Improving Immunization Rates: Is it REALLY About Vaccine Hesitance or is it REALLY about Listening?

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Carrico Disclosures

- Advisory Boards—Sanofi [influenza vaccine], Pfizer [meningococcal vaccine, COVID-19 vaccine, Paxlovid], Moderna [COVID-19 vaccine], Valneva [travel vaccines], Seqirus [influenza vaccine], Novavax [COVID-19 vaccine], GSK [improving immunization processes], Sepsis Alliance, Association for Healthcare Value Analysis [AHVAP]; American Association of Nurse Practitioners [vaccines, vaccination, leadership]; CDC HICPAC [healthcare personnel workgroup]

- Speakers Bureau —Sanofi [influenza immunization], Pfizer [pneumococcal immunization, RSV immunization, COVID-19 immunization, Paxlovid]

- Consultant- Dynavax Technologies [Hepatitis B]; VaxCare [vaccination logistics]; American Hospital Association [environmental infection control]

Objectives

- Recognize the current landscape regarding vaccine acceptance and receipt of vaccines across populations
- Review current perspective concerning vaccine misinformation, particularly pertaining to safety, and the impact on patient vaccine and vaccination perspectives
- Explore the relationships between vaccine availability, access, acceptance, and administration and opportunities that present when we change our starting points, our perspectives, and how we define success

It is not Vaccines that are critical—

----- It is Vaccination that is critical

Without vaccination, there will be no need for vaccines

Immunization Neighborhood

- Collaboration, coordination, and communication among immunization stakeholders dedicated to meeting the immunization needs of the patient and protecting the community from vaccine-preventable diseases.

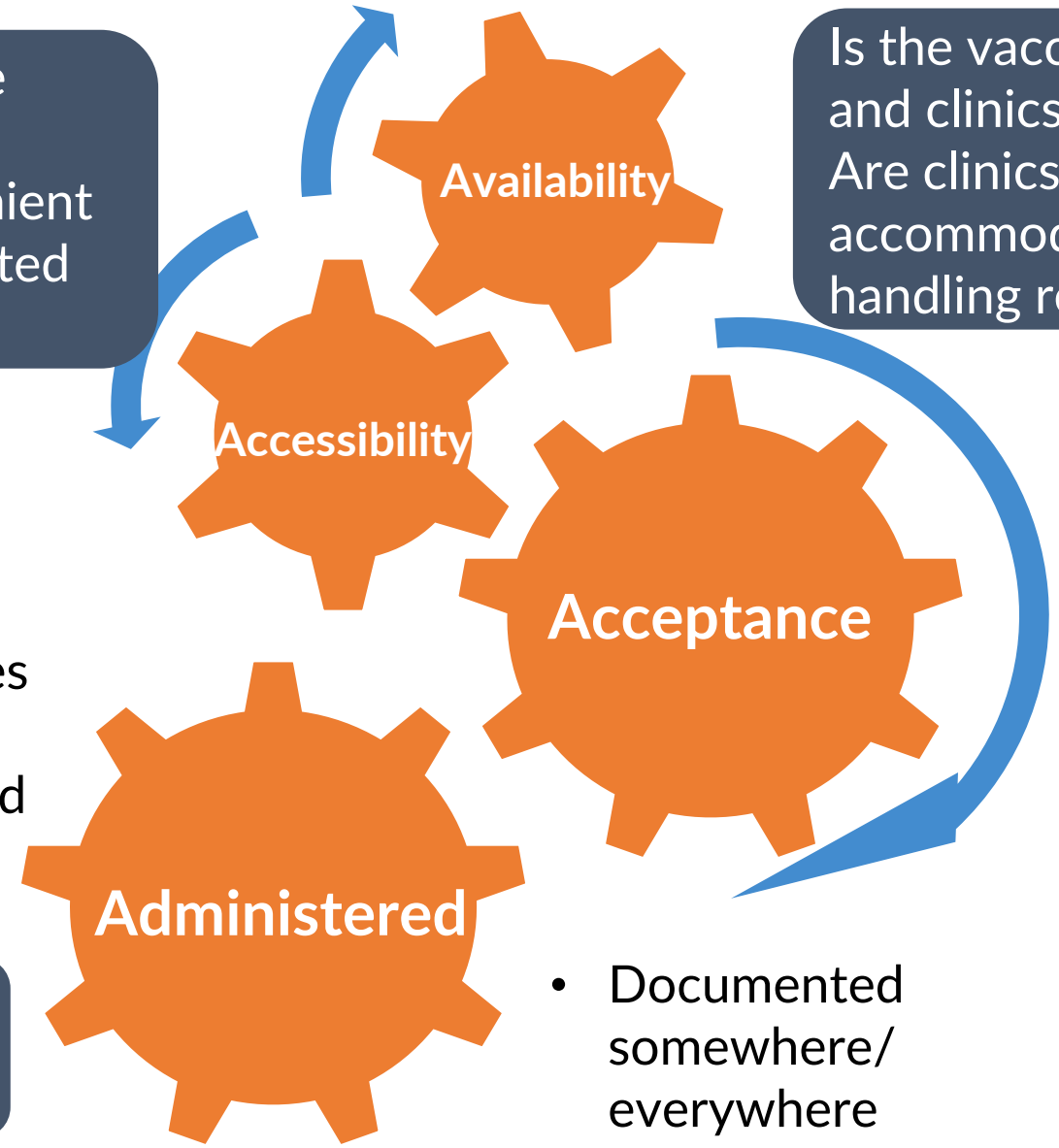
- In plain words, this means taking the vaccine to the people and making it available in ways the people accept. It is about the people and not necessarily the program.

Improving Vaccination

Is the vaccine available to the people who need it?
Is it being provided in convenient locations for people with limited access?

- Pharmacies
- Community centers
- Group homes
- Tribal or cultural centers
- Independent living facilities
- Residential care facilities
- Resources for home-bound individuals
- **Medical Home**

Did they get it?



Is the vaccine available to providers and clinics?
Are clinics and clinicians able to accommodate vaccine storage and handling requirements?

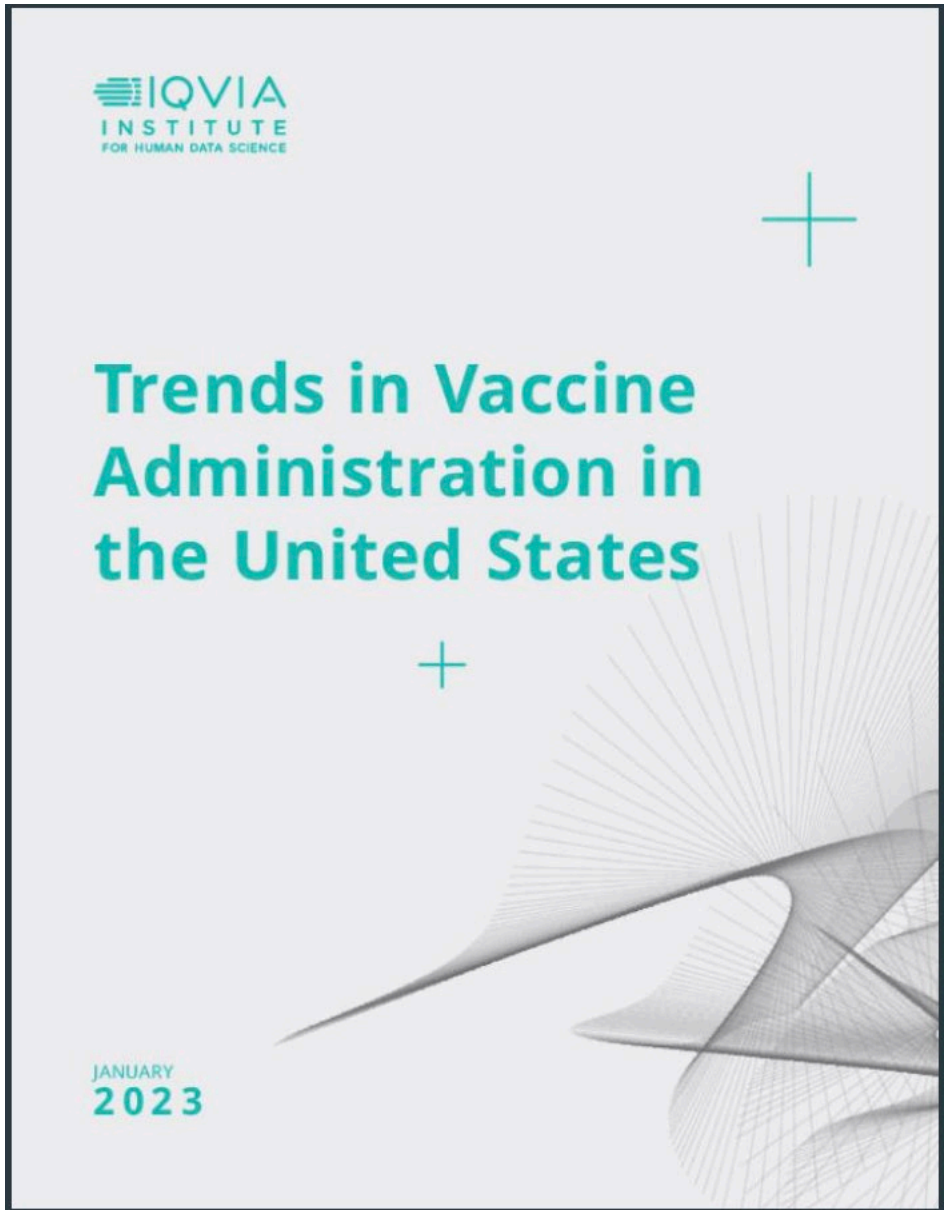
Will people get it?

- Ensure communication and education materials are accessible
- Use diverse media outlets
- Enlist trusted community messengers
- Work with patients and caregivers to address barriers

- Documented somewhere/ everywhere

Immunization Neighborhood Partners

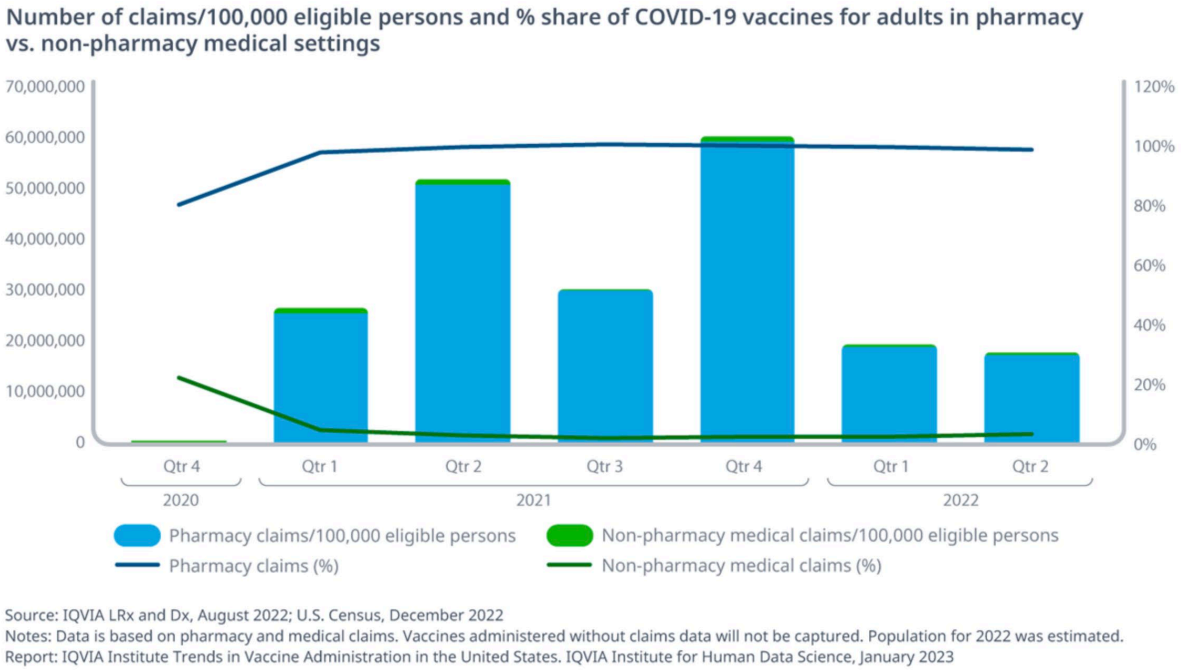
Pharmacies
Public health
Federally Qualified Health Centers
Churches
Community agencies and organizations
Hospitals
Medical practices [primary care, all specialties]*
Professional associations and organization



https://www.iqvia.com/insights/the-iqvia-institute/reports-and-publications/reports/trends-in-vaccine-administration-in-the-united-states

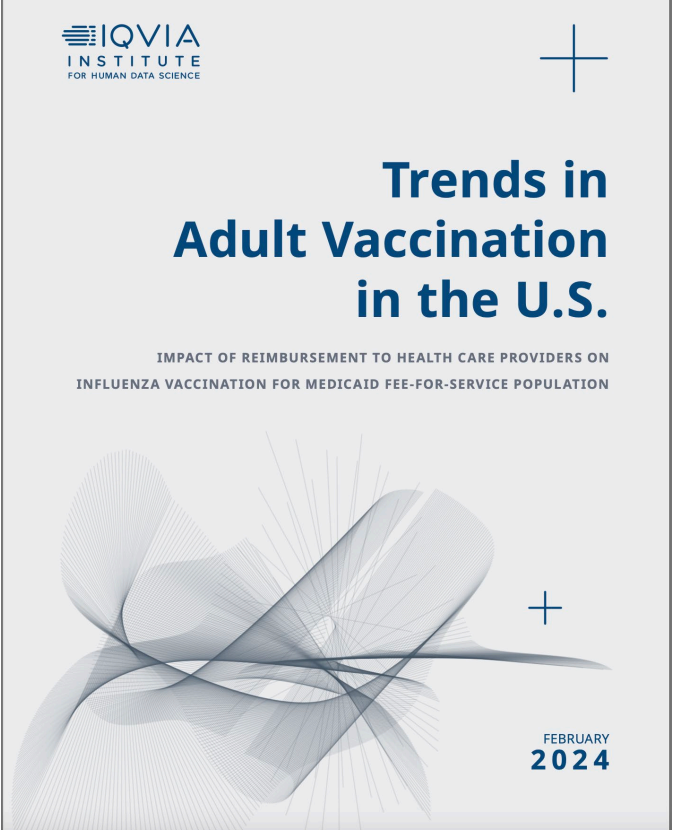
- The COVID-19 pandemic led to an increased role of pharmacies in the overall immunization process as they served as key sites of administration of the COVID-19 vaccines.
- The Public Readiness and Emergency Preparedness (PREP) Act also expanded the role of pharmacists and interns in vaccine administration overall over the course of the pandemic.
- This report aimed to:
  1. understand the role of pharmacists in the immunization process by analyzing whether a person received a vaccine at a pharmacy or a medical location for several vaccines between 2018 and 2022 (through the second quarter).
  2. analyze whether there are differences in the site of vaccine administration by gender, income, or race.
  3. provide an understanding of the important role that pharmacies are playing across vaccines and especially for adult vaccines.

Key Takeaways

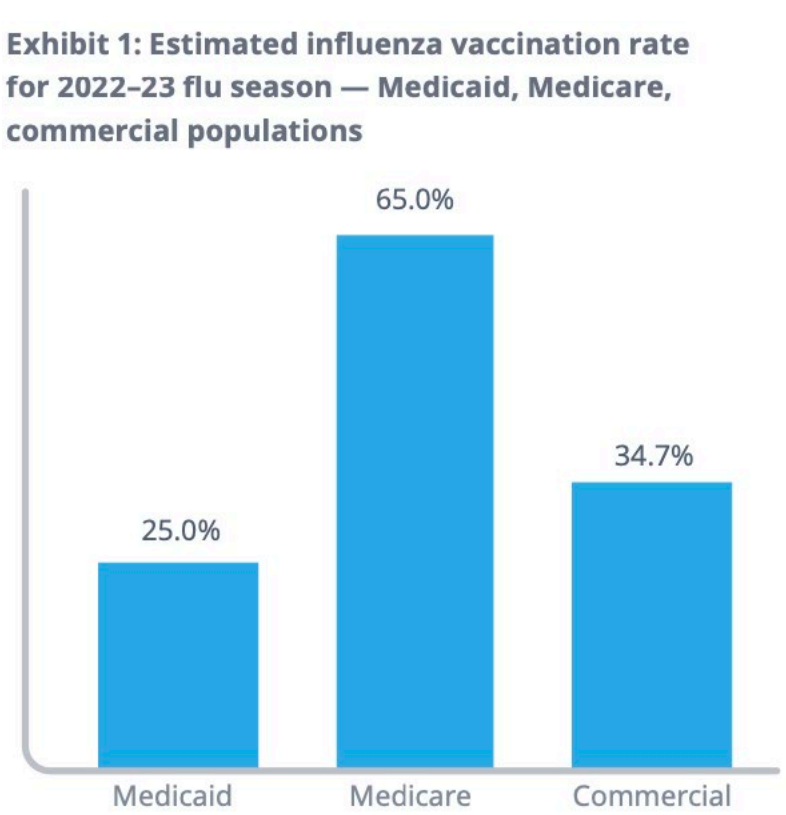


Source: IQVIA LRx and Dx, August 2022; U.S. Census, December 2022
Notes: Data is based on pharmacy and medical claims. Vaccines administered without claims data will not be captured. Population for 2022 was estimated.
Report: IQVIA Institute Trends in Vaccine Administration in the United States. IQVIA Institute for Human Data Science, January 2023

- Many people received COVID-19 vaccines at pharmacies, irrespective of gender, race/ethnicity, or income
- More than 90% of COVID-19 vaccinations provided through either medical centers or pharmacies were delivered at pharmacies (Excluding temporary, government public health sites and sites where a claim would not be generated)
- Shingles vaccine also saw a similar trend, with a large majority of administration taking place at the pharmacy level across all of the years analyzed



https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/trends-in-adult-vaccination-in-the-us/iqvia-institute-trends-in-adult-vaccination-02-2024-forweb.pdf



+ Adult vaccination rates have remained low and well below targets. Vaccination rates for the adult Medicaid population lag significantly behind adult commercial and Medicare populations with an 8–10% point difference between flu vaccination rates for Medicaid and commercial populations

+ Medicare payment to vaccine providers is uniformly higher than Medicaid payment. For influenza vaccine administration by physicians, a 2023 survey published in Health Affairs showed Medicare reimbursement was $30, but 38 state Medicaid programs paid physicians less than $15 for administering an adult influenza vaccine

+ Previous research demonstrates higher state Medicaid reimbursement is positively correlated to pediatric vaccine uptake. A study published in Medical Care found that Medicaid reimbursement for vaccine administration for children was positively associated with immunization service utilization

Additional Takeaways

- Pharmacies serve as an important part of the overall flu vaccination process, with 60-70% of vaccinations during flu season (third and fourth quarters) taking place at pharmacies
- These vaccine administration trends generally hold irrespective of gender, race and income. For some vaccines, Hispanic and Asian American populations see a larger proportion of administration at pharmacies compared to other racial/ethnic categories
- But, as the general public begins to ask individual questions regarding vaccines and there is movement away from a population-based approach, there is an increasing need for relevance, confidence, and safety questions to be addressed by the healthcare provider.

More Takeaways

- Tremendous efforts have been made in enabling vaccination in US pharmacies
- Tremendous impact have been shown by these investments, but gaps remain
- Healthcare providers remain interested and willing to provide vaccination in the clinical setting, as evidenced by the growth of programs such as TransRX and VaxCare where billing of commercial insurance including Medicare Part D can occur
- Providing stable, consistent, and equitable investments in the place where patients go to see their trusted provider is a missing piece
- Continuing to do what we have always done, will continue to provide the results we have always received.

National Health Interview Survey, 2022

- NHIS data indicated that many adults in the US remain unprotected against vaccine-preventable diseases
- Racial and ethnic differences in vaccination coverage persisted for all vaccines
- Coverage for the age-appropriate vaccination composite measures were low in all age groups and in all races and ethnicity groups
- For all vaccines, adults without health insurance were less likely to be vaccinated than those with health insurance
- **Adults without a usual place for healthcare and routine physician [provider] contact can provide important opportunities to educate, recommend, and provide vaccination.**
- Substantial improvement in adult vaccination uptake is needed to reduce the burden of VPDs nationally.

https://www.cdc.gov/vaccines/imz-managers/coverage/adultvaxview/pubs-resources/vaccination-coverage-adults-2022.html

The Medical Home

- Ongoing relationship with a personal healthcare provider
- Continuous and comprehensive care
- Whole-person orientation that includes addressing acute, chronic, preventive, and end of life care
- Ability to connect across specialty providers
- Information technology access and connections

Ferrante JM, Balasubramanian BA, Hudson SV, Crabtree BF. Principles of the patient-centered medical home and preventive services delivery. Ann Fam Med. 2010 Mar-Apr;8(2):108-16.

Medical Home as Non-Vaccinating

- Provide care for acute and chronic health conditions
- Identify the role of vaccines as a preventive care approach
- Engage with patient [routine discussions, shared clinical decision-making]
- Outline vaccination plan
- Provide patient with information regarding where they may be able to access vaccine(s) identified in the vaccination plan 
- Electronic prescription, post-visit summary with recommendations
- Patient follow-up at next visits
- Importing information from state immunization information system

Medical Home as a Vaccinator

- Provide care for acute and chronic health conditions
- Identify the role of vaccines as a preventive care approach
- Engage with patient [routine discussions, shared clinical decision-making]
- Outline vaccination plan
- Provide vaccine based upon the plan (e.g., type of vaccine selected for that patient based upon health condition, lifestyle, disease epidemiology, social factors)
- Documentation into electronic medical record
- Followup and appointment for next vaccines according to the plan

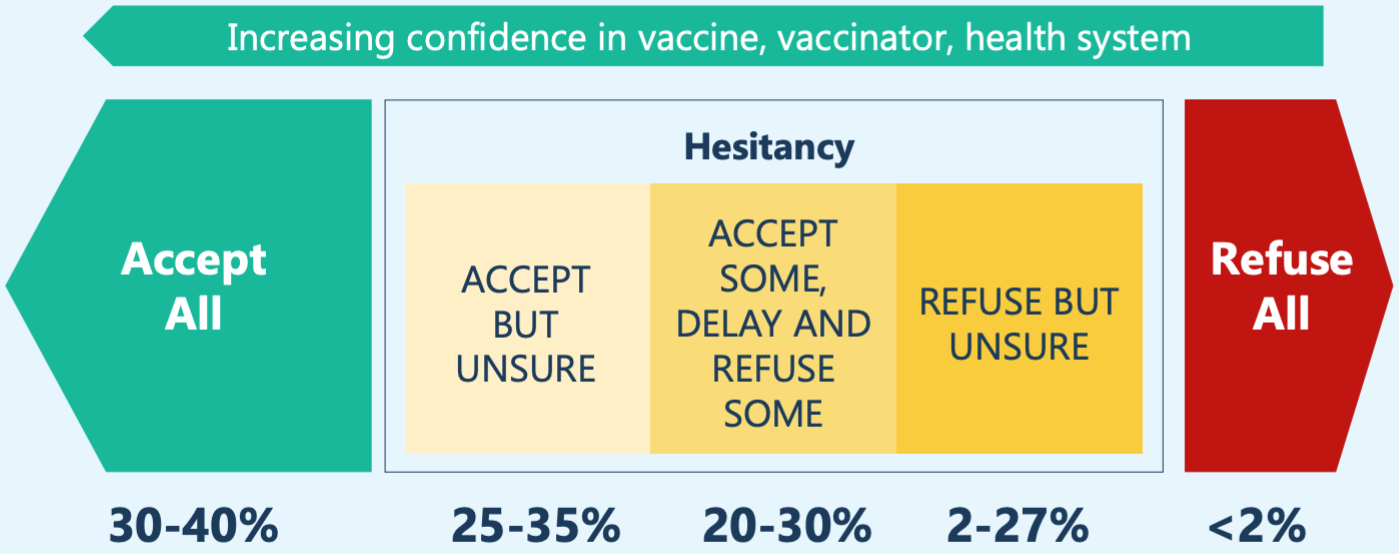
Pros and Cons to Medical Home Vaccination

PRO	CON
Patient receives the vaccine the provider selects at the time the provider determines and it is documented	Up front vaccine purchase unless a third party provides [e.g., VaxCare]
Can co-administer vaccines	Handling and management of vaccines [e.g., VaxCare]
Patient engagement	Personnel to administer, training, operationalize
Development of an individualized vaccination plan	Billing, accounting and cash flow [e.g., VaxCare]
Patient receives benefit of the patient-provider relationship and disease prevention	Time and space allocation for vaccine preparation and administration
Financial benefit to the practice	Time spent in patient engagement and plan development

What is Vaccine Hesitance?

- **A delay in acceptance** or **refusal of vaccines**, despite availability of vaccination services
- **Complex and context specific**, varying across time, place and vaccine

Willingness to accept a vaccine falls on a continuum



The majority of people accept vaccination, several are uncertain and will have questions, few people refuse.

Some Key Behavioral Biases Relevant to Vaccine Hesitance

Availability Rule of Thumb	Optimism Bias	Confirmation Bias	Omission Bias	Social Norms	Framing Loss v. Gain
The more you are able to picture it, the more important it is.	We think we can beat the odds.	We only accept research or facts that support our own 'tribal' view.	We prefer to take no action rather than risk being the cause of a bad outcome.	People routinely conform to the prevailing social behavior.	People value avoiding a loss two to three times more than winning a gain

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If you have not had a personal experience with the disease, you discount the need for vaccination. Make the disease vivid, relevant, and personal to that individual.	People may skip vaccines thinking they will beat the odds. Use testimonials from someone who also believed this but was devastated by illness. This is *Convert Communication*	People who believe vaccines are dangerous or part of a plot will not readily change their minds when provided with evidence. Instead use other techniques such as *Convert Communication*, *Social Proof*, *Narrative Transportation.*	If someone fears even the slightest possibility of an adverse reaction or fears a bad outcome, such as autism, they will avoid vaccination, even knowing the risk of no vaccination. So, frame the inaction as the bigger risk.	Emphasizing and reminding people that the vast majority of people have chosen to have their children vaccinated *Social proof* means using examples of people just like themselves.	All messages can be configured as a loss (do not do this, and bad things will happen) or a gain (do this and good things happen). Loss frames are more effective.

Adapted from Dr. Christopher Graves

Some Relevant Theoretical Considerations

- Convert Communication
  - Convert communicators are those **perceived as credible sources because they are arguing against the person's own previously held attitudes and behaviors.**
  - The communication is the **message as well as the method** used for the communication (personal, a link to click, a document).
- Social Proof
  - **people copy the actions of others in choosing how to behave in a given situation**.
  - **"herd mentality".**
  - **Decision-making becomes credible and validated through the behavior of others**.
- Narrative Transportation
  - **when people lose themselves in a story, their attitudes and intentions change to reflect that story.**
  - being completely **immersed in a story and leaving the real world behind**. Transportation involves **cognition, emotion, and mental imagery**, all focused on the story.

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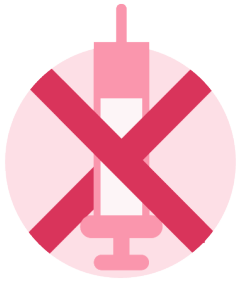
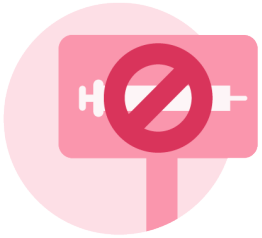
Stories that paint a picture; photos; videos: -the disease -the vaccine -vaccination -outcomes	I rarely get sick but if I do, it is always mild.	I read that vaccines don't really work and none of my family wants to take the risk of a vaccine.	I am afraid of the vaccine. It may cause me to be unable to have children.	This is the government's way of controlling what we do. Nobody in my group of friends is vaccinated.	Frame the loss: -illness -hospitalization, death -lost work, school -transmission to others
Credible people Realistic scenarios Local scenery	My immune system is strong and I do not need a vaccine to help me.	Vaccines are not safe. The information is all over FaceBook.	I would rather take the chance with the disease than have some of those side effects.	Walk around my town. Nobody wears masks and nobody is afraid of this virus.	Recognize the win: -no vaccination -autonomy to push back

Factors Affecting COVID-19 Vaccine Hesitancy

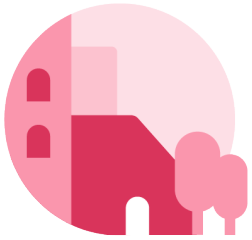


Convenience

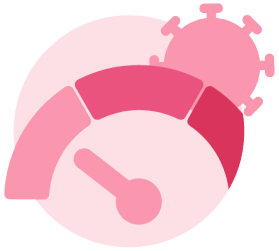


- Vaccine Deniers

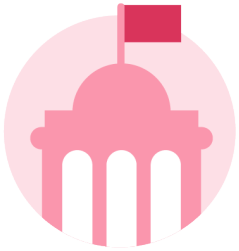
Safety Concerns



Cultural and Socioeconomic Differences in Vaccine Acceptance



Low Perceived Risk of Infection



Politics of COVID-19 Vaccination

Freeriding

Image adapted from: Communicating with patients about COVID-19 vaccination. World Health Organization. Accessed August 12, 2024. https://iris.who.int/bitstream/handle/10665/340751/WHO-EURO-2021-2281-42036-57837-eng.pdf

Convenience

- Patient or parent is ready for vaccination, but the vaccine is not available at a place or time or day convenient for the patient

- How do you address questions regarding access?
- What do you do to prevent ‘leakage’? [Patient is ready but never actually receives the vaccine]
- What do you do to assure the patient has access to the vaccine(s) for which you have a preference?
- How do you make sure you are aware when vaccination has occurred?

If the MD/NP is Referring to a Local Pharmacy

- When you send a prescription to a pharmacy for a vaccine, the individual's specific insurance policy determines whether or not the vaccine is covered and any co-pay
- Not all vaccines are covered by insurance and there are no 'absolute' rules for vaccine coverage for any patient population. The closest involves individuals who are 65 and older who have Medicare Part D. This covers routine vaccines indicated for that population. Some vaccines, such as those for international travel, are rarely covered.
- Each pharmacy has a designated medical provider who is responsible for development of the protocols for vaccination used in that pharmacy. Those protocols outline which vaccines are available, how they are administered, to whom, and under what circumstances.
- Variances in practice that are outlined by CDC/ACIP, such as vaccination grace periods, may not be included in protocols and therefore may not be part of vaccination practice in pharmacies.
- Individuals 65 and older who have Medicare Part D, are likely to have full cost covered, including co-pay. Individuals who have Medicare but have not included Part D in their coverage, will not have this benefit and may be required to pay for the vaccine and co-pay
- Individual state scopes of practice outline pharmacist practice, and they differ by state. This means different states allow pharmacists to administer different vaccines, to different aged patients, and for variable costs.
- When you send a prescription for a specific vaccine, it does not guarantee your patient will receive that specific vaccine. It depends upon what vaccine is available in that particular pharmacy, the specific administration guidelines within that pharmacy, and cost.
- Find out the pharmacist's scope of practice for your state by contacting the designated state pharmacist. There may or may not be a website available with this information.
- Vaccines that may be covered by health insurance plans and are able to be given in a medical practice include COVID-19, influenza, pneumococcal, and Hepatitis B. This does not mean the cost of the vaccine will be completely covered as each insurance plan is different. It does mean that those vaccines are not solely covered by Medicare Part D.
- Pharmacists by state scope of practice can follow [based on the state vaccine table] either ACIP or FDA in terms of vaccine approvals for administration. For example, Illinois pharmacists can administer Arexvy [GSK RSV vaccine] to individuals 50-59 years because it is FDA approved despite not being ACIP approved. 11 states follow FDA. Some may have a hybrid approach; for example Indiana where pharmacists follows FDA but would need a prescription to administer.

Vaccine Denier

- Conspiracy theories, misinformation, misinterpretation.
- Believes in what their ‘tribe’ believes.

- How do you determine the ‘starting point’ for this discussion?
- How do you address clear misinformation?
- How do you address misinterpretation?
- How do you support the patient’s ability to disengage from the tribe-think?
- How do you support the patient’s ultimate decision? Or do you?

Vaccine Safety

- ‘Haven’t you read about those mRNA vaccines and how they change our DNA? How can you be sure that won’t happen?”

- How do you determine the ‘starting point’ for this discussion?
- What is the basis behind this concern?
- How do you talk about what you/science knows and what we/science do not know?
- How do you support the patient’s ultimate decision? Or do you?

Cultural and Socioeconomic Concerns

- ”I would be vaccinated, but I cannot afford it. I was told that my insurance does not pay for vaccines.”

- Are you prepared to help patients prioritize vaccines as they relate to their risk factors while also recognizing the social barriers that still exist with vaccines and vaccination?
- How do you help the patient obtain information regarding payment for vaccines?
- What if they lack coverage? Do you have information regarding resources for them?
- What if they are in the gap?
- How do you support the patient’s ultimate decision? Or do you?

Low Perceived Risk of the Infection

- Principles of risk communication

Communicate current knowledge

- Consider what your patient already knows.
- Use varied information formats tailored to educational levels and languages.
- Provide guidance on how to assess website reliability and provide a list of reliable ones.

Your professional opinion matters

- Your strong recommendation to get vaccinated has been shown to increase uptake.
- Use statements such as, "I believe this vaccine will protect you".
- Remember: A trusted Health Worker is proven to be essential in the decision-making process.

Respect differences of opinion about vaccination

- Some patients will express reluctance or refusal to accept the vaccine for themselves or their family members.
- Ask permission to explore underlying reasons without being judgmental.

Represent risks and benefits of vaccines fairly and openly

Contrast known versus theoretical risks of the vaccine with known risks associated with the vaccine-preventable infection.

Adopt a patient-centred approach

- Effective decision-making is best done in a partnership between the Health Worker and patient.
- Individuals have input into the decision to vaccinate and retain responsibility for their own health.

Present clear, concise evidence-based messages

- Encourage questions, address misinformation, and provide credible and appropriate resources, for those who want more information.
- Respond to specific concerns avoiding lengthy discussions.
- Reaffirm your conviction that the vaccine is important to prevent serious disease and complications.

Politics

- Belief that politics have determined vaccination policies with or without safety, benefit, individual impact being considered

- Have you had that inner discussion enabling you to accept that one of the beauties of our country is the right to make decisions? Even if we disagree?
- How do you address clear misinformation?
- How do you address misinterpretation?
- How do you support the patient's ability to determine their own course?
- How do you support the patient's ultimate decision? Or do you?
- How do you leave the discussion door open?

Freeriding

- Letting others receive the vaccine believing they will benefit from herd immunity

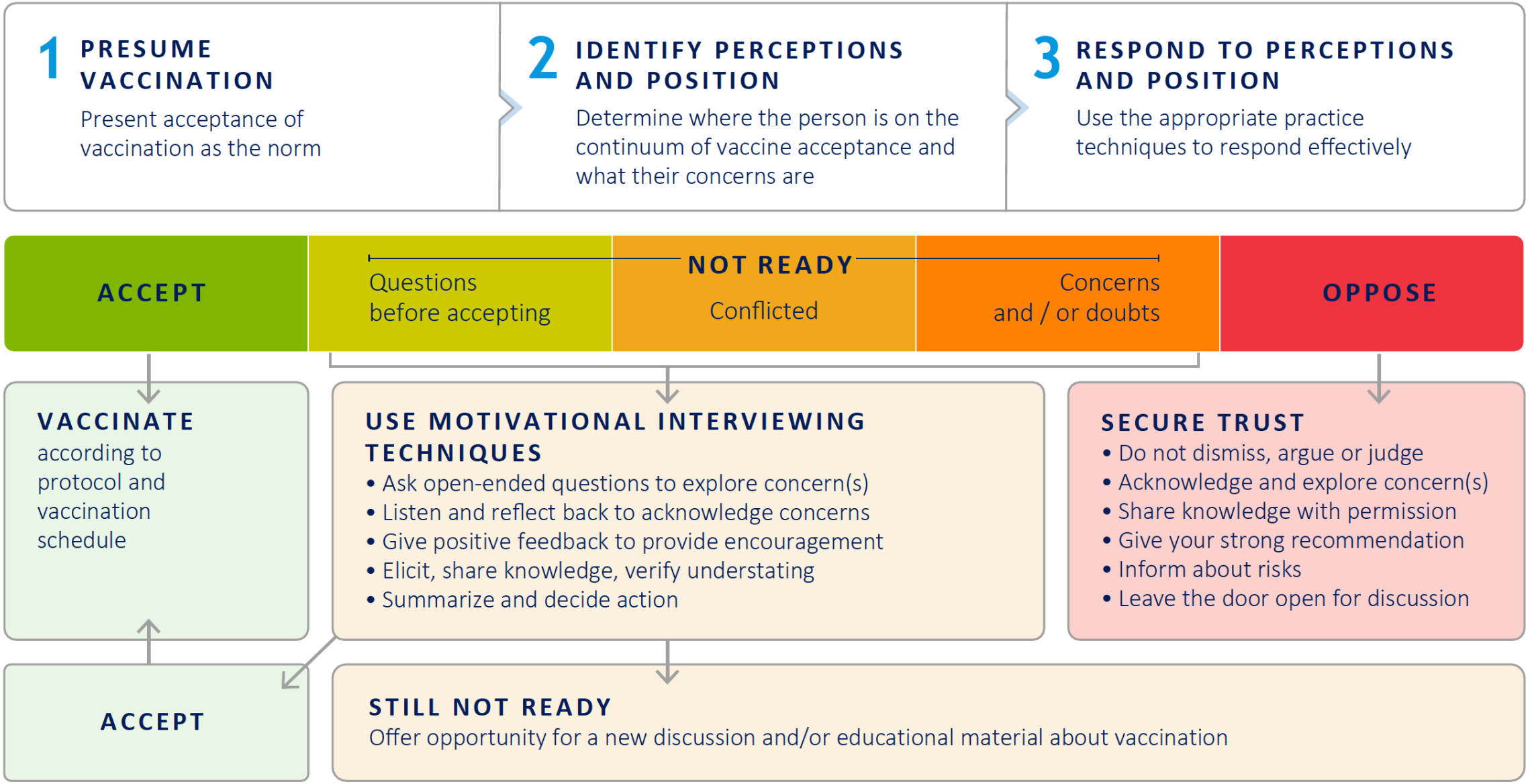
- How do you determine the ‘starting point’ for this discussion?
- How do you address clear misinformation? What if they are right?
- How do you address misinterpretation? Are you prepared to explain herd immunity?
- How do you support the patient’s ultimate decision? Or do you?

Questions Patients and Parents Pose to Healthcare Providers and In-Office Teams

- Will this vaccine help me?
- Will this vaccine hurt me?

- How do you determine the ‘starting point’ for this discussion?
- These are basic questions and every vaccine represents different risks and benefits. Do you feel comfortable with these discussions
- What about your office staff? What additional training do they need? Do you know their ’starting points’?
- How do you support the patient’s ultimate decision? Or do you?

Conversation steps to build confidence in vaccination



https://www.who.int/europe/publications/i/item/WHO-EURO-2023-8926-48692-72363

How HCPs can help increase adult immunization

Understanding and **responding to specific patient needs** can help overcome barriers to vaccination

Delivering vaccines and information in community settings. Effective conversations are based on a **communication plan** that is proactive, focused on listening, **tailored to the patient**, and clear without the use of technical language

HCPs can influence an adults' decision to accept immunization by **building trust** – it has been shown that **sharing vaccine information with patients** reduces their concern regarding vaccination

All HCPs are encouraged to **use every opportunity to identify people** who may benefit from immunization

CDC encourages all HCPs to assess the immunization status of all patients at every clinical encounter and stay informed on the latest recommendations for adult immunization[2]

Engaging the Healthcare Team in Support for Vaccination

1. Make patients and parents aware of your immunization policy
2. Make vaccine resources easy to find
3. Review each patient's vaccination status and prepare them to receive vaccines
4. Make effective recommendations
5. Answer questions and address concerns
6. Implement procedures and policies that help staff support vaccination
7. Schedule upcoming vaccinations before the patient leaves the office
8. Remind patients and parents about upcoming vaccination appointments and missed appointment

Foster Support for Vaccination in Your Practice. Centers for Disease Control and Prevention. Accessed August 26, 2024. https://www.cdc.gov/vaccines/hcp/conversations/your-practice.html

Information for Clinicians and Clinic Personnel

✓	Clinician and Clinic Personnel Support
✓	Basics of vaccine immunology
✓	Knowledge about specific vaccines, including indications, safety, and administration
✓	Standing orders to facilitate vaccination consistency
✓	Vaccine administration techniques
✓	How to converse with patients regarding hesitance and promoting vaccine confidence
✓	Handling post-vaccination emergency or adverse events
✓	Analysis of vaccine orders as part of performance improvement
✓	Feedback regarding operational, financial, and administration performance as ongoing performance improvement

Operational Needs for Medical Home Vaccination

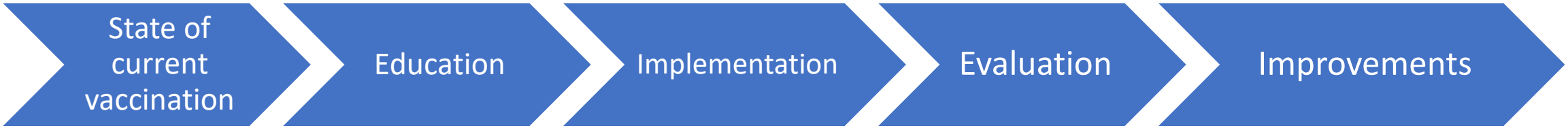
✓	Purchase contracts or mechanisms for ordering vaccines
✓	Refrigerator/freezer appropriate for vaccines
✓	Temperature monitoring
✓	Policies and procedures for vaccine handling, management, and documentation
✓	Sourcing of supplies and equipment for emergency response
✓	Billing mechanisms, including Medicare Part D
✓	Documentation into electronic medical record
✓	Documentation into state immunization information system
✓	Financial impact analysis

Information for Patient Support

✓	Education focused on the targeted vaccine(s)
✓	Text messaging reminders
✓	Vaccine Information Statements (VIS)
✓	Ability to get to and navigate through the clinical environment
✓	Clinic hours aligned with patient needs
✓	Billing mechanisms taking advantage of patient-eligible payment
✓	Documentation into medical record systems that patients can access, including state immunization information systems
✓	Analysis of vaccine vaccine uptake among patient populations
✓	Iterative performance improvement that targets the use of date to improve patient-centered activities and approaches

Equitable Access to Vaccine

- In the community where individuals live, work, play, worship
- At times when the individuals are able to access
- At locations where individuals feel safe
- With individuals with whom they are able to openly converse
- In environments that embrace and accept
- Where the at-risk are present



- Who is administering
- Where administered
- What administered
- To whom administered
- Baseline data

- How vaccines work
- Clinical indications
- Disease epidemiology
- How to handle, prepare and administer
- How to talk with patients/parents

- Best practices
- Office strategies
- Vaccine availability
- Financial components
- Documentation
- Making the office ‘talk for you’

- How did we do
- Vaccination rates
- Co-administration
- Missed opportunities
- Errors
- Financial impact
- Feedback

- What do we continue to do
- What do we change
- Ongoing data collection and monitoring
- Feedback

Moving from **having** a Vaccine to **Providing Vaccination**

Additional Resources

- Carrico R, Balcom D, Garrett JH, Kosko D, Resnick B (2025). Improving Adult Immunization Uptake: An Expanded Role for the Nurse Practitioner. *The Journal for Nurse Practitioners*, Volume 21, Issue 1, 105268. https://doi.org/10.1016/j.nurpra.2024.105268
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