# Episode 56: From Checkers to Chess

**Chris Dall:** [00:00:05] Hello and welcome to the Osterholm Update: covid-19, a weekly podcast on the covid-19 pandemic with Dr. Michael Osterholm. Dr. Osterholm is an internationally recognized medical detective and director of the Center for Infectious Disease Research and Policy, or CIDRAP, at the University of Minnesota. In this podcast, Dr. Osterholm will draw on more than 45 years of experience investigating infectious disease outbreaks to provide straight talk on the covid-19 pandemic. I'm Chris Dall, reporter for CIDRAP News, and I'm your host for these conversations. It's May 20th, and while the covid-19 pandemic continues to rage in many countries around the world and the specter of new coronavirus variants remains a threat, the United States is moving quickly toward the next stage of its pandemic future, perhaps more quickly than many people were expecting or prepared for. Although the country is still averaging more than 30,000 new covid-19 cases a day, infections have been rapidly declining as more and more people get vaccinated. And last week, the announcement from the Centers for Disease Control and Prevention that fully vaccinated people no longer have to wear masks in most situations, enhanced the feeling that for many, the end of the pandemic is near. But that announcement from the CDC, celebrated by some, criticized by others, also raised a host of questions. Is it too soon to start ditching our masks? How do we know who is and isn't vaccinated? How do local officials and businesses enforce mask mandates and distancing measures for the unvaccinated? What about the immunocompromised, for whom vaccines may not provide full protection? Or children under 12 who aren't yet eligible for vaccination? On this episode of the Osterholm Update, we're going to talk about the CDC's new guidance for vaccinated Americans, the criticism and what it all means for the future. We'll also take a quick look at the national/international situation and share a story about love and loss during the pandemic from one of our listeners. But first, we'll begin with Dr. Osterholm's opening comments and dedication.

**Michael Osterholm:** [00:02:09] Thanks, Chris, and welcome to all of you to another episode of this podcast, we're so glad you're with us. As I say, each week and said sincerely, we know you have many options to get your information about covid-19, and the information we share here on this podcast is surely just one opportunity for that. And so the fact you're spending time with us means a great deal. We'll be talking later in the podcast about the work that we're doing right now to evaluate how we can best serve you with a commitment that we will continue to do that and also one that says we hear you. We want to do what we can to make this podcast the most effective vehicle you have for getting information on covid-19. In that regard, after thinking long and hard this week with the podcast staff, we've decided we have a very appropriate dedication this week, particularly in light of our homework assignment over the last two weeks to help us better understand from you what it is that you want and need. And so we're dedicating this week's podcast to you, the listeners, in large part because of the incredible feedback you've given us, very helpful. And so this week, this one's for you. Thank you very much. And one of the things that I just can't give up yet, give me another couple of weeks until we get to that summer solstice, is sunlight. It's getting lighter and lighter here. And this week's sunlight in Minneapolis/St. Paul on May 20th, we have 15 hours, 2 minutes and 43 seconds of sunlight. We've gained 15 minutes and 35 seconds since our last podcast a week ago. And we've gained 6 hours and 16 minutes in total sunlight since the winter solstice. Now we recognize, we're just about at that point where we're going to see the numbers go the other direction. And maybe at that time we'll consider reformulating our approach to welcoming you on to the podcast. But for now, celebrate the light if you're in the Northern Hemisphere. In the Southern Hemisphere, your turn is just about ready to come. Just another month and you'll start seeing the increase in sunlight too.

**Chris Dall:** [00:04:21] Let's start with what's going on with the covid-19 pandemic in other parts of the world. India remains a house on fire, although cases do appear to be declining a bit, but other parts of Asia are really starting to get hit hard. Mike, is this more of what we've been seeing over the past few months, a combination of more infectious variants, pandemic fatigue and the forces unknown that you've talked about in previous podcasts, all contributing to these new spikes?

**Michael Osterholm:** [00:04:46] Trying to understand what's happening on an international level really does require that dose of humility that I've talked about on numerous occasions. Why do we see certain areas of the world flare up in cases with major surges? Why do we see some areas that have had very little public health mitigation strategies implemented and have had very low levels of vaccination, yet we see very little activity? This virus is doing what this virus is doing and we can't always explain why that might be the case. The good news, however, this week is, is that we're now in our second straight week of declines in terms of cases on an international level. We are at 4.8 million new cases reported in the past week, which is over 682,000 fewer than the previous week. This has been largely driven by fewer confirmed cases in Europe and in Southeast Asia. For example, Europe reported 1.2 million cases the week of April 26th just a few weeks ago. This week it's at 685,000, almost just half of what it was just several weeks ago. Southeast Asia reported 2.9 million cases last week, and this week they are at 2.5 million. I do believe that both of these latter two situations reflect true decreases, not just a function of surveillance and reporting. If you look in Asia, though, and start to drill down in some of the areas that are in fact seeing the surges, the story is very different. India has now surpassed more than 25 million total confirmed cases. We have ample evidence that there is major underreporting going on in India and there may be a hint of decline, however. The seven day average number of cases at 319 new cases for the seven day average and 4,100 deaths for the seven day new daily deaths average actually is slightly below where it was just three weeks ago. We know that while cases are declining, we are still hearing about major underreporting. So it's hard to say exactly how bad things are in India except to say that they are very bad. They were also concerned that there are now reports of the virus continuing to surge in rural parts of the country. And this is home to more than 2/3 of India's population. And oftentimes in the rural areas, they have very limited access to testing and medical care. So we'll continue to follow that. India recorded its highest ever number of daily deaths this past Monday at 4,340 per day. Remember, that shouldn't be a surprise as death is a lagging indicator. So if we had a peak of cases three to four weeks ago, we would expect to see today the deaths are increasing as they have. We also know that India has another major challenge on its hands, as on Monday, the cyclone hit part of the country's west coast, prompting mass evacuations and raising concerns about maintaining electrical supplies for hospitals and factories in the affected areas. This has surely been a very serious blow to the response to covid-19. And the situation in India continues to have major global ramifications. As remember, the Indian government are now requiring that the country not resume exportation of any of its covid vaccines until October, further hampering the COVAX situation. And this is one that we have counted on India's vaccine supply in a major way for the rest of the world and that's not happening. Alongside the crisis in India are continued surges in countries such as Nepal, Sri Lanka, Vietnam, Cambodia, Thailand and Taiwan. I think the Taiwanese situation is by far the most challenging one in that they had had the record of the best control of the pandemic to date and now they're being seriously challenged. Nepal's test positivity rate continues to hover above 45 percent. Hospitals are at max capacity and unfortunately, 400,000 seasonal workers are expected to return to the country from India over the next few weeks. This all makes for an increasingly severe crisis. Finally, I just have to say, in Japan, a major group of nearly 6000 doctors are calling for the Olympics to be cancelled, saying that the hospitals are already overwhelmed. I have had an opportunity to get involved in discussions about the Olympics and the preparedness that Japan has for them. And I must say, I fully agree with this group of doctors. I'm extremely concerned about what will happen as Japan right now is in a situation of ever increasing cases and lack of control. As you may know, a state of emergency has now been issued for a number of areas in the country, including Tokyo, which is the primary site of the the Olympic Games in just 70 days. Finally in Latin America, it is the only region in the world reporting increases in covid cases right now. They were up over 7 percent last week. 7 of the world's top 12 countries with the highest case averages per capita are located in Latin America. Uruguay and Argentina, ranked number two and three, both are reporting upticks in the past week. Brazil, which ranks 19th, has seen a rise in cases where now their seven day case average is 64,000 and their seven day death average is 1,900. I would like to make a point here about seasonality. I keep hearing about this and we'll talk more about it later in the podcast. I just want to remind people that if you look at countries like Uruguay and Argentina, the 30th latitude runs right through those countries, meaning 30 degrees south of the equator. If you look at the North American situation, the 30th degree latitude North runs through the Midwest. They're just on the opposite side of the world from us with regard to what we would expect to see for seasonality. And ironically, the 30 degree north latitude runs right through India, Nepal and Pakistan. So when I hear people saying, you know, this is going to be a seasonal event. I'd like to know where they're getting that information from. What's happening? Because globally, there is no evidence of that yet. And as we'll talk later, you can't assume that the presence or absence of cases in the United States is due to seasonality. I think there are other issues to bear. And let me just update briefly what's happening in Africa. The WHO's African regional office said in its weekly report that although covid cases are declining in the region overall, levels have now increased 20 percent or more in 7 countries. And that this is an area that they have grave concerns about the potential for surge activity in these various countries. And in Europe, the U.K. is by far the best of the good news stories. On Tuesday, they begin to reopen after a 4 month lockdown down. They'll decide on June 14th whether to take the final opening step, which was originally slated for June 21st. They're nervous about the increasing occurrence of the B617 variant, the one first identified in India, and looking to see what impact the vaccines will have on that variant, as well as the spread within the country.

**Chris Dall:** [00:12:18] So here in the US, as I mentioned in the intro, the situation continues to improve. Earlier in the week, President Biden noted that for the first time since the pandemic started, all 50 states are reporting declining cases and 60 percent of eligible Americans have now received at least one dose of covid-19 vaccine. Mike, we all hope this good news continues, but what are you going to be keeping an eye on in the coming months?

**Michael Osterholm:** [00:12:42] At this point, I'm going to use all three of my eyeballs to keep track of what's going on out there, because I think that's what it's going to take. There are many unknowns yet of where we're going. The first and most important message I can deliver today is yes, yes, yes. We are seeing remarkable, remarkable changes in the epidemiology of this disease throughout the United States. CDC is reporting today that there are 9 states with less than 10 deaths due to covid in the past week. They include Wyoming, Alabama, Vermont, Hawaii, Alaska, North Dakota, Montana, Rhode Island and Maine. The list is almost identical to last week's list, but now excludes the District of Columbia, where there were 10 deaths reported in the last seven days, and Nebraska, which actually had reporting of previous deaths and so they had 40 deaths this past week reported. This week's does include, however, Montana. On May 17th, we had 29,287 cases reported in the US with a 35 percent decrease in cases over the previous 14 days. Hospitalizations are down 18 percent and deaths are down 12 percent. There are some areas that were experiencing a 14 day increase in cases that includes, for example, 7 states with increases in hospitalizations. They include Montana, Hawaii, West Virginia, Alabama, Mississippi, Washington, Oregon. But all of these were less than 10 percent, with the exception of Montana, which was 11 percent increase. If we look at places in the US with the highest number of daily cases per capita reported based on a seven day rolling average, Michigan still remains at the top of the nation with 20 cases per one hundred thousand. However, Colorado has now equal that at 20 cases per hundred thousand. And Minnesota is not far behind at 18 eighteen per hundred thousand, with Maine at 18 per hundred thousand, also. I think one data point that really summarizes where we're at right now is that we are reporting this week less than 12 new cases per hundred thousand people per seven day average. This is the first time this has happened in eight months. It's hard to believe what it was like eight months ago, but that's where we're at now. One of the challenges we're going to have when you ask me what's going to happen as we go forward is the fact that we still have big gaps in this country in the level of immunizations. And these are still highly vulnerable areas. We'll talk about that more in a moment when we talk about vaccines. But there are areas in the country right now that have vaccination levels that we're not that far off of where Michigan was when it was a house on fire. And so why we're not seeing transmission in these states right now, I don't think we can attribute it to vaccine, although it is helping. We can't attribute it to mitigation strategies where in many of these states they are very limited. And this is that point that I've raised earlier about Mother Nature. I've been asked a number of questions, what do I mean by Mother Nature? You know, does she have this grand plan? Is there a physics equation that I can express to people that, you know, somehow explain what's happening, viral gravity? I can't. I just know that the unpredictability of this virus and why it's doing what it does lends itself to lots of experts explaining why and what's happening, I mentioned earlier about seasonality. And at this point, I don't think we know. I am still befuddled about why B117, which as we saw really have a tremendous impact on Europe through January and February. We saw the number of cases of B117 pick up in this country, and yet the only two states that were really hit in late March and April were Michigan and Minnesota. Why? I've never seen a respiratory transmitted pathogen put a house on fire status in a state, and the adjoining states enjoy very little activity. If you look at Indiana, the state immediately south of Michigan, borders adjoining, actually had in March one of the lowest levels of vaccination in the country. And yet we saw no spillover in Indiana. Now, just for the same reasons these states were not impacted, could be why they will be impacted in the future. Look no further than Asia. We held out Thailand, Taiwan, Vietnam, Cambodia as models. We kept saying, look at how good they're doing. Why can't we do what they're doing? And now look at what's happening there. So I think this unknown piece is still there. And I think we will be studying for a long, long time what happened with B117, what it did and what it didn't do and what it still may do. And so from my perspective, on a national level, this is good news, but we're far from done with this virus yet.

**Chris Dall:** [00:17:39] So now to the issue that I think most of our listeners have been waiting to hear from you on the CBC's announcement that fully vaccinated Americans are now safe to resume most activities without wearing a mask. Mike, I know you have a lot of thoughts on this issue. Where would you like to start?

**Michael Osterholm:** [00:17:57] Well, I'd like to start by waking up one day and realize this is all just a bad dream, that wouldn't be a bad place, but I know, unfortunately, that's not going to happen. Let me lay out for you a picture. Something that I think we all have to look at carefully to understand any one aspect of vaccines, masks, exposures, whether it be indoor or outdoor, and what our end game is. I think right now we risk public health credibility like we haven't through the duration of this pandemic. And we know it's been pretty tough and rough through many of these months. The public is taking in all this information and the more confusing the information gets, the more they distrust what the message is that we're providing them. And we heard that loud and clear this past week when CDC changed their recommendations on the use of masks. We heard those who are excited by the change and others who were very upset about it and said that it set us back, not forward, and it put people's lives at risk. So let me walk through vaccines, masks, the protection of outdoor air, and then what is our end game and where do we go from here? And I hope that this will give some sense of where I think we're at. If we look at vaccinations again, we continue as a country to shine. I give great credit to the Biden administration, to state and local health departments, to our medical care facilities, to the many volunteer organizations, to the community clinics, to the private pharmacy companies. Go down the list. All the people who have made it possible for us to deliver right now on over 270 million doses of vaccine. That's just simply remarkable. But if you look at where we're at, we still have a ways to go. And we talked last week about what has happened in the Seychelles and the fact that we had a country that had the highest reported immunization levels in the world at over 70 percent, with one dose and the 60 percent plus with two doses. And these were vaccines, the Sinopharm vaccine from China and the AstraZeneca vaccine made in India. And there was some suggestion that maybe they weren't performing at the same level as the mRNNA vaccines we're seeing in this country. But they were still performing very well and yet they were in lockdown. So this idea that there's this magic number we hit and suddenly everything stops, first of all, has to be right now thrown out the window. That's not the case. We can sure do a lot, but we're not going to hit this herd immunity issue. Let me just provide some perspective. While we will often use a specific percentage to describe the level of vaccination in our country, such as the fact that right now 60 percent of all adults have at least one vaccination, you have to start to break it apart to really understand what's happening in terms of potential risk. Right now, if you look at all the population, 47.7 percent have had at least one dose, 37.5 percent are fully vaccinated, only 37.5 percent. If we look at the population under 12 years of age, this new group that is now critical because of the fact that we're adding in the younger kids to this, 56.5 percent had a single dose 44 percent are fully vaccinated with two doses or the one J&J dose. If you look at those 18 and older, that's where the 60 percent comes in. 60 percent, as I said, have had at least one dose. 47 percent are fully vaccinated. And there also is good news in that 84.6 percent of our population over sixty five years of age have had at least one dose, 72.8 percent have had both doses or the one dose of the J&J vaccine. So why am I concerned about this? Well, it's almost a tale of two states. If you look at what we have happening in this country, we have a number of states that are substantially below the numbers I just shared with you as an average. If you look at 10 states in the country, you'll see very, very different pictures of vaccination levels. Mississippi, 32 percent of the population has at least one dose. Louisiana, 34 percent. Alabama, 35 percent. Wyoming, 35 percent. Idaho, 36 percent. Tennessee, 37 percent. Georgia, 37 percent. Arkansas, 38 percent. Indiana, 39 percent. And South Carolina, 39 percent. Note that all of those states are either clustered in the south or the two states in the Rocky Mountain region. So from that perspective, we're not going to be done for a while yet, we are going to be working really hard to get these last few percent of people vaccinated. So when we say 60 percent have had at least one dose, don't count on it,suddenly gettinng to 70 percent or 80 percent. Now, the CDC announcement on the issue with masks, they pointed out also about studies showing how well the vaccines were working such that they meant the transmission of the virus among vaccinated people, should they become infected, would not be a challenge and would therefore not mean you continue to need masking. Well, I found this a little confusing, quite honestly. And even among my colleagues who have cited a number of studies, and I say confusing, not because I don't believe these vaccines are really, really powerful tools. They are. They are incredible what they are doing. But the data that was put forward, frankly, was pretty obtuse, and there's actually six studies that people have cited and among those six studies, they all showed how well the vaccine worked in primary prevention. Remarkable. But for five of those studies, they didn't even measure anything related to the possibility of secondary transmission and how it was prevented by being vaccinated. So if I was somebody in the media or the public, I might say, wait a minute, how, you kept telling us this is what you're doing the studies for, and yet these aren't the data that are really presented here. So I'm not suggesting that that by itself should have been a reason to or not to do a change in the masking recommendations. But I think we owe it to the public to say, what do we know and not know? And these studies just didn't address it. They all addressed how effective the vaccines are. I think also there were some situations where people raised questions about what do we know about the J&J vaccine in terms of breakthroughs? And is the single dose going to be as good as a double dose with mRNA vaccines? And there were surely some colleagues who have expressed concerns, just saying, well, we'll have to wait and see what the data shows us. And I think that's true. So after having pushed the J&J vaccine as strongly as we have, suggesting it's just like the mRNA vaccines, I'd stay tuned. I think we very well could be seeing in the near term new data which might support a need for a booster, i.e. the second dose. I hope I'm wrong. And I don't want anybody to come away from this podcast saying I said you're going to have to get a second dose. But I think we need to be open to that. And we also have to be open to the fact that these studies that I just shared with you, that we could go into great detail, these six studies that have been touted as showing that there is no secondary transmission, never really measured that. Which gets me to another point on the issue of breakthrough cases. I worry that we, along with the masking issue and vaccine, are going to have a crisis someday down the road in credibility about the breakthrough data. Breakthrough data is by itself very, very difficult to interpret for people, meaning that when I hear from someone they say, look at, over 115 million people have been vaccinated and we only have 1359 breakthrough cases. That means that 0.01 percent of the people got infected after having been vaccinated. And I don't think the data can support that at all. The breakthrough data surely does, I believe, support that these are very, very good vaccines. But again, it comes back to credibility. For example, if we look at the breakthrough cases, we would definitely expect to see cases occur after vaccination, even in 90 to 95 percent vaccination level would mean that such cases would occur. Now, you have to be careful about taking the number of individuals who have been reported breakthrough cases and putting it over the total number of people who have been vaccinated. And then coming up with this incredibly low, low, low rate, making it look like the vaccines were thousands of times better after these trials than they were during the trials. Why? Because many of the 115 million people who had been vaccinated had never been exposed to the virus since they've been vaccinated. So they couldn't have been a failure or they couldn't have been a success. We can only count on the breakthroughs as it relates to the number of people who have actually been exposed and could have been infected. But here's the second thing that I worry about. CDC today reports 1359 breakthrough cases, which to many people seems like a lot. You think about the number of people vaccinated and the potential number of infections. It's not. But I see people on the news channels and in the media all the time commenting about how good these numbers are and citing these numbers. I have actually heard just in the last two weeks, several of the experts saying 'and there have been no deaths associated with these, look how much better it is you're still going to have milder illness'. Well, that's just simply not true. Among the 1359 cases that have occurred and been reported to the CDC that are either hospitalized or fatal cases, there have been 223 deaths among people who were fully vaccinated. Now, right up front, we have data that supports that 42 of the 223 reported as asymptomatic or not related to covid-19 when they died. They may have been infected, but that was not what caused their death. On the other hand, when you look at that number, it will shock some people in the public to see that we should be telling that story honestly so that one day someone doesn't go say, "Oh, I just heard yesterday there have been no deaths and now you're telling me there's 223." Tell them what we know and don't know. We should be looking at all cases, whether fatal or not, to better understand our variants having an impact on the success of our vaccines. And most of all, stop saying that these are just all mild, mild infections. They generally are. In fact, many of them are so mild that they will be asymptomatic infections. Many of them will occur in those over sixty five, 1080 of the 1359 cases that have been reported to CDC were in people over sixty five years of age. Is that a surprise? No. Look at flu vaccines. Oftentimes we will see major challenges with influenza vaccine effectiveness in the frail elderly, including those who are fully vaccinated dying. So I only raise this not to confuse people or to make people think, oh, boy, this isn't real. The point is, is that I just think we have to be more clear to the public. Now in terms of the other area that I think is so critical is masks. This is a tough one. I have been trying to nuance the mask issue of protection, what we can do, should do with this, since the beginning of the pandemic. Last June 3rd, I did an entire podcast on masks and science. And of course, my inbox was loaded with people who thought that I had betrayed the public health cause, etc. by trying to nuance. If you look at the ACGIH organization, this used to be called the American Conference of Governmental Industrial Hygienists, the people who really understand occupational risk, they understand the issues about inhalation related disease, how to prevent them. They put out a series of really outstanding documents on covid-19 and what we all need to do to protect workers, but they apply also to the public. Their Covid-19 Pandemic Task Force published data, which was an initial effort by the CDC, in this case NIOSH, to look at the time to infectious dose for someone not infected with covid-19. So meaning if I'm not infected already, what's my risk of getting infected using various types of respiratory protection devices? And if they look at nothing or a face cloth covering, a surgical mask or an N95 that was not fitted, or in N95 respirator that is face fitted, in other words, fit testing. And you know what, if you do nothing and two people do nothing come together and they swap the same air in 15 minutes, you can easily have an infectious dose exchange between the infected and the uninfected person. But if you look at these others, such as cloth face coverings and you have someone who has one of those on and has contact with someone who has nothing and who is infected, that time to infectious dose goes up to 20 minutes. It's only 20 minutes. If you have a surgical mask on and the receiver now is receiving that virus again from somebody doing nothing, you still get an infectious dose in 30 minutes. So if I'm at a grocery store or I'm at a location where there may be a high level of virus, I'm still am vulnerable. And it goes the other way, too, in terms of, you know, what is the source wearing and what is the receiver wearing. Now, if you get into N95s, even if you don't face fit it and you look at that, its twenty five hours before you would have enough to get an infectious dose. If you both are in fact fit tested for an in N95, it's two 2500 hours. Now, we lump masks together all the time. Have you heard anybody try to distinguish masks to you? They put them all together, whether it's a face cloth covering, a surgical mask, or an N95 respirator, and that's been a big disservice to the public. All I've heard all week is masking, masking, masking. That is like explaining the difference between an old model car that only has a seatbelt in it and one that actually has a seatbelt, has airbags, it has a collapsible body on impact, it has the fracture glass, that means that shards don't go flying, adds all the other safety details into it. And we're now making these two equivalent. I can tell you that if both of them end up hitting an inanimate object at three miles an hour, probably the outcome is going to be the same. But if both of them are in a head on collision at 45 miles an hour, I just bet you the one with the seatbelt, airbags, collapsible body and the shard glass are going to do a lot better than those in the car with just the seatbelt. Now, I want to be really clear, I have continued to recommend any kind of respiratory protection that you can use. So this is not to say I'm anti-mask. Some will try to do that. But please be aware if you're wearing a surgical mask or a face cloth covering and you're in contact with someone for 20 to 30 minutes, you can get an infectious dose. And we've not concentrated on that at all. And I think CDC has been absolutely derelict in its duty not to further explain respiratory protection by time and by the kind of respiratory protection you're using. Part of it, I think, has come from the fact that until just recently, they didn't support the fact that aerosols were important. And these data I just shared with you are based on both inward and outward leakage of particles that would be in the aerosol level. So I just want to point this out to you as we're having this debate about throwing your mask away or not. What are you talking about? And as we look at today, what is so important is among those individuals who have underlying immune compromised conditions, some type of immune deficiency or the frail elderly who are experiencinng what we call immunosenescence or reduced immune response, it becomes important what they have to be protected against and how you're going to do it. That has been missed. The environment you're in has been missed. And so we need to have much more discussion about what mask means and we have it. So when CDC said you can stop wearing your mask if you're fully vaccinated, I believe that the vaccine is a much, much, much more potent weapon than face cloth coverings or surgical mask. I don't believe it's more potent than an N95 respirator that has been fit tested somewhat in the equivalent. We are putting the data that I just shared with you on our website today so that you can also go look at these numbers yourself that were generated by a group of experts. And just to point out to you that this is what we have to consider when we talk about masking. So let me just move to one last piece about well, wait a minute, we've heard over and over again how well masks work. As I said in my piece last April, have continued to nuance it exactly the same, there have been organizations that have looked at the data around respiratory protection, and one of those was actually an ongoing evaluation by the Agency for Healthcare Research and Quality. Dr. Roger Chou and colleagues have been evaluating respiratory protection and in their most recent update, where they have continued to follow this over time, they just said, and I quote in their most recent report, "On the basis of evidence from one randomized controlled trial and two observational studies, the strength of evidence for mask use versus non-use for the prevention of sars-cov-2 in the community was previously assessed as low for a small reduction in risk for infection with any mask use." Now, some could take that as don't wear them. No, I'm saying wear it, even low protection is good. It's very helpful if that is that 15, 20 minute kind of exposure and you've just taken it off the table. But don't assume that because you wear something for eight hours a day and you're in a high risk setting, that that's going to protect you. So I hope that people see this more not as an indictment of masking, but more a criticism of how we have given people the gradient of protection that comes with the issue of masking. And right now, vaccine with short of the N95 respirators is by far a much, much more powerful protective tool than is mask in and of itself. Let me just provide a quick update on the situation of outdoor air. This is another area I think we're basically leading the public to a place that we don't want to be because we're going to see some conflicting data coming out that then will challenge the whole notion of outdoor air. I, for one, have been a very strong proponent of outdoor air and how well it works. I myself have, you know, gotten rid of my face cloth covering several months ago when I was outdoors, walking in a park by myself and with my partner. Very comfortable with that. But outdoor air is not a 100 percent guarantee that you won't have transmission. And again, this is advice we have to give to people as a setup for what's going to happen this summer. We last summer in Minnesota worked up an outbreak that was associated with an outdoor concert and dance for a local community, it was held on July 4th. It was at a campground in rural Minnesota. The festivities lasted for three hours. The week after the gathering, there was an outbreak of covid cases which the health department worked them up. They did a remarkable job investigating this situation, and they found that the outbreak was defined as at least three cases from three different households reporting the event. These people were all standing outside. They were all basically shoulder to shoulder together in a crowded venue and singing and loud voices, etc. And they found when they looked at the viruses from these different individuals who were at this and who had onset just days after the event, that, in fact they were all of the same related virus. Now, this clearly was an outbreak associated with an outdoor concert. The sequencing supported that a super spreader event likely occurred and that even outdoors, if you're all crowded together for a prolonged period of time, if there's a super spreader in that environment, you can have transmission. I just point that out to you because I don't want people to get confused, generally speaking, outdoor air is much, much safer and you can feel confident and comfortable not wearing some kind of respiratory protection in that setting. But if you're going to a bunch of outdoor concerts this summer or you're going to some events where you're all standing together quietly in a sense, meaning you're not moving all around. You could see these kinds of events and you need to then think about what kind of respiratory protection would I take if I'm an older individual who may be at higher risk for severe disease, I'm an immune compromised individual. What should I consider in that regard? So to me, we also have to get our messaging right on outdoor air. I've heard a number of people say it doesn't occur outdoors. All you do is go outdoors. That's just not true. Let me close by where are we going? What's our endgame? And I think this is a huge challenge right now. This is one where we should be making decisions much as a chess master anticipates the moves down the board. And I fear we've been playing this far too much like I play checkers with my 11 year old grandson. We should have and could have seen that when the CDC made its change last week, the governors, business owners, the public positions, health care providers in general, state health departments were all going to be caught in the lurch. And that's a hell of a way to make public policy. And it does not engender the support of the public. Now, grant you that the use of respiratory protection, masks, whatever you are using, is obviously going to create emotional responses when you do something like this. I was one that said, you know, we're at a place where we're not going to see in India here in the United States. We're not. We've taken that off the table. We have enough people vaccinated, but we could see surges occur. How does that play out there in terms what we're trying to do, what's our messaging? We want more people vaccinated. We have a lot of people were reluctant. Will, by somehow changing the masking recommendation, change that? I don't think so. I don't think it's going to make it worse. It's not going to make it better. For those who are protected with the vaccine, you know, the data do support that that's the most important thing you can do to reduce your risk. So why not allow people to do that? The question really comes to play, so what is our next move, what is our endgame? What are we trying to do? Well, we can try to get back to a new normal, a new normal might be what is the influenza world? There are an average 38,000 deaths a year from influenza in this country. If you look at it, most of them are occurring in three or four months of the winter. We might get up to four or five, six, seven thousand a month. If you look at what's happened relative to covid, we're now beginning to approach the number of deaths that we might expect to see with an influenza year. Does this mean we've hit now the new normal that we're willing to accept or are we going to only accept if we get it down to zero? And then when I say accept, what does that mean? Does that change the way we operate what we do? I'm going to share with you very briefly an article that was posted on the website of Peter Sandman and Jody Lanard. I referred to the many times on this podcast. I think there are some of the most skilled, gifted experts in the world on risk communication. And they published an article over the weekend called 'We're Not All in This Together Anymore: CDC's Unspoken Adultifying Message Regarding Masks and Social Distancing'. This, too, will be linked on our website. You can go and read the entire piece. What Peter and Jody laid out was really to get to this new world order of covid, CDC needed to reach three conclusions. One, that the residual threat unvaccinated Americans posed to vaccinated Americans is small enough to be acceptable. And I think the data would support that. Number two, that the amount of morbidity and mortality that result when unvaccinated Americans, most of them young and healthy, are free to abandon non-pharmaceutical interventions without third party policing will also be small enough to be acceptable. Well, what is the mask prevention efforts? How much have they prevented? Widespread hospital overcrowding, for example, is no longer a likely outcome. Number three, that given the first two points, continuing to recommend NPIs for all Americans, but unduly penalize those who are vaccinated and unduly minimize those who are unvaccinated. We need to start thinking about how do we deal with people who are not going to get vaccinated? I don't want to sit by them in a restaurant. I don't want to sit by them at a theater event. Maybe immune passports are going to become something more commonly accepted. In Minnesota back in the 1970s, we were the first state in the country to enact clean air acts inside of our restaurants and bars. And at first everyone said, "Oh, this is going to be terrible. This is going to be a major problem, bars and restaurants will suffer immeasurably." You know that their business just went up because 70 percent of the population that didn't smoke wanted to go to a clean air location, to eat, to drink, to socialize. Are we going to see one day that restaurants and entertainment venues and airlines and cruise ships and all these places are going to say, you know, "You don't have to come with us, but if you are going to come, you have to be vaccinated"? We need to start thinking about things like that. I'm not sitting here today to say that's going to happen or necessarily should happen. That's the world we need to start planning for. What are we going to do? And we're not. So in conclusion, Chris, in a very long answer, I hope that number one people realize these are incredible vaccines. They are highly effective. Our challenge right now is getting those who have not yet been vaccinated vaccinated. Number two is we've got a message about these vaccines appropriately. Don't make them to be perfect. Don't make them to be without some concerns about do they fully protect the elderly or the questions we just raised. Will we have breakthrough cases? Yes. Well in proportion to what we'd expect to have happen within 90 to 95 percent effective vaccine. Number two, we've got to start being much more direct about masking. If it's your mother or grandmother who's immunocompromised, you want to know what's the respiratory protection that she ought to use if she's going back out into the public? Stop talking about masking. I even hear the experts in aerobiology who keep talking about their masks that doesn't give the public a definition of what they should be doing. I do not understand after 14 months, 15 months into this pandemic, we do not have better respiratory protection for the world. Why don't we? We need that. That's a demand. Number three is we have to understand outdoor air is great, but it's not perfect. And you need to consider that as you all celebrate this summer in large crowds. And finally, we need a game plan. What is our game plan here? What are we going for? I believe one of the standards we use is influenza. If we get to be like an influenza year, are we going to shut down or are we going to keep kids out of school? Are we going to require people to wear masks in all kinds of settings? And we don't even know what those masks mean. I think now is the time to have that grand plan discussion. Envision what the future will look like, and don't keep making decisions that come out in the next news cycle that have tremendous implications for people, both in terms of real protection and their psychology and then cause great consternation. So I hope if nothing else in this section, you came away with the sense it's not easy, it's complicated. But also, telling the truth and just laying it out there is the best bet in the end.

**Chris Dall:** [00:48:17] So as you might have guessed, we received a lot of emails from listeners about the new CDC guidance, many expressing concern about whether it was the right decision. Here's one from John. And I'm using it because it gets to an issue that you just mentioned. John writes, "I was surprised by the new CDC guidance not to wear masks. I'm fully vaccinated, but have two children under 12 who will not be able to be vaccinated until at least several months from now. I understand that the vaccines are very effective, but I don't see how the distinction is going to be enforced in public. I don't trust that strangers in indoor spaces are going to be consistently following the honor system, given everything that has happened over the last year. While I understand that young children rarely have severe acute illness, I also worry about potential long term effects of covid. More than anything else, at this point, I do not want to expose my young children to the possibility of a lifelong disability." So, Mike, this question about the honor system and how we can trust the people who aren't wearing masks are vaccinated ultimately leads to the issue of vaccine passports, which you just touched on. Your thoughts on this issue?

**Michael Osterholm:** [00:49:20] The unfortunate reality is that there are people who will not be truthful about have they been vaccinated or not, whether they are wearing a mask or not. Remember what I just shared with you about the power of the mask to prevent transmission? In those low risk settings with limited time exposures, they can be effective if they're a cloth face covering or gater or something like that. But if it's more of a high intensity contact area with lots of people in an indoor environment, then you're going to need better protection right there. So just assume that now and think about that. Don't just assume that a piece of cloth over your nose and mouth are going to make the difference. Now, having said that, I do believe we're going to get to the point where people are going to say, I don't want to be in a setting where people who are not vaccinated are also there. Early on, I heard from many people who were dismissive of the concept of immune passports or even to the point of very agitated as such a consideration might be on the table. And their point was, look at this would be discrimination. You know, some people can't get vaccinated. Well, that was true. That's not true anymore in this country. Basically, you can get vaccinated. Now, we still have work to do for those who have been hard to reach, especially in some of our communities of color and low income areas. We do need to help them get vaccinated. But the point is, you wouldn't be discriminated anymore. If you decide not to get vaccinated, that's your choice. It's not because you couldn't afford it or you couldn't get access to it. And I think you're going to see more and more people who are going to say, you know, one, "As an employer, I want to mandate this vaccine so I don't have a challenge or a problem in my business." I think that's going to happen, particularly as these vaccines are fully licensed and approved and no longer an emergency use authorization. Number two, I think you're going to continue to see movement towards the kind of passport thing I talked about. You know, I gave up my eyeballs and my fingerprints to a private company so I could get on and off a plane quicker. That I think is going to be something that will be discussed. Will it happen? I don't know. But like the smoking/non-smoking environments of restaurants and bars, we saw how that didn't detract from the number of customers, but actually supported it. I think there are probably 50 or 60 percent of Americans right now that would say, wow, if I could go to a social event tonight, like you go to a wedding, I can go to a funeral, I could go to a bar or restaurant, I could go to a concert, I could get in a plane, and I knew that everybody else in that environment were vaccinated, that would put my mind at such ease. Particularly if I'm one of those 12 million people who are immune compromised. So I think this is still a discussion as to be had. I think it's going to take a while to work through it. But I agree right now, you know, you want to protect your sons. I happen to know of far too many young adults and older adolescents who have survived the classic covid-19 infection but now have long haulers disease. I can understand the concern. So I think the faster we have these discussions, the more we concentrate on how are we going to live with this virus now. We've been learning to die with it for the last 14 months. How do we live with it is going to be important. So I want to support your concerns here and just say that for now it's our hope that we as a society will take this issue on. And we're not telling people who aren't vaccinated that, you know, you are less than us. We're not sitting here, you know, trying to beat you into submission, we're saying, but for our own protection now, you know, we're going to take these steps. If this were tuberculosis and we had infectious cases of TB, would any of us think it would be OK to have them go to a restaurant tonight? Would anybody think that they should get on a plane? We got to start thinking about this situation in that regard.

**Chris Dall:** [00:53:30] So, Mike, a few weeks ago, we asked our listeners to share their thoughts on the podcast and what they would like to hear more or less of. We've had a huge response, well over 500 emails, and we've had some time to take in these suggestions. So can you tell our listeners what they can expect going forward from the Osterholm Update podcast?

**Michael Osterholm:** [00:53:52] Well, first of all, I want to thank the listeners for their incredible feedback. It has been very helpful, as I noted at the opening of this program. The input we've received has been so helpful. At this point, we have made some decisions within the podcast that obviously we're going to continue, but our center has basically been working nonstop since this pandemic began. We actually have staff who have not had a day off since February 2020. And we're burning on fumes right now. And it's a challenge. So we have decided we're going to move the podcast once every two weeks just to be able to accommodate all the other issues and all the other work challenges we have within the center. But we're not giving up. So we'll do one next week and then we will take a week off for the Memorial Day weekend. And then after that, the following week have one, and then every other week after that. And we may change it if we find that there is just too much information to try to put into one podcast, if we find that there are emergency situations where something new comes up that really can't wait two weeks. We're going to be flexible with that. We want to provide you with what you're asking for. As far as the rest of the format on the program, we're looking at that very carefully. You had many very thoughtful suggestions. And thank you to all those who wrote in. And I'm sure there are people who would have liked to have written in about this, but nobody actually suggested to fire me. You know, they wanted me to maybe change a few things, but nobody said get rid of the bum. So that was good news, okay.

**Chris Dall:** [00:55:36] This week, we don't have an act of kindness to share with the audience, but we do have a really touching email that was sent by a dedicated podcast listener that we thought was very important to share. Mike, can you read it and then share your closing thoughts with us?

**Michael Osterholm:** [00:55:50] This week, I've actually chosen this letter as both the act of kindness, but also a act of love. And one that gives us a perspective on this pandemic like few others I've read. And I want to share that and use this then as my closing in addition. This came from Janice B. She writes, "I'm writing today to share a positive story related to the covid shutdown. In November, 2019, my daughter Juliet began hospice care. She was born with mitochondrial disease, which is a progressive degenerative disease of energy metabolism. Juliet was very affected by her disease. She was never able to walk, talk or eat by mouth. She was, however, a lover. She loved with a pure, fierce spirit and faced each day bravely. Any illness has dangerous repercussions for Juliet. So we always led a life in which handwashing and protecting Juliet from illness were our top priorities. In 2014 she barely survived 46 days of intubation due to two rhinoenteroviruses, the common cold. So when covid began to spread in China, we followed along closely to the news. When the world shut down on March 13th, we chose to give up our nursing care for Juliet, which was 12 hours a day and nine hours overnight. It was really a no brainer. There was no way we could take the chance that after fighting to keep Juliet alive for her entire life, we would lose her to covid. My husband took leave from his work as a helicopter pilot and as a teacher, I was teaching virtually. We took over all of Juliet's care services, which was no small feat. Because her stomach was no longer able to digest food through her feeding tube, she had been placed on total parental nutrition and was receiving her nutrition through a central line in her chest. We had to learn how to complete weekly blood draws and dressing changes, which is a bit intimidating for a pilot and a teacher with no medical training. I'm not sure I ever completely stopped shaking as I completed these tasks, but I definitely got better over time. In April, we decided to spend all of our newly found time at our vacation home in the Pocono Mountains. It was Juliet's happy place. She loved going on cool walks there and sitting on the dock overlooking the lake. Juliet fought so very hard over the summer. Sadly, her disease continued to progress and she passed away peacefully in our loving arms in September, 2020. Juliet made it to 16 years of age, which is a small miracle in of itself, as she was not expected to live to be five. My husband and I look back at the six months of Juliet's life and feel so grateful. While most people felt like they were missing out on life, we had the extraordinary blessing of spending all day, every day with an angel right here on Earth. We got to love her up day and night. We built beautiful memories of our family in Juliet's happy place. For that, we will always be thankful. Janice." I couldn't find song lyrics, I couldn't find poems more beautiful than this. Janice, to you and your husband, we're so sorry on your loss. But we also celebrate the very fact that you found the love during a pandemic and that there are people on this podcast who have also had those moments. We want to celebrate those. Those should never be forgotten for one moment and always remembered as we go forward as that there is more good in humans, there's more good in this world than there is bad. This pandemic has challenged us, it's challenged just like few other things could ever do, but you've given us an opportunity to see what also is the goodness of this world. So in that, I close on this beautiful, beautiful statement of love and I just want to thank you all again for being with us. We are listening to you. I know this is a long podcast this week and I apologize, but I think that the facts of dealing with the vaccines, the masking, etcetera, were so important. And we look forward to being with you again next week. So just remember to be kind. Be kind, be tolerant, be patient. It's hard right now, particularly given the masking issue and the anger that has evoked in many circles. Be kind, be patient, be safe. Be safe. Understand what masking means and protect yourself. And if you haven't gotten vaccinated, get vaccinated, please. And for those who are all vaccinated, remember, two more people this week we need to get vaccinated. OK, that's your homework assignment this week again is get two more people to get vaccine. So thank you very much. Be kind. Be safe. Thank you.

**Chris Dall:** [01:01:03] Thanks for listening to this week's episode of the Osterholm Update. If you're enjoying the podcast, please subscribe, rate and review. And be sure to keep up with the latest covid-19 news by visiting our website CIDRAP.umn.edu. The Osterholm Update is produced by Maya Peters, Cory Anderson and Angela Ulrich.