COVID-19 Vaccines, Myths & Misinformation Training Module Transcript

Slide 1:

Hello and welcome to COVID-19 Vaccines, Myths & Misinformation, an educational video presented by The Immunization Partnership.

Slide 2:

The Immunization Partnership is a Texas-based non-profit dedicated to helping individuals, physicians, and others with an interest in immunizations protect their communities from vaccine-preventable diseases.

All across Texas, The Immunization Partnership conducts educational community forums and researches immunization best practices.

Slide 3:

This presentation is made possible through partnerships and funding from our listed supporters.

Slide 4:

Before we get started, here is the disclaimer letting viewers know all speakers and individuals on the planning committee have no disclosed conflicts of interest. Additionally, this presentation is for educational use only and does not constitute medical or legal advice.

Slide 5:

This presentation will cover the following topics:

1. COVID-19 Vaccine Myths and Facts
2. The Importance of Getting Vaccinated
3. How to Dispel Myths and Misinformation: General Tips
4. Helpful Resources

Slide 6:

By now you've probably noticed that many myths and pieces of misinformation about the COVID-19 vaccines have been snowballing through social media and other non-scientific mediums.

In this section, we'll discuss some common myths associated with the different COVID-19 vaccines, and provide facts to help set the record straight to ensure an accurate message is shared when speaking with hesitant individuals.

Slide 7:

As of June 30th, 2021, there are 3 different COVID-19 vaccines currently available in the United States. Because of the pandemic, all three of the COVID-19 vaccines have been granted Emergency Use Authorization or (EUA) by the Food & Drug Administration (FDA). As part of the FDA's evaluation of COVID-19 vaccine EUA requests, they analyzed the controls, chemistry, and manufacturing for each vaccine. To ensure proper and current compliance in the vaccine manufacturing process, the FDA conducted site visits, reviewed records, and previous compliance history.[1]

In guidance released by the FDA in October 2020, entitled Emergency Use Authorization for Vaccines to Prevent COVID-19, it was made clear that an EUA authorization for the COVID-19 vaccine had to demonstrate two important aspects:

1. There must have been "adequate manufacturing information to ensure it's quality and consistency."[1]
2. The FDA determined that a vaccine must show that it's "benefits outweigh its risks based on at least one well-designed Phase 3 clinical trial," demonstrating it's vaccine safety and efficacy in a "clear and compelling manner."[1]

In this slide you'll notice that Pfizer/BioNTech and Moderna vaccines received EUA authorization within a week of one another in December, 2020, while the Johnson & Johnson vaccine was authorized in the beginning of 2021.

- Pfizer/Bio-n-Tech, EUA authorization: Dec. 11, 2020, 2 dose regimen
- Moderna, EUA authorization: Dec. 18, 2020, 2 dose regimen
- J&J, EUA authorization: Feb. 11, 2021, only 1 dose needed

While the authorization of these three vaccines has been an incredible win for science and public health, many people still have concerns about the speed at which these vaccines were developed. In order to address these concerns, we'll review how exactly the COVID-19 vaccines were developed and the procedures in place to ensure their safety.

Slide 8:

Likely the most common source of myth and misinformation regarding the COVID-19 vaccine focuses on the speed at which these vaccines were developed, claiming there is no way that they can be safe. In order to debunk and explain this myth, we need to understand the full context of the situation.

The emergency situation of the pandemic warranted an emergency response, but that does not mean that vaccine manufacturers bypassed safety protocols or did not perform adequate testing. Many manufacturers invested significant resources into quickly developing a vaccine for COVID-19. [2]

All vaccines in the United States go through rigorous testing before being authorized or approved. To receive emergency use authorization, the biopharmaceutical manufacturers must have followed at least

half of the study participants for at least two months after completing the vaccination series, and the vaccine must be proven safe and effective in that population. [2]

The Pfizer/BioNTecH vaccine was the first authorized vaccine for emergency use by the FDA on December 11, 2020. This vaccine was studied in approximately 43,000 people prior to its authorization.

The Moderna vaccine was authorized for emergency use by the FDA on December 18, 2020. Moderna enrolled more than 30,000 participants in their Phase 3 clinical trial.

The Johnson and Johnson vaccine was authorized for emergency use by the FDA on February 11, 2021. Almost 40,000 participants were included in the Phase 3 clinical trial.

While the public health community and government have celebrated these authorizations as historic successes, many communities heard the message that these vaccines were created faster than ever before, and wondered how could they trust that they really were safe? Simply explaining what the Emergency Use Authorization is may not be enough to ease an individual's concerns. One of the most common myths about the COVID-19 vaccines are that they are not safe because they were developed too quickly. In order to communicate the ways in which we know these vaccines are both safe and effective, we need to understand the research history of these vaccines, the role of Operation Warp Speed, and review detailed data from the clinical trials.

Slide 9:

Before the COVID-19 pandemic, vaccine development could take 10 years or longer from concept to approval. However, the Pfizer, Moderna, and Johnson & Johnson COVID-19 vaccines have all been developed in less than a year. How was this possible, and how do we know that these vaccines are safe?

The most significant factor in the accelerated development timelines of the COVID-19 vaccines was the significant global public health threat posed by the SARS-Cov-2 virus. As scientists discovered the virus in late 2019, and received its genetic information in January 2020, it was imperative they move quickly to provide immunization options to the public. With COVID-19 now the largest public health priority, governments and the private sector alike allocated significant funding to finding a suitable vaccine.[3] This led to hundreds of vaccine candidates being tested simultaneously, which is not the norm. This diverse pool of vaccine candidates allowed for more options and ultimately resulted in several strong vaccines that succeeded in all phases of clinical trials.[4]

In the United States, the federal government established enough federal funding to help develop and mobilize approved vaccines as quickly as possible to American citizens, this was known as Operation Warp Speed. To accelerate development while maintaining standards for safety and efficacy, Operation Warp Speed has been selecting the most promising countermeasure candidates and providing coordinated government support.[4,5] Protocols for the demonstration of safety and efficacy were aligned, which helped allow the trials to proceed more quickly. The protocols for the trials are overseen by the federal government, as opposed to traditional public-private partnerships, in which pharmaceutical companies decide on their own protocols. Rather than eliminating steps from traditional development timelines, steps have occurred simultaneously, such as starting manufacturing of the vaccine at industrial scale well before the demonstration of vaccine efficacy and safety, as happens normally. [4,5] This increases the financial risk, but not the product risk as clinical trials are not skipped, and safety data is still required to be reviewed before final authorization and release of any manufactured products.

Another factor that aided in the rapid timeline of the COVID-19 vaccines involves existing research of both other coronaviruses and mRNA technology in other vaccines.[6]

Upon analysis of the virus' genome sequence, scientists realized that the coronavirus' genetic code was very similar to that of another coronavirus, Severe acute respiratory syndrome (SARS), which they had already encountered from the outbreak that took place in 2003.[7] Although a SARS vaccine was never completed due to the virus's spread being contained and fizzling out, scientists had a good idea of the vaccine strategy based on previous SARS vaccine research.

Additionally, scientists had been working on developing mRNA technology to use in vaccines for over 10 years prior to COVID-19.[5] Both the Pfizer/BioNTech and Moderna vaccines deliver the virus's spike protein via messenger RNA (mRNA), which is how the body's immune response is triggered. Researchers have been testing mRNA technology to develop vaccines for other viruses such as Zika, HIV, rabies, and influenza. mRNA vaccines can be developed in a laboratory using a DNA template (that can be standardized and scaled up), lending to a faster vaccine development process than traditional methods.[6] It is free from animal origin and synthesized without preservatives.[6] Other benefits of using this technology includes use of a non-infectious element and the potential for targeting multiple diseases. While some may hear mRNA referred to as "new technology", it has been around for more than a decade, is familiar to researchers, and has been studied in humans outside of COVID-19 vaccine clinical trials.

Think of it as a vaccine development cheat sheet. A combination of cutting-edge technology, existing research, and funding accelerated the vaccine development timeline and FDA review process, while still ensuring vaccine safety and efficacy were achieved.

Slide 10:

Before we review the data from the United States on the number of COVID-19 vaccines that have been administered, let's go over the basics of each vaccine. As you can see in this comparison chart, The Pfizer/ BioNTech vaccine has been authorized for individuals 12 and older, while both the Moderna and Johnson and Johnson vaccines have been authorized for those 18 and older.[6]

Both the Pfizer and Moderna vaccines are a two-dose series, with the second dose for Pfizer being administered 21 days after the first and Moderna's second dose being administered 28 days later. The Johnson and Johnson vaccine is only a one-dose series, which is a benefit when vaccinating mass amounts of people. [6]

The overall efficacy of preventing a COVID-19 illness varies across the three vaccines. Based on clinical trials, the Pfizer vaccine was 95% effective at preventing COVID-19 and the Moderna vaccine was 94.1% effective. The Johnson and Johnson vaccine was 72% effective at preventing a COVID-19 illness, however it is important to point out that trials for this vaccine included several of the new variants of the COVID-19 virus not present in the Pfizer and Moderna trials. [6]

The fourth row of this table is arguably the most important and should be used as a main point of communication when educating the public. When it came to preventing death from COVID-19, all three vaccines proved to be 100% effective in clinical trials. Additionally, both Pfizer and Moderna were 100% effective at preventing hospitalization from COVID-19 and Johnson and Johnson was 93% effective. While preventing any COVID-19 illness is the ultimate goal of a vaccination campaign, preventing serious

illness that results in hospitalization or death should be the number one priority, and all three of these vaccines do just that.[6]

Finally, in the last row we see the most common vaccine reactions reported from each vaccine with common themes of pain at injection site, fatigue, headaches, and muscle aches.

Slide 11:

A final piece of information that may help boost confidence for individuals still hesitant about receiving the COVID-19 vaccine is the current number of doses administered in the United States.

As of June 30th, 2021 over 326 million COVID-19 vaccine doses have been administered. This translates to over 154 million people being fully vaccinated, which is 46.7% of the total population. Additionally, over 180 million people have received at least one dose, which is 54.4% of the total population.[8]

Among those aged 65 years and older, 78% are considered fully vaccinated.[8] As older individuals were at the most increased risk of COVID-19 complications, this is an important statistic.

With this many people having received their COVID-19 vaccines, we also have an incredible amount of safety data to add to what was available from the clinical trials. After vaccinating millions of Americans, three serious adverse events have been found to be associated with the COVID-19 vaccines, however they are all extremely rare.

Anaphylaxis, or a severe allergic reaction, has occurred in approximately 2 to 5 people per million vaccinated in the United States. Allergic reactions can occur after any vaccination and were also noted as a possible reaction during clinical trials. Individuals with a history of allergic reactions are encouraged to speak with their medical provider first prior to receiving the COVID-19 vaccines.[9]

Finally, two serious but rare adverse events that have received significant media coverage are thrombosis with thrombocytopenia syndrome (TTS) and myocarditis and pericarditis. TTS is a rare blood clot condition and has been reported after receiving the Johnson & Johnson vaccine, particularly in women younger than 50. We will talk further on the next slide about the condition and how it was detected.[9]

Myocarditis and pericarditis are conditions that occur with inflammation of the heart and have been reported following vaccination with mRNA COVID-19 vaccines, particularly among people ages 30 and younger. It is important to note that while both of these conditions are serious, they are incredibly rare. Out of the millions of people vaccinated, 38 confirmed cases of TTS have been detected and 518 confirmed cases of myocarditis or pericarditis have been reported.[9] On the next slide we will talk further about the TTS and Johnson & Johnson reports, and also give some detail about how the CDC and FDA are tracking adverse event reports to ensure vaccine safety.

Slide 12:

Before we address some common myths about the COVID-19 vaccines, we need to review an important update that occurred with the Johnson & Johnson vaccine in April of 2021.

In early April, several reports of a rare blood clot condition, thrombosis with thrombocytopenia syndrome, referred to as TTS, were detected via VAERS, the Vaccine Adverse Event Reporting System.

All reported cases of TTS occurred within 2 weeks of individuals receiving the Johnson & Johnson COVID-19 vaccine. All reported cases occurred among women ages 18 – 59 years.[10,11]

Out of an abundance of caution, the CDC and FDA recommended a temporary pause of the J&J vaccine on April 13th while experts worked to review the data. On April 23rd, after reviewing all available data, the pause was lifted by the CDC and FDA after determining that the vaccine's known and potential benefits outweigh its known and potential risks.[10]

As of June 28, 2021, more than 12.3 million doses of Johnson & Johnson's COVID-19 vaccine have been administered in the United States. Through continuous safety monitoring, 38 total cases of TTS have been identified among individuals who had received the J&J COVID-19 vaccine, the majority of whom were women between ages 18 – 59.[9]

Currently, women 50 years and younger may still receive the J&J vaccine but should be aware of this rare but adverse event risk.

While media reports of the pause may have created fear and hesitancy among the general public, the J&J pause is a wonderful example of our vaccine safety monitoring systems working exactly as they should. VAERS, the system that detected the original cases of TTS, is available to medical professionals and the general public alike, and accepts any adverse event reports following vaccination, whether they are ultimately related or not. It is a great tool to first detect any initial concerns that then may warrant further investigation, such as the reports of TTS following the J&J vaccine.

Slide 13:

Another common myth, especially with the authorization of multiple vaccines, is that some COVID-19 vaccines are "better" than others. This argument has really taken hold with the authorization of Johnson & Johnson's one-dose vaccine, as its overall efficacy numbers from its clinical trials are lower than both Pfizer and Moderna's. This is a myth that needs to be debunked so people are not discouraged by the specific type of vaccine they may be offered – any COVID-19 vaccine is better than none.

Remember, while the Johnson & Johnson vaccine had an overall efficacy of preventing a COVID-19 illness of 72% (compared to 95% and 94.1% for Pfizer and Moderna), that same vaccine was also found to be 100% effective at preventing a death from COVID-19 in clinical trials, which is the ultimate goal.[6] Individuals should not be too concerned about which vaccine they receive. Medical experts and public health leaders agree – if you are offered the COVID-19 vaccine, don't turn down your best shot at protection against COVID-19!

Slide 14:

Both the Pfizer and Moderna COVID-19 vaccines are messenger ribonucleic acid (mRNA) vaccines. mRNA isn't the same as DNA, but the term mRNA has led to some confusion in the general public, with the myth that the vaccine can alter your DNA proliferating. According to the CDC, mRNA vaccines work by instructing cells in the body how to make a protein that triggers an immune response to COVID-19.[12] Injecting mRNA into your body will not interact or do anything to the DNA of your cells because the

mRNA never enters the nucleus of the cell where DNA is kept. Human cells break down and get rid of the mRNA soon after they have finished using the instructions.

Slide 15:

Per the CDC, neither the Pfizer nor Moderna vaccines were developed with the live virus that causes COVID-19.[13] Both vaccines only deliver a portion of genetic material, the mRNA, from a part of the virus's spike protein. This information only allows the body to recognize and build an immune response to the spike protein and does not allow for replication of the whole COVID-19 virus itself. Similarly, the Johnson & Johnson vaccine also does not use a live portion of the COVID-19 virus. Like Pfizer and Moderna's vaccines, the J&J vaccine takes a small portion of genetic material used to create just a portion of the virus's spike protein. This genetic material is delivered via a portion of the common cold virus that is unable to replicate in the human body.

Therefore, the COVID-19 vaccine cannot make you sick with the SARS-Cov-2 virus. If an individual tests positive for COVID-19 after taking the vaccine, they were most likely infected right before or right after the time of vaccination. The vaccine would not have had a chance to provide enough of an immune response at that particular time.

It is important to note, that some individuals may feel unwell for a short period following administration of the vaccine. Common side effects reported by participants in clinical trials, as well as the general public, include pain at the injection site, mild fevers, headaches, fatigue, and body aches. While these side effects may be uncomfortable, they are all short term and should subside within a day or two of receiving the vaccine. Individuals should be prepared for possible side effects and understand that they are a side effect of the body's immune system working hard to build a response and antibodies to COVID-19, not symptoms of a true COVID-19 illness.

Slide 16:

Some individuals who have already contracted COVID-19 may not believe they still need to be vaccinated. This is particularly important in populations where large portions of people have already had COVID-19 (such as long-term care facilities or other health care settings). Currently, the CDC still recommends individuals with a prior COVID-19 illness receive the vaccine.[14] This is important for several reasons.

First, it is unknown how long natural immunity from a COVID-19 illness offers protection. Additionally, every person's own immune response is unique, and huge discrepancies in antibody numbers have been observed in people with a prior COVID-19 illness. What we do know, is that the antibody levels generated by a COVID-19 vaccine are far greater than what has been observed from any natural infection, meaning the vaccines offer the very best form of protection.[14] While it is rare, scientists believe it is still possible for someone who already had COVID-19 to become reinfected. As new variants of COVID-19 continue to appear and spread, the chances for reinfection only increase.

If someone has had COVID-19 they need to be fully recovered before receiving the vaccine, according to current CDC guidelines. Additionally, anyone who has received monoclonal antibodies or convalescent plasma as treatment for COVID-19 should wait 90 days before receiving a vaccine.[14]

Slide 17:

People who are immunocompromised may not be able to receive other types of vaccines, particularly those with weakened versions of the virus (sometimes referred to as live virus vaccines) which may be too dangerous for compromised immune systems. However, all 3 currently authorized vaccines for COVID-19 are available to individuals who are immunocompromised.[6] This is in part due to the type of technology used by the COVID-19 vaccines. Both the Pfizer and Moderna vaccines use messenger RNA to deliver a portion of the spike protein's genetic code, which instruct our bodies to illicit an immune response for COVID-19. This is not the same as being infected with COVID-19 and will not actually result in giving the virus to an individual. Additionally, the Johnson and Johnson vaccine uses viral vector technology, meaning it uses a virus common to adults (similar to the common cold) to deliver the genetic material of the spike protein into the cells and illicit an immune response. Just like mRNA vaccines, these viral vector vaccines will not infect an individual with COVID-19 as it is not the actual virus being introduced, rather just a small amount of genetic information to instruct cells on how to fight the virus. Because of this, there are no current restrictions for individuals who are immunocompromised when it comes to the COVID-19 vaccines.[15] However, the CDC encourages individuals to always consult with their medical provider first.

While most individuals who are immunocompromised may receive the COVID-19 vaccines, it is important to still talk closely with your medical provider about your own personal risk, as the immune response for everyone is different, and may be reduced for someone with a weaker immune system. Individuals who are immunocompromised were not included in the clinical trials for COVID-19 vaccines, so there is less data to review when it comes to vaccine efficacy. This means that while someone who is immunocompromised may be able to receive the COVID-19 vaccine, it may be less effective for them as their immune system may not react as strongly.[15] Continuing to work with your medical provider to understand individual risk and continue mitigation strategies, such as masking and social distancing, may be necessary, particularly as community vaccination levels remain low.

Slide 18:

One of the more outlandish myths about the COVID-19 is also the most straightforward to explain – the COVID-19 vaccine does NOT contain a microchip or any tracking devices.

The vaccine does not contain a tracking microchip planted by the government or manufacturers. In fact, the ingredients of the Moderna COVID-19 vaccine only include the following: mRNA, lipids, tromethamine, tromethamine hydrochloride (both used to treat electrolyte imbalance), acetic acid, sodium acetate (salt), and sucrose (sugar).[16]

The Pfizer vaccine contains very similar ingredients to the Moderna vaccine: mRNA, lipids, four types of salt, and sucrose (sugar).[17]

Finally, the ingredients of the Johnson and Johnson vaccine include the adenovirus used to deliver the spike protein's genetic material, acid and acid stabilizers, and salts.[18]

Based on the official ingredient lists provided by the FDA, none of the COVID-19 vaccines have the capability to implant a microchip and invade one’s privacy.

Additionally, while the COVID-19 vaccines have been described as using “nano technology”, which may sound highly technical or like something from a science fiction story, it’s simply another way of

describing the technology used in the vaccines. In this case, “nano” means “small” (either the mRNA or adenovirus) and technology is simply synonymous with “something we’ve created”.

Slide 19:

Another common myth that requires explanation and nuance, is related to whether or not the COVID-19 vaccines contain fetal cells. This is particularly important to address in certain religious communities. First, it must be stated that none of these vaccines actually contain fetal cells – rather, they have been used to grow and test vaccines in laboratory settings.[19]

Fetal cells have been used in the past to develop and test numerous vaccines, including vaccines for rabies, Hepatitis A, rubella, and varicella (chickenpox). The cells used to test the vaccines are what is known as "fibroblast cells". Fibroblast cells are what the body uses to grow and hold connective tissues, such as skin, together. The fibroblast cells used to grow and develop these vaccines have all been derived from the same two terminations that occurred in the early 1960s.[19] These same cells continue to grow in the laboratory and there is no need for additional sources of fetal tissues today. Fetal cells have strengths for testing vaccines because they are more similar to human cells, rather than animal cells, and because they also have not experienced as many cell divisions as other types of human cells, allowing them to be used much longer for vaccine testing.[19]

The Johnson & Johnson COVID-19 vaccine used retinal cells for testing and development that were isolated from a terminated fetus in 1985, which is the main root of this specific bit of potential misinformation.[19] It is important to note that the use of fetal cells is crucial to testing many vaccines, however it can be a highly sensitive topic for many individuals. Explaining the history of when these cells were obtained is an important component of breaking down this concern, as these cells were obtained decades ago and come from a small number of terminations. Still, religious groups such as the Catholic Church have raised concerns about the Johnson and Johnson COVID-19 specifically, which has amplified questions for some people.

The U.S. Conference of Catholic Bishops has made an official statement that encourages Catholics to receive either the Pfizer or Moderna vaccines, if they have a choice.[20] However, both the Vatican and U.S. Conference of Catholic Bishops state that there is no reason to deny the Johnson and Johnson vaccine, in the event that the Pfizer or Moderna vaccines are not a choice.[20] Ultimately, this is explained as a morally just choice as COVID-19 is a very serious disease and life-saving treatments should not be denied. According to the U.S. Conference of Catholic Bishops, though none of the vaccines are free from any research connection to fetal cells, "in this case the connection is very remote from the initial evil of the abortion.“[20]

This myth and issue is a very nuanced one, and that is important to remember when speaking with individuals. However, official church stances should serve as a confidence-booster when speaking with the community, as well as an explanation of the history of these cells to help individuals understand how removed from modern day they truly are. Finally, explaining that the vaccines do not contain the fetal cells, but instead are used for testing purposes, may help to alleviate any remaining concerns.

Slide 20:

Another common myth is that people who are pregnant or breastfeeding cannot receive the COVID-19 vaccine. While pregnant individuals were excluded from the original clinical trials for these vaccines,

initial guidance from the CDC and the American College of Obstetricians and Gynecologists, known as ACOG, in December of 2020 stated that COVID-19 vaccines should not be withheld from pregnant individuals.[21,22] This initial guidance was based on an understanding of the risk a COVID-19 illness poses to a pregnant person, the level of COVID-19 currently spreading in the community, and an understanding of the biologic functions of vaccines on pregnancy. While the clinical trials did not include pregnant individuals, each of the three vaccine manufacturers with an authorized COVID-19 vaccine completed what is known as a DART study, or Data from Developmental and Reproductive Toxicity study. These studies use animals, specifically rats and rabbits, to study if the vaccine has any impact on fertility.[21,22] Researchers monitor factors such as female fertility, fetal/embryonal development, and postnatal development. None of the DART studies conducted by Pfizer, Moderna, and Johnson & Johnson revealed concerns related to fertility and the COVID-19 vaccines.

In light of the limited data yet significant health risks posed by COVID-19 to pregnancy, the CDC, FDA and ACOG's guidance all uniformly recommend that any pregnant or lactating people speak with their health care provider and make their own informed decision about receiving the vaccine.[21,22]

Since the initial authorization of the COVID-19 vaccines, pregnant and breastfeeding people have received the vaccine, and in many states like Texas, have been prioritized in the vaccine distribution process. This is because symptomatic individuals who contract COVID-19 while pregnant have been shown to be at greater risk for negative health outcomes, compared to non-pregnant individuals. The CDC is currently tracking pregnant or lactating people who receive the vaccine via their V-Safe Pregnancy Safety Registry. As of June 7th, 2021, the CDC shared that over 123,000 pregnancies have been reported to the system and no safety signals have been detected, though outcomes will continue to be tracked into the future.[22]

Finally, some initial studies have shown strong evidence that breastfeeding individuals who receive the vaccine may even pass protecting antibodies along to their infants.[23]

Slide 21:

A second myth related to reproductive health is that receiving the COVID-19 vaccine will make women infertile. Currently, there is no evidence to support this claim and all individuals, including those actively trying to become pregnant, are recommended to receive the COVID-19 vaccine.[21,22]

Based on the biologic mechanism of the COVID-19 vaccines and safety data shown in non-pregnant individuals, neither the mRNA COVID-19 vaccines or the viral vector vaccine are a cause of infertility.[24] None of the vaccines allow the virus to replicate in the body or alter one's DNA.

Additionally, while the sample size is too small for any conclusions to be drawn, a small number of women in the vaccine clinical trials did become unexpectedly pregnant, which may offer additional assurances that these vaccines do not impact fertility.[24]

Slide 22:

Now that we've reviewed the data from the COVID-19 vaccines and provided information to clear up some myths that may cause hesitancy, we'll shift our focus to discussing the reasons why it's important to get vaccinated.

Slide 23:

A common slogan that is being used to encourage people to receive the COVID-19 vaccine is simple and straightforward – when it comes to protecting yourself against COVID-19, take your best shot!

The importance of getting vaccinated against COVID-19 cannot be understated. Individuals should be encouraged to get vaccinated as it is the very best form of protection against COVID-19. The protection from these vaccines has been shown to significantly reduce an individual's risk for a COVID-19 illness, but most importantly, severe illness that can lead to either hospitalization or death. Preventing severe illness is important beyond preventing death, as we have seen large numbers of COVID-19 survivors left with significant health complications following illness, which include long-term side effects such as heart issues or lung scarring.

While individuals who are at greater risk for poor health outcomes are the top priority for vaccination, COVID-19 has shown to be a serious illness for anyone, regardless of age or health status. That is why it is advised that everyone who is eligible to receive a COVID-19 vaccine should do so when it is offered to them.

Slide 24:

As we continue to vaccinate more individuals and collect additional data, new evidence shows that these vaccines are both safe and incredibly effective in real world settings, which may help alleviate concerns among individuals who are still hesitant about receiving the vaccine.

Published by the CDC in late March of 2021, the HEROES-RECOVER study followed 3,950 health care workers, first responders, and other essential workers for 13 weeks following vaccination against COVID-19. Participants were tested weekly for COVID-19. The study found that in real-world conditions, individuals who had been vaccinated were 90% less likely to be infected with COVID-19.[25] This study is positive evidence that the COVID-19 vaccines are effective outside of controlled, clinical trial settings.

Additionally, vaccine manufactures continue to monitor clinical trial participants after the EUA and Pfizer was the first company to release data beyond the three-month period in April of 2021. Pfizer's data showed that the vaccine continued to be highly effective at preventing infection and serious disease 6 months following vaccination, including against some of the virus's newer strains. Additionally, no major safety concerns were detected in the 6-month time frame.[26]

Slide 25:

Zooming out the focus from the individual, it's important that we also get a large portion of the eligible population vaccinated in order to achieve herd immunity. Herd immunity (sometimes also referred to as community immunity) occurs when most of the population is immune to an infectious disease, either through natural infection or vaccination efforts. Achieving herd immunity is essential to stopping the spread of an infectious disease, which is important as there will always be individuals who are high risk

for serious health complications but who also cannot be vaccinated.[27] These individuals rely on the collective immunity of their community to protect them.

The level to achieve herd immunity is different for every infectious disease and depends greatly on how contagious the disease is. We have achieved herd immunity for other infectious diseases such as measles and polio, primarily through vaccination efforts. Estimates for the necessary levels for herd immunity for COVID-19 vary greatly as we are still learning about the disease. It is generally accepted that a minimum level of herd immunity would need to be above 70% in order to live a pre-pandemic lifestyle and control the rate of infection.[27] However, this number could be higher, which is why everyone who is eligible is encouraged to get vaccinated, as it offers protection for the greater community.

One argument that comes up in the discussion of herd immunity involves letting the virus "run its course" or relying on natural infection to achieve herd immunity. As we've seen with COVID-19, this is not an ethical approach and one that would absolutely overwhelm the health care system, as has occurred during each of the previous peaks in cases. Relying on natural immunity would also lead to hundreds of thousands of avoidable deaths.

The race is on to achieve herd immunity from COVID-19 as we've seen multiple strains arise as the virus begins to mutate. Each new strain creates challenges to achieving herd immunity as our current vaccines may not be as effective at protecting against infection from these new strains. This is why vaccinating as many eligible individuals as quickly as possible is the ultimate goal.

Slide 26:

Understandably, everyone wants to know what life will look life after they receive the vaccine. The good news is that in many ways, receiving the COVID-19 vaccine is the first step to enjoying many aspects of our lives that have been dramatically altered in the last year.

Current CDC recommendations following vaccination apply to individuals who are considered fully vaccinated. It is important to note that an individual is not considered fully vaccinated until 2 weeks following their last dose, either the second dose for both the Pfizer and Moderna vaccines or the first and only dose for the Johnson and Johnson vaccine.[28] Until an individual reaches the fully vaccinated time period, they are advised to continue all mitigation efforts.

Once an individual is fully vaccinated however, most activities are considered much less risky and are now being advised by the CDC. It's important to note that this guidance has evolved over time and is current as of June 2021. As we learn more about this pandemic, guidance may continue to change.

Currently, the CDC has advised that individuals who are fully vaccinated can safely do the following:[28]

1. Resume activities that you did prior to the pandemic
2. Resume activities without wearing a mask except where required by federal, state, local, and tribal laws or business and workplace requirements
3. You no longer need to get tested or self-quarantine before or after travel in the United States.

There are still many situations in which you may be required to provide a negative COVID-19 test, such

as certain international travel, and wear a mask, with is still a requirement on public transportation such as airplanes and trains. Additionally, many local institutions and private businesses may maintain their own COVID-19 requirements, even for those who have been vaccinated.

You may also feel most comfortable still wearing your mask in public places, which is completely okay. As not everyone can receive the COVID-19 vaccine, there may be those who still feel most comfortable wearing a mask, particularly as new variants of the virus spread. Even once vaccinated, it's important to pay attention to local mask requirements and be ready to accept new guidance from health authorities should the need arise.

Slide 27:

Knowing how to dispel myths and misinformation related to vaccines is important to addressing vaccine hesitancy. Whether you are speaking with a patient in a medical practice, a concerned parent as a school nurse, or a close friend or family member, everyone can help speak truth to vaccine myths.

Let's review some general guidelines to keep in mind, as well as learn a specific technique to use when addressing vaccine myths or when speaking with vaccine hesitant individuals.

Slide 28:

When dispelling vaccine misinformation or talking to vaccine hesitant individuals, it's important to keep several general things in mind.

First, be knowledgeable about the established science on the issue. Presenting strong evidence in a simple format that is not overly technical is essential to helping individuals understand the truth about vaccines. Again, not focusing so much on restating the myth is important here – the goal is to starve it of oxygen. Instead, double-down on evidence-based science to help refute the claim.[28]

While it's important to come prepared with the proper science and information, it is just as, if not more important to balance those facts with empathy and understanding. While we'd like to believe that individuals make decisions about vaccines based on hard science and data alone, we have to acknowledge that there is an emotional element at play in these decisions. A dismissive tone or attitude to an individual's emotional concerns about vaccines is unlikely to put their mind at ease or reduce vaccine hesitancy. A gentle balance must be struck to ensure the delivery of evidence-based science is not done in a way that ignores the warranted emotions of an individual.[29]Additionally, vaccine hesitation and fears may be different based on an individual's own cultural background and it is important to keep this in mind. An individual's age, race, ethnicity, native language, religion, and immigration status may all influence their beliefs and comfort level with the healthcare system.[29]

Understanding the unique perspective of each individual you speak to will help you to tailor your message to be the most effective.

Tailoring your message to best suit the specific audience you are engaging with is also crucial. Detailed science and journal articles are unlikely to convince most people – you will need to explain the science in a way that people can relate to their everyday lives.

Slide 29:

One approach to dispelling misinformation that we will focus on is called motivational interviewing. Motivational interviewing is a counseling method that helps people resolve ambivalent feelings and insecurities to find the internal motivation they need to change their behavior.[30] The tools of motivational interviewing can be used to steer conversations in a conductive manner, so an individual feels motivated to make a behavior change on their own.

Motivational interviewing has been found to be a great approach to use when having conversations with vaccine hesitant individuals. Let's look at some of the specific aspects of motivational interviewing and discuss how they can be used when addressing vaccine hesitancy.

Slide 30:

The goal of motivational interviewing is not to necessarily resolve an individual's problems – the goal is to allow the individual to become more introspective and help resolve their ambivalence. With this approach they will have a better chance of finding an acceptable resolution on their own.[31]

The interactive OARS framework highlights essential aspects of motivational interviewing that include; asking open-ended questions, giving affirmations, listening in a reflective manner, and summarizing what someone says. Although this model is meant to be patient-centered, one may also use the strategies when speaking to friends, family members, or anyone else who may be hesitant. It is vital to use verbal and non-verbal skills, as well as having a culturally sensitive mindset when addressing concerns.[32]

Next, we'll go over each aspect of OARS in detail, along with examples of each.

Slide 31:

It is important to ask open-ended questions, rather than "yes" or "no" questions. It gives the person the opportunity to respond freely without the pressure or fear of being right or wrong.[31] These type of questions allow the patient to tell you their story, and also allows you to gain a better understanding of their personal happenings. These answers often reveal the individual's inner most thoughts, feelings, hopes, and experiences.[32]

Here are some open-ended question examples:

- What brings you in the clinic today?
- Tell me more about why you are hesitant to vaccinate your child…
- Who have you talked to about vaccines?
- What questions do you have for me?
- Where do you feel comfortable getting information about vaccines?

Slide 32:

Expressing empathy towards the person's concerns is a powerful tool. When you give affirmations you build rapport and encourage the individual's strengths and abilities by building on their level of self-efficacy (or the belief in one's own abilities). Keep in mind, the key to affirming is to share a belief you have about the individual so they are responsible for their own decision making.[31]

Some affirmation examples include:[32]

- You're obviously really good at…

- You handled yourself really well in that situation.
- It sounds like you've been very thoughtful about your decision.
- I appreciate that you are willing to talk to me about vaccines.

Slide 33:

Oftentimes, concerned individuals have the answers within themselves and your role as the healthcare professional or as a knowledgeable source of accurate information is to simply help them realize those answers. Reflective listening is a technique when you listen, observe, and reflect on what the person shares with you. You should reflect on the words they use and pay close attention to their behavior and tone when they speak. It is also essential to acknowledge the person's mood. When you reflect their words and/or emotions, the individual has a chance to hear your perceptions and experience of what they shared.[31]

Some examples of reflective listening may play out as follows:[32]

- You seem frustrated when you talk about vaccines…
- I noticed you smiled when you said that…
- You mentioned that you won't vaccinate your child because you aren't sure of the ingredients. That seems to make these check-up appointments very stressful for you.

Slide 34:

Summaries are a great way to bring a conversation to a close. You can keep the conversation moving by summarizing the dialogue exchange between you and the individual from the beginning, middle, and end. Be sure to check the understanding of their goals and in turn, confirm the individual has understanding for the way ahead. This is the perfect time to correct any misunderstandings or touch on anything that may have been missed.[33]

There are a few different ways to summarize a visit: a collective summary, a linking summary, and a transitional summary.

Here are some examples:[32]

A collective summary – "So what I'm hearing is…" A collective summary is a more generic statement referring to a series of interrelated items that you and the individual talked about during the conversation.

A linking summary – "When you first came in you said you wanted to talk to your wife about allowing your child to get vaccinated…would you like to talk more about how to do that?" A linking summary is when the individual says something that stands out to you during the conversation and is linked back towards the end – in which you address the statement that stood out to you and provide suggestions for a resolution upon request.

A transitional summary – "We've just gone over the next time you are scheduled to bring in your child for their booster. Remember, we're always here to help if you have concerns. Do you have any other questions before you leave today?" A transitional summary is when you reflect on the purpose of the conversation and signal a shift for something new.

The four techniques of motivational interviewing that we just discussed are critical in communicating effectively and empathetically with the concerned individual. It allows them to become aware in their hesitations and increase their motivation to change.

Slide 35:

Now we'll use the techniques from OARS to go through a scenario between a nurse and a patient about the patient's hesitation from misinformation on social media about the COVID-19 vaccine.

1. The nurse asks the patient an open-ended question:

Nurse: How can I help you today?

Patient: I'm scheduled to get my COVID-19 vaccine today, but I really don't know if its safe. I saw on Facebook that it could change my DNA.

2: Next, the nurse affirms the patient.

Nurse: It is clear that you care about what you put in your body and that is very important. However, I can assure you that the vaccine is safe and does not change your genetic make-up. According to the CDC, *explains why vaccines are safe"

Patient: Okay, thanks for explaining why its safe. It's just really scary. *discusses fear of how the vaccine actually works*

The nurse carefully listens to the patient's fear about how the vaccine works in the body.

Slide 36:

3. Then, the nurse reflects on the patient's emotional response when expressing their concerns.

Nurse: I noticed that your voice sounded shaky when you talked about your fear of how the vaccine actually works – and that's okay. Let me explain the process…

Patient: Thanks for explaining the process. That makes me feel much better.

4. In this scenario, the nurse uses a transitional summary to ease the patient's safety concerns about taking the vaccine.

Nurse: We've just gone over why vaccines are safe and how the COVID-19 vaccine works in your body. Remember, we're always here to help if you have additional concerns. Do you have any other questions before we administer the vaccine?

Patient: No, I appreciate you breaking it down for me. I think I'm ready to take it.

Again, this was an extremely simplified scenario highlighting how to use the OARS when speaking to a patient. Not all interactions will play out with such ease or in this type of setting. Motivational

interviewing helps the healthcare provider, friend, or family member build a trusting rapport with the individual they're speaking with. It is also a great way to help individuals identify their personal beliefs and feelings in order to assist in developing a new outlook on their initial hesitations or concerns.

Slide 37:

Now we'll share some helpful resources that you can refer to when seeking additional information about the COVID-19 vaccines.

Slide 38:

The first resource listed is the CDC's main COVID-19 page. This page is the best source for any information related to COVID-19, including symptoms of illness, vaccine information, case data, and recommendations for different settings including schools, healthcare, and work environments.

Next, is the CDC's "Vaccines for COVID-19" page, which offers the most thorough information about all of the COVID-19 vaccines, including safety data, how to find a vaccine, and what you can do after you've been vaccinated.

As our knowledge and understanding of the pandemic continues to evolve and change, referring to the CDC is always encouraged as recommendations may change and adapt over time.

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As our knowledge and understanding of the pandemic continues to evolve and change, referring to the CDC is always encouraged as recommendations may change and adapt over time.

Slide 40:

Be sure to follow us on Twitter, Facebook, Instagram, and LinkedIn.

Also, if you'd like to stay updated on the latest information from The Immunization Partnership sign up for our alerts at www.immunizeusa.org.

Slide 41:

Here are the references for today's presentation.

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Slide 42:

If you have any questions about this presentation, please reach out to Ashley Beale or Rachel Walker at The Immunization Partnership. Thank you for listening.