

Episode 41: Failure is Not an Option

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.

Chris Dall: [00:00:41] It's been more than a year since the coronavirus pandemic began, but if you took a quick look at the latest headlines this week, January 2021 feels an awful lot like January 2020. While the reduction in covid-19 cases and hospitalizations in the United States and the roll out of vaccines is bringing a glimmer of hope, earlier in the week, President Joe Biden announced strict travel bans on non U.S. citizens traveling from the United Kingdom, twenty six European countries, Brazil and South Africa. In fact, borders are being tightened throughout the world as health officials try to stave off the arrival of more contagious coronavirus variants and prevent another wave of infections. On this January twenty eighth episode of the Osterholm Update, we're going to discuss where we are in the trajectory of this pandemic, which surpassed 100 million cases this week, the impact the variants might have and the vaccine rollout. We'll also answer some listener emails on what continues to be one of the most challenging questions of the pandemic: whether to reopen schools for in-person learning, and how that issue may be complicated by the coronavirus variants. And we'll hear about an act of kindness from one of our listeners. But first, as always, we'll begin with Dr. Osterholm's welcome and dedication.

Michael Osterholm: [00:01:48] Thanks, Chris. And welcome to all of you for joining us again. We're so very glad you're with us. We appreciate you spending time with us each week. For those who might be new to the podcast, welcome to our podcast family. We very much appreciate the fact that you have many options to get your information on covid-19 and the fact that you spend time with us means a lot to us here at CIDRAP. And I hope that you find today's podcast in particular of some support for you in dealing with this issue. I want to begin by just first acknowledging that I know that many of you have had to spend many hours on your computer looking at a screen, trying hopefully to

find a location where you will be able to get your covid-19 vaccination. Some of you have spent hours on the phone. I just know that for those, all of you, who have done that, please, you must continue to do that. And as I'll talk today, I believe that the system for delivering these vaccines is going to get much better. But I know how desperate it can feel sometimes wanting to get that immunization and for many individuals as they're trying to get them for their mom or dad or their grandpa and grandma. So this program today is dedicated to you. Please don't give up. At the same time, I also have some good news. Real good news, everybody. We're following this carefully. On January 20th here in Minneapolis, the sunlight length is nine hours and thirty nine minutes. We've gained 16 minutes since last Monday. We've gained fifty three minutes since the winter solstice on December twenty first. And next week we're going to pass one hour. So the world is becoming enlightened and lightened. And I feel like at this point we couldn't have a better way to spring us forward as we take on this pandemic than to make our days more and more light filled. I want to start out this week's episode by just sharing with you a title that I have thought long and hard about trying to capture the moment that I feel we're in. The title is Surrender is Not an Option. Two weeks ago, I said that the whole world is at war with this virus. We are. From the very start, we've employed warlike terms talking about our front line workers who have been deep in the trenches of the struggle. The nation is scrambling for resources, ventilators, PPE and even oxygen. Much in the same way as happens with a war. In fact, the Defense Production Act has been activated to help in this national battle we've been waging for a year. So I think military analogies are definitely appropriate. Which leads me to a true story from World War Two that is now fitting for our current situation. It's all about those brave soldiers who are now part of what we have come to know as the greatest generation. This story took place in Bastogne, Belgium, six and a half months after the allied troops landed at D-Day. Known as the Battle of the Bulge, it was a major German offensive campaign from December 16th of 1944 through January 25th 1945. If it had succeeded, it would have crushed the allied invasion. American troops occupying Bastogne were surrounded by a much larger German force. The German command sent a letter to General Anthony McAuliff, who was in charge of the US forces. The note read, "There's only one possibility to save the encircled USA troops from total annihilation. That is the honorable surrender of the encircled town. In order to think it over a term of two hours will be granted, beginning with the presentation of this note. If this proposal should be rejected, one German artillery corps and six heavy AA battalions are ready to annihilate the US troops near Bastogne. The order for firing and

will be given immediately after this two hour term." McAuliffe offered up an immediate reply, which was typed up and centered on a full sheet of paper and sent back to them. His message was a single word, "Nuts". Honest to goodness, this is an absolutely true story. Nuts was McAuliffe's favorite word for nonsense. Think about what he was facing. He had never confronted this sort of potentially hopeless situation before. He was, as we talked about two weeks ago, in a place he had never been before. His reaction in this moment is what makes this story, I believe, so worth telling. It was a situation where it would have been understandable to consider surrendering. He had hoped the reinforcements would come, yet there was no guarantee when they would arrive. He had only his courage, only his courage. There were thousands of lives at stake, but he was not about to surrender. He did know that help was on the way. The Germans were insulted, but four days later, the US 4th Armored Division arrived, led by General George Patton. The Germans were beaten back. The Americans prevailed with limited casualties. In war, surrender is the last option. Ladies and gentlemen, right now, more than I can ever put into words, we recognize that we're in a covid war. And surrender is simply not an option. Like the Fourth Armored Division, vaccine is on its way. Nuts to this virus. Nuts to this virus. Yes, surrender is not an option, and today we'll talk about why surrender is not an option.

Chris Dall: [00:08:05] Mike, the downward trend in US covid-19 infections and hospitalizations that we started to see last week appears to be continuing, although our baseline remains very high with a seven day average of around one hundred seventy thousand new covid-19 cases a day. So what does this trend mean for future cases here in the U.S.?

Michael Osterholm: [00:08:24] When we're on a journey like this, we're always looking for good news, we want to need good news. But before I comment on this moment, let me just remind us all again, I did this last week, but I think it bears repeating. In April this past year, we had days with thirty two thousand cases reported per day. And we thought it couldn't get any worse. The house was on fire. By May, with our efforts to flatten the curve, we got the case numbers down to twenty thousand a day. But then what happened? The summertime pandemic fatigue set in, pandemic anger in some cases, and by mid July we were at seventy thousand cases a day, up substantially from thirty two thousand. But by September, we again bent the curve. We got down to about twenty six thousand cases a day, close to that previous benchmark, that baseline, but

still up. And then again, it all took off. On November 20th, we surpassed two hundred thousand cases, making thirty two thousand cases a day seem like not so bad. On December 3rd, as the Midwest began to see a slowing of the case numbers, we got down to one hundred and sixty thousand again. Still twice the number that we had at the height of the previous peak in July. And then we know what happened. The southern Sun Belt states, just like earlier in the summer, took off again. On December twenty ninth we were at two hundred thousand cases. On January 3rd, three hundred thousand cases. And now we're back today reporting about one hundred and fifty five, one hundred sixty thousand cases, as you said down thirty one percent over the past 14 days. Deaths are down a little bit today. We're going to report about eighteen hundred deaths, down three percent over the past 14 days. And hospitalizations at now about one hundred and ten thousand, are down 11 percent over the last 14 days. I've been asked by the media over and over again, isn't this good news? And I want to tell you, I wish it were. I continue to remember every day, as I ask all of you to, that every one of these cases is somebody who was loved. Every one of these cases is a son or daughter of somebody, or a mother and a father. But when I look at these numbers and I say, are we accepting one hundred and fifty thousand as a baseline right now for which it's getting better? Well, I realize we have to go through these numbers maybe hopefully one day to get down to fewer than 10 cases a day. But as I will share with you in the next several minutes, these new variants are going to change everything. And this baseline is what I fear, more than anything, will be the jumping off point for what is going to be a major surge in cases over the course of the next six to 14 weeks. Even with vaccination and we'll talk about that. We have to get ready. The worst is yet to come. Now, that's hard to say, and for some of you, that may sound very depressing, but I will also share with you how we're going to get through it. We will get through it. Surrender is not an option. But we have to be prepared for what's coming and I know how hard that is. I hear people all the time say, "Oh, there he goes again." But wouldn't you rather know that maybe we're going to see this happen? And if it does happen, we want to be as prepared as we can. If it doesn't happen, you know what? I will sing Hallelujah from every street corner saying I was wrong. I hope I am wrong. In this case, also, we are still going to see flare ups in various areas of the country. Right now, we see it, for example, in places like Arizona, South Carolina, where there still are succeeding in the high numbers, parts of Texas. That will continue. But I think what you're going to see is for at least the next few weeks, probably these lower numbers and staying down there. But that does not give me reason for optimism about where the pandemic is going. Now

where are we going to go long term? As I will share today with the vaccine where I think we're going, I am so hopeful for what we might see at the end of this year. But now we've got to hunker down. We got to understand where we're at. And so, Chris, these numbers, while they surely are a lot better than three hundred thousand cases a day, they are, in fact, I believe, just a harbinger of things to come.

Chris Dall: [00:13:08] As we've discussed in the last few episodes, we have at the moment several coronavirus variants that are of concern. Mike, can you give the listeners an update on where we're at with these variants? And do you think that the travel restrictions, combined with the continued vaccine rollout will have any impact on the spread of these variants in the US?

Michael Osterholm: [00:13:26] Well, as I just alluded to in my previous answer, obviously, I think the variants are going to play a tremendous role in what's going to happen to us over the weeks to months ahead. And I will comment on that relative to vaccination and the rollout of that and also the travel restrictions. Let me remind everyone what these variants are. Remember, these are mutated viruses that continue to circulate in the human population. They're fit for circulation, meaning they survive in the human world and they have very significant changes that potentially impact one of three things. One, disease transmission. Number two, disease severity. Or number three, the ability to escape immune protection in the host from either vaccine or from immunotherapy. And there are many variants out there. We just call them variants. The ones that I'm going to talk about today are, we call, variants of concern. You'll see it often abbreviated VOC. The one that has received the most attention in the United States because of its presence here, of which right now we have over two hundred and ninety three documented cases in humans with this variant, and that is the B117, or often referred to as the UK variant. This has been associated with increased transmission, this past week it has been associated more severe disease. However, there is no evidence at this time that that particular variant is associated with any issues around immune protection. Then we have the B1351, or more well known as the South African or African variant. This one has been associated with higher transmissibility. I've not seen any data yet that supports that there's more severe illness, although I wouldn't be surprised if we see that somewhere down the road. There is a concern, however, that there's a mutation in this virus, in the spike protein. A mutation called E484K that may reduce the vaccine or antibody therapy efficacy or how well it works. And I think the

data are now accumulating which supports that that may be happening. However, we don't have any data that supports that it is happening in a way that would fundamentally change the fact that the vaccine still protect or that immune therapy might work. And I'm just going to come back to that in a moment. But I'm, at this point, feeling more comfortable that the data do not support that this could be the game changer that we might have to worry about in the future. We also have had other variants of concern that have happened. One is called the P1 lineage or P1. This is an isolate that was actually identified in someone in Minnesota in the last several weeks. This one originated in Brazil, in the northwestern Amazon region, in an area known as Manaus, where there has been serious concerns about the mutation actually might escape the immune protection of previous infection, clearly is associated potentially with more severe illness. This particular lineage now is in multiple countries around the world and is one that is also of real concern. The other variants you'll hear about, you'll hear about one called L425R or the Denmark variant, which has been found in increasing frequency in California. It's unknown at this time if there's really any concern about that, meaning increased transmission, increased disease severity or any impact on immune protection. And then there's other ones you'll see. Don't be surprised if you see a whole number of these new variants emerge. But again, the ones we're concerned about is what we call variants of concern, which are the ones that have one of these three factors that make it important. Namely, again, more transmission or the fact that it is causing more severe disease or that it is escaping immune protection. Over the course of the past week, there's been lots of discussion in the media about the B117 variant of the UK variant. And what does that mean in terms of the potential for human disease in the United States? As I already mentioned, we have at least two hundred and ninety three cases in twenty four states. The majority of these are in California and Florida. It is clear from in England what's happening, as well as in countries like Denmark, the Netherlands, Ireland, Spain, Portugal and Israel that when the B117 variant takes off, the cases increase dramatically. And in a number of these countries, the virus was present for weeks, in some cases several months, before it took off, much like it is here in the United States right now. It's continuing to occur, but we don't have evidence of a big increase in cases. The challenge we have with this particular variant is that in each of these countries I just mentioned, literally, it required major lockdowns. That terrible L word that everyone hates, it's that drinking barbed wire word. But also it's what has been required to actually bring under control in these countries. Shutting down businesses, closing schools, limiting public transportation, no churches, I can go

through the laundry list of what had to be done. And in England, where they attempted to come on with a graduated approach for reducing the number of cases, it didn't work until they really went into this hard lockdown. The data we have right now suggests clearly that there may be as high as a 50 percent increase in transmissibility of these viruses. Again, they don't transmit any differently than the other older viruses we've been talking about. Still swapping air. It's just that there may be much more virus in that room when you walk into it if someone has been exhaling their air into that room. The same principles of protection that have protected you from the beginning of this pandemic are operative now. You need that respiratory protection, ideally an N95 respirator. You can avoid exposure completely if you're not in contact with people who might be infected, distancing. All the same things hold true. But I raise this because I worry very much that over the course of the next six to 14 weeks, if we see this big surge in cases starting from a baseline of one hundred and fifty to one hundred and sixty cases per day already, this will be almost an unimaginable situation. I think we really will have by far the darkest days of the pandemic. And when I hear my colleagues, and I hear a number of them say on TV or in the media, "Oh, we're in a race with a vaccine." Let's be honest with the public, we are not. The variants already won if we're going to take it on that way. If you look at the president's very ambitious program, which I give him great credit for, he's now announced up to one hundred and fifty million doses within one hundred days. Well, if you just go back and even look at the hundred million doses in sixty five days, not a hundred days, till the end of March and you actually calculate out the protection that will occur from administering that vaccine and make the assumption that thirty three million people get two doses. That's sixty six million doses. And the other third, thirty three million, get their one dose and they have not yet had their second dose. If you look at the thirty three million that received two doses, that's ninety five percent protection that gradually was acquired over six weeks. If you look at those that had one dose, that may be 50 percent protection at best acquired again over three or four weeks. If you add that all up, that's about 12 percent of the US population will be protected between now and the beginning of April from vaccination. A great thing to do. Keep firing away. We want to get there one day to have many, many, many people vaccinated and that's what we're looking for through the summer and fall. But right now, over the next six to 14 weeks, that is not going to be what will save us from this virus. The same thing is true in terms of previous immunity from natural infection. Our best estimates right now, and I'll give you a range, because that way I think no one can argue, it's either as low as 20 percent or it's as high as 30

percent, I think is somewhere in the middle, of our country's residents have previously had covid-19 disease in the last year and likely have quite a bit of protection for those more recently infected, may be waning immunity somewhat for those who were infected some time ago. But the point of it is you add up the vaccine related protection and the protection that comes from having had disease. You may be talking about thirty two to forty two percent of the population with some protection by this time that we're talking about, the variant actually flaring up. That is not nearly enough to begin to dampen potentially what's happening. And we just saw that in Manaus Brazil where they had a house on fire event that occurred during the spring and early summer of last year that where up to seventy five percent of the residents were thought to have been infected. That yes, that's not enough. Now, maybe there was a problem that the virus actually evaded natural immunity. But we saw another house on fire event there in Manaus that occurred through the latter part of the year. And so we have to be mindful that we could still really have a bad situation. And I know no one wants to hear this, but I worry that we're going to wait again, as we have done throughout the duration of this pandemic, and only decide to pump the car brakes after we've wrapped the car around the tree. That is a major concern that we're not having these discussions to say "At what point might we start to put the brakes on if cases start to rise?" You know, people look at me saying, "You know, this is a horrible thing. You're trying to limit my freedom." I fully expect to get hundreds of very nasty emails. But telling the truth right now is everything, because it can allow us to be better prepared. What will be the circuit breakers that will say "At this point we're going to do this, at this point, we're going to do that." Do we have to wait until we have our hospitals overrun before we do something? Now again, I hope I am wrong. I hope I am wrong. You will all remind me of that if I am and I will be so thankful to be reminded of that. But if I'm not, and so far, this pandemic's gone pretty well how we've been projecting it, if I'm not then we need now to understand what it's we're going to have to do to deal with this B117 variant and what it might do in the United States. So this, I think, is gut check time. It's going to be one where nobody wants to talk about this. Nobody wants to think about this. Everyone wants to think, "Oh, my, look at it, one hundred and fifty thousand cases we were just a three hundred thousand cases. Isn't everything grand?" And just know I think this could be the last hurrah for the virus. This may be our Battle of the Bulge. If we don't surrender here, we may get to that point this summer, this fall, where we will have had enough people vaccinated. And I'm counting on the fact that the variants of concern that might impact on the vaccines will not have sufficient impact that will change the course of this. We

may be able to get to this summer or fall in a different world, but it's now our Battle of the Bulge. We can't surrender. Nuts. We can't. So I hope that I know how hard this message is for those who have been sharing with us their despair about where we're at, they're ready to be over with this. I hope this is our last one and it could be the hardest one, but it's one we can get through. And remember, we can protect ourselves all the same ways that we've been protecting ourselves to date. Nothing different. No magic. Let's do it. And be prepared, don't be surprised if we see a big increase in cases. And if we don't, oh my, what a glorious day it will be as we go into our summer.

Chris Dall: [00:26:29] As you noted, Mike, President Biden said this week that he hopes the US can soon get to vaccinating 1.5 million people a day, up from the original goal of one million a day. But given what you have said about vaccination, should we be aiming even higher? And is that possible given some of the administration problems we're having right now?

Michael Osterholm: [00:26:49] Let me just say at the outset that it feels so good to have a plan. It feels so good to have a national priority where the president of the United States gets on television in a press briefing and lays out the challenges we have, but what they're going to do about it. Balls and strikes call only. This is the balls and strikes call only. So as many of you know from previous podcasts, I came out of the Biden/Harris Advisory Board experience believing that this administration really was committed to science, was committed to dealing with this as our nation's number one problem at the moment, and that they would always tell the truth. At the same time, as much as I have been very lavish, I think, in my critique of what the previous administration did to bring us Operational Warp Speed and the creative aspects of how we got these vaccines, it will always be a highlight in public health accomplishments. But then I also saw a secretary of Health and Human Services talking about vaccine doses he was going to release, he didn't have any new. I heard him talk about recommending that those twenty one to sixty five who had underlying health conditions should now be added to the number of people to get vaccine. That's eighty one million individuals, for which no vaccine would be available just causing frustration. So I had some hard moments at the end of that previous administration about just telling the truth about what was going on. That has been part of the challenge of being able to understand what vaccines could be delivered over the course of the next weeks and months to make sure we really had accurate information. So when the president this

week says we can get to that one hundred and fifty million doses in this hundred day time, I believe him. I think we now are getting the data from the companies in a way that will be very helpful. I think we're also going to see a major change over the course of the next few weeks on how vaccines are delivered. Once we understand how many vaccines are coming to a state, then you can start to plan in a much, much more comprehensive and effective manner for telling people when they can get their dose. Part of the problems we've had is a number of states have tried to stand up major vaccine activities and they couldn't because they never could know if in the next three or five days will I have zero doses or will I have fifteen thousand doses. That I think is going to change, too. So, as I pointed out earlier, this is a real challenge, trying to get your vaccine right now for sixty five years of age and older. If you're in long term care or a worker there, you should be able to get it through the federal program. And it still is a challenge for many people to get it. So I just want to say that I am optimistic that the vaccines are going to keep rolling out. Even if we see a B117 surge, we can't stop vaccinating. And I do believe that sometime by the second to third quarter we will have hopefully vaccinated most of the US residents. We will have hopefully had a major impact on vaccinating much of the world and that we're going to see that people right now who are vaccine hesitant will, in fact, agree to be vaccinated.

Chris Dall: [00:30:29] I also understand that you received your first vaccine dose this past weekend, so, Mike, what were your thoughts as you received that first shot?

Michael Osterholm: [00:30:38] Well, first of all, let me just back up and say, given ,particularly given, my previous comments, I spent all the last week on that computer. In between all my other meetings, I was making calls every day to find a place where I might get vaccine. I'm sixty seven going on sixty eight years of age. I qualify. I surely never wanted to jump the line in front of those who needed it first, including our health care workers, those in long term care. That had to be the top priority. But when my number came up, I told you I was going to go get it as soon as I could, but I couldn't get it. I couldn't find a place to go. I understood that frustration. Then my daughter came along. As many of you know, I am the most blessed father in the world to have two very special kids. My daughter Erin, who is a neonatologist, she is the head of the neonatal intensive care unit at the University of Minnesota hospital, is part of a quite amazing group called Physician Moms of Minnesota. And like mothers do so well, they take care of so many things. And this group in Minnesota has decided that one of the things they

wanted to do is help their parents and grandparents find vaccine and then actually even expand it to the community to help them. And so they've been monitoring all of these sites when vaccine becomes available and they put a notice out. My daughter calls me on Saturday morning, said, "Dad, Dad, get on your computer right now." I thought the house was on fire. And I did. And I was able to get a reservation for Saturday and I went in. And of course, you know, I pretty well knew the drill. And in fact, it was ironic that it was actually at a convention area that I had previously given a lecture in 2014 on pandemic potential and what pandemics would look like. So it's kind of ironic. I'm in this large ballroom area and I walk in thinking this is really great. I couldn't tell you how excited I was, but I sat down and when that needle went into my arm, I started to cry. I literally started to cry. I know how absolutely beautiful this gift is of these vaccines. And you know, as much as I deal with this virus day in and day out, I think about it the first thing I do when I wake up in the morning, I think about it the last thing I think about when I go to sleep and I know I dream about it. But, you know, its always scared me, it has scared me. As much as I know about it, it has scared me. I respect this virus, what it can do. So to get that vaccination was like I'm now in a place with an upper hand. What a gift. So I, first of all, thank my daughter and the Physician Moms of Minnesota. And thank you, Physician Moms of Minnesota, for helping a lot of other people get the vaccine, not just your moms and dads and grandpas and grandmas, but all the other people you're helping get it right now. And I want to thank, you know, the the state of Minnesota, the Department of Health, who also put on this large clinic. And I just want to encourage all of you, keep trying to get that vaccine. Get it. It's going to be there. I know it's frustrating. The health plans around the country are rolling it out more and more as we get more vaccine. And this is how we're going to beat this virus. And I now know what it feels like to have that first dose of vaccine. And I'm telling you what a gift. What a gift. Thank you, Erin.

Chris Dall: [00:34:34] We've received a number of emails from our listeners over the past few weeks about schools and whether we can reopen them for in-person learning. First one is from Denise, who writes, "Currently, the district that I work in in New York is using a hybrid model where two cohorts come on alternate days. However, we're quickly moving towards full time business as usual. I really don't understand this thinking with increasing rates of infection. I already feel like the hybrid model puts my health at risk. Moving to full time with all students is terrifying. What are your thoughts?" And Chanley writes, "An article today on CNN's website said the UK is out of control

with covid now because they left schools open when the new variant was first spreading. The CDC said B117 would be the major variant in the US in March. So doesn't it follow that if we open schools now in the first 100 days of the Biden presidency, as promised, the same thing will happen here? Why the push to open schools everywhere now when we know B117 is coming?" And Mike, I'll just note that while these two listeners are questioning the wisdom of reopening schools, there are many people in this country who want to see schools reopened. So where are you on this issue?

Michael Osterholm: [00:35:37] Well, let me first make a very important disclosure. I am the grandfather of five incredible grandchildren who themselves right now are in schools or day care. And everything I process about this is processed in that light. So I just have to give that as a disclosure that this is a very real issue for me. The second thing is, is that let me just say up front, I know how emotional this is. And it's OK. I mean, no one should feel badly about it being suggested, they may be emotional about this issue. I know that I must be somewhere and hopefully the right region of dealing with this issue, because I have people who want our schools open yesterday and I have people who want our schools closed until everyone's vaccinated in this country sending me equally angry emails every day. Many of them. So I have upset both sides of the world, you might say, because I'm not advocating for a point of view that they might have. That tells me right there that this is one of those situations where no amount of data that I can share with you is necessarily going to provide the answer. And I get that. I get that. So let me give you my best shot at it. There is no easy answer, and I've been evolving with this. I evolve with all the new data that we continue to collect and look at, and I'll talk about the variant in a moment. But first of all, acknowledging there's no easy answer. I think we all can agree whether you're a parent, whether you're a teacher, whether you're a student even. Schools are critical for emotional, behavior, and social development. For many kids, they serve as a very important purpose for meals and shelter, and we are seeing every day with this pandemic widening inequities where students who were most disadvantaged before the pandemic began are falling even further behind. Many of their peers and private schools are keeping pace, thereby learning in person or remotely in small classes. And they have abundant tech support. We also have to recognize kids with this particular infection have a different risk than adults, but we do need healthy adults to open schools. So we have to think about both the kids and the adults in somewhat different ways, yet equally important. That is a

critical underpinning of whatever we do. Really I think to think about the role of children and adults in schools, we have to look at really, I think, four different perspectives. And we need more data on all of them. I do not believe we have nearly enough data. So what are those four different perspectives? One is exposure. How likely is it for a teacher or a child to be exposed in school? Susceptibility. How likely is a child or a teacher to be infected if they're exposed to school? Transmission. How likely is it for a child or a teacher to transmit in the school? And finally, severity. How likely it is that a child or a teacher will have a severe outcome if they get infected in the school? So let me just briefly go by what we know. If you look at exposure, the data have consistently demonstrated that children in schools actually have lower risk of exposures of the virus than actually just in the community. There was just a new report released this week published by the CDC addressing 17 K through 12 schools in rural Wisconsin and looking at their incidence through a large part of last year. And they actually found that after following several thousand students and over six hundred staff, that there are only one hundred and ninety one covid cases in staff and students, with only seven of those thought to be as a result of in-school transmission. And this is when the community had much higher rates of transmission. I could go through other studies that show the same factor. Kids are just not nearly as often infected and they're just not nearly as often transmitting the virus to others, particularly those who are in the younger ages. If you look at a European CDC study that was published in December that included findings from 17 country-level surveys from 12 different countries, the investigators concluded with these data that the rates of infection among teachers and non-teachers were generally similar, indicating the schools were not associated with any kind of accelerating community transmission in those settings. Now, I'm going to come back to this because this is pre-variant time. So if you look at this, it really suggests that there is something very different about the lower rate of infection in kids. And let me just emphasize that if you look at influenza, on the other hand, that has historically been a situation in schools where they actually serve, as you might say, the igniting event in a community. We often see the outbreaks begin, particularly in the K through sixth grade level, where we see tremendous transmission of the influenza virus. We're not seeing that here. So from that perspective, there's something unusual there. But it's definitely been noted. With regard to supportability, the studies that have been done in this area show that school outbreaks are rare, even when communities spread is relatively high. Again, there is something where in that controlled setting of a school, whether masking is part of it, distancing, that school outbreaks are rare. There is one exception that I

want to point out. And this is one that is a somewhat ironic situation because it's been at the heart of a lot of debates. High school athletics have been associated with a number of outbreaks. Not in-school activity. And yet what do we do? We put kids in distance learning and then bring them back for sporting events and training. So we just have to deal with that fact that we do have ample data showing the sporting events somehow have contributed to the transmission. Let's take a look at disease severity. How likely is it for a child to die? Or how likely is it to be severely ill? Through the course of this pandemic, as we know, it's notable the difference in severe outcome by age. In Minnesota, we've had one child under the age of 19 die from covid-19 and that child was not in daycare or in school. We've had no children between the ages of five, up to 19 die. We've only had nine people as young adults, twenty to twenty nine years of age die. That compares to over six thousand deaths that we now have in the state. The same is true if we look at hospitalizations, the number of children who have been hospitalized, for example, between the age of five and 14, that school age, we might be most worried. Only forty four. And I say only knowing that that's still significant. Only forty four kids out of over four thousand eight hundred thirty six individuals hospitalized have been in that age group. Take influenza as a comparison for what we are seeing happen right now with covid-19. In the last eight years in Minnesota, thirty one kids in daycare or in schools have died from influenza. Most of these were largely acquired in school. We've not closed down schools for that. And we know that we can't get to zero risk. I hear it said often 'if there is any risk, it's too much risk'. If that's the case, we will never open schools again, ever, because of the fact that influenza by itself will create as great a risk, if not a lot more than we could see anything with covid-19 as we have seen it to date. So looking at exposure, susceptibility and severity, I can understand why it's important that we bring our children back to school as we can because of the emotional, behavioral and social development aspects. And if we look at the data on teachers, the same thing is true in terms of their risk of acquiring covid-19 and having a serious outcome. Now, in Minnesota, we'll be testing teachers every two weeks. If something changes, if the data changes, I'll be the first to say, "Wait, time out." But we don't have that. Which now brings us back to transmission. That's the last of the four categories. This is the one that concerns me a great deal. And I say concerns me because as was asked in the question, what does this mean with the variant of concern B117? We have seen in Europe that in England, Ireland, Denmark, all these countries, school closings was an important part of addressing community wide transmission. And in fact, in England, as they shut down the country to try to stop this transmission before

Christmas, they went through a period where the only thing that was open was, in fact, the schools. And they finally came to the point of deciding we even have to cancel schools because we're not controlling the infection sufficiently. Now, why is that different than what we've seen with these other strains of the virus? I don't know. Is it, in fact, true that closing schools have made a big difference? I don't know, but it sure seems like it. So for those who think I'm talking out of both sides of my mouth, I am. But it's simultaneously. It's an issue right now where I'm prepared to say I think the data supports the fact that we can and should open these schools with all the safety requirements in place that we can possibly put in place. But at the same time, we have to be extremely vigilant if B117 takes off of looking carefully at schools and be prepared quickly, if necessary, to make a decision that we will back off that point. Now, I know that there are a lot of elected officials, there are a lot of leaders in our communities who have committed to getting schools open and keeping them open. And this is not a partisan issue. It's coming from Republicans and Democrats. It's coming from urban areas and rural areas. And all I would say right now is we are in this unknown period with the variants and based on what we've seen in England, what we've seen in Ireland, what we've seen in Denmark, what we're seeing in Portugal, we have to understand that this may have to come back onto the table. And I, among others, will try to do my very best to stay with the data. What do the data tell us? And knowing that those data are all about my five grandkids too. You know, it's hard to become a policy wonk or a data cruncher when every day you're looking straight at the picture of those five grandkids on your desk, it's very hard. So I promise you, we will stay on top of this issue. I wish I could give you more clear and compelling data that sways you easily into believing one position or not. And at this point, just stay tuned and we will do everything we can to give you the balls and strikes version of what's happening.

Chris Dall: [00:48:26] We received the wonderful email this week about an act of kindness from one of our listeners, Mike can you share it with the audience?

Michael Osterholm: [00:48:33] Yes, thank you. You know, getting these acts of kindness, I can't tell you what medicine this is for the heart and the soul. Our staff love them. And as do I, of course. What you do out there just sometimes blows me away. The intent in which you do it, the manner in which you get up in the morning and you're committed to acts of kindness, I just thank you. And it's making a difference because I'm hearing from people who have actually contacted us to say something happened to

them in terms of an act of kindness that was bestowed upon them. And when it happened, they asked why, and they said, "Well, because this crazy guy in this podcast says to go out and be kind." It's working, guys. It is working. Keep it up. That's how we're going to get through this. So this particular act of kindness comes from Colleen and she wrote, "The week of Thanksgiving, Minnesota's hospitals were full of covid-19 patients and health care system's capacities were being tested like never before. Through a Facebook discussion about how to support health care workers, I learned that many of those workers can easily get dehydrated during long shifts wearing several layers of PPE. I decided to support my local hospital staff with the donation of healthy snacks and electrolyte drinks to help them get through those long, tiring shifts. I made two bags of goodies and asked that one bag go to the ICU workers and the other bag go to laundry cleaning staff members as these staff are often overlooked for their service. In my thank you notes to the workers, I wrote that 'we see you' to remind them that members of the community do appreciate them and that their heroic efforts are being noticed. Colleen." And Colleen kindly sent a picture along of the back of her vehicle with these huge bags of goodies. And I can only imagine what the health care workers thought when they received those gifts. Thank you, Colleen. Keep up those wonderful acts of kindness. They make a difference every day.

Chris Dall: [00:50:48] And just a reminder to our listeners that if you want to share your pandemic act of kindness with us, please email us at osterholmupdate@umn.edu. Your closing thoughts today, Mike?

Michael Osterholm: [00:50:59] I realize this was a heavy podcast, but I hope also that it was a hopeful podcast. It was one of defiance against this virus, we can get through this. I know many of you are very lonely. I know some of you are frightened and scared. I know some of you are going through tremendous challenges financially. Mental health issues are first and foremost for so many of us. And I just hope you know that we're here. We're going to get through this together. And there's no amount of scientific facts that're going to change how you feel. But just maybe, just maybe if you have faith in yourself and you have faith in us as a society getting through this, it will make a difference. One of the scientific heroes of my life was madame Marie Curie. I think many of you are well aware of her and her work in the area of radiology. She was born in 1867, died in 1934, actually, as a result of a cancer acquired from her own work. She was a Polish/French physicist and was the first woman to win the Nobel Prize, the very

first and the only woman to win it twice in two areas of medicine. Remarkable. Madame Curie once said, "Nothing in life is to be feared, it is only to be understood now is the time to understand more so that we may fear less." Now is our time to understand more so we may fear less. I hope as we do these podcasts, as we exchange information with each other, we are understanding more. And while this virus is bad, it's just plain bad, we can fear it less because we know what we can do to protect ourselves. We can see light at the end of the tunnel, even if it's going to get much grayer. In fact, very black clouds potentially on the horizon. We can get through. And that's how I do it every day. I couldn't get through otherwise. Now I have my vaccine. I'm on the way to feeling that protection. I can't wait for all of you to get there, too. I can't wait for you to get there. But for right now, we have to understand more about what's happening and we'll try our very best to share that with you every week. What we know, what we understand, what we don't. And then we can fear it less. And you know what? We will then understand in its finest sense that surrender is not an option. Surrender is not an option. Nuts to this virus. Thank you. Thank you so much for being with us. Be kind, be thoughtful. Be good to yourself, be kind to yourself this week. Make yourself the first act of kindness. And then be kind to everyone else, and I hope you'll join us again. Thank you.

Chris Dall: [00:54:17] Thanks for listening to this week's episode of the Osterholm Update. If you're enjoying the podcast, please subscribe on your podcast platform of choice and write a 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 Oelrich are our researchers, and Randy and Eric Olson are Dr. Ostrum story consultants.