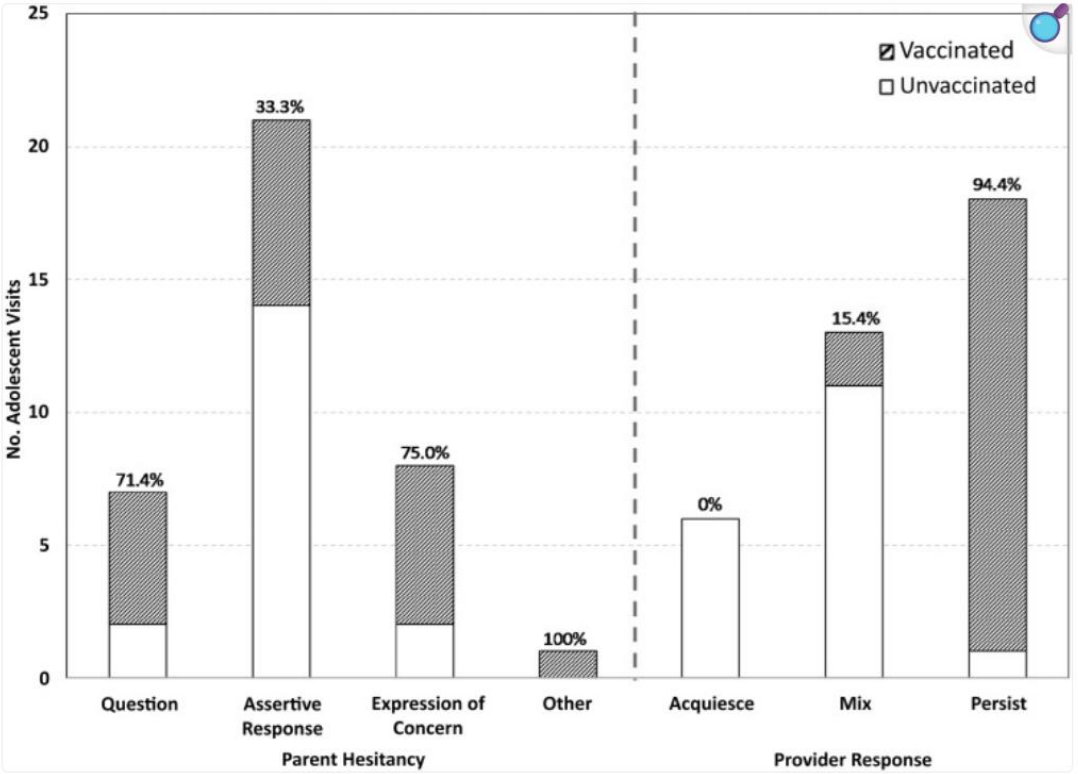


Continuing the Vaccine Conversation

- **Key principles**
  - Pursuing adherence to vaccine recommendations makes it more likely that children will ultimately be vaccinated
  - Motivational Interviewing (MI)can provide a blueprint for facilitating the vaccine conversation

Evidence-based Communication Strategies: **Pursuing Adherence**

- 43 visits with adolescents unvaccinated for HPV were audio-recorded.
- When pediatricians/providers responded to hesitancy with persistence, 17 of 18 adolescents were vaccinated. When they acquiesced, no adolescents were vaccinated same-day.



Vaccination status by parent hesitancy type and provider response type.

Source: Shay 2018.

Evidence-based Communication Strategies: **Motivational Interviewing**

- Motivational interviewing (MI) aims to employ intrinsic motivations to guide vaccine decisions
- Goals include demonstrating empathy and respect
- MI techniques:
  - Open-ended questions
  - Affirmations
  - Reflections
  - Ask permission before sharing more information
  - Summarize information

Source: Limaye 2021. O'Leary 2024.

Evidence-based Communication Strategies: **Motivational Interviewing**

- A US study of **HPV vaccine** uptake demonstrated significantly higher odds of series initiation and completion among adolescents receiving care in MI-trained practices.

- A Canadian study of maternal intent for their infant's **2-month vaccines** demonstrated higher intent among mothers receiving care in MI-trained maternity wards (PromoVaQ trial)

JAMA Pediatr. 2018 Mar 5;172(5):e180016. doi: 10.1001/jamapediatrics.2018.0016

Effect of a Health Care Professional Communication Training Intervention on Adolescent Human Papillomavirus Vaccination

A Cluster Randomized Clinical Trial

Amanda F Dempsey [1,2,✉], Jennifer Pyrznawoski [1], Steven Lockhart [1], Juliana Barnard [1], Elizabeth J Campagna [1], Kathleen Garrett [3], Allison Fisher [4], L Miriam Dickinson [1,5], Sean T O'Leary [1,6]

Euro Surveill. 2019 Sep 5;24(36):1800641. doi: 10.2807/1560-7917.ES.2019.24.36.1800641

Promoting vaccination in maternity wards – motivational interview technique reduces hesitancy and enhances intention to vaccinate, results from a multicentre non-controlled pre- and post-intervention RCT-nested study, Quebec, March 2014 to February 2015

Arnaud Gagneur [1,2], Marie-Claude Battista [1,3], François D Boucher [4], Bruce Tapiero [5], Caroline Quach [5,6], Philippe De Wals [7], Thomas Lemaitre [1], Anne Farrands [1], Nicole Boulianne [4,8], Chantal Sauvageau [3,7,8], Manale Ouakki [8], Virginie Gosselin [1], Geneviève Petit [9], Marie-Claude Jacques [10], Ève Dubé [8]

Source: Dempsey 2018, Gagneur 2019.

Evidence-based Communication Strategies: **Motivational Interviewing**

- A US study of vaccination among children 6 months to 6 years demonstrated significantly higher **influenza vaccine** coverage among children receiving care in MI-trained FQHC practices, however the results were mixed for other vaccines (MOTIVE study)

- A US study found no difference in vaccine uptake among children of parents with **negative vaccine attitudes** receiving care in practices employing presumptive format and MI (PIVOT with MI trial)

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Vaccine

Volume 40, Issue 12, 15 March 2022, Pages 1846-1854

Motivational interviewing and vaccine acceptance in children: The MOTIVE study

Justin W. Cole [a b], Aleda M.H. Chen [a], Kalista McGuire [a], Sarah Berman [a], Julia Gardner [a], Yamini Teegala [b]

JAMA Network — Click to view article >

JAMA Netw Open. 2025 Apr 30;8(4):e257814. doi: 10.1001/jamanetworkopen.2025.7814

Tiered Clinician Vaccine Communication Strategy to Improve Childhood Vaccine Uptake

A Cluster Randomized Clinical Trial

Douglas J Opel [1,2,✉], Jeffrey D Robinson [3], Chuan Zhou [1,2], Kathryn Colborn [4,5,6], Heather Spielvogle [2], Anna Furniss [4], Christine Spina [4], Cathryn Perreira [4], Sean T O'Leary [4,7]

Source: Cole 2022, Opel 2025.

Continuing the Vaccine Conversation

Reflection & Asking Permission

- ***Thanks for sharing your past experience*** *with the flu shot. I've heard that concern from other families.* ***May I explain how I think about the vaccine?***

- *I'm happy to listen to what you have to say, but I just don't like flu shots.*

- Sometimes people think the flu shot gives them the flu, but the flu shot does not contain live virus and so cannot cause the flu.

- Everyone says that that shot causes the flu. I just want to keep myself and my kids healthy. I can't afford to take time off of work when my kids are home sick.

Affirmation & Strong Rec

- I can see that **you really care about keeping your family healthy.** The flu shot will help to keep you well and everyone at work and school. I think they're so important **that I get myself and my family vaccinated every year and I think this shot is really important for Raya.**

Continuing the Vaccine Conversation

- After engaging further in conversation about the influenza vaccine, the parent agrees to vaccination.

- **Next step:** Vaccinate!

It seems like you really care about your patients. We haven't had the flu shot in a long time, but maybe we can give it another try. But if Raya gets sick, you'll be seeing us again!

Continuing the Vaccine Conversation

Case 3: MMR vaccination

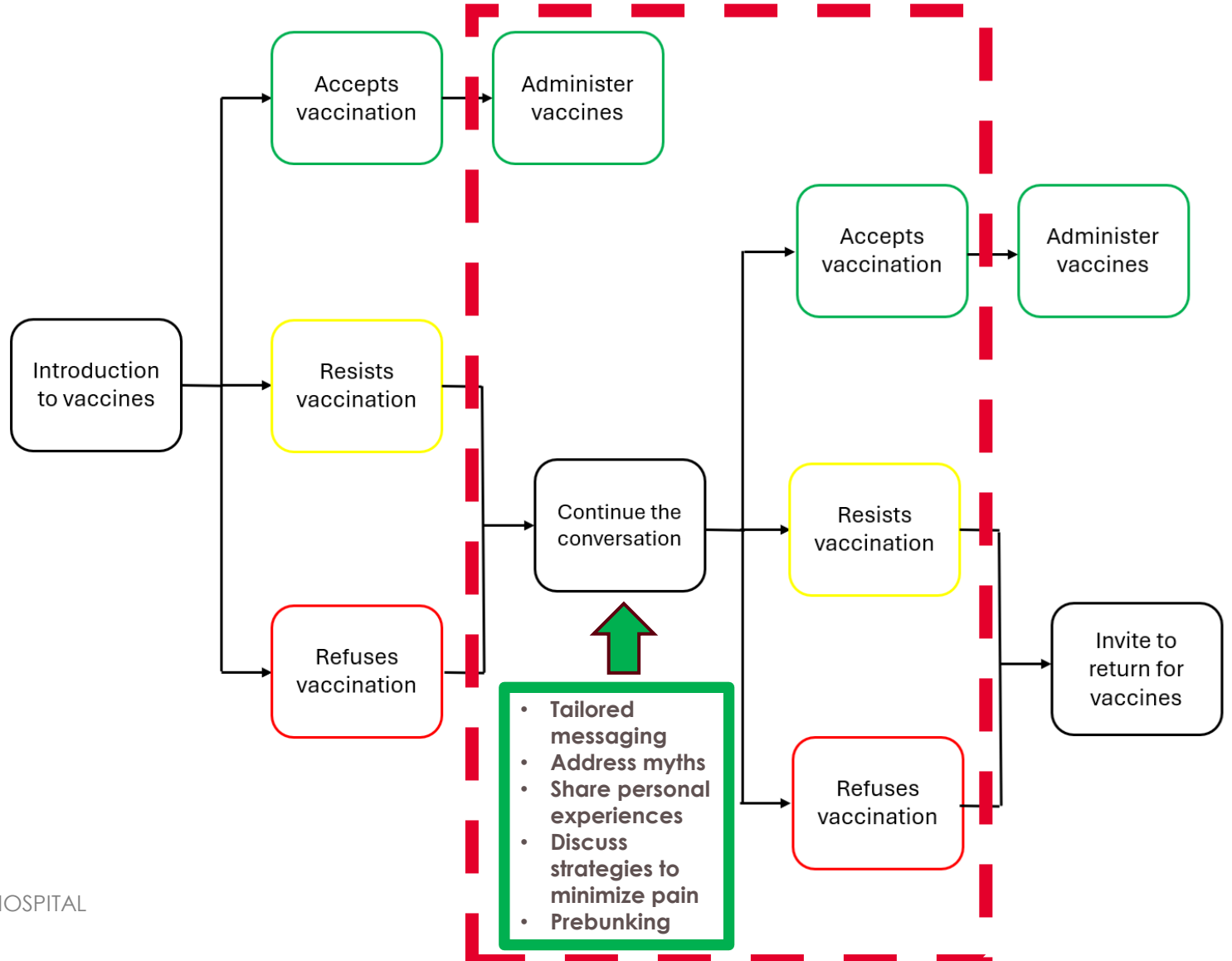
- A 12-month-old presents for an annual physical.
- Developing appropriately with normal growth parameters.
- Family plans to travel to Europe next month.
- You presumptively recommend the 12-month vaccines.

Continuing the Vaccine Conversation

- The parents share their concerns about the MMR vaccine.
- Because they've known you for the first year of their child's life, they feel comfortable sharing their thoughts with you.

We have a friend whose son got the MMR shot and then he was diagnosed with autism right after that. We are really worried about giving this shot to Sofia.

Blueprint of a Vaccine Conversation



Continuing the Vaccine Conversation

Communication Strategies Toolbox

- Make a strong vaccine recommendation
- Presumptive format
- Bundle vaccine recommendations
- Motivational interviewing
- Pursue adherence despite initial reluctance
- Address myths and misinformation
- Tailored messaging
- Prebunking and the theory of psychological inoculation
- Discuss strategies to minimize pain
- Share personal experiences with vaccination

Evidence-based Communication Strategies: **Addressing Myths & Misinformation**

- Evidence base is mixed
- 2023 systematic review found that "interventions and messaging that focused on debunking or refuting misinformation had mixed results."
  - 3 interventions decreased belief in misinformation, 2 interventions worsened belief in misinformation, 2 interventions had no clear effect.
  - 5 interventions had mixed or no effect on intention to vaccinate, 2 interventions found decreased vaccine intentions.
- **Key takeaway:** Briefly address myths & misinformation and then steer the conversation forward

Source: Whitehead 2023.

Evidence-based Communication Strategies: **Tailored Messaging**

- Evidence base is mixed
  - An RCT examining the effect of tailored messaging on HPV vaccine uptake among young adult women (18-26 yrs) found increased vaccine intent among those randomized to receive tailored messaging. (Gerend 2013)
  - An RCT examining the effect of tailored messaging on HPV vaccine uptake among Latino adolescents demonstrated no effect on vaccine uptake. (Dempsey 2019)
- **Key takeaway:** Tailored messaging helps to make the information that is shared relevant for the patient and family.

Continuing the Vaccine Conversation

- **Address the misinformation directly and succinctly**.

Thank you for sharing more about your concerns with me. There have been many studies that show that the MMR shot does not cause autism.

Continuing the Vaccine Conversation

- After briefly addressing the misinformation about autism, **keep moving the vaccine discussion forward**.

- **Tailor vaccine information to the child and family**.

I think that the MMR shot is important for Sofia especially since your family is traveling soon and I recommend that you get it for her today. That said, this is your decision and I want you to feel comfortable with the decision.

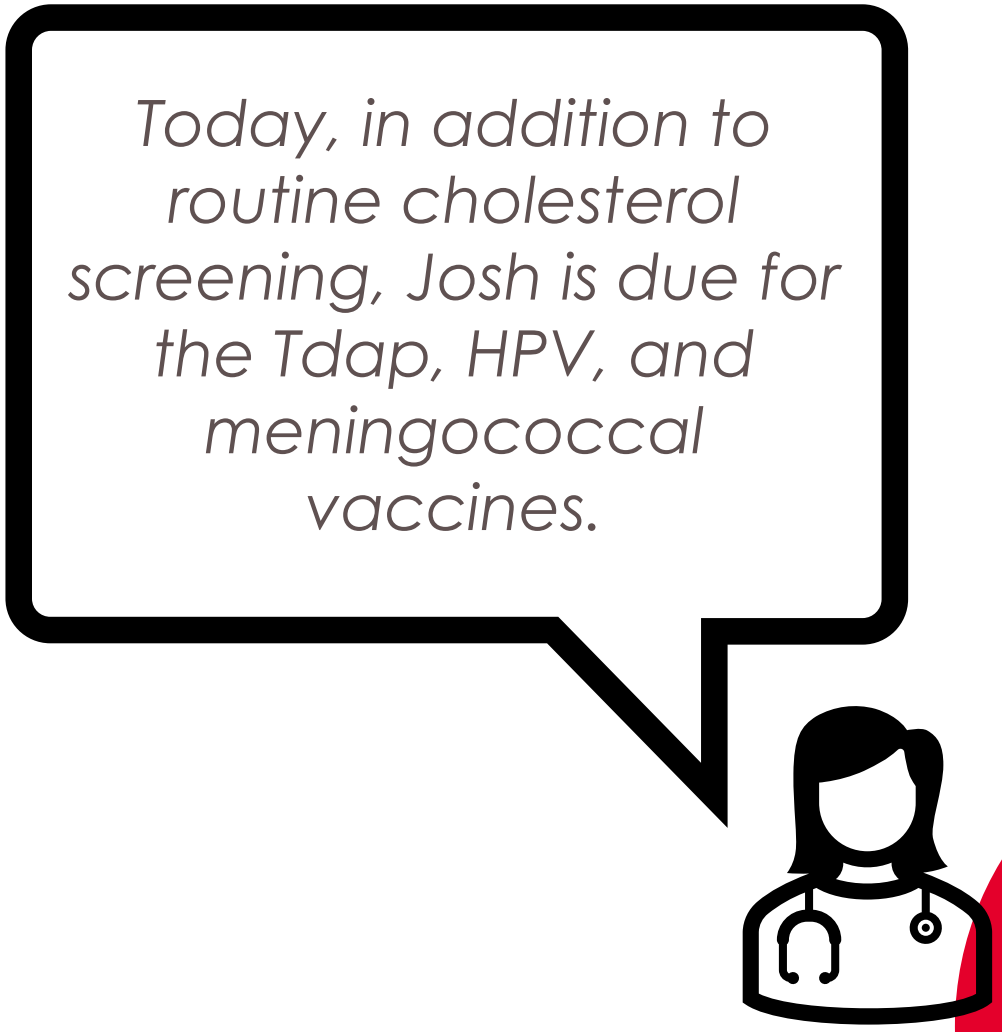
Continuing the Vaccine Conversation

- **Continue the vaccine conversation** even if the family declines vaccination during the visit today.

Continuing the Vaccine Conversation

Case 4: HPV vaccination

- An 11-year-old presents for an annual physical.
- You presume vaccine acceptance and bundle your vaccine recommendations.



Continuing the Vaccine Conversation

- When the parent expresses reluctance to vaccinate, which communication strategies might you employ in your response?

Evidence-based Communication Strategies: **Prebunking**

- Prebunking and the theory of psychological inoculation
- Posits that if you forewarn individuals that they may encounter misinformation and disinformation, they are more likely to spot it and less likely to be swayed by it

Source: O'Leary 2025.

Evidence-based Communication Strategies: **Prebunking**

- Study of the impact of disinformation and inoculation messaging on COVID vaccine intent among Canadian Adults
- Control group:
  - Message about a flower
- Intervention group:
  - Disinformation message only
  - Disinformation message + inoculation message
- Inoculation was protective against disinformation.

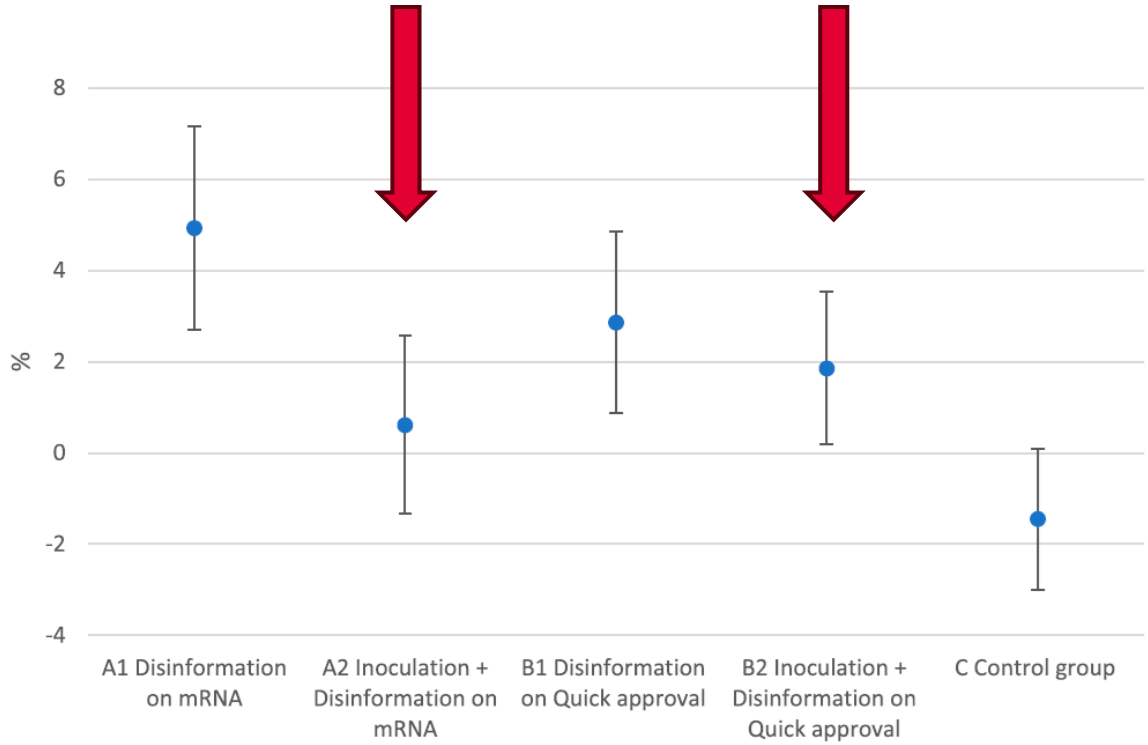


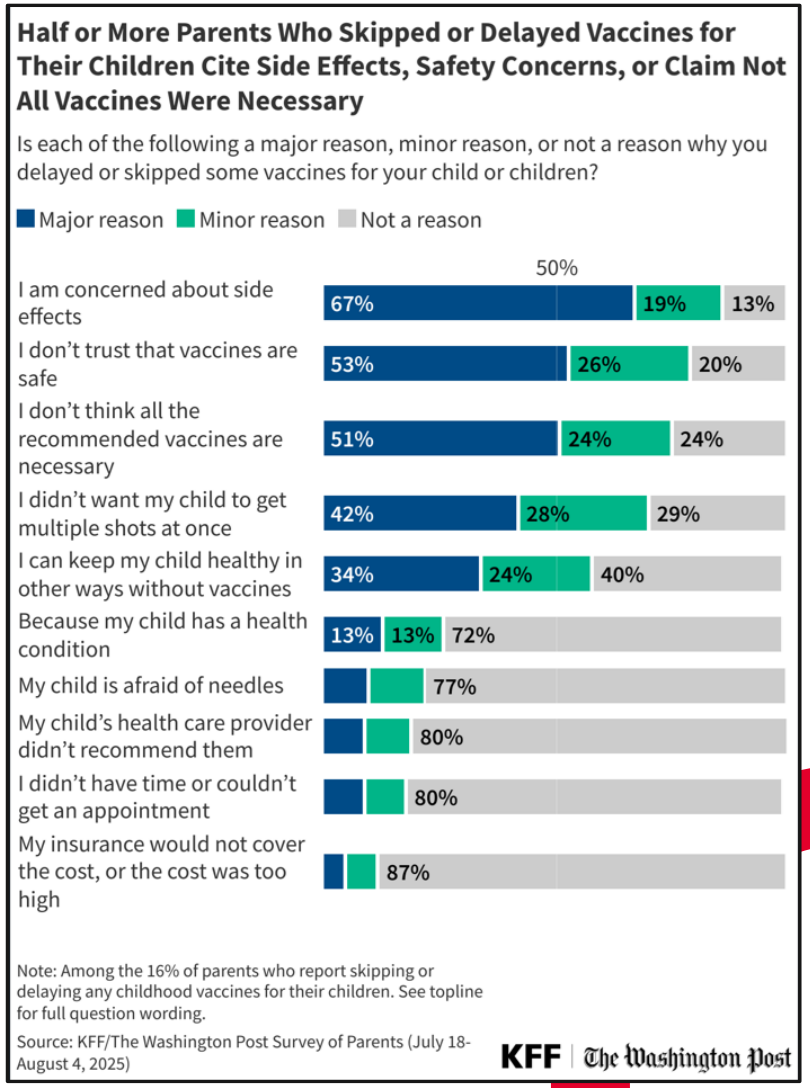
Figure 5. Difference in % pre-post vaccination intention based on message type.

Source: Vivion 2022.

Evidence-based Communication Strategies: **Discuss Strategies to Minimize Pain**

- Concern for needles or child experiencing pain is a cause of concern about vaccines.

- Providing strategies for minimizing fear and pain may be useful for some patients.



Source: O'Leary 2024.

Evidence-based Communication Strategies: **Share Personal Experiences with Vaccination**

- 2021 Cochrane Review demonstrated that some parents were more accepting of vaccination when "healthcare workers shared balanced information and personal stories about themselves as parents."

Finding 17: interactions with frontline healthcare workers. Parents' vaccination views and practices, across diverse settings, contexts and population groups, were mediated by the face-to-face interactions or personal relations they had with frontline healthcare workers. Some parents were less accepting of vaccination due to mistreatment from healthcare workers, and when they felt the vaccination information provided to them was simplistic and unbalanced. In contrast, some parents were more accepting of vaccination due to positively-received engagements with healthcare workers, whereby they felt supported, listened to and respected, and whereby healthcare workers shared balanced information and personal stories about themselves as parents.	Brownlie 2005; Poltorak 2005; Millimouno 2006; Casiday 2007; Leach 2007; Dugas 2009; McKnight 2014; Hussain 2015; Dube 2016; Giles-Vernick 2016; Reich 2016; Sobo 2016; Smith 2017; Ward 2017; Peretti-Watel 2019; Limaye 2020	**High confidence**

Source: Cooper 2021.

Case 4: HPV vaccination

Open-ended questions

- ***Can you tell me what concerns you about the HPV vaccine?***

- We just don't want that vaccine. I don't think he needs it. We will take the other two vaccines you mentioned.

Prebunking

- There's a lot of information out there that can make this confusing. **Some information I've seen online about the HPV vaccine is just spreading incorrect information and it can be tough to spot.** Is there anything you've seen that particularly worries you?

- I know it's given to prevent an STD and can be very painful. I also read that it might cause problems with fertility.

Personal Experience & Strategies for Pain

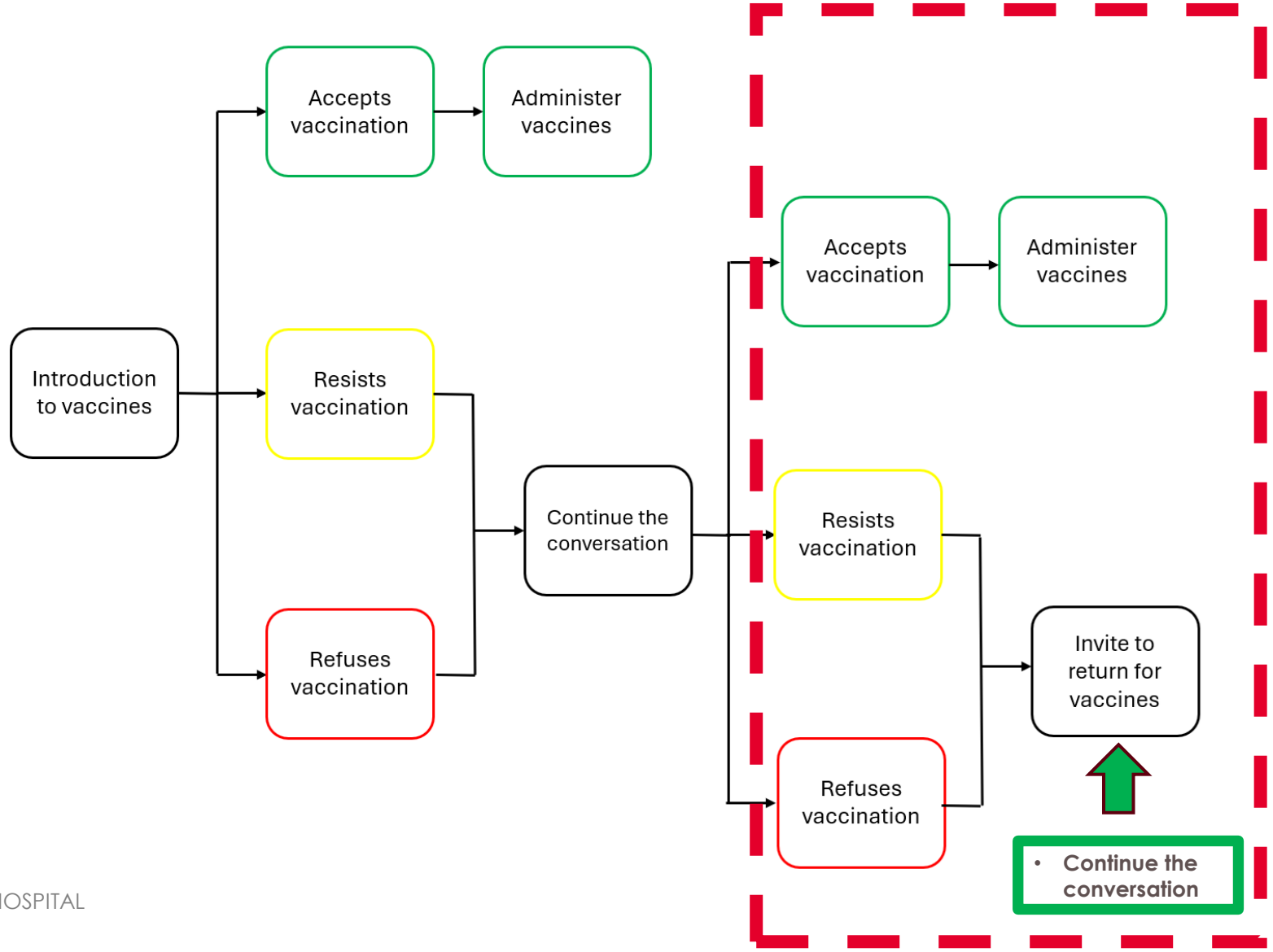
- I've heard that from other parents and I know you just want to do what is best for Josh. I do think this vaccine is important and **I gave the vaccine to my own child. I can share some strategies to minimize pain if that would be helpful.**

Closing the Vaccine Conversation

- Despite employing several vaccine communication strategies, the family is not yet ready to vaccinate.

Thanks for that. I'm just not ready to give Josh that shot today. We'll give the other two shots, but not the HPV.

Blueprint of a Vaccine Conversation

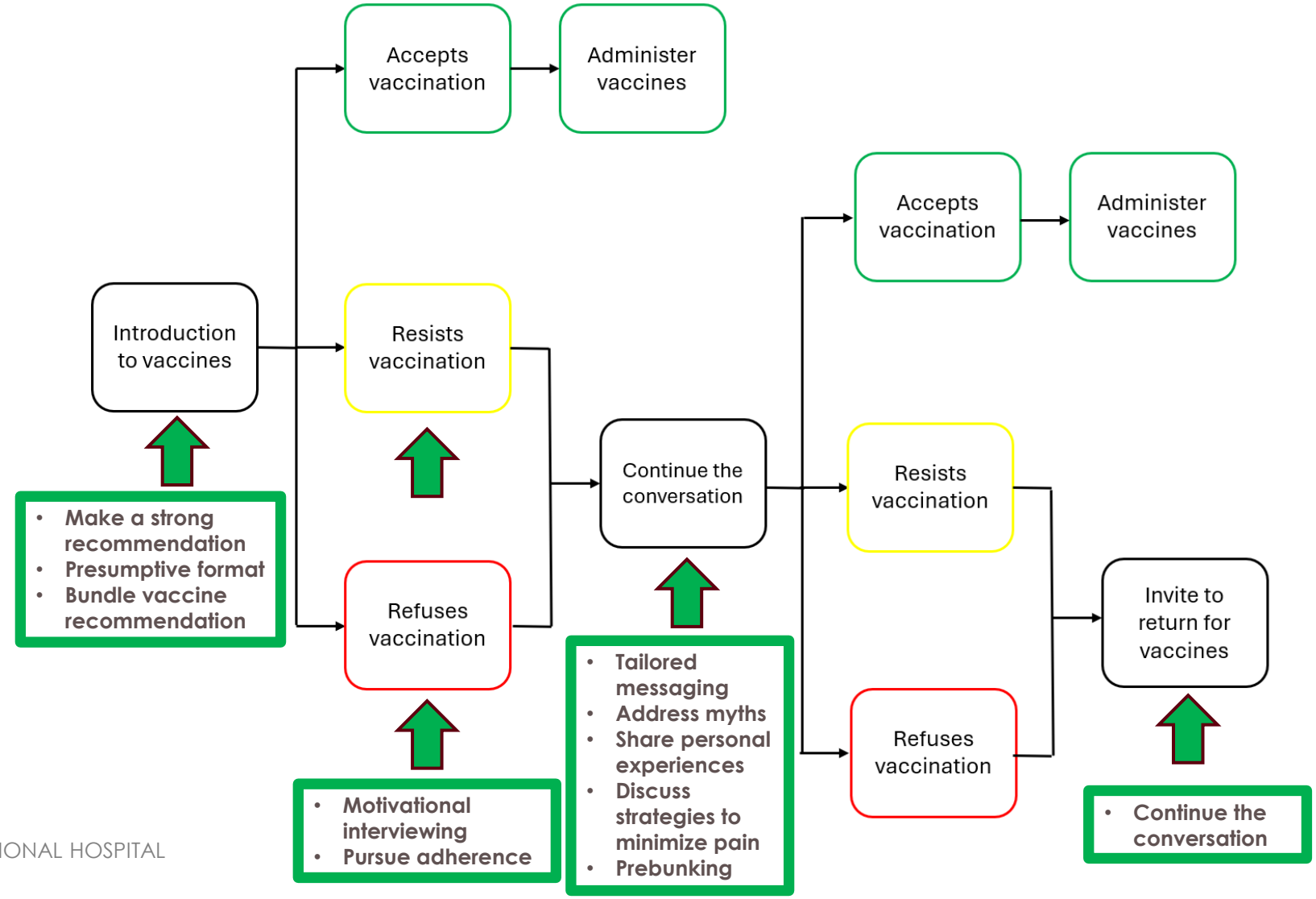


Closing the Vaccine Conversation

- Families may not be ready to vaccinate during the current visit, but they may decide to vaccinate later.
- Keep the conversation going by offering to answer questions at a later time.
- Remind the family that you will make the same vaccine recommendations for their child when they return to the office.
- Invite the family to return for an immunizations visit at any time.

Source: O'Leary 2025.

Blueprint of a Vaccine Conversation



Vaccine Hesitancy & Communication Pearls

- There is a spectrum of vaccine hesitancy.
- Evidence-based communication strategies are part of the toolbox for addressing vaccine hesitancy – there is no one-size-fits-all approach!
- Relationships and rapport with families are key to vaccine acceptance.

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