



Vaccination in the Time of COVID-19: Overcoming the Growing Threat of Vaccine-Preventable Diseases

Part 3 - Improving Vaccination Rates for Vaccine Preventable Diseases: Overcoming the Challenges of Hesitancy



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UAN: 0430-0000-22-144-L06-P

Credits: 1.0 hour (0.10 CEU)

Type of Activity: Knowledge

Learning Objectives

At the conclusion of the activity, the pharmacist will be better able to:

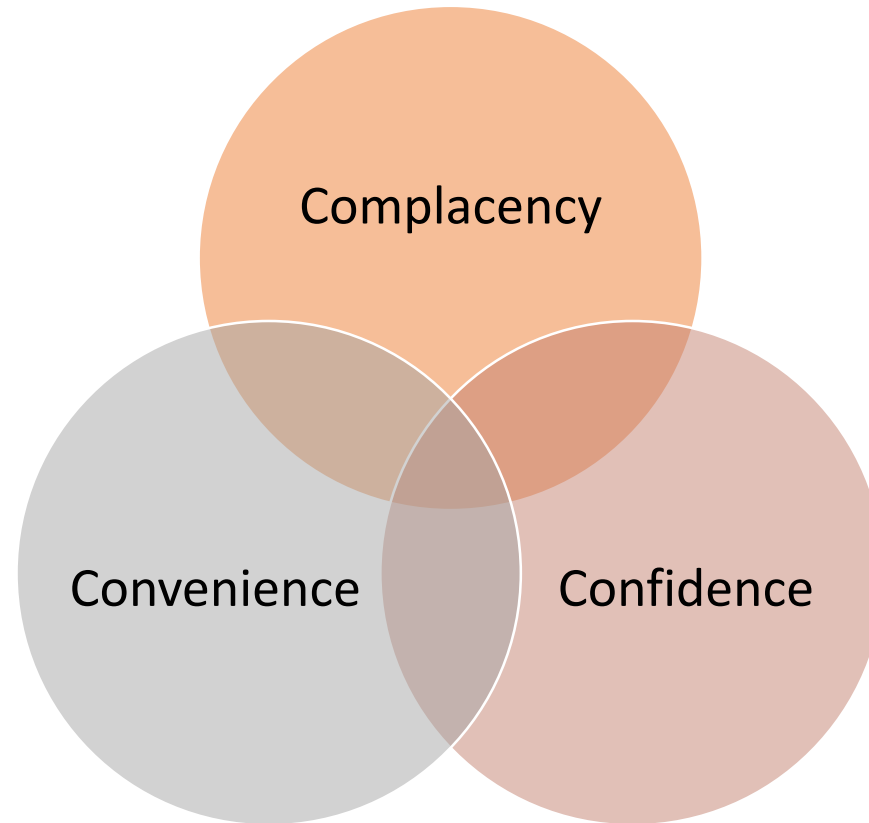
- **Discuss** the factors that contribute to vaccine hesitancy in the ongoing pandemic
- **Explain** the scientific evidence to alleviate mistrust in vaccinations
- **Identify** strategies and communication techniques for improving vaccination rates for vaccine-preventable diseases

Vaccine Hesitancy

- The World Health Organization defines *vaccine hesitancy* as a “delay in acceptance or refusal of vaccines despite availability of vaccination services”
- There is a wide range of vaccine hesitant individuals:
 - Refuse some vaccines but agree to others
 - Delay vaccination
 - Accept vaccination but are unsure in doing so

MacDonald NE; SAGE Working Group on Vaccine Hesitancy. Vaccine hesitancy: Definition, scope and determinants. *Vaccine*. 2015 Aug 14;33(34):4161-4

The 3C Model of Vaccine Hesitancy



MacDonald NE; SAGE Working Group on Vaccine Hesitancy. Vaccine hesitancy: Definition, scope and determinants. *Vaccine*. 2015;33(34):4161-4

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Confidence

- Trust in the effectiveness and safety of vaccines
- Trust in the system that delivers them
- Trust in the motivations of policy-makers who decide on the necessary vaccines

Complacency

- Perceived risks of vaccine-preventable diseases are low and vaccination is not deemed a necessary preventive action
- Other health/life responsibilities seem to be more important
- The disease the vaccine prevents is no longer common
- Low self-efficacy

Convenience

- Availability
- Affordability
- Willingness-to-pay
- Accessibility
- Ability to understand the language
- Health literacy
- Quality of the vaccine service
- Degree to which the service is delivered

5C Scale of Vaccine Hesitancy

- Confidence (same as 3C Model)
- Constraints (same as Convenience in the 3C Model)
- Complacency (same as 3C Model)
- Calculation
 - Engagement in extensive information searching
- Collective Responsibility
 - Willingness to protect others by one's own vaccination

Vaccine Hesitancy During COVID-19 Pandemic

Confidence	Constraints	Complacency	Collective Responsibility
Conspiracy beliefs	Behavior change	Age	Concern for hospitals
Misinformation		Concern for family	Concern for social unrest and crime
Trust in the government		Education	Interpersonal trust
Trust in national health authorities		Sex	Support for restrictions
Trust in scientists			

Lindholt MF, Jørgensen F, Bor A, Petersen MB. Public acceptance of COVID-19 vaccines: cross-national evidence on levels and individual-level predictors using observational data. *BMJ Open*. 2021;11(6):e048172

Vaccine Myths: Autism

- A study that has been retracted and discredited claimed there was a link between the measles, mumps, and rubella (MMR) vaccination in children and autism spectrum disorder (ASD)
- The study was a small case series with no controls, linked 3 common conditions, and relied on parental recall and beliefs
- Investigations found the possibility of research fraud, unethical treatment of children, and the author's conflict of interest
- Over the following decade, epidemiological studies consistently found no evidence of a link between the MMR vaccine and ASD

Wakefield A, Murch S, Anthony A, Linnell J, Casson DM, et al. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet*. 1998;351:637-41. Retracted *Lancet*.2010;375:445

Vaccine Myths: Autism

- ASD rates have increased in the U.S. in parallel with the expansion in the diagnostic criteria of autism
- The Institute of Medicine (IOM) Committee on Vaccines and Adverse Events released a report in 2011 using peer-reviewed literature to examine 8 vaccines given to children or adults of which included the MMR vaccine
 - Concluded that current childhood and adult vaccines are safe and adverse events are rare
- A 2013 CDC study looked at the number of antigens from vaccines during the first 2 years of life and showed that the total amount of antigen from vaccines received was the same between children with ASD and those that did not have ASD

DeStefano F, Price C, Weintraub E. Increasing exposure to antibody-stimulating proteins and polysaccharides in vaccines is not associated with risk of autism. *J Pediatr.* 2013;163:561-7
Centers for Disease Control and Prevention. *Institute of Medicine (IOM) Reports.* Accessed October 12, 2022. <https://www.cdc.gov/vaccinesafety/research/iomreports/index.html>

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Vaccine Myths: Sudden Infant Death Syndrome

- The overlap of peak sudden infant death syndrome (SIDS) incidence and the period of initiation of the childhood vaccination series led to questions about a causal relationship between vaccines and SIDS
- A study that examined the Vaccine Adverse Event Reporting System concluded that death may be stimulated by the temporal association with vaccine timing, rather than by a causal relationship
- IOM's 2003 safety report concluded that vaccines do not cause SIDS
- SIDS has decreased dramatically due to the American Academy of Pediatrics recommendations and the National Institute of Child Health and Human Development's Back to Sleep campaign reminding parents to place infants on their backs to sleep

Silvers LE, Ellenberg SS, Wise RP, Varricchio FE, Mootrey GT, et al. The epidemiology of fatalities reported to the vaccine adverse event reporting system 1990-1997. *Pharmacoepidemiol Drug Saf.* 2001;10(4):279-85
Stratton K, Almario D, Wizemann T, McCormick M. *Institute of Medicine Immunization Safety Review: Vaccinations and Sudden Unexpected Death in Infancy.* Washington DC; National Academies Press: 2003

Vaccine Myths: Unsafe Toxins

- Chemicals are toxic to the human body in certain levels, but only trace amounts of these chemicals are used in FDA approved vaccines
- FDA takes all ingredients of a vaccine into account before approval (including additives)

Vaccine Additives

Additive	Use	Concern
Formaldehyde	Inactivates viruses and bacterial toxins	Potential carcinogen; diluted to residual amounts during manufacturing
Aluminum	Adjuvant	Neurotoxicity and bone toxicity concerns; amount of aluminum in vaccines is negligible
Antibiotics (gentamicin, neomycin, polymyxin B, streptomycin)	Prevents bacterial contamination of the vaccine	Concerns about allergic reactions; during the purification process antibiotics are removed resulting in trace amounts in the final product
Gelatin	Preservative/stabilizer	1 case of anaphylaxis for every 2 million injections; children with a gelatin allergy can seek an alternative formulation or exemption
Monosodium Glutamate (MSG)	Preservative/stabilizer	Reports of adverse reaction to MSG in foods; scientific research has not found MSG to be harmful; FDA declared it as a safe additive

Public Health. *What Goes into a Vaccine?* Accessed October 12, 2022. <https://www.publichealth.org/public-awareness/understanding-vaccines/goes-vaccine/>

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Vaccine Myths: Vaccines May Alter the Human Genome

- A DNA or RNA vaccine takes a small part of the virus' own genetic information and relies on the human body's own cells for production of the target protein
- Genetic vaccines do not enter the human genome, they merely imitate what happens when our body gets infected with a virus
- When we get a viral infection naturally the DNA or RNA from the virus is inside of our cells, but the virus does not leave its DNA or RNA behind to become part of the human genome

Tips for Clarifying Vaccine Myths

- Frame the messages in ways that affirm the audience's worldview or personal values (e.g., protection of family, social responsibility)
- Explain the motivation behind the misinformation about the vaccine and provide a factual alternative narrative
- Repeat factual information to strengthen its efficacy
- Avoid repeating the misinformation

Overcoming Societal Vaccine Hesitancy

- Face-to-face provider communication
- Mass-media
- Information pamphlets
- Reminder-recall systems
- Advocacy campaigns
- Standing orders for vaccine administration
- Multimodal approaches

Communication and Vaccine Acceptance

- There is evidence that communication can be an effective tool to make a significant difference on the acceptance of vaccination
- Increasing knowledge alone may not be sufficient to bring about changes in health behaviors
- Understanding the perspectives of those for whom immunization services are intended and their engagement with the issue is as important as the information being communicated
- It is important to understand the drivers of vaccine hesitancy
- A pharmacist must listen to patient's individual concerns while also delivering educational content

DiMatteo M, Haskard-Zolnierok K, Martin L. Improving patient adherence: a three-factor model to guide practice. *Health Psychology Review*. 2012;6(1):74-91

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Information-Motivation-Strategy (IMS) Model

Information

- Patients need the opportunity to ask questions and receive clarification
- Adequate information allows for participation in medical decision-making

Motivation

- Patients take action to prevent an illness if they regard themselves as susceptible to a condition
- If they believe it has potentially serious consequences
- If they believe a particular course of action would reduce the susceptibility or severity
- If they perceive few barriers related to the health action

Strategy

- Patients must have the tools necessary to overcome barriers

DiMatteo M, Haskard-Zolnierok K, Martin L. Improving patient adherence: a three-factor model to guide practice. *Health Psychology Review*. 2012;6(1):74-91

Jones CL, Jensen JD, Scherr CL, Brown NR, Christy K, et al. The Health Belief Model as an explanatory framework in communication research: exploring parallel, serial, and moderated mediation. *Health Commun*. 2015;30(6):566-76

Applying the IMS Model to Vaccination

Category	Recommendations
Information	<ul style="list-style-type: none">Address questions/concernsDiscuss CDC vaccination scheduleDiscuss what to expect when receiving the vaccineEncourage participation in the decision-making process
Strategy	<ul style="list-style-type: none">Discuss vaccine mythsDiscuss Vaccine Adverse Event Reporting System
Motivation	<ul style="list-style-type: none">Identify where to get the vaccineAssist with financial resourcesSchedule an appointment

DiMatteo M, Haskard-Zolnierok K, Martin L. Improving patient adherence: a three-factor model to guide practice. *Health Psychology Review*. 2012;6(1):74-91

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Motivational Interviewing (MI)

- MI is a person-centered communication style designed to strengthen personal motivation and commitment to a specific goal by eliciting and exploring the patient's own reasons for change
- MI is based on 3 components:
 - Cultivating a culture of partnership and empathy
 - Fostering engagement in the relationship and focusing the discussion on the change
 - Having the skills that allow providers to address and understand patient concerns

Gagneur A. Motivational interviewing: A powerful tool to address vaccine hesitancy. Can Commun Dis Rep. 2020;46(4):93-97

Cultivating a Culture of Partnership and Empathy

- Partnership: Achieving equality/strengthening collaboration
- Acceptance: A positive, empathetic attitude that reinforces autonomy
- Evocation: Having the patient verbalize the change
- Compassion/Altruism: Acting in a caring way

Foster Engagement and Target the Goal of Change

Process	Objective	Questions to Address
Engaging	Show empathy and interest in the patient's beliefs/attitudes	What are your concerns?
Focusing	Define and focus the discussion on the target of change	What should we address that may need to be changed?
Evoking	Discuss the importance of change and the confidence the patient has to make the change	How relevant will the change be in your life? What strengths/abilities do you possess to get you to the change?
Planning	Discuss the steps necessary to get to the change	What steps will you take to get there?

Gagneur A. Motivational interviewing: A powerful tool to address vaccine hesitancy. *Can Commun Dis Rep.* 2020;46(4):93-97

MI Skills

Skill	Example
Open-ended questions	“What do you know about the vaccine?” “What are your concerns?”
Affirmation	“The health and safety of you and your family are important.” “You already have a lot of knowledge.”
Reflective listening/summaries	“You have heard of instances where people have gotten sick after receiving a vaccine.” “You are concerned about getting the disease you were hoping to be protected against.”
Elicit–Share–Elicit	ELICIT: Ask what the patient knows and ask permission to complete their knowledge SHARE: Provide the information ELICIT: Verify what the patient has understood and ask what they will do with this information

Gagneur A. Motivational interviewing: A powerful tool to address vaccine hesitancy. *Can Commun Dis Rep.* 2020;46(4):93-97

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Active Listening

- Maintain eye contact with the person who is speaking
- Turn your body towards the speaker
- Give regular verbal responses (even if only encouraging sounds)
- Responses should indicate understanding of facts AND of the feelings and implication of these facts

Discussing Vaccinations with Parents

- The American Academy of Pediatrics and CDC recommend a collaborative/participatory discussion when discussing parental vaccination concerns
- Respect parental autonomy in decision making regarding vaccination of their children
- Trust in the provider was found to be pivotal for a parent's decision to vaccinate their child
- Communicate risk effectively
 - Cover common and rare adverse effects and actions to take if they occur
- Use MI techniques

Case 1: Influenza Vaccine Fear

Pharmacist: “What are your concerns with the influenza vaccine?”

Patient: “I know it is recommended that we all get the influenza vaccine every year, but I hear about people getting sick after they are vaccinated.”

Pharmacist: “You know it is important to protect yourself against influenza, but you don’t want to get sick from the vaccine.”

Patient: “That is exactly right.”

Pharmacist: “Would it be ok if I share some information with you about how vaccinations work?” (Patient nods head)

Pharmacist: “Vaccines can cause mild symptoms resembling those of the disease they are protecting against. A common misconception is that these symptoms signal infection. With live vaccines, these mild symptoms may sometimes occur. This isn’t harmful and in fact shows that the vaccine is working. The influenza vaccine is an inactivated vaccine which means it is made from viruses that have been killed by heat or chemicals. You can’t catch a disease from this type of vaccine because the virus can't reproduce. Does this make sense?”

Case 1: Influenza Vaccine Fear

Patient: “Yes, but I don’t really get sick because I take good care of myself and if I get the flu big deal.”

Pharmacist: “That is great you focus on your health and rarely ever get sick. You feel that if you did get influenza you would recover pretty quickly. Would it be okay if I shared some facts about influenza with you?”

Patient: “Sure, I can also tell my wife.”

Pharmacist: “You are right that most people will recover in a few days to a few weeks. However, some people will develop serious complications which can lead to hospitalization and other complications. Anyone can get sick with influenza, even healthy people, and serious problems can happen to anyone at any age.”

Patient: “I didn’t realize that even healthy people can get really sick from influenza.”

Pharmacist: “I think most people don’t realize that. Do you have any more questions or do you think it would be okay to set up a time to get your influenza vaccine?”

Case 2: The Patient Who Refuses

Pharmacist: “Do you mind if we talk about getting the COVID-19 vaccine?”

Patient: “I have done my research and I don’t want to get the vaccine.”

Pharmacist: “Can we just talk through it so I understand your decision?”

Patient: “I guess.”

Pharmacist: “What have you heard about the vaccine?”

Patient: “It took scientists significantly less time to develop the vaccine for COVID-19 compared to other diseases. I’m worried the process was rushed. I am not really sure the vaccine is safe.”

Pharmacist: “It did seem fast compared to other vaccines. I understand your concern. Would it be ok if I shared some information with you about its development?”

Patient: “Ok.”

Case 2: The Patient Who Refuses

Pharmacist: “Scientists have been working for many years to develop vaccines against coronaviruses. The virus that causes COVID-19 is related to these other coronaviruses. The knowledge that was gained through past research on coronavirus vaccines helped speed up the initial development of the current COVID-19 vaccines.”

“After initial laboratory development, vaccines go through 3 phases of clinical trials. No trial phases have been skipped. Results from these trials have shown that the vaccines are safe and effective, especially against severe illness, hospitalization, and death.”

“Before approval, the FDA assesses clinical trial information, manufacturing processes, and test results that ensure quality of the vaccine. The FDA does not grant approval to vaccines that do not meet their high standards. Once approved the CDC and FDA continue to monitor for adverse events through several reporting mechanisms to make sure that the COVID-19 vaccines are safe. Does this information help you to understand the approval process better?”

Case 2: The Patient Who Refuses

Patient: “It does but I would still like to do more research on my own based on what you have told me.”

Pharmacist: “It is always important to do your own research. I encourage you to take some more time and think about what we have discussed.”

Patient: “I will do that but right now I am still pretty hesitant about getting the vaccine.”

Pharmacist: “Perhaps next month when you come in for your refills we can talk about it again.”

Counterproductive Techniques

Counterproductive Technique	Example
Inappropriate reassurance	“Don’t worry you won’t have any problems after receiving the vaccine.”
Passing judgment	“It is your job as a parent to have your child vaccinated.”
Giving advice	“I think it is in your best interest to get the vaccine.”
Closed questions	“Do your other family members have concerns about vaccines?”
Defensiveness	“I am only trying to help you and protect the health of the public. I would think as a citizen you would be concerned about this.”

Sibiya, N. Chapter 3 . *Effective Communication in Nursing*. IntechOpen, 2018. 10.5772/intechopen.74995. <http://dx.doi.org/10.5772/intechopen.74995>

Quick Tips

- Use a positive versus a negative frame (i.e., emphasize the benefits rather than the risks of not getting vaccinated)
 - Positive frame: “Getting the vaccine will protect you and your family.”
 - Negative frame: “If you choose not to get vaccinated, you are putting yourself and your family at risk.”
- Medical jargon leads to confusion
- Accept patient autonomy/respect a refusal
- The decision not to vaccinate is reversible continue to work on building a trusting relationship

Resources

- Adult Vaccination Resources
 - <https://www.cdc.gov/vaccines/hcp/adults/for-patients/index.html>
- Preparing For Questions Parents May Ask
 - <https://www.cdc.gov/vaccines/hcp/conversations/preparing-for-parent-vaccine-questions.html>
- Responding to Parents
 - <https://www.immunize.org/talking-about-vaccines/responding-to-parents.asp>

Key Takeaways

- Despite overwhelming evidence of the effectiveness and safety of vaccinations, a growing number of people are reluctant to receive vaccinations or refuse them altogether
- Vaccine hesitancy is complex and varies with time, place, patient, and vaccine
- Pharmacists are well positioned to address vaccine hesitancy
- Developing the skills, knowledge, and confidence related to discussing vaccine hesitancy will allow for effective conversations with patients about the importance of vaccinations



Questions & Answers

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Thank You!