

CCPU-EP15-2020-0423-Science Wednesday with Dr. Jose - Opening Up America - Protests - Masks - Asymptomatic infection - Re-infection.m4a

Dr. Nicholas Van Sickels: [00:00:00] Hello, everybody, and happy Wednesday. This is Dr. Nicholas Van Sickels, I'm the chief medical officer at Crescent Care, a federally qualified health center here in New Orleans, Louisiana. And we are coming to you several times a week with updates on the COVID-19 pandemic, how it's affecting our patients, how it's impacting our clients, our community, and anybody who's listening to this podcast. We are excited today. We are keeping you on your toes with our Science Day of the Week. Not necessarily intentionally, but we are. We are here with Science Wednesday, and we're here with Dr. JoAnn Jose, again. JoAnn, do you mind introducing yourself?

Dr. JoAnn Jose: [00:00:33] Absolutely. Thank you for having me. My name is JoAnn Jose. I'm an infectious disease specialist. And I also teach at the School of Public Health at Tulane and have a public health degree.

Dr. Nicholas Van Sickels: [00:00:41] Well, thank you. And if you all haven't listened to Dr. Jose's podcast before, please do. They're really helpful to understand a lot that's been going on. And I know personally I have a medical background, but some of the public health literature that's come out and trying to read and make sense of all these graphs, charts and how things are going to work is really tough. So please take a listen. She does a phenomenal job of explaining modeling and how that works. And also some of the basics that we all need to know in this pandemic. But this week, we've had quite a bit of news and it's been building for the last several weeks. And I want to start with opening up America. Tell me about that.

Dr. JoAnn Jose: [00:01:25] Yeah. So opening up America. Yes. It's an interesting concept.

Dr. Nicholas Van Sickels: [00:01:29] The president, just to level set, wants to open up the country as soon as possible. There's been a little bit of a political debate between the president of the states, but several states, Georgia -you know, we were just talking about this- have decided to go ahead and open up. And there, you know, they want to

do it. And I want to say, like full disclaimer, like there are valid concerns that are economic-based, those don't necessarily trump lives. I didn't use that word as a pun. I can see where people would want to do this. So just full disclaimer for people listening. We understand there's an economic concern. I'm not trying to downplay that by any means, but please go ahead.

Dr. JoAnn Jose: [00:02:09] Yeah, absolutely. So let's talk about what the guidelines from the White House actually are. And then we can talk about some maybe problems with the current state of what we have available. And then some issues that have not been getting a lot of press that are in the documents, actually. But we don't really talk about them as much. So right now, the kind of guideline, it's called the Guideline for Opening Up America Again. It's a document that's on the White House's Web site. We'll link to it, I think, in the notes. So you can go look at it yourself. It's not very hard to read because there's not a lot on there. But basically, they identify these kind of gating criteria as what they call them. So these are criteria that the states have to satisfy before proceeding to reopening. And basically, there are three areas in which these criteria are. So the first one is symptoms. So they want a downward trajectory of influenza-like illness and presumptive COVID-like illness for 14 days before we we start to reopen. This one's probably the easiest one, I think, for most localities to meet. But you have to keep in mind that testing affects this as well, right? So if you're not doing widespread testing or if you're only testing based on symptoms, there's going to be a little bit of a problem with how you interpret this measure. The next one is that actual identified cases should go down. So the number of cases should go down as well as the proportion of positive tests as a percentage of the whole. And again, this one depends really heavily on testing capacity. And then finally, hospitals should have capacity to take care of people who are sick and then also have a robust testing structure for health care workers. So the things that they kind of talk about in their little diagram is antibody tests as a part of robust testing of health care workers. The problem is, and as we talked about this extensively the last time I was on, the antibody tests aren't really ready to go yet and we don't have them.

Dr. Nicholas Van Sickels: [00:04:02] And we've actually gotten a kind of a "Dear Doctor" letter warning us to use these for diagnostic purposes and saying we really should not do it because of the rate of false negatives and false positives, correct?

Dr. JoAnn Jose: [00:04:16] Yeah. Exactly. So there's a lot of these antibody tests that are coming to market. Not all of them have been fully vetted by the FDA. So we're in a position where we have very different sensitivity and specificities for some of these commercial products. And then on top of that, we have all of the issues that we talked about last time on how to interpret those tests and the concept of an immune passport, which is really something that has some pretty significant problems with it, that we haven't answered any of those questions that came up the last time that we talked.

Dr. Nicholas Van Sickels: [00:04:42] Yeah.

Dr. JoAnn Jose: [00:04:43] So then the next thing that they want states to have before they reopen is capacity for testing and contact tracing. This is a problem in many states. We don't have a really robust public health workforce that can do this. There is some money from the CDC that's being dedicated to states being able to hire people for this, but you also need to find people with the correct training and train them on how to do contact tracing. So our capacity for testing and contact tracing is well behind where it ideally should be when we reopen.

Dr. Nicholas Van Sickels: [00:05:10] Sounds like it's going to take a lot of time to build that up.

Dr. JoAnn Jose: [00:05:12] Yeah, absolutely.

Dr. Nicholas Van Sickels: [00:05:13] Even if we got people hired right away.

Dr. JoAnn Jose: [00:05:16] Because they have to be able to do more testing and then be able to interpret or be able to do contact tracing that is detailed and takes a lot of time. And I mean, I think part of infectious disease is really knowing how important contact tracing is. And it's hard work. So that's a lot of work that we're not ready to do and we don't have the resources to do just yet. I think they also want the states to have capacity for the health care system. So that includes things like PPE for all the health care workers who need them, which has been an ongoing challenge since the beginning of this, as well as surge ICU capacity, which is also a little bit of a problem in

some areas. So in a large urban area where you have multiple hospitals and multiple academic centers that can create a plan for kind of surging up, that may not be as much of an issue. But what about rural places and what about places where they don't have a lot of ICU beds, or the capacity to get physicians who are trained to take care of people in the ICU? So that's another kind of asterix, is that we have some healthcare capacity right now. We seem to be doing OK in most parts of the country. There are some places where we're really not doing very well. But we don't have a lot of that surge capacity, especially in rural or more remote areas. And then finally, they want states to have the capacity for advanced planning. And there's a whole list of things that they need to do advance planning for. And that is really lacking in a lot of places and is particularly lacking in places that have classified, for example, a bowling alley as an essential business, and are opening without really good guidelines in place about how do we maintain social distancing in a public space once we open it up again. What do we do if people aren't following social distancing? What, do you give them a ticket? Do you just sort of tell them not to? Do you say nothing? What are the rules? Nobody knows that right now.

Dr. Nicholas Van Sickels: [00:07:02] No one knows. It's tough as a society to make that change, right? And it can't happen overnight. So I think the bowling alley is a great example. Like if you just open it up, some people will follow it. Some people won't. Have you thought all these individual businesses: are they going to operate the same or operate differently?

Dr. JoAnn Jose: [00:07:19] Exactly. There isn't like a guideline for businesses to use, right? Because each business is different in their purpose, in their function. So it's really difficult to open the country without really having thought through all of those implications so that we can keep people safe. And then I think the other part of this that's going to be a big problem is -and we'll talk about it later- is the kind of misinformation that's going on and how people are reacting to that misinformation.

Dr. JoAnn Jose: [00:07:43] So if you meet all of these criteria as a state, so let's say Louisiana meets all these criteria, which to be clear, we are not where we can meet all these criteria yet, then we can proceed to Phase One of the government's plan. So the way the government has kind of laid it out, there are three phases of reopening and

each phase has suggestions for individuals and employers and then some special employer situations. So Phase One, for example, would require anyone who is a vulnerable person -so this is anyone who is elderly or has medical conditions that might put them at higher risk for the illness- to shelter in place. So if you're vulnerable, you still stay inside, even when everyone else maybe theoretically gets to go outside. You maintain social distancing, avoid gatherings of greater than 10 people, avoid nonessential travel and isolate after travel if you have to travel for essential purposes. For employers, we are still telling employers in Phase One to encourage telework, return people in phases if at all possible, close common areas, minimize travel and offer special accommodations to people who need it. Like for example, your immunocompromised or your elderly. And then for specific employers, they are recommending in Phase One that schools stay closed. Visits to hospitals and skilled nursing facilities in places like that should not be carried out because the risk posed to the people inside is really significant.

Dr. Nicholas Van Sickels: [00:09:01] Like visitors go to visit a loved one, for example.

Dr. JoAnn Jose: [00:09:02] Right. So if your parent was in a nursing home, for example, they would not allow you to visit the way that you would have been allowed to do before COVID was a thing. In addition, they advised caution at large venues. They say that you can resume elective surgeries, but with a careful discussion of risk versus benefit, and making sure that there is adequate PPE for the health care workers. They do say that gyms can open with certain restrictions, but bars should remain closed.

Dr. Nicholas Van Sickels: [00:09:31] I think a pause is necessary for that.

Dr. JoAnn Jose: [00:09:36] Yeah, I think so. So then if you are proceeding along Phase One -and this is really like sort of a fantasy, so I'm sorry if it seems like kind of a dream- but if you are proceeding along Phase One and you do not have a rebound, so that implies that you need to have the testing capacity and the contact tracing to be able to tell if a rebound is happening relatively quickly, which in Louisiana we might be able to do that, but there are a lot of places that did not ramp up their testing capacity and don't have a lot now. So it be hard to build that infrastructure, to be able to continue that. And then they have to meet grading criteria yet again. So then you can proceed to

Phase Two. So Phase Two means that the vulnerable individuals still shelter in place, we continue social distancing, but we're a little bit more relaxed about it. We avoid gatherings of greater than 50 people and we can resume nonessential travel and maybe don't have to isolate after travel. Employers should continue to encourage telework, close common areas and offer special accommodations. At this point, we would open schools. We would still discourage visiting people who are in hospitals or nursing facilities, advise caution with large venues again, elective surgeries can resume with fewer restrictions. Gyms would continue to be open. Bars could open partially with certain criteria for how many people are in there at one time. Now, if you are going through Phase Two and you still don't have a rebound again that requires pretty aggressive testing, and then you meet your grating criteria yet again, then you can enter Phase Three. So this one, you would relax requirements for vulnerable people and try to tell people to attempt to avoid crowds even if they're low risk. But all of these kind of social distancing things would get removed. Then if you were an employer, you would just go back to business as usual. And then if you're a special employer, you could start accepting visitors to hospitals and nursing homes. You could relax restrictions on large venues pretty much completely. And gyms and bars could open unrestricted.

Dr. Nicholas Van Sickels: [00:11:37] That's a lot. Yes. That's a tough thing. I mean, even if we were to follow that plan and I think there's a whole host of questions, right? Because, one, this is the federal government's plan. And the federal government, despite some arguments in the beginning, has let states have some decision making ability capabilities. They don't have to necessarily follow this.

Dr. JoAnn Jose: [00:11:59] So it's a little bit confusing, right? Because at first we were sort of told, I think at one point that the federal government is really going to make the determination about when to open and how to open and all that stuff. And then that's sort of went away, because I think what we are seeing is that there are different epicenters of the epidemic. So like a Wyoming might be ready to open at a different time than a Louisiana is. And so there has to be enough flexibility to kind of take that into account. And so then the plan was to provide these kind of loose guidelines and let states kind of interpret them as they will. The pitfall with that is that we don't require passports to go from one state to the other. So if you have open borders between

states, then what happens in one place really affects what happens somewhere else because there's a free movement of goods and people in between those areas.

Dr. Nicholas Van Sickels: [00:12:50] So if you had people going from a hot zone go into a cold zone, they could bring that COVID with them, if a lot people are infected, to that area.

Dr. JoAnn Jose: [00:12:57] Exactly. And then the dynamics of transmission, because people are asymptomatic quite a lot of the time. We'll get into the details of that in a minute. But because people are asymptomatic a lot, it's not like you can tell anyone who's entering Texas from Louisiana that they should isolate if they're sick. You have to isolate all of them if that's going to be your your way of dealing with things. So it becomes logistically very tangled very quickly. And so you could say that the current approach is offering a lot of flexibility for states to kind of do what they need to do. The problem is that you can already see in the states that have started opening, you can already see that people are interpreting these guidelines in widely different ways. And then that means that there is no standardization, there is no standard guidance that people are following, which means that your inequities are going to be kind of exaggerated in the impact because we're not having clear guidelines for like when all of the stuff is supposed to happen, we just have a very loose guideline. And so there's a lot of room for people to inject kind of their political opinions into it.

Dr. Nicholas Van Sickels: [00:13:59] Well, I wanted to ask you a little bit about society and how we're going to change if we did follow this, because I think a lot of it will change quite a bit in how we behave if we all follow this guideline. But no matter what, we're going to change, even if we don't. But I want to have you keep going. Like, what do you think we need to do to reopen?

Dr. JoAnn Jose: [00:14:18] Yeah. So I think in terms of what we really need to reopen - and this is a little different from what we would want to reopen, because I think that is completely different, that's a more detailed and very long list- but what do we absolutely need to reopen? We need a dramatic scale up of testing. We need to be testing lots and lots of different people. We need to be testing symptomatic and asymptomatic. We need to have a high degree of faith in the testing itself and make sure that we're not putting

products on the market that are not adequately studied and maybe not reliable. So there's a lot of stuff around testing that needs to happen. And it's really unclear where this will come from. The federal government has given us some tests to the states. But it's a little bit unclear whether we can get more and definitely this dramatic scale up, we need like hundreds of thousands of tests. And it's a little unclear where that's going to come from right now.

Dr. Nicholas Van Sickels: [00:15:08] Because we don't have them here at CrescentCare. We're more relaxed than the state is in terms of who we'll test. And I think if we tested everybody, we would we would run out very quickly.

Dr. JoAnn Jose: [00:15:18] And then the other question is, if you really want to open the country and let people go back to doing things as normal, even if you're doing it through this kind of phased approach instead of sort of opening the gates and letting everyone free. If we're gonna do that, then we have to think about the asymptomatic infected. So we know that a percentage of people who have COVID, and are spreading it, don't have symptoms. So they don't know they're sick and no one else knows they're sick. So we have to scale up our testing capacity to be able to test people who have no symptoms. And right now, nobody's doing that because we don't have tests to be able to do that.

Dr. Nicholas Van Sickels: [00:15:49] Right. Not only to be able to test, we don't have the ability to really help them that much. We can't test all their family members. We can't provide, you know, options for contact tracing. So, yeah, it's as you said, the whole picture is missing.

Dr. JoAnn Jose: [00:16:03] I think the next thing that we need is reliable antibody tests, and good information on how to interpret them. We don't have this right now. So the re-infection and reactivation question might further complicate this and we'll get to that later. But we really need to know how to tell if someone is immune. First of all, how immunity to COVID works because we don't really know that yet. And then how do we tell if someone's immune and how do we know if they'll get reinfected, and therefore be in an environment where they might be spreading illness without knowing it? Then I think we need a willingness to do the dance part of "The Hammer and the Dance". This

is this essay that was written that explains the hammer, which is what we're doing now, which is like a very extreme social distancing measures. And then the dance, which is relaxing, maybe part of these very strict measures, seeing what happens. And then either bringing the hammer down again or, you know, relaxing a little bit more and seeing how that happens. It's a very stepwise and cautious and nuanced approach. And I think, like, our national discourse doesn't really do well with stepwise, nuanced and careful. So that's something else to kind of think about. So we need clear standards and clear guidance and a plan for what if there there's a rebound or a second wave. We need a plan now for that, so that we know what to do if it starts to happen. This is now a political question rather than a scientific one, which has complicated this a lot. So these questions have not been answered in federal guidelines. But states have open borders. There's not really a federal strategy. People are kind of interpreting these guidelines as they sort of wish. So you have your Brian Kemp, the governor of Georgia, doing his interpretation. And then you have Jay Inslee, the governor of Washington, doing his interpretation. This is not really a fun interpretive dance. This is something where we really need to have a coherent strategy so that we're not having a huge second wave that results in many more deaths.

Dr. Nicholas Van Sickels: [00:17:49] Because I could go to Georgia, hang out for a while, and fly to Seattle.

Dr. JoAnn Jose: [00:17:53] Yeah, they're not gonna stop you.

Dr. Nicholas Van Sickels: [00:17:55] I shouldn't. I won't. But yeah, just important to reiterate. I think those are great points. I think those are what we should do. I think most of the population from what we're seeing in polls and in media, which is always hard to interpret with all this change, is in favor of this. Even though they understand it's hurting. And I just again want to underscore it. It is hurting. I mean, you and I talked about this before. We talk to our patients, so many of them are hurting and stressed out and just want it to all be over. So I don't want to underscore that. I don't want to not make that a point, because I think it is worth mentioning. But we are seeing some people who are taking that to the next level and who are actually protesting against what hospitals, what doctors, what governors are doing. We're seeing in Louisiana because they feel like we should open back up. Why are they doing that?

Dr. Nicholas Van Sickels: [00:18:52] Yes. Let's talk about the protests. So first, I think it's really important to acknowledge, as you just did, that there is this baseline level of economic pain and also psychological pain, because humans are not designed to sit inside for very long periods of time and be terrified all the time. It's not good for us. It's not good for mental health. There's like a body of research on how the mental health of the population has been affected by the anxieties related to COVID. So I have every sympathy for the economic pain as well as the psychological pain that people are going through. And I understand, too, if we know about trauma, we know that that trauma can sometimes cause people to behave in ways that are suboptimal. Because their compensating mechanisms are maybe not like the best thought out mechanisms. They're just what helps them feel better in that moment. So I think there's a tendency on the part of some people to turn to the conspiracy theories and misinformation as a way of feeling like they have control over the situation, which is objectively a really terrible and difficult situation for literally everyone in the country. There are gradations: I'm sure if you are a Jeff Bezos, you are not suffering as much as a minimum wage worker would be. But I think there's this baseline level of high anxiety, high stress and a lot of economic pain that's driving people to behave in certain ways, some of which are suboptimal, like showing up to protest. So I think this is all the result of taking a scientific question and making it a political one. Science is nuanced. It's a body of knowledge that's built over time with reference to empirical data that changes over time. We actually want our data to be proven over and over again, right? So we want people to do experiments and show that what was found one time can be re-demonstrated. If we're wrong, we want to be told that and we want to adjust our body of knowledge to account for that. And I think that's a very difficult thing to throw into the political sphere, because that's not how politics works. Like if you think about, if you're running for office, things come up that you did like 30 years ago and you have to defend them. I think people don't give their politicians the room to grow that they would maybe give themselves.

Dr. JoAnn Jose: [00:21:06] So when you mix a very nuanced and careful way of doing things that actually welcomes critique and welcomes being wrong, and you mix it with a system in which things are very black and white, and you are on one side of the issue or the other. And that's just like a sort of smorgasbord of terribleness that's happening. So I think outbreak science changes with more data. And that's particularly ill suited to the

politicization of what's going on right now. Because I think it's very easy for people to say, "Well look at that piece of guidance that went by the wayside. That was people lying to me". And it really isn't people lying to you. It's that we got better data and then we adjusted the way that we make recommendations to account for that data. So I think the other part that's really difficult for people is that models are imperfect. So when you think back to February, which I know feels like 10 thousand years ago, but when you think back to February and the Imperial College model that came out of London looking at what happens if we do nothing and predicted millions of people dying. And now you look at the IHME model, which says a much smaller number of people are dying. Well, the models are different because we did things to change the model. But that's really difficult to explain to people who are angry and upset and hurt and don't have the kind of time and patience to understand what modeling is and what it's for.

Dr. Nicholas Van Sickels: [00:22:24] As I mentioned earlier, I have an MD, I've done training. I've had to read those things several times because they're hard to understand. And then one- read; and two- understand and then three- process. It's a lot of work.

Dr. JoAnn Jose: [00:22:36] Yeah, exactly. And it's also really hard to understand that each model differs because of its assumptions, because it feels like you're just making a thought experiment. Which I guess, in the purest sense, is what a modelling study is for. But it does things that are useful and it helps us make decisions in the moment that are useful. But it has a very limited set of uses and it's really important to kind of understand that nuance. And that's lost in this discussion that we're having of should we open and should we not open, and people screaming and yelling. In general, I find that screaming and yelling is not a great way to communicate, right? So if that's what's happening, nuance is not being conveyed. So I think there's misinformation and there's a really great podcast from The Daily today about where this misinformation is coming from and how these protest movements are being coordinated. There's an oversimplification of some very difficult concepts and some very difficult ideas. This virus is only about five months old, so we are learning things about it at breakneck speed. And things that we thought we knew two months ago are not true now. And things that we kind of had an idea were maybe true two months ago are now absolute fact. So you can talk about that in every sphere that this virus has touched of human activity. There's also a kind of disconcerting -to me anyway, because I guess I would be considered an expert- there's

a disconcerting distrust in expertise. I do think that it's worth pointing out that someone who went to school for a very long time as an epidemiologist and has published papers and become important in their field, or like a physician who knows things about the human body, they went to medical school and did all of this training afterward, those people have expertise that the ordinary person on the street does not have. And if you were to look at your social media right now, you would see a whole bunch of newly minted virologists who learned all about virology in the last two months. So there is something to be said for expertise and nuance. And that's just being lost right now because everyone's just kind of yelling into the void. And then I think there's been a lot of confusing messaging from state and local governments, and especially from the federal government, that has led to a lot of confusion. It's very difficult when you don't have coherent messaging at all levels because people start to be confused and the confusion is not really conducive to understanding nuance and working through all of these details. It feels like a full time job for us. And I can't imagine what it feels like for people who don't have the same tools we have for being able to shortcut our understanding of what's happening.

Dr. JoAnn Jose: [00:22:36] So when you put all of that stuff together, it's just this toxic brew that leads to congregating without masks in large crowds, which for the record is a very bad idea right now. It's a bad idea that even some of the protesters recognized as a bad idea because some of them showed up with masks on. So it's just like, what are we doing here? It leads to screaming at frontline health care workers, which for the record, please don't do that. These people are putting their lives on the line with inadequate PPE all around the country because they took an oath to patients, and they feel that this is important. Every day that they show up to work they are at risk. And to scream at them is an act of unbelievable meanness, I guess, for lack of a better term. Even if you don't agree with them, even if you think they're all wrong, they are still risking their lives to take care of you and people like you. So, like, please don't yell at them. And then I think finally, there's this false dichotomy. It's not people or economy. That's not a choice, right? Our choice is not do we save the economy or do we save people? People are the economy.

Dr. Nicholas Van Sickels: [00:26:05] Yes.

Dr. JoAnn Jose: [00:26:05] So you can't be like, "Oh, well save the economy". Well, who are you saving it for if millions of people die in getting the economy back on track? And I'm sorry, but if lots of people get sick and die because there's a second wave, the economy is not going to do well, because all those pieces of the economy made up of individual people are going to vanish. And that's going to be a really painful situation. And then I think the other thing that I really want to point out to people who maybe have some anger or are inclined to perhaps protest, just think about this: by going to a large event without a mask on or even with a mask on, you're potentially creating a super spreader event. This is why all of these conventions and conferences and all the rest of it have been canceled, because we don't want people congregating in large numbers. Not because we don't like their freedom and we want to take it away, but because we are very afraid about their health. So I think it's really important to understand that if you care about your rights and you care about the people that you're protesting with, protect them by maybe finding another way to make your displeasure known.

Dr. Nicholas Van Sickels: [00:27:06] Yeah, that's a great summary that you did. I love the way you talked about the underlying problems that might have led to this and suggestions. That was going to be my next question, is what would we do when we encounter a protester? I think that's the best advice possible: find another way, don't do it in a group, and please don't yell at our health care workers. Terrible, terrible.

Dr. Nicholas Van Sickels: [00:27:30] You mentioned a couple of them had masks. We talked about masks a little bit before, but we hadn't really had a chance to dive into it. Tell me a little bit about masks. What am I wearing a mask right now? A very pretty fabric one.

Dr. JoAnn Jose: [00:27:43] Yes. Let's talk about masks. Initial guidelines were that masks were not recommended for the general public, right? We talked about that in our first episode, I think, it was like this whole thing. We didn't have them here. We weren't wearing them when we were encountering each other in our workplace. Now, the guidance is for everyone to wear a non-medical mask-like face covering in public. That can be anything like a bandana or a scarf, just cover your nose and mouth when you're outside is basically the guidance. So why the change? And I get this question a lot because people feel very suspicious about this change. They feel like they were maybe

lied to or perhaps the government didn't care about them or something along those lines. And I think there is an explanation. But again, it's like a nuanced explanation. So early on, there was a desperate shortage of PPE for health care workers and then a risk-benefit analysis, it's absolutely imperative for health care workers to have the medical masks that they need. So the concern, I think, was that people already, even without the government recommending that people wear masks, people had already like bought up all available supplies. I think we had some really kind people bring in what they had accidentally hoarded. And then certainly there were lots of other places that people felt bad about what had happened and brought in their medical masks for health care workers to use.

Dr. Nicholas Van Sickels: [00:28:55] Which is kind and wonderful.

Dr. JoAnn Jose: [00:28:57] Yeah. Then there was new data on the prevalence of the asymptomatic infected, which we'll talk about in a minute. And that data really drove the change in policy, because if there are people walking around who have it, but they don't know it and the virus lives in the environment for perhaps up to three days and in the air for perhaps an hour or two, then it's worth like asking those people to put on a mask to try and impede the viral shedding that they're doing. So the mask that you're now being told to wear, it's not to protect you, it's to protect everyone else from you. So if you are sick and you don't know it and you're shedding virus, the mask will keep that hopefully in the mask instead of out in the environment where someone else can pick it up.

Dr. Nicholas Van Sickels: [00:29:38] So I think it's nice -and you and I talked about this thing before- we've got to all do it together. Altruistic, help your fellow human and put the mask on. Because if we all do it, then we don't spread our coughs, we don't spread our sneezes, and we don't asymptotically spread this stuff as much, or to as great of a distance at least. And then we could potentially see some benefit, right? Because we don't know who's asymptomatic right now. There's no way to say, oh, you're asymptomatic.

Dr. JoAnn Jose: [00:30:05] And because the data shows there are so many asymptomatic, it's worth doing this, even if it's a relatively small proportion, because it helps cut down the transmission. The other thing that I really want to talk about is

gloves. Can we talk about gloves? People wear gloves in the grocery store. Don't do that. Here's why you shouldn't do that. When we use gloves in a clinic, we put on the gloves, we do the procedure that we're using the gloves for, and then we throw them away right away. We don't go out of the room carrying the gloves and touching other things. If we do that, that would contaminate every surface. So putting on gloves and wearing them for a prolonged period of time, it gives you this false sense of security that you have protected your hands from whatever's dirty in the environment, but you actually haven't. And you're picking up things and putting them down and spreading all kinds of nastiness. So instead, what you should do is wear gloves if you have to do something that requires gloves for a moment, and then you throw them away again. If not, just obsessively wash your hands, which has been our guidance from the beginning and which is shown to be very effective in getting the virus off your hands.

Dr. Nicholas Van Sickels: [00:31:09] So we always talk about in the medical world, we go into a patient room, you gel-in, you see the person, you gel-out. The same thing could apply the community when you go to the grocery store: gel-in and gel-out. Use some hand sanitizer, wash your hands when you get home, do some of those things. It sounds silly. Your hands are gonna get a little chapped, but you know, it's worth it. And I agree a hundred percent, the gloves are a false sense of security. Yeah. I'm glad you brought that up. Let's talk about the asymptomatic spread. Where is that now? Tell me a little bit more about the data because early on -and people ask me this and of course, you know, like I said, that it doesn't look like it's a huge driver of the epidemic when it was an epidemic. We've learned since then that it is maybe not the biggest driver, but it is a pretty substantial driver. Tell me how that changed and what we learned. And obviously a lot of it is time and information, but just tell me a little bit more about that.

Dr. JoAnn Jose: [00:32:04] Yeah. So we've defined an asymptomatic infected previously, but it's basically a person who is infected but doesn't know it. So they're spreading the virus without being aware of it. And other people don't know to be careful around them because they have no symptoms. They look just like everyone else. This is, I think, the best reason why all these people who are like, "oh, I'm going to just go to a barbecue, but no one's sick". You don't know if anyone sick in that environment because they might not be showing symptoms. In this country, we're really only testing people if they have symptoms, which means that we don't know the scope of the

problem. So there's a lot of missing data there, but there are some clues about what's going on. This is the data that we have and there's four or five little bits and pieces. So there's MMWR, which is the Morbidity and Mortality Weekly Report. It's from the CDC. It is free for everyone to look at. So if that's your thing that you want to look at, you absolutely can. You can also sign up to have it delivered, I think, to your email. But there were two of them. There was one published at the beginning of April, 4/1, which looked at Singapore. So it looked at 243 cases in Singapore that occurred between January 28th and March 16th. They identified seven clusters in which pre-symptomatic infection likely occurred. So this is people who did not know that they were infected, but were unfortunately the source of infection in these clusters, and 6.4% of locally acquired cases were attributable to pre-symptomatic transmission. Then there was another MMWR on the 3rd of April looking at King County, which is in Washington, and they looked at a skilled nursing facility that had quite a lot of cases. They tested 76 out of 82 of the residents in that skilled nursing facilities. They were elderly. They had multiple medical problems. They were all at really high risk. And they were able to test all of them. Twenty three, or about 30.3%, were positive and about 50% of those were people who would have been considered pre-symptomatic or asymptomatic. So that's really concerning.

Dr. Nicholas Van Sickels: [00:33:56] Yeah!

Dr. JoAnn Jose: [00:33:57] There's another theme -see if you can spot it- that becomes evident as we go through these. Then there was a study looking at the Diamond Princess cruise ship, which we were all super concerned about in February. So this showed that about 18% of infected people never developed symptoms. So it's not just that they were pre-symptomatic. They were truly asymptomatic: they never had any indication that they might have COVID. Then there was the Teddy Roosevelt, which is a Navy ship, and it was in the news because there were all these political machinations with the captain, which we don't really care about for this. But it's kind of an interesting story if you want to look that up. But they had a 4800 member crew, of which 94% have so far been tested. First of all, we should acknowledge that that's a really impressive. That is extremely impressive. And of all the 94% who were tested, about 600 were positive. And of those, about 60% had no symptoms at the time that this report was published. So that's really concerning. So this is a young population because

Navy seamen tend to be younger, and it's a confined space because they were all on board ship, and about 60 percent of them were asymptomatic. At least some of those people were definitely spreading COVID in their environment. And then finally, I think actually they're two more, but there's a study in a Boston homeless shelter. Basically, they recognized early on that the homeless population is at really high risk for COVID. And so when Boston started to have their outbreak, there were some cases in the homeless pretty early on. And so they preemptively tested everyone in a shelter who had or did not have symptoms. So everyone got tested. One hundred and forty six people were positive and they were all asymptomatic. So it's like a super high risk population, all living very close together, and none of them would have been considered symptomatic. And then the final one, I think the most maybe interesting one of all of these is this correctional center in Ohio. So it's called the Marion Correctional Institution. More than 20 percent of Ohio's total cases -I think there are about 12000 of them- are in the prison system. So clearly there's something going on with the prison system. So they did this mass testing at Marion and they found that 1828 of the inmates were positive out of about 2600 total. That's 73% of the inmates. Most of those inmates were asymptomatic at the time that they were tested and would not have qualified for testing based on symptomatic criteria. So the theme that came up here is that asymptomatic people are a bigger source of infection than we realized early on. We need to consider the implications and we need better testing so that we can identify really the scope of the problem, but also the other underlying theme here. Notice how many of these places are places where overcrowding is an issue? A Navy ship, a homeless shelter, a correctional center. How many of those places ended up having asymptomatic transmission and really high rates of infection? So if you were in doubt about whether social distancing is really necessary, well here's your proof that social distancing is necessary. Because populations that are not able to do social distancing have enormously high rates of positivity.

Dr. Nicholas Van Sickels: [00:37:03] And even if those were asymptomatic, I know you know this, obviously, but they spread it to people who are at high risk for disease, especially people who are incarcerated, people who are in nursing homes. We know that black people are incarcerated way more than white people. We've seen more deaths in black people. You get all these asymptomatic cases, you get them around a

lot of people who are at higher risk for complications for whatever reason -and we don't know all the reasons yet- it's a very worrisome situation because people die.

Dr. JoAnn Jose: [00:37:32] And then there are some logistical challenges as well, right? So for homeless people, for example, if they have COVID and they're admitted to the hospital, we can't discharge them to the street. Which is a thing that happens to homeless people or used to happen to homeless people all the time in this country, right? They would be discharged from the hospital and their dispo was the street, which is not acceptable at any time and is particularly not acceptable now. And then for inmates, when they are in a hospital like they're requiring ICU care, there have to be arrangements for guards for them and things like that. Which can contribute to overcrowding in an ICU if there's a guard per prisoner and there's lots of sick prisoners. That's a lot of people and logistics that have to be worked out to be able to get them the care that they need. So there are a lot of challenges with populations that are subject to overcrowding. And it's really important to keep the asymptomatic people in mind when we're thinking about designing policy for them.

Dr. Nicholas Van Sickels: [00:38:23] I love it. Well, I want to end on one last topic that's been popular in the news, especially this week. It even got some attention in early April. Re-infection. Can you get reinfected with COVID-19?

Dr. JoAnn Jose: [00:38:36] It's the million dollar question. Who knows?

Dr. Nicholas Van Sickels: [00:38:36] Can you relapse? Once you get it, do you get over it? Are you done?

Dr. Nicholas Van Sickels: [00:38:42] Two people asked me that, two patients. They're like, "Am I done? What am I done?"

Dr. JoAnn Jose: [00:38:45] And the answer is nobody knows, which is a really difficult answer to give someone. I mean, I can't imagine the anxiety of wanting to go and see your family members or just put yourself out of the semi-isolation that you're in with your household, and not knowing when it's safe to go back. So let's define terms first. Re-infection is that you had it, cleared it and then got it again. A relapse is that you had it,

felt better and then felt the worse again and tested positive. A reactivation is this amorphous idea that maybe you had it, you felt sick, you started feeling better, and then we tested you again because you were maybe feeling worse and it was still there. And we don't know if it went away and then came back, or what the deal was. So a reactivation is actually a term that doesn't have the best definition, and so it's kind of an amorphous term. There are a couple of examples, I think actually just the one that I want to talk about, which is the South Korea one. They did a really successful initial response. I think something that people like to talk about a lot is that they had their first case the same day we had our first case, and their epidemic curve looks very different because they were able to leverage an excellent public health system and a lot almost invasive contact tracing measures. They have a smaller population and they also had some experience dealing with a respiratory pandemic because they had had to deal with SARS a decade or two ago. So the Korean CDC on last Friday or 4/17 said that one hundred and sixty three people had tested positive after a full recovery. That number was 74 one week before that. So basically, they think that this is a reactivation of remaining virus in the patients' bodies. Either they had insufficient immunity to begin with or their immunity was weakened during recovery or something. It's unclear because there is no data on what's going on with these people. The possibilities, none of which are excellent, are a reactivation or a dormant virus, a virus that can go dormant and then become not dormant, which is horrifying. A testing issue, which certainly could be an issue like sampling might be a problem. The test looks for bits and pieces of the virus's genetic material. It doesn't necessarily look for an intact and able-to-replicate virus. It could just be dead virus. And there are diseases in which that happens. There are other diseases in which the PCR test remains positive, even though we are reasonably certain that they don't have that disease anymore. The one example I always use to teach that is Chagas disease, because people can be PCR positive for Chagas disease many years after they had their acute infection. And it's just they're picking up something that isn't actually parasite as far as we can tell.

Dr. JoAnn Jose: [00:41:30] So you could also have a true re-infection, which is a truly horrifying thought. Because it means that immunity doesn't work the way that we think it works if people can get reinfected. Or that it does work like that in some people, but it doesn't in other people, and how on earth would we tell which person falls into which category? So this is like this endless nightmare show, because none of these outcomes

are good outcomes. They did do a series of six people where the virus could not be cultivated in isolation. So that might suggest -but only in like six people, so not rigorous data- but that might suggest that maybe the testing or the sampling is the problem. But I think until we know more, we really have to think about re-infection or reactivation as a real possibility, and plan for that when we're making our plans. Because if we plan for it and it's not a thing, great, we can eliminate that part of our plan. But if we plan if we don't plan for that and that's a feature, that means people die because we didn't plan for it. So it has to be really carefully considered. The situation really raises some of the questions we talked about the last time I was here. So we don't know if immunity is durable or if it is neutralizing. So if people can get re-infected, then that means it's not durable and it may not be neutralizing. Which means that the idea of an immune passport should be viewed with even more suspicion than it's being viewed with now. That doesn't mean that it's not a good idea. It just means we don't have enough data, so we need more data before we make conclusions.

Dr. Nicholas Van Sickels: [00:43:01] Do they know how long it will take to get better information from South Korea?

Dr. JoAnn Jose: [00:43:04] At least a few weeks was what I saw.

Dr. Nicholas Van Sickels: [00:43:06] So hopefully by mid-May we might know a little bit more. And maybe we'll have some data in the US by then even. We'll see.

Dr. JoAnn Jose: [00:43:14] And then this has implications for any plan to reopen. And it has implications for how do we decide who's at risk and who's not. Because if we don't know that this happens, or why it happens, we have no way of knowing who's at risk for it or not.

Dr. Nicholas Van Sickels: [00:43:30] Yeah, well, thank you for coming on today. Thank you for explaining all this, because it is a lot. This week's been a lot. It's only Wednesday. But I think it's good to keep having a dialogue about all these things because like you said, so many of them are so nuanced. Some of them are so complicated that people who are highly trained even take some time to try to

understand it. And talking through it is a helpful way, hopefully, for others to understand the reasons behind why decisions are being made or why they should be made.

Dr. JoAnn Jose: [00:44:05] Yeah, exactly.

Dr. Nicholas Van Sickels: [00:44:06] Thank you for doing that.

Dr. JoAnn Jose: [00:44:07] Absolutely. Thank you so much for having me.

Dr. Nicholas Van Sickels: [00:44:08] No problem. All right, bye y'all.