



## **WEEKLY EDITION**

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## LIVE EXPERT PANEL: HOW TO WIN OVER VACCINE SKEPTICS

HOW IS THE VACCINATION EFFORT GOING? WHAT CAN WE DO TO WIN OVER VACCINE SKEPTICS? HOW ARE THE RECENT CHANGES TO THE MASK RECOMMENDATIONS AFFECTING COMPLIANCE? HOW IS THE VACCINATION OF CHILDREN GOING? AS CASES CONTINUE AT CONCERNING LEVELS IN MICHIGAN, FLORIDA, TEXAS, AND OTHER PARTS OF THE WORLD SUCH AS INDIA, DOES THE THREAT OF MUTATION AND VACCINE ESCAPE INCREASE?

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Live Expert Panel: Melanie Swift, M.D., M.P.H., Occupational Medicine Specialist and Internist, Mayo Clinic. Swift is co-chair of the COVID-19 Vaccine Allocation and Distribution Work Group, Mayo Clinic.

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Thom: Hello, and welcome to this Newswise Live Expert panel. Today we are talking about winning over vaccine skeptics and other topics related to the current state of the Covid pandemic. We want to ask how the vaccination effort is going as well as what are some of the strategies for winning over vaccine skeptics and getting maximum participation and immunization. As cases have continued to concerning levels in many states such as Florida, Texas, and Michigan as well other parts of the world such as India where they are having catastrophic numbers, we wonder if there is an answer to the threat of vaccine escape and the ability for us at least in the US to reach some level approaching herd immunity. We have with us two panelists; I want to introduce first Dr. Melanie Swift. Dr. Swift is co-chair of the Covid-19 vaccine allocation and distribution workgroup at the male clinic. And we also have with us Dr. Christie Alexander, who is an Associate Professor at Florida state university college of medicine. Dr. Alexander, I will start with you: as a family physician, what kind of questions are you hearing behind people's vaccine hesitancy and what you feel like we can learn from what you are hearing from patients.

**Dr. Alexander**: I hear a lot of things about vaccine hesitancy and as a family physician we see all ages, anybody who is capable and able to have vaccine right now we see all of these people and I think some of the biggest things that we are hearing have to do with just how quickly they feel the vaccine was made – although we in science know that this is been a long time coming so that's one thing that I hear it's just so quick, I want to see what happens, I want to see you know how other people feel when they get it – that's sort of thing. The other thing I hear a lot is fear of the side-effects there been a lot of talk about – from people like me who have got in the vaccine and the side effects I have experienced or others have experienced and that fear of feeling really yucky for a few days after getting the vaccine and not understanding that's the hump keep you from getting so sick from Covid itself, so there's that.

There is the idea that they don't want to they feel like they were guinea pigs and not willing to be the guinea pig in the process and a just feeling like again – that goes along with the rush they feel how quickly the vaccine was made and in and of itself – and then very few and far between do I personally hear the conspiracy theories of their inserting genetic materials into my system and thing like that. I don't hear that as much as the other fears and there is always the few people that say well I don't get a flu vaccine why would I get this vaccine – something as simple as that sometimes is the message that I am hearing

**Thom**: Thank you, Dr. Alexander, I want to go ahead to Dr. Swift and ask how does the vaccine push that were going nationally and globally compared to your experience in the past with efforts to vaccinate a large university community, the comparison of scaling that up – do you think that this going well or not?

**Dr. Swift**: it has been extremely different from anything I have experienced before I think the closest analogy would be the H1N1 vaccine that we had to push out for that pandemic, but compared to other mass campaigns such as the flu vaccine – this has been very protracted and very complicated and complicated in every way you can complicate something, right we have new vaccine platforms to educate people about and to understand. We have rationing of vaccines where we had many more people wanting vaccines than were prioritized to get it early on. We had confusion over vaccine supply, forecast we have lots of administration and storage challenges with these complex vaccines that have special handling requirements, different dosing intervals – it's all been very complex and actually, I am surprised we have done as well as we have given all those hurdles. It's encouraging to me to see that vaccine hesitancy rates are going down and we finally have enough vaccine really across a vast majority of the country for everyone who wants it and for those of us who have been trying to sort of being gatekeepers during the early stages from where we are trying to really ration vaccine for those highest-risk people, we knew this day would come that still bits a jarring to have vaccines sitting on our shelves and not have a line around the block.

So, it's really time that people who wanted vaccines have largely gotten it by now. And dealing with vaccine hesitancy is really now our biggest challenge.

**Thom**: Thank you, Dr. Swift. Dr. Alexander, I want to dig a little bit further into some comments that you made about the vaccine. So, objections that you're hearing from patients and see if we can clarify a little bit of at least a couple of them, this one about how quickly it was made and the idea of people getting the vaccines

now being sort of the guinea pigs. I feel like looking at the numbers a little bit would be of interest because it doesn't sound like really a rational or a logical argument. And that maybe is important to understand that it isn't based on rationality or logic. 10s of 1000s of subjects were part of the clinical trials correct. And that's, that's an extraordinarily large group to be done and being done simultaneously around the world. Can you tell us a little bit more about how that may be? If that were to speak to people, it's something that we can clarify.

**Dr. Alexander**: That is definitely something that I talk to patients about when they bring that up as a concern is that it is 10s of 1000s of people that came before the vaccine was even authorized for emergency use. All of those people had to pass through the various phases of trials in order for that vaccine to reach emergency use authorization by the FDA.

In addition to that, this particular vaccine, they've been working on variations of this for Coronavirus, and various other viruses for years, the thing that people have to realize is that when there's a global pandemic, everything gets put on hold. And this becomes the primary focus – this vaccine became the primary focus for everyone globally. So, when we talk about well, why was it taking so long beforehand? Well, because we were working on other things, other things were more important, this became the primary thing, the most important thing for the health of the world. And so, when you think about it that way, you cut through some of the red tape and some of those things so that everybody could get on the same page and work towards this common goal of getting past this pandemic and keeping people well. So I'll talk about that many times with patients if we get into it, talk about the 10s of 1000s that came before that the people who got really sick were those in the placebo group not in the vaccine arm and talking about that as well. And that I'll even use myself as the example and say, well, I've gotten it and many of your healthcare workers have received it. And we if anybody's being a guinea pig, we were – as we went first. So, you can kind of spin it. I don't like the word spin, but you can talk about it in lots of different ways so that the people that you're talking to have a better understanding of the process if that's the concern.

**Thom**: Thank you very much, Christy, just to follow up, then on this, what other advice might you give to someone you mentioned, for example, the side effects, right? You know, some people if they're really thinking this through, they say I can't afford to kind of be off my feet for two days, I've got a family to take care of, or

whatever it is, they're resisting getting the vaccine, because of that they almost would rather risk getting COVID itself on the hopes that it's an asymptomatic case. But that may not be the case. What's your advice? Or what would your response be to people that are sort of the thought process?

**Dr. Alexander**: Yeah, so we talk about what the common side effects are: headache, fatigue, body aches, muscle aches, feeling rundown, that it usually occurs, after that first 12 hours can last 36-48 hours or can last a couple of days. Talk about their schedules. So, is there an opportunity where maybe you could get in on a weekend or when you're not working just in case you have those side effects? Because not everybody has side effects. So that's the other piece of it. So, talking through, you know, logistics a little bit in regards to how can we help you get this vaccine and in addition, give them the information that if they have a side effect, they can take something like ibuprofen, Tylenol, Aleve, after getting, after and not before – getting the vaccine, should they experience a side effect like that, to prevent it or to – if they have the side effect to quell it? So, there's that option as well. So, there are ways to treat the side effects and then the icing on the cake of course is – if you were to get COVID there's no guarantee that you're not going to be one of the severely sick hospitalized people. This disease, this virus takes no prisoners, it has hospitalized children. It is hospitalized teenagers; it has hospitalized adults. And yeah, sure those over 60-65 are the most at risk. But we're all at risk because nobody understands how this virus works completely yet. In fact, it just affects everybody differently.

**Thom**: Thank you, Christy. I want to go next to Melanie, and we have a question from Craig at PBS. I'd like to invite Craig to ask Craig, I've enabled your audio if you can make it live and go ahead and ask your question.

**Craig**: Okay. I have two sorts of overlapping questions may be – targeted toward Christie, but either, and that is first of all, do you find that vaccine reticence is significant –

**Thom**: I'm sorry, Craig, we're getting feedback from your mic. For some reason, I need to mute it. So, I can relay your question.

Craig asked first is, is vaccine hesitancy seeming to be a significant issue among seniors? Melanie, have you seen that at all? Do you have anything to say?

**Dr. Swift**: Yeah, actually a very little vaccine hesitancy among seniors. For a number of reasons. I believe. When you look at what causes vaccine hesitancy, you can usually categorize the concerns into concerns about confidence, which is – is this vaccine safe? Was it well vetted? Do I trust the people who are recommending it, then there's complacency, which, as Christine was talking about, well, I don't think I'd get very sick from COVID? And then there's convenience or access.

So, for seniors, they tend to be more trusting in general authority figures and experts who have recommended the vaccine, they actually experience fewer side effects from these vaccines than younger people do. So, they're not getting horror stories about having high fevers and having so many side effects. And they're also pretty tough and willing to go through those few side effects they do get. But very importantly, I think it's been made incredibly clear the vulnerability of the elderly to COVID-related morbidity and mortality, our nursing home residents in the United States comprise a very small percentage of the population less than 10%. I think it's like 4% or less, but 80% of the COVID mortality in our state was long-term care residents. So, they don't have that sense of complacency. And because they were prioritized early, they have now had all access to vaccines. So, our vaccination rates in our over 65 for our county locally is over 90%. And we're seeing very high rates nationally.

**Thom**: Thank you, Melanie. Christie, I'm curious about your response to what's the feedback from seniors, and just building on some of Melanie's responses, correct me if this is incorrect, but the vaccines preventing hospitalizations and death is near or at 100%. And so, in spite of whatever discomfort there may be with the vaccine itself, it is at least ensuring that those seniors will survive it right. And so, what so, else are you able to provide advice for those folks?

**Dr. Alexander**: That's exactly right. And everything that Dr. Swift said, is that right on point, even here in Tallahassee, it's the same that people 65 and older were lining up when it became available, shutting down the phone systems trying to call in and get appointments, which is great, which was such a great response. And so yeah, we're not seeing that – and nationally, we're not seeing it either, just as she said, so, I think there was a good amount of good press about – this is why because of the fact that morbidity and mortality are so high in that age group and making keeping those folks safe. And yes, you're absolutely right. All of Pfizer, Moderna show 100% safety from severe illness, hospitalization, and death, all three. So, it's really fantastic. We've never seen vaccines like this – vaccines don't do this.

So, this is incredible information. And that's just one more thing that we can say to people like this is unheard of for vaccines. I know. We've heard we've talked about vaccines, all of our lives, getting the flu shot MMR, whatever tetanus shot, but none have been to this level of efficacy.

**Thom**: I heard a statistic just a few days ago that for the first three or four months of this year, zero of the hospitalizations or deaths were people who had been vaccinated. So that just that seems pretty clear cut. I wonder the second part of Craig's question for you, Christie, and then back to Melanie, what do you hear from these hardcore, anti-vaxxers? And conspiracy theorists? And what do you tell them?

**Dr. Alexander**: That's a different story – in some cases, you try – you meet them where they are you have discussions about why they think what they think they, whatever the comment is, whether it's – your DNA is getting changed, or they're not telling us really the truth about the side effects and people are dying from the vaccine. And there are a lot of conspiracy theories out there and just saying, I can give you the study that shows where that's not true, I can tell you the information. The problem is some people are so far into the zone of anti-vaccination, that you can't change their thinking on it. You can try to meet them where they are, you can repetitively have that conversation, which I think is important. It's worth trying to understand where they're coming from with it. That's the very basis of what we can do – is understand where they're coming from with it, and not try to fight them on it.

**Thom**: Melanie, what would your response be to any of these hardcore anti-vaxxers? In order to do our due diligence and try to convince any of them that may be convinced?

**Dr. Swift**: I absolutely agree. You have to understand what their particular concern is. And sometimes their concern is that they just believe this is wrong, and you can't move them. You can't. There's no fact-based information that can move that. I think it's really important that we remain humble about what's not known. I do think it's really important that we recognize that even though these clinical trials were huge, and these vaccines are incredibly effective and safe, there are things that we don't know yet. That's science, science is not a set of facts. Science is a process. And what people should be really reassured about is that, even though the clinical trials cannot find one in a million, or one in 5 million side effects, we have incredibly robust vaccine safety monitoring programs in our country, even after these vaccines are licensed. And so, the fact that there was the pause on the Johnson and Johnson vaccine that got some vaccine skeptics riled up to say,

I told you so — I told you there would be problems with this vaccine. But honestly, can you imagine another situation where six people could have something happen to them. and the entire country grinds to a halt? It's amazing that our monitoring system is so robust, we were able to detect those and find out and take all the steps we needed to do to find out were there any more cases? How can we understand this? How should we proceed forward in the safest and best way for the country? And we did that. And so, I think that's about humility. It's about transparency. It's about, recognizing, we don't know at all, it's not all set in stone. But our ears are open, our minds are open, we're continuing to be very concerned about doing the right thing. So that sometimes is a little bit helpful, because I think if so, they hear too much of just sort of the rhetoric of these vaccines are safe, they've been well studied, then they're not going to move, they're not going to listen. And then — but a lot of people I think are not that that far dug in, I think they are just truly hesitant, not anti-vax. They truly want to have some peer observation. They do want to see that people that they trust, and know, personally do well after vaccination, and especially when we start to roll out vaccines to children. I think we see that conservative, kind of stance around safety being the primary reason that people aren't yet quite ready to roll up their sleeve or their child's sleeve.

**Thom**: We have a question from Valerie at Very well Health. Valerie, I've enabled your audio if you'd like to ask this yourself.

**Valerie**: Oh, hi. Thank you. Um, do you think that and I'm addressing this to both Dr. Swift and Dr. Alexander, are older people more open to vaccination in general because they're old enough to have seen epidemics in the past such as, I mean, polio, measles, mumps, I mean, I'm older I remember the after-effects of polio. Some of my relatives walked with braces and such. Whereas younger people, it's like, the worst we've had was chickenpox. That kind of thing.

**Dr. Swift**: Absolutely. You know, and the health belief theory is – what is your perceived threat? What's your perceived vulnerability? And not only in the elderly population but in times when areas are being really heavily affected like India is right now there's going to be very little vaccine hesitancy in India right now because they're seeing the devastating effects. So, whether you're experiencing those effects in your community in your country, or you remember similar pandemics and epidemics from your childhood, that sense of perceived vulnerability and perceived threat will drive you to want to, so, take the vaccination. And you're absolutely

right, the anti-vax movement has been largely, ironically made possible by the success of childhood vaccines. We've eliminated a lot of these vaccines from most people's memory, and so they don't see the need to take a vaccine.

**Thom**: Christie, what would you add to that?

**Dr. Alexander**: I would agree wholeheartedly with Valerie that I think people who have gone through something, are more willing to protect themselves from the next thing. So, in this case, the pandemic and getting your vaccine because you were part of the polio scare or something along those lines. I think that holds a lot of value. And I think I'll add to that as well, that I think that might be part of the problem with those that are just complacent, as Melanie said earlier, not so much against it, just complacent. Well, it's not going to happen to me, and they don't have any real-life experience to touch that to say, Wow, my best friend got it. They have Long Haller syndrome now or something along those lines. They don't have anything to put it with. So, they don't think it'll ever happen to them. So, I think there's that sort of that feeling as well with the complacency component of vaccination.

**Thom**: I want to ask next, Christie, what are your thoughts about the CDC updating the mask guidelines? First, you know, what, what's your analysis of it? And can you clarify anything in terms of who should continue to wear mask? When and where? Should you continue to wear a mask? When is it safe not to? And any thoughts about anything that you maybe feel has been, the media has gotten wrong about this in the reporting, as well as the specter of the anti-vaxxers? Or at least the people not getting immunized? Potentially using this announcement to attack the credibility of the process as well as not comply?

**Dr. Alexander**: Yes, that's a lot of stuff there. So, you can unpack it little by little, I think with first off, the recommendation itself, that if you're vaccinated, you no longer have to wear a mask indoors or outdoors. Unless you're in health care unless you know, abiding by federal state, local regulations, local business regulations, things of that nature, but outside of that, not having to wear it indoors or outdoors if you're vaccinated. I think it's based on science. I think we're seeing cases going down. I understand, you know, there's less hesitancy just as Melanie was saying more people getting vaccinated in certain areas with really high vaccination rates. So, the safety issues, okay, well, we're probably okay to do it in those areas, but you have to look at it not inside of a vacuum, right? So, these are some signs and that's science. We can't take

science in a vacuum. That's why I love public health, too. You have to look at it outside of that and say, okay, yes, the science shows us this, how does that apply to this particular community or this particular group of people or whatnot. So, to your point, those that may not have access, as Melanie said earlier to the vaccine, there are communities that don't have access, for example. And so, in those communities, people should probably continue to wear masks. It has to be individualized in a sense that way.

Now, there is that blanket statement out there, though, so people will take it and run with it. And I have recently been reading some articles about how those who aren't vaccinated are like, Oh, great. We don't have to wear masks now like misinterpreting what was said there. And that's where it gets really tricky because we're not going to be wearing armbands that say, okay, you're vaccinated and you're not, and all of this kind of stuff. It's going to get really difficult in regard and we're just going to have to watch it like we have been doing throughout the whole pandemic. How does this affect our communities moving forward? If people start discontinuing mask use, vaccinated or not, that's the tough part. It's really incumbent on the individual then the burden is on the individual at that point,

**Thom**: Melanie in the context of these changing mask guidelines, certain institutions, even businesses or employers are going to be the ones to enforce the guidelines that kind of more local levels with people who are in the kind of vaccine skeptic category when they're pressured to get immunized by some organization or their employee. Do they trust and abide by that? Or do they reject that? And what alternatives might they trust more or less in this process?

**Dr. Swift**: Okay. Yeah, a couple of parts to that, to that question.

So, first of all, do employer-based mandates work? We have seen from influenza immunization, that employer mandates for vaccination do result in higher vaccination rates significantly. So we have not seen a lot of mandates from employers for vaccination outside of influenza.

I think with the COVID vaccine, we will see more types of employers actually mandate vaccines. The University of Pennsylvania healthcare has already announced that they are now mandating their health care workers take the vaccine, there will be a lot of things that need to be clarified. You know, do you just have to get vaccinated initially? Or do you need to get boosters if those become recommended, etc? But I do think

we'll see more than just healthcare. Look at this, I think we'll see transportation industry employers, educational institutions, perhaps. And I do think that there will be other non-employers that start to require it for participation. You know, certainly, colleges and universities are likely to start adding it as a requirement, they already do have some immunization requirements. And we may ultimately see it down the road of that as a school entrance requirement. And in between here and there, there may be recreational activities, cruises, etc, that could implement a requirement, or anything like that, of course, has to be compliant with the ADA and has to have a process for accommodating people who, for medical, or religious reasons are not able to take the vaccine. And they have to have a way to verify it. So, it gets really complicated.

I think, you know, we've already started to see incentives before mandates. There are some really novel incentives, like lottery systems and things like that. So, we may see more carrots than sticks at first, but I do think ultimately, we'll see some mandates. And then what was the second part of that question?

**Thom**: Just what, just what kinds of entities might these people in the skeptic category who are on the fence might say, trust, or listen to more or less than others?

**Dr. Swift**: Right. You know, I think that we have seen good vaccine uptake among people who do trust, medical authorities, experts, public health, our government, the vaccine manufacturers science, those folks have gotten the message. But there are people who don't have particularly high levels of trust in those traditional voices of authority and medical recommendations. And for them, there's still maybe influencers that could provide that sort of trusted recommendation that's often a faith leader, someone from their own community appears who's more of a thought leader in their social or other demographic groups. Celebrities, I think have a role in some of this, particularly as we get into younger and younger populations having role models from Sports and industry, the entertainment industry, musicians and others can sort of help normalize getting vaccinated see it as the cool and acceptable thing to do. So, I think that there's a range of trusted voices and influencers that we need to leverage now.

**Thom**: If anyone on the call has further questions for either of our panelists, please do chat those to us and we'll have them asked and answered.

Melanie, following up on some of the comments you made, how do you recommend that public health officials as well as frontline workers, in some of these places where the controversy is present, about wearing or not wearing masks, especially when going into retail businesses, for example? What's your advice for how those health officials or frontline workers could handle these objections?

**Dr. Swift**: Yeah, I think to Christine's point that you've got to look at the data and you got to look at what the risk actually is. And if your community's not highly vaccinated, if you don't have a good sense of safety, for allowing the unmasking that CDC does allow for, then I think it's perfectly within a business's right, unless prohibited by state law in some places, to impose a mask mandate universally. I think part of the calculation and liberalizing the social distancing and masking recommendations were too kind of incentivize vaccination. However, I'm not sure that the thing is a bit optimistic to think that the same people who have refused to be vaccinated will comply with masking on the honor system. I'm not sure that that's the audience that's highly responsive to these authority recommendations. So I think when you're in doubt about how safe that is to do, I would recommend erring on the side of caution for everyone because you don't know who in that store in that building and that business, maybe immunocompromised, maybe they're vaccinated, but they may not have full protection from the vaccine, and they may be vulnerable. So, we're not only vaccinating to protect ourselves, we're vaccinating to protect everyone around us, most of whom we don't know their story.

**Thom**: Christie, I want to ask you about the emergency use authorization the FDA announced recently for children 12 and up, how do you think this is going to change the game for getting as many people immunized as possible. And just as a frame of reference for everyone who maybe isn't up on the numbers, I believe we're just over 1/3 of the eligible population that's gotten the vaccine so far, and in various polls and surveys, close to half saying they're uncertain about it. And as many as 25 to 30% of some groups say that they just absolutely will not get it. Does it being available for children to change the equation a little bit?

**Dr. Alexander**: It absolutely does. I mean, at the end of the day, kids a while they may not get as sick, they there may be more asymptomatic cases, there have also been studies that have shown that somebody becoming really ill with COVID was in contact with a child who is in person schooling within 14 days prior. So, it may not be about the child, it may be about the people around that child. And so, we've known that all along. We've been saying that all along that even though kids are less at risk, generally speaking when they get sick, or when they contract COVID-19. It's the people around them that get affected by it as well.

So, I think it's going to be a huge step forward, maybe somebody can't get the vaccine for some reason, they're just not able to get it but the kids can. So again, it kind of helps with that herd immunity picture getting closer to that, if we'll ever get there, but closer to those numbers that we would need in vaccination rates to reach true herd immunity. It's got to be the whole population involved with that. So, the fact that we're opening it up and seeing the studies showing that it is safe and efficacious in that age group and that the studies are continuing to be done on children even younger than that. Moving forward is a step in the right direction.

**Thom**: Craig at PBS asks, in the chat, do you think that we still have the likelihood of attaining herd immunity?

**Dr. Alexander**: Well, with the numbers you just mentioned of 20 to 30% that are hard-nosed against getting this vaccine, maybe not, you know, I mean, if we were able to get every single complacent person vaccinated, and then all of those who want it, you know, full access to the vaccine and all of those people were vaccinated today, and it was still 20 to 30% that were not vaccinated, we'd have to check and see if 70% that original 70% threshold of vaccination holds true for herd immunity or not. So, you think about the numbers that way and it'll be tough to get to herd immunity. What we will likely see is sort of like the flu – that the COVID is always with us and seasonality occurs and whether we need a booster shot or not remains to be seen, right? We don't know about that yet. But where we might have some seasonality to it, there are stages and waves and waves of it and things of that nature are more likely to be true than to true herd immunity.

**Thom**: Melanie, what are your thoughts about the likelihood of attaining herd immunity and building on one of Christie's comments about the seasonality? I wonder if you could clarify that at all the kind of circulation the waves that may move around the globe?

**C**: Yeah, so herd immunity is achieved by people getting immune through either vaccination or acquiring the disease. So, if everyone who was vaccine-hesitant, was vaccine-hesitant because they had the disease, we might be okay. But I don't think that's the case.

**Thom**: So, we also haven't seen clear data on infection once preventing infection again, there have been cases of reinfection.

**Dr. Swift**: There definitely have been some cases of reinfection. However, it does appear that people have good protection for at least three to four months. There are some concerning studies having to do with the ability of the natural infection to protect against infection with a variant of concern like the B1351 that's in South Africa, convalescent serum is not very effective against that strain. Vaccine-mediated immunity seems more protective, even though it's not as protective against that strain as it is against our normal strain.

**Thom**: So people shouldn't count on it. I had it and I got over it.

**Dr. Swift**: Right. So yeah, so I don't think we're going to get there through natural infection. You know, counting for all the people that haven't been vaccinated, it would take too long to do that. It would be of course, painful, costly, horrendous. And it probably wouldn't work because the vaccine mutates too fast. I mean, the virus mutates too fast. So, it's really a race against variants. And a vaccine, we need to vaccinate quickly, we need to stop transmission. Because if the virus isn't transmitted, it's not going to continue to replicate and have opportunities to mutate.

So, speed is really important. I don't know we still have a shot, I think, being in a much better place with many fewer lives lost if we just push ahead with vaccines as hard as we can. But I think being realistic to Christine's point, we are likely to have some circulating COVID moving around the globe, I would think we will likely have hotspots that move and we will employ other tools besides vaccines. We will employ new surveillance tools, environmental surveillance tools, things like wastewater testing to predict what's coming down the road and where the next hotspot might be, we might be in a position to deploy things like vaccines to anticipate the hotspots. There have been some studies looking at the use of monoclonal antibodies as another prophylactic for people who can't take vaccines. But also, further treatments are being developed. So monoclonal antibody treatments, antiviral treatments, other treatments will come along. So, our fight against COVID is not one tool in our toolbox kind of fight. We're going to have to have multiple tools in our toolbox to predict where this disease is going, how it's changing. And to prevent it through vaccination and another social distancing masking. We know we now know how to do all that stuff. That's another tool in our toolbox. I think we'll have to whip those out from time to time. We don't know anything yet about the seasonality of coronaviruses. And so, it may be that there are seasonal changes, or it may be that there are hotspots that come up. And at those times in those places. We can, you know blow the whistle and say okay, masks back on six feet apart. You know, the drill. Let's keep this from becoming a problem in our area.

**Thom**: On the question of the vaccine's approval for children, 12 and up, what are your thoughts about how the vaccine skeptics or the vaccine-hesitant would respond to that? Do you think that requirements For children in those families to get vaccinated is the only path for things like attending school or youth sports or what are your thoughts about children in families where the adults are hesitant?

**Dr. Swift**: Yeah, I don't think it would be terribly productive to implement really harsh mandates for things that the kids need, like the ability to go to school, being contingent on being vaccinated.

Discretionary activities, like extracurricular things, and trips, you know, perhaps, but I think there'd be a lot of pushback – the clinical trials in children have been smaller. And it is still on an emergency use authorization. And I think that when it's got a full FDA license, there will be a segment of parents who've become more comfortable with it because I think that emergency use label still has many parents concerned about safety. There are many more concerns, I hear voices from parents about long-term safety with children. Even though, we don't have reason to believe that's a concern. I think it will take a while to convince them. But other incentives would be sort of the natural consequences of getting vaccinated or not getting vaccinated for the quality of life of that kid in that family. So, if you get exposed to someone with COVID, and you are not vaccinated, you still have to quarantine. And that means not going to school, that means not going to the soccer game, that means not going on a school trip. That means all the things you want to do out of the blue, without being able to predict it. You're benched for two weeks. And then if you get it, your siblings, if they're not vaccinated, then they get to quarantine as well, so that's a huge impact on that child and that family, and the ability to just get vaccinated means they could go on with life as normal. And I think that might be a much bigger incentive and more well-received as a message for families than our school is going to start requiring your child to take this vaccine that you think is still experimental.

**Thom**: We have a question in the chat from Nancy at Linkwell health. I'll pose this first for Melanie and then get Christie's thought – from past experience, is there any evidence that a higher percentage of the population gets vaccinated? Those who are hesitant may be more likely to take the vaccine later? Are they open to changing their minds as those around them seem to avoid the disease and serious side effects?

**Dr. Swift**: I don't know the science on this in terms of actual data anecdotally makes a ton of sense. And we've seen that in our own health care worker populations. We have seen it -we've recently started opening walk-in clinics at our site. And, we're hearing from people who – I was just waiting, I was just waiting for two things, one for it to be really, really convenient for me to come in and two for all of my friends to get it and I see that okay, it's no big deal.

**Thom**: Christy, anything you'd like to add to that? Do you know of any science about this or anecdotal experience about this?

**Dr. Alexander**: Again, mostly anecdotal, very similar to what Melanie was saying. Yeah, the idea that I don't know, let me watch everybody around me. I actually had a patient say, well, since you got it doc, I'll get it. So, there is a component of that, you know, okay. Well, if it's okay, that she got it, and she survived it, then I'll do it too. So, I do agree that there is some anecdotal, very, very good anecdotal evidence that the number of people getting vaccinated and – Okay, it's been okay for them. makes it more okay for somebody who might be on the fence.

**Thom**: Christy, another question for you. What are your suggestions for having a conversation and maybe sometimes a hard conversation, and also for the media to write about talking to vaccine skeptics? Jessica in the chat asking, what's the response to those who say they don't think there's been enough data for the long-term effects, for example? And also, my thoughts are one on one conversations versus mass messaging. What are your thoughts about those different aspects of convincing them?

**Dr. Alexander**: Well, I think Melanie was spot on earlier, we have to be very transparent and we have to be humble with what we do know and explain that this is a learning process for all of us, but what we know for sure, right now is good that the evidence we have at this time is strong and so you know you can – and into your question about the individuals versus mass communications I think really on the individual level a lot of it does need to be so grassroots on the individual level about where that person is – like I said earlier, what are they thinking? why is it that they are not concerned, what is their specific concern, and let's talk about it. So lot of it will have to be the one on one conversations in it, doesn't have to be from a position it can be from somebody else, it can be from like she mentioned a -Pastor or somebody that has some – that garnishes a lot of respect so those messages can come from a lot of people, from a lot of areas but I think the messaging

does need to be clear to -in regards to the benefits, the risk and so on of these vaccines in as it compares to having covid itself – in the mass devastation that covid has caused – so I think it's just continuing to send the right messages you mentioned for the media – it's been tough you guys had to go through a lot of information, tried to figure out what is it that am supposed to be putting out there, because one day this is the message and the next day this is the message and its ever changing and may be that needs to be the messaging, that yes – this is ever changing – that is science, that is part of process of learning about what we are learning about Covid-19 – but we are always giving you the best information we have at that moment, and based on that information right now this is where we can go with it.

**Thom**: Digging a little deeper on this question I want to call on Carol of Freelance writer in the audience, Carol goes ahead with your question.

**Carol**: Hi thank you very much. So my name is Carol Perriman from Mexico. And I think one of the challenges in addressing anti-vaxxers is that we have different audiences and it's very difficult to talk with the audience – so my question is how to address or how to cross that barrier, we are so divided I feel that we as science communicators we talk to our audiences and it's like a little echo and to cross and to talk to those other audiences, the anti-vaxxers audiences I think that is our biggest challenges

Thom: Christie your thoughts on it.

**Dr. Alexander**: I agree that is the biggest challenge but I think you just answered it – I don't know the logistics behind how to make it happen but all of us get into the same room at some point to have a real conversation with each other. I think that's the answer to a lot of what's being going on in the past couple of years if we could just get in a room and have a conversation about what our concerns are on both sides so that we are not hearing the echo chamber all the time, and they are not hearing the echo chamber all the time – that we can cross that path and kind of come to some sort of understanding between the two groups as to why we are saying what we are saying and thinking what we are thinking and maybe that would be the beginning of coming together of these issues.

Thom: Melanie I would like to ask if you have any further thoughts on that.

**Dr. Swift**: I think sometimes in your role with the media, it may be more important that you are talking to the vaccine hesitant than you're talking to the anti-vaxxers, so it's the vaccine hesitant people who really are the larger group of people, who are subject to be swayed and they are hearing messages from the two sides – right they are hearing the anti-vaxxers conspiracy theories, they are hearing science based reporting and so I think that the question – something about the anti-vaccine movement may appeal to them and it might be a mistrust of authority, it might be a number of things – so anything we can do to get the factual information to that susceptible audience who is still open to hearing in ways that they trust – and part of that is to make sure they are able to hear it from people who look like them, who have had the same sorts of cultural backgrounds and life experiences and the same sensitivities that they may have to some of their concerns that they perhaps haven't voiced – and we have got to talk about the fact that we have just great disparities and health care and covid vaccine - covid has certainly been no exception and Covid vaccine has been no exception either, with a lowest vaccine uptake rates among African-Americans compared to other races in our country. And well no wonder – we have had of this legacy going all the way back to the [inaudible 50:00] Syphilis, experiments and you know just atrocities, and the clinical trials were diverse, the clinical trust had large numbers of African-Americans involved, they did really well and I was talking with someone about this the other day – it's not enough to hear that an expert has looked at the data and yes it was representative and yes, it is diverse and applicable. It's important to know that the person you are hearing this from, looked at the data through an equity lens, that they looked at it with full knowledge of all of the concerns that your community has and they are still able to come forward and tell you – okay I can reassure you on this score. So in terms of advice for media, to get us many different representatives voices out there – get them very well acquainted with what the data actually shows and present it from as many different perspectives as you can because there would be someone out there who will say – okay finally I am hearing from this someone who knows what I am really afraid of.

**Thom**: Question for Christie we have Laurence Walter, a freelancer from New York. What do you say to one of those skeptics that you mentioned who might say things are ever-changing and therefore why not wait for a little while?

**Dr. Alexander**: So I would say that's true – things are always changing and if you choose to wait I understand that but know that the risk of coronavirus is still very real, covid-19 is very real, and that we are still seeing – although the numbers are decreasing, we are still seeing the several deaths. The numbers are not where we

were when these pandemics started certainly – that the rates are still very very high although they are decreasing, and so the quicker that we can get people immunized and taken care of vaccination wise – the quicker that we can feel safe knowing that we are not spreading that disease, that we are controlling it that we don't have another hot-spot, that we don't have another uptick, that we don't have another breakthrough and we can protect ourselves into moving into this new normal going forward.

**Thom**: While waiting you might get it and be asymptomatic and give it to 5 more people – I just feel like that's the most compelling thing – thank you for those comments, Christie. I want to go ahead to Melanie for one final question and then we will wrap things up as we are running close to out of time unless there are any other big questions from the media on the call.

Melanie, tell us – let's be candid here- what's the worst-case scenario if vaccine hesitancy keeps us from reaching that herd immunity, what does that mean for covid continuing to circulate and potentially mutate or even escape the vaccine through those mutations and then maybe tell us what's the best-case scenarios for that outlook

**Dr. Swift**: Well worst-case scenario is India, right now – we have enough susceptible people who get exposed that we overwhelm our healthcare system, and that could happen in the United States through the development of some new variants that could escape vaccine-mediated immunity, could cause even more severe illness than the previous strains have caused, could be more transmissible than the previous strains – we are by no means out of woods and this virus has proven that it is willy – it changes, it's difficult to predict and so I think that's the worst-case scenario.

The best-case scenario is that we continue to have better and better success with our vaccine roll out – it becomes much more widely available, people find the number of reasons to take the vaccine as one of the people on the call noted in the chat – sometimes facts are not what move people – sometimes facts and fact-based conversation actually push someone away, but perhaps there is an emotional reason or a social reason that can compel people – one thing that could be a really good outcome of this is that we really start to understand better how to communicate about not only vaccine but other health behaviors that are for the public good, but they may be resistant to and have reasons that they don't want to do. So we may learn more.

I think we are learning a lot about vaccine technology and I think our best-case scenario is that we develop the ability to quickly and nimbly update the covid vaccine to stay ahead of emerging variants and that we develop a number of tools in our toolbelt as I mentioned before, to keep us all safe.

I don't think it's a realistic best-case scenario that we eradicate this virus from the face of the earth – that would be a dream, it would be lovely – I don't think it's at all realistic, but I think short of that best-case scenario is we essentially can return to life to normal with just much more respect and support from our public health efforts, and our public health experts that we have before because we really need them now like never before.

**Thom**: Thank you very much, Dr. Swift – with that we will bring things to a close, I want to thank Dr. Christie Alexander and Dr. Melanie Swift thank you so much for joining us and thank you also to the communicators at Florida State and at the Mayo Clinic – Bill and Kevin thank you so much for helping to coordinate together with us. For any of the media on the call, if you have already registered you are going to get a video recording and a transcript of this event, we will send that out early tomorrow morning. If you didn't register and you just clicked an invite link and you want to get those materials, please send us a quick email through info@newswise.com and we will make sure to get you on that list.

With that, we will go ahead and close thank you again Dr. Swift and Dr. Alexander and I will say to everyone stay safe, stay healthy, and good luck.