# Episode 90: A Pandemic of Lost Trust

**Chris Dall:** [00:00:06] Hello and welcome to the Osterholm update COVID-19, a 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. Welcome back, everyone, to another episode of the Osterholm Update podcast. Once again, as we have seen several times over the course of the COVID-19 pandemic, the United States appears to be entering a more optimistic phase of the pandemic experience. The nationwide surge of Omicron cases has passed its peak, several states are seeing transmission levels similar to those before Omicron arrived, and COVID-19 hospitalizations are declining. This renewed optimism has prompted some governors to announce the end of indoor mask mandates and masking requirements in schools, and is fueling a larger conversation about learning how to live with this virus going forward. But with the country still reporting more than 2,500 deaths a day from COVID, is now the right time to be having this conversation? On this February 10th episode of the podcast, we're going to dove into that question as we assess the trajectory of the pandemic here in the United States and around the world. We'll also get the latest on the BA.2 sub-variant of Omicron, answer a COVID query about COVID-19 vaccines for children under five, and share the latest Beautiful Place submission from one of our listeners. But before we get started, as always, we'll begin with Dr. Osterholm's opening comments and dedication.

**Michael Osterholm:** [00:01:52] Thank you, Chris, and welcome to all of you to another episode of the podcast update. It's notable today we're recording our 96th episode. We've had 90 regular episodes with this one, six special episodes, so we're getting to that point of 100 episodes. I would have hoped and wanted to believe that we'd never make it to 100 episodes. Unfortunately, I know we are going to. As we continue to unravel what's happening with COVID throughout our communities and for that matter, around the world. Today, I will try to give you a sense of what I think is a really a transition time where we are going to start seeing light at the end of the tunnel. And it's not the headlight of a train coming down on us, it's truly sunlight at the other end of that tunnel, at least for now. One of the things that is going to be important here is is this concept of nuancing. You know, I've tried to talk about that throughout the course of this pandemic. And usually it only got me in more trouble than it helped because people don't want nuances, they want black and white answers, and they will stick by them as a way for them to feel most comfortable responding to this pandemic. Well, it's not that way in real life. We have to nuance it, and today I'll be talking about how do we make this transition from this Omicron viral blizzard to what I think will be the days ahead? And what does that mean for public health? What does that mean for our everyday lives? It's in this regard that today the dedication I have is really one that is quite general. And yet for each of us, I think we can feel it very specifically. Imagine all the school boards, all the school superintendents, all the college administrators, all the daycare providers, community faith leaders, large and small business owners and supervisory staff, travel planners, reunion planners think of all the hospital administrators around the world. How about emergency response planners? Clearly critical infrastructure planners, even being a mom or a dad or a grandpa and grandma. This is dedicated to you as you try to figure out what are my next days with COVID to look like, what can I count on? What will I know that I can do that will not suddenly find me a day or two later wondering, why did I do that? So we will try to do our best today to help provide some sense of where we're going and what I believe is truly two different pandemics going on right now, one of COVID and one of a lack of trust in public health. And we're going to have to address both of those pandemics because they're real. That's where this planning really is about the rubber meeting the road. Now I do have to start out in my very typical good news fashion this is a wonderful part of the podcast ahead for some of you who are bored by it, so be it. For those who enjoy it, take note today we will have 10 hours and 10 minutes and 14 seconds of sunlight in the Minneapolis-St. Paul area. That's 16 minutes and 27 seconds of additional sunlight than we had just last week at this time. And more importantly, it's one hour and 24 minutes and three seconds of additional sunlight than we had in the winter solstice on December 21st. Yes, it's getting lighter. Those in the southern hemisphere, you've still got a lot of light left, but we have to hold on to these ever, ever increasing minutes of sunlight today. Finally, I just have to add one personal note, and this is somewhat difficult for me to talk about because I hate talking about personal things. I want to thank all of you, all of you, and I can't tell you how many that is who have written in to us concerned about my health and my voice. And you have given me tremendous, tremendous advice on what I can do to deal with this hoarse voice. Well, let me reassure you, I am fine other than the fact that I am hoarse and I am hoarse because I just talk too much and there will be a number of you on this podcast who will very violently agree with that, that I talk too much. But for those that occasionally want to hear what I have to say, you know, I'm OK. Otherwise, I am literally looking forward to a day when I can shut up, go walk in some wilderness for days on end, not talk to anybody but the trees or the birds and regain my voice back. In the meantime, you're going to be stuck with me. I'm sorry. You're stuck with me. I hope the message is a lot better than what the messenger sounds like. So anyway, in that regard, I do want to sincerely thank the number of you who have written in concerned about my health and what my voice is like. And thank you. They were very, very kind. I cannot tell you how much many of those very thoughtful emails and letters meant to me. So thank you.

**Chris Dall:** [00:06:58] Mike, many of our international reports over the last few weeks have focused on the Omicron wave in Europe, and that made sense because we've often looked to Europe to understand what was going to happen here in the United States, but it's Asia now that appears to be bearing the brunt of Omicron. Can you give the listeners a sense of what's going on in Asia and other parts of the world?

**Michael Osterholm:** [00:07:18] Well, Chris, one of the things that's been a real challenge these past few months is that in addition to all the information and data consistently coming out on Omicron, we've also had to try and keep up with the widespread surges playing out almost simultaneously across the globe. But before we go on and address this international aspect, I want to take this moment and pause to reflect on a number that I think while it hardly represents the actual true number of cases that have occurred worldwide, it is a subtle reminder of what we have been through just in the recent weeks. Think about this, at this point in the pandemic, there have now been over 400 million cases reported of COVID around the world. It took one year to get to 100 million. It took seven months to get to 200 million, and it only took six months to get to 400 million. But more specifically, it only took a month, one month to go from 300 million to 400 million. In the last month, we've seen 100 million new cases worldwide. Now, I've already talked at length about the challenges of trying to count cases, the undercounting where they are missed and how they're missed. But this should just be a reminder to us of the impact that COVID has had. And I just have to say at the outset today, I'm going to get into numbers and I'm going to talk about issues related to policy and so forth. But please never forget, these are cases of infection. These are people who are hospitalized, and unfortunately, far too often these are people who died, who are our family, who are our friends, our colleagues, people we admired, people we only heard of, but we wish we knew and we never, never can forget the toll that this pandemic has taken on the lives of so many very, very special people. So let me move on with this discussion about the international reports. If you think about it, even with the emergence of previous variants, many countries or regions outside of where it was first identified experienced a pretty substantial delay before they ever felt the impact firsthand. Take, for example, with Alpha, we saw a lot of the initial activity play out in the UK and other parts of Europe. By the time Alpha took over in the U.S., it had been months since the emergence in Europe, so we knew quite a bit about it. Of course, even when it did take over in the U.S. for whatever reasons, and I am yet to understand why the impact was limited to just a handful of states, particularly states like Michigan and Minnesota. A similar situation played out with Delta. Remember, Delta emerged last spring when India was an absolute house on fire. Around the same time, meaning last February, March and April, countries near India, like Nepal and Pakistan were also experiencing major surges linked to the variant. Meanwhile, here in the U.S., we really didn't see our first delta wave until early July. Other places like Eastern Europe went into August before they were hit by Delta, and many parts of Latin America didn't see a surge from Delta at all. Never did. So, although there were no shortage of hot spots when these previous variants emerged, there were these irregularities surrounding when and where surges occurred. However, with Omicron, it seems like essentially every country and region has faced a surge shortly after the variant arrived there. This is exactly the concept of a viral blizzard that I tried to put forward in November. As a result of all the global travel that occurs each and every day, combined with Omicron's remarkable ability to transmit, it was really only a matter of days or weeks that separated the timing of these surges in different countries. So again, this variant's consistency in causing surges has led to that storm track pattern I've talked about in the past. As a result, there's been no shortage of international activity to discuss these past couple of months. That being said, as you mentioned your question, Chris, we have used Europe as one of the main focal points for our international updates. A big reason for this is because several countries that faced Omicron surges earlier than many other parts of the world, offering a preview of what other places might expect with the variant surge. In addition, several of these same countries, including Denmark and the U.K., do an excellent job with sequencing the virus. So in general, Europe has really provided an in-depth look at what these Omicron surgeries entail. And although the variant is still having an impact there. A growing number of European countries hit early on have reached peaks and are now seeing declines. In fact, if you look at the numbers for the past week reported to the WHO, global cases as a whole appear to be improving. Again, I will add all the caveats about underreporting. Yes, we know that. Of course, with more than 19.5 million reported cases last week, there's undoubtedly a lot of virus still circulating. However, that total is down from nearly 23.3 million reported the previous week, representing an all time high. This is actually the first time we've seen a decline in weekly cases since mid-October, where 16 weeks ago, when the total then was below three million. So although I'm still hesitant to put a ton of stock into case numbers, this recent decline is at least an early indication that most of the world is past the Omicron case peak. At the same time, it's also important to recognize that as a lagging indicator, the global death toll has only continued to grow, with more than 68,000 reported this past week. This marks the fifth consecutive week of rising deaths, which are now 60% higher than they were the final week of December, when the death toll then was only 43,000. I hate saying only, but in comparison to 68,000, it gives perspective. In fact, this latest total is close to the levels reached during the Delta surge this past August that hit Eastern Europe and the U.S.. So, like I said last week, although any progress is good progress, we shouldn't lose sight of the impact that this virus is still having more than two years after its emergence. This brings me to Asia and even countries in the Middle East. Unlike South Africa, the UK and other countries that had early starts to their Omicron waves, many parts of Asia and the Middle East didn't see activity really take off until late December. So it was only a month later, but nonetheless, in Omicron time, that was a long time. According to the Reuters COVID dashboard, as of this past Tuesday, a total of 11 countries in Asia and the Middle East are reporting peak levels of infection. In fact, 23 countries in the region, including Japan, South Korea, Azerbaijan, Jordan, Turkey, Georgia, Iran, Indonesia and Malaysia have documented an increase in average daily cases over the past two weeks. In Iran, a country that has already experienced five previous waves and has fully vaccinated, two out of three of every residents, i.e. 66%, which puts them ahead of our country. Omicron has caused daily cases to grow from less than 1,500 in mid-January to more than 35,000 as of Monday. For context, their all time high case total of 40,000 was in August caused by Delta and was reached after more than two months of growth. Despite starting from a lower baseline, cases from Omicron have already approached that all time high in just three weeks in Iran. Now, if there's any good news for the country, average daily deaths from COVID were at their lowest point since the start of the pandemic in mid-January, so this lower baseline, along with reduced severity from Omicron and protection against severe disease offered by their vaccine efforts and/or previous infection should help lessen the surge impact. However, daily deaths there have already climbed from less than 20 in mid-January to more than 100 this past Monday. So we'll have to see how Iran, which has relied heavily on the Sinopharm vaccine out of China and has administered additional doses to less than one quarter of its population, fares in the weeks ahead. Israel is another country in the region that's been hit hard by Omicron. Unlike Iran, which has yet to hit a peak in cases, Israel has been reporting declines throughout the past two weeks. However, prior to these declines cases there spiked from less than 600 a day in mid-December to a record high 73,000 just over a month later. Remember, this is a country that has never reported an average of even 10,000 cases a day prior to Omicron. Let me repeat that Israel has just recorded a record high 73,000 cases, and their previous high was 10,000 cases a day prior to Omicron. As a result, Israel also recently documented their highest ever number of seriously ill patients and reported that an all time high average of 73 deaths a day last Friday. Their previous high was 60 deaths a day set during their surge last January. So how is this possible? I've seen people recently use Israel's evidence that vaccines somehow aren't working, citing headlines of their efforts to get fourth doses into arms, while also mentioning the country hit an all time high for deaths. At face value, it can certainly raise a lot of questions, but if you look at the data, you'll see the vaccines were actually playing a very critical role in reducing the impact of this surge in Israel. First, this is a country where two out of every three residents are fully vaccinated or around 67%. Again, this is somewhat better than the U.S. rate of 64%, but there are still more than 50 countries with rates that rank higher than Israel and, of course, our own. That being said, the country has administered additional doses to more than half of its population, 57%, which places them among the top 10 globally. So how well is the vaccine working? Well, data from the country's health ministry showed that although just 12% of the country's residents 60 years of age and older are either unvaccinated or have only received one dose, they accounted for 43% of the COVID deaths in their age group last month, so just 12% of the country's residents who are not vaccinated or under vaccinated accounted for 43% of the deaths last month. On January 31st, the death rate in unvaccinated individuals aged 60 and older stood at 16.3 per 100,000. For fully vaccinated individuals in this age group, the death rate was only 0.9 per 100,000 more than 18-fold lower. Now, unfortunately, the death rates for fully vaccinated individuals who also received an additional dose wasn't available for at the same time period. However, considering data from the U.S., which shows a seven fold lower death rate in those 65 years of age who have received an additional dose compared to those who haven't. And the data from Israel published in December, which found that an additional dose reduced the risk of death from Delta by 90% compared to those relying on two doses. I think it's fair to assume the death rate for individuals with three or even four doses of vaccine were noticeably lower than even 0.9 per 100,000. Grant you, this does not take into account those who are immune compromised and what those rates may look like. We'll hopefully be able to provide you more of that information in the days ahead. But we can all agree, vaccines clearly make a difference. But as we've seen in countries like Israel and the U.S., the virus can take advantage of any gaps in protection. And that's what Omicron has done. So it's no surprise that a variant as infectious as this is causing record high cases in places like Hong Kong, Japan and South Korea. These case surges are really the hallmark of Omicron, and ultimately it means that countries are largely reliant upon the progress they made in the way of vaccinations, which can really define whether the case surge leads to a dramatic rise in hospitalizations and deaths, or it remains at a fraction of the levels seen with previous surges. Finally, I just want to end with a quick update on China. Of course, the Winter Olympics have recently kicked off there in Beijing, and although there are reports of cases being picked up in the Olympic bubble, there haven't been many COVID updates in other parts of the country. Again, heading into the Olympics, China was dealing with several clusters or outbreaks in multiple cities, including Beijing, and a number were caused by Omicron. On Monday, the country reported a total of 105 new cases. Although 40 were imported, the remaining 65 were locally transmitted in two cities. One of those cities, which is where most of the cases were identified and is home to 3.6 million residents, has been placed under total lockdown. However, with at least 10 areas of the country having recently reported locally transmitted cases of Omicron, it's hard to believe that Monday's report covers the entire extent of China's current situation. I truly believe we are at this point experiencing major underreporting of cases in China, and it will be interesting to see what we find over the next few weeks ahead.

**Chris Dall:** [00:21:26] Here in the U.S., we're now seeing a seven day average of less than 250,000 new daily cases, down from more than 750,000 daily cases just a few weeks ago. And the descent from that peak has been pretty rapid. So, Mike, is it safe to say that the viral blizzard is on its way out?

**Michael Osterholm:** [00:21:46] Well, Chris, I think it's safe to say that at least up to this point, the improvement we're seeing with cases and hospitalizations have been playing out about as well as we might have hoped for realistically. We've lived through much of this viral blizzard. As you mentioned, cases have dropped to less than a third of the levels they were at just a few weeks ago. And while they're still right around the previous record high hit last January, basically every state in the country is now reporting notable declines in cases, so I don't expect any sudden reversal at the national level. Of course, knowing what's happened in places like South Africa and the U.K., I'm still not exactly sure when and where this descent might taper off. Again, both of these places experienced apparent plateaus after initial declines, with the UK's stalled progress arriving just about one week after the peak and South Africa's decline slowing around four weeks after their peak. Notably, both countries have reported improvements so far this week, although they have yet to return to the levels reported prior to the surge. Well, we're three weeks in and so far so good. As I mentioned, almost every state in the country has contributed to these declines, although a couple of places like Mississippi might be seeing some lingering activity. Honestly, at this point, it's difficult to know is this a reporting artifact or is it actually representative of what's going on in that state? Fortunately, it's not just cases, either. Hospitalizations have dropped from their peak of 158,000 on January 20th to just over 100,000 as of this past Tuesday, taking us below the levels reached during the height of the Delta Surge last September. Even in the time since last week's episode, when there were 126,000 Americans hospitalized, we've clearly seen the situation improve. Notably 100,000 hospitalized this Tuesday, a week ago 126,000 hospitalized. The same thing goes for patients in the ICU, although the number hasn't dropped nearly as quickly as overall hospitalizations, it's certainly falling. At the time of last week's episode, there were nearly 23,000 patients being treated in an ICU. As of this past Sunday that total was approaching 19,000, a reduction of 4,000 patients in one week. Again, that's progress. However, recent data from the New York Times helps put this into perspective, finding that nearly one in four U.S. hospitals with intensive care units have at least 95% of their beds filled. So while it's easy to get caught up in this idea that we're officially through the surge, there still are many places in this country where you probably don't want to have a heart attack or be involved in a car accident right now. Even in other parts of the country, this improvement could mean that an eight hour wait in E.R. is now three hours. Again, I don't say this to discount the progress, but I'm not sure many people fully understand the position that our health care system is in. I know I sound like a broken record when it comes to this, but remember that more than 400,000 health care workers across the country have left their job since the start of the pandemic. Last month, there were 18 states that reported critical staffing shortages in their hospitals. For many of the current workers, any discussion about improvement likely doesn't mean all that much. So when I read an op ed or a commentary about how the country just needs to move on from COVID, I wonder if they're aware of that for many people in this country that's not an option, at least right now. Finally, it's puzzling to think that in the backdrop of these conversations about simply moving on, there are still an average of 2,600 Americans dying from COVID each and every day. As many of you know, on Friday, the U.S. death toll from the pandemic hit 900,000. There are only 15 cities in the entire country with populations above that number. In fact, cities like San Francisco, Denver, Washington, D.C. and Boston all have populations below 900,000. So let me just conclude by saying we are making progress, that progress will continue. Remembering that hospitalization and deaths are lagging indicators, we won't see these numbers come down precipitously for at least a few more weeks. But it's not too early to start planning for that. But please don't assume that today everything's all done. It's not. We still have many health care facilities in this country that are still really stretched.

**Chris Dall:** [00:26:27] We spoke last week about the BA.2 Omicron sub-variant. Have we learned anything new about it over the past week and do we have any data yet on BA.2 in the U.S.?

**Michael Osterholm:** [00:26:39] Well, Chris, let me just spend a moment reminding our listeners about what we're talking about when we talk about BA.1 or BA.2. When the Omicron variant emerged, it was originally characterized as a BA.1 sublineage virus, meaning that that was the dominant virus that we saw in our communities. But shortly thereafter, we saw this sublineage BA.2 and BA.3, both distinctly different from BA.1. In fact, just to remind you of that, as I talked about before, the difference between the ancestral strain of the virus from Wuhan and the Alpha variant is actually less from a mutation standpoint than the difference between BA.1 and BA.2. So while we're calling them Omicron sub variants, they are different. As of February 8th, BA.2 has now been detected in at least 67 countries and 42 U.S. states. It's estimated to be responsible for approximately 2% of the cases globally, with BA.1, the original Omicron strain still responsible for the majority of cases worldwide. But it seems to be quickly picking up steam. But in short, what can we say about BA.2 and its impact on cases in the future? Well, let me just say it's complicated, and the picture right now is murky. For example, studies out of both Denmark and the U.K. that looked at household transmission found that BA.2 is likely about 30% more infectious than BA.1. BA.2 does not appear to cause more serious disease than BA.1, and at least right now, there doesn't appear to be a difference in vaccine effectiveness between BA.1 and BA.2. Though BA.2 seems to be more transmissible than BA.1 that does not necessarily mean it will cause the same dramatic rise in cases that we saw in December and January, when the Omicron variant first appeared. In both countries where BA.1 was dominant, and in countries where BA.2 was dominant at the time of the peak in Omicron cases, there has been rapid reductions in cases following those peaks, which makes it difficult to assess what impact BA.2 may have had when it became the dominant strain in different areas. Let's take a look what we've seen happen in countries around the world to illustrate how complicated this is. Keep it in mind that there are a lot of factors that we don't really fully understand yet about the transmission dynamics and what may or may not be causing a rise or fall in case numbers by sub variant type. Take India. India is an example where BA.2 was dominant at the time of the Omicron Peak, Omicron became the dominant variant in India in late December, and by early January, BA.2 accounted for the majority of India's Omicron cases. In the nine days following their peak, they saw a much more rapid decline in cases compared to Denmark, with their cases falling 17%. As of January 31st, BA.2 made up 98% of cases and has seen a 48% decline in cases just in the past week. One looks at Nepal, the Philippines and Qatar, BA.2 was likely dominant in all three of those countries at the time of their peaks in late January, and all experienced a rapid decline in cases ranging from 35% in Qatar and 56% in Nepal, nine days out from their peak. Take Sweden, BA.2 became the dominant sub variant in Sweden at the time of their peak Omicron cases on January 28th and by February 5th they had experienced a 25% decrease in new cases. Let's take a look at Denmark. As a reminder, last week we looked in detail at Denmark, which, on the other hand, is an example where BA.1 was dominant at the time of the Omicron Peak in the country. The Omicron variant became dominant in Denmark in the week of ending on December 25th, then making up 76% of the cases. At the time, BA.1 was far more prevalent than BA.2 accounting for 88% of the country's Omicron cases. One week later, over 90% of the country's cases were Omicron, and two weeks after that, BA.2 surpassed BA.1 as the dominant sublineage, accounting for 54% of the country's Omicron cases. As of January 31st, BA.2 is responsible for 82% of all cases. Now Denmark's cases peaked on January 29th, with a seven day average of nearly 46,000, and nine days later, the seven day average was about 42,000 an 8% decrease. Denmark currently has 1,315 people hospitalized with 39 in the ICU and 59 of those in ICU patients on ventilators and 28 new deaths reported on Monday and Tuesday. So in this situation with Denmark, we see a different pattern that we've seen in other countries who also saw this dominant BA.2 sub variant. Let's take a look at South Africa. BA.1 was dominant in South Africa when Omicron peaked in the country, and initially cases fell dramatically after South Africa reached their peak on December 18th, falling 38% in just nine days. Now, BA.2 is dominant, making up approximately two thirds of the cases as of January 24th. Since then, cases have remained fairly stable around 50 new cases per million population per day. Approximately 10 times higher than the previous low of four cases per million that was seen in November of 2021. This long tail may not be entirely due to the BA.2 sublineage, as it is not unlike what we have seen in many other countries with Delta. But BA.2 could certainly be playing a role in this. A couple of last countries to note in Norway where BA.1 was dominant at the time of their peak Omicron cases on January 27th, cases have declined by only 7% nine days after the peak. BA.2 has not yet become dominant in Norway, but is increasing and as of January 25th, made up one fifth of the cases. In Ireland, after reaching a peak on January 9th of over 4,700 cases per day per million population cases dropped dramatically by 43% over nine days. Then they hit a low about 680 cases per million per day, and have since experienced a 14% increase in daily cases over the last week. As of January 24th BA.2 cases were rising, but still made up less than 10% of cases. Time will tell what happens here. Finally, the United States. Here in the U.S., BA.1 was dominant when the Omicron wave peaked on January 16th, with 2,410 cases per million population. Nine days later, the case count has decreased by 17% to 1,990 cases per million per day. In the past week, the U.S. has seen a 40% decrease in cases. As of February 5th, BA.2 still only made up about 3.6% of cases, but has been growing steadily. So what does all this mean in terms of cases that relate to BA.2? Well, honestly, it's really hard to tell you right now whether trends in cases are a result of the presence of the BA.2 sublineage or are they just the result of the Omicron variant in general, or which other factors are at work. What we've seen in other countries, we can suspect that as BA.2 becomes more prevalent, there will be a slower decline in cases. It's also likely that BA.2 sublineages will cause the Omicron Peak to be higher in places that have not yet peaked and have a slower drop and extended longer. Many questions remain regarding BA.2, including what kind of protection previous infection with BA.1 will provide against future infections with BA.2. In short, this is still a stay tuned moment. But in general, what we're seeing is this very major drop in cases following that initial peak. And what we're really looking at carefully with BA.1 and BA.2 sublineages, how will that tail look? Will it drop further? Will it be stable? Will it slightly go up? And what will that mean for hospitalizations and deaths? I again reiterate what I've said already. I do believe that as case numbers come down from these peaks within one to three weeks, we will also see the number of hospitalizations and deaths across the country and, for that matter, around the world continue to decrease.

**Chris Dall:** [00:35:30] So as I mentioned in the introduction, there is a growing sense of optimism with the rapid decline in cases here in the United States. Four states this week announced timelines for the end of school mask mandates, while others have dropped indoor mask mandates. A number of public health talking heads, as you like to call them, are saying that we need to start loosening restrictions whatever restrictions are left to show the public that there is an off ramp. Others say it's too soon. I think for many of our listeners having that conversation, while more than 2,500 COVID-19 deaths are being reported every day seems premature. But Mike, is it time to start having this conversation? And what should the message be, whether it's from the White House, the CDC or state health officials?

**Michael Osterholm:** [00:36:17] Well, Chris, as I just pointed out in describing what was happening with these surges, peaks and cases and decrease, we still have some uncertainty about what the immediate future will look like. Will we see some ongoing tail of activity that still causes substantial illness in our communities? Or will we see drops in cases that will result in levels of infection similar to what we might see in an average flu year? I think this is still yet to be determined. My sense is that we will see a continued drop in cases for some time. But to really focus on this discussion and it is a critical discussion, we really have to acknowledge that we have two pandemics happening simultaneously with COVID. The one is in fact surely that of the disease caused by the virus. The other is a loss in trust in public health. I see it growing daily. This is dangerous. We have got to address both of these situations simultaneously. First of all, we have to realize that we've been in this pandemic for two years. And as with any other kind of emergency event, fatigue sets in, patients are lost, credibility is challenged. That's normal in all of human discourse where you have something lasting this long. So in fact, think of if this pandemic had only been six months in length and we were in and out. We would have very different perceptions of what public health did or how they did it. So one of the issues is acknowledging time by itself is a factor in how people view what's happening. We do have to acknowledge another factor as we've had challenges with messaging. One is we have never really shared with the public a primer on how do you talk science? What does it mean, how do you understand it? How do you anticipate it? You know, this is not the classic kind of equation equal MC squared kind of physics. This is an evolving science. This is one where in fact, we have individuals who will make public statements about something on a given day, and that does reflect the science as we know it that day. Three months later, we have new data. This is evolving science. Things may change. I have tried very hard with you, our podcast audience, to be certain that I express the humility that we must have when dealing with these data, when understanding evolving science. This is what we know. This is what we don't know. This is what we're going to learn over the days ahead so that we will know. And I think our lack of clarity on that has really been a challenge because it's left people with they don't know what the hell they're talking about. Look what they said then. Now look what they say now. And I think this has been a challenge. The final piece is we've had lots of talking heads. I contribute to that. I'm one of them guilty as charged, but I have seen over and over again talking heads who have made all kinds of pronouncements and predictions for which none of them or very few have ever been realized. Just this past week, one of those talking heads was confronted in an NBC interview. All the different predictions she had made that were wrong, not even close. And how then, could she predict the future without some credibility on a track record? We've not held many of the talking heads accountable for what they've said, how they've said it. And I think we should. It's not to lay blame or give credit. It's just the unreliability factor. You kind of want a Consumer Reports addition of public messaging. You know who is giving you the information? And so today, it's not unusual to see different people talking at each other, over each other, and the public left to decide, wait a minute, what's the truth? That's a challenge, and we do not speak with a single voice in public health. And I'm not saying that you make people say what you want them to say, but what is consensus? How do we come to that? What do we know? What do we not know? That would clearly make things better. So this is an example right here with masking. This is a perfect example. One of the challenges we've had is how do you nuance this message when you're still trying to learn? For example, I have been accused of being anti-masking and with all the sundry associated characteristics that go with that, I've been assumed as someone who believes that masking should be all the time, everywhere for everyone. And without any discussion, what the hell do we mean by masking? We keep throwing that term out like good or bad or up or down or in or out. We never define it. In April of 2020, we put out a piece I was part of it talking about the need for quality masking, the need to have protective masking. Well, let's just take a look at what we're talking about today when we talk about mask mandates. It matters a great deal, which kind of respiratory protection you're using. And I still maintain that largely cloth face coverings are nothing more than some type of decorative device. They pose very little protection. Now people will cite studies. In fact, a recent one from CDC suggesting that in fact, cloth face coverings are much more effective. I will tell you across the board we have looked at these studies and there's a commentary on our website about this. Many of these studies were so poorly designed that if one of our graduate students were to have conducted that study, I would have flunked them. And we don't talk about quality of data. Whoever has a pre-printout on some element of something, the media picks it up and it's the gospel truth. You know, just last week, several economists from Johns Hopkins put out a study showing that lockdowns provided no real public health benefit. The media ran with that when something fierce without at all, adding the fact that there have been over 15 studies showing that if they do provide some reduction in transmission. Again, you know, dueling banjos of science. So when we take a look at masking, we have to understand you can't just talk about masking. We also have to understand what it's come to symbolize. Masking has taken on political dimensions beyond anything I could have imagined. It is absolutely a divisive issue. And so if you're going to try to bring about a policy from a public health perspective of something to reduce the risk of transmission of the virus if the public won't comply, what good is it? It's like that old piece I keep saying to you about a vaccine is nothing until it turns into a vaccination. A recommendation is nothing until it turns into action, that actually reduces transmission. So we have to understand that. And let me just give you a very clear, I think and and real example of what I'm talking about. We now have this masking debate up masking mandates. What a bad term. What a bad thing. In terms of trying to understand the real issues of this. I have maintained, as you know, for some time, that I don't think masking of itself is effective in younger children because we don't have effective respiratory protection for younger children. N95s don't fit. KN95s for younger kids are very hard to keep on, and a face cloth covering is just not that protective. Well, on Tuesday, David Leonhardt in the New York Times wrote a piece on the mask debate, and I was quoted in this piece. And what I actually said is in the context, I'll read you the full paragraph that David used. He said, "The benefits of universal masking in schools remain unclear. Studies in Florida and England, for example, tend to find little effect in caseloads. One study that did find an effect has been largely debunked. Some experts still favor masks in schools, and they're likely to have an effect. Even if few studies have yet shown it. A lot of other evidence suggests masking matters. Until the Omicron wave ends in both hospitalizations and deaths fall much further, masks should stay on these experts say." So now imagine you're the public. Where are you at right on this one? What are they talking about? But David goes on to say, "other experts believe that universal mask mandates are almost worthless. Among the reasons medical masks are designed for adults, not children. Michael Osterholm, a University of Minnesota epidemiologist, notes even mask designed for children slip off their faces. Children take off their masks to eat, and omicrons intense contagiousness, and the benefits of the current mandates may be tiny. A universal mandate doesn't work, Osterholm told me. Mandates focused on older children and high quality masking can help when caseloads are rising rapidly, he added. It's also relevant that teachers and students who want to continue wearing masks can do so. One way masking with medical masks provides protections, experts note." Now just those words that I said yesterday has created a firestorm in response to me. And people who are thinking I've sold out that I'm not protecting our kids, that I'm not trying to put forward that positive, proactive public health message. Well, let me come back to this. No one, I hope can ever say, if you read what I've written, you look at what I've said can think that I'm against restaurant protection. I have advocated strongly for it dating way back in April of 2020 when we first came forward saying aerosols were a critical part of the transmission model for SARS-CoV-2 transmission. But you got to wear adequate protection. You know, just putting something in front of your face doesn't do that. And for younger kids, this is a huge challenge, a huge challenge. It's a challenge for older kids and adults. If they won't do it and wear a highly protective device, if the face cloth covers all they'll wear. I promise you they will likely get infected over time, particularly in an Omicron kind of world. So the nuancing here is I'm not against masking that term, which I dislike. I'm for quality masking, and I'm acknowledging the difficulty of getting young children to be protected from some kind of respiratory protection device use. And I'm also one of these realists that says, you know, you can't assume if you take 30 minutes for lunch and you take your respiratory protection device off your face, that doesn't count. Lunchtime doesn't get a time out with virus transmission. And yet, I hear this all the time. Well, you know, they wear it all day while they were at lunch for a half an hour with Omicron that's more than enough. So why are we mandating that? We are losing the public's faith in us if we don't tie real outcomes to real actions. And this is an example. So I would say my ideal would be for older kids that can wear N95s and KN95s and by older I may even mean seven, eight, nine year olds can wear them, then go ahead and put that in place, but then enforce that. Don't let anything that comes across your face count. Somebody wears a gator to school, that's not protection. You're going to mandate that, oh, they must wear something so they'll wear that. We're inconsistent. We are absolutely inconsistent in our efforts. So let me tell you where I think this is getting us by not acknowledging this issue and not acknowledging that we're going to be seeing case numbers drop precipitously. In another article that was in The New York Times yesterday, written by Nate Cohen entitled "Americans Are Frustrated with the Pandemic, These Polls Show How Much." I urge all of you, if you can, to go back and read it. I think this content is open to the public if you're not a subscriber to the New York Times as it relates back to COVID. But in this, Nate lays out very clearly in this piece the challenge we have. Let me just share with you his opening paragraphs. "A wave of polls taken as the Omicron variant crested across much of the United States shows new signs of the public's resolve to combat the coronavirus pandemic is waning. The surveys depict an increasingly frustrated and pessimistic nation that is as worried by the specter of an endless pandemic as it is fearful of the disease. While a majority of voters remain concerned about the coronavirus, the balance of recent polling suggests that the desire to return to normalcy has approached or even overtaken alarm about the virus itself. A recent Yahoo News YouGov survey found that 46% of respondents thought Americans should learn to live with the pandemic and get back to normal, while just 43% thought we need to do more to vaccinate, wear a mask and test. Now I could go through and highlight all of the findings from these different surveys, whether they be from the Kaiser Family Foundation, from Monmouth University, but the bottom line message is we as a public health community are increasingly disconnecting from the public. That is a dangerous, dangerous place to be. We should never make public health policy based on what's popular. But we should always acknowledge our public health policy has to live in a world where without the trust and the support of the public, our recommendations will ring hollow. Look what we've seen with mandated issues. Largely particularly for masks they've not been enforced. I could go through a laundry list of mandates that have fallen flat on their face. Now I support mandates. I always have. I spent my entire career trying to get young children vaccinated in our schools with vaccine related mandates to protect other students and family members. We have to understand we are living in a very different time than we were two years ago. So where am I at with mask mandates? I think for most instances, they're not doing much. I wish they were. But unless you're wearing high quality respiratory protection that is routinely enforced that we've instructed the public how to do, no more of this 25% of the population wearing it under your nose, if we're not doing that, then we are not probably gaining much at all from a mandate. And we are causing ourselves lots of credibility challenges. So I hope that gives you a sense of where I'm at on this. I would talk about this in all aspects of public health. It's about common sense. It's really about using the power of science, finding that message, telling people what you know, what you don't know, and also understanding where people are at. Because if we don't bring them along with us, we will not be successful in any program that we do to address COVID.

**Chris Dall:** [00:52:15] So, Mike, when you talk about nuance, does that mean going forward acknowledging that cases are declining, that things are getting better, but that the pandemic is not over yet, and that we have to be aware that another variant could come along and cases could rise again?

**Michael Osterholm:** [00:52:36] You know, Chris, that's exactly the point. I don't know that another variant is not going to show up and do even more damage than Omicron did in terms of its infectiousness, immune evasion. That is a real possibility. You know, I'm sitting here right now. It was one year ago this week that I put out a statement that said the darkest days of the pandemic could still be ahead of us. A statement that was not at all popular. Nobody gave it credibility, but I was looking at these variants, and anybody who's been a regular listener of this podcast knows for the last year that Fifth Dimension song, you know, "This is the Dawning of the Age of Aquarius" is playing in my head every day, this is the dawning of the age of the variance. I've been saying that for a year. I don't know that that's not going to happen again. I hope not, but as you've heard me say many times, hope is not a strategy. So we have to be prepared for another one. So how do we get prepared? We have credibility from at least what we've done already. And you know what? High quality masking with good respiratory protection could be a very important element of a new emerging variant down the road. Well, if we have burned all of our goodwill and our credibility by insisting that you have to do it this way, you know you have to stay masked until a certain point without providing the quality masking that makes a difference to begin with. You know, what have we accomplished? Yeah, we were right. We got people to do what we wanted to do, but did we really save lives? So I think we have to come back to this issue of I do believe case numbers will come down precipitously. And even with the discussion of BA.1 and BA.2 and the lack of clarity of how far they'll come down, we are probably going to be in a time in the next few weeks. Now we're not there yet, we're not there yet, but we will be in time at a place where we can say to ourselves, you know, we can do a lot more of what we used to do. Now I just have to put one caveat in this literally breaks my heart each week to talk about this. For those who are immune compromised, I don't know when your life will ever get back to what it was before Omicron. I think about you all the time and what it must be like to have to live even with your four doses of vaccine on board and counting on your personal respiratory protection to protect you. But we will get there. What we have to do now is help people understand how we got there in a scientifically sound consistent manner and then move from that. And you know, I've had so many reporters ask me in the last three days, Oh boy, these governors are moving, you know, are they right to do this? It seems like it's far too early, et cetera. You know, governors are probably as good as anybody in the world at reading the tea leaves. They see where the public's at. They know it. These are some Democratic governors who have been very supportive of public health. But they're reading the tea leaves. So I would say if this were one that was an absolute protection kind of situation where if you did it, everybody was protected. If you didn't, nobody was protected. You know which way I'd go on it. Absolutely. I'd come down on protection. But there's so much ambiguity in the masking issue right now. Don't die on this bridge. This is not where the war will be won or lost. It's about getting people vaccinated. It's about continuing to work on that issue of getting the testing and drug treatments readily available to people, as well as coming up with better quality masking. Somebody should win the Nobel Prize for finding a highly effective respiratory protection device like an N95 but for kids that they'll wear, that they find comfortable, that they find protective. If somebody does that, I want them to get the Nobel Prize because they'll save a lot of lives. But until we get that way, we have to understand the limitations of what we say when we tell people they must wear a mask.

**Chris Dall:** [00:56:49] This brings us to our COVID query segment. This week we have a question about vaccination for children under five from Abby. But before we get to this question, let's start with a little background. Last week, Pfizer and BioNTech submitted an emergency use application to the FDA for approval of their vaccine in children ages six months to four years. The application was based on the initial two dose trial results, which found that the vaccine was safe but did not produce a strong enough immune response in all groups within that cohort. So the hope is that the vaccine will be authorized and kids can begin getting shots while the companies await the data on a third dose of the vaccine, which is expected or hoped to provide more protection. So with that in mind, here is Abby's question. "I'm feeling very conflicted about the potential approval of Pfizer vaccine for my three year old. On the one hand, I'm certainly anxious to get him protected as soon as possible. He's the last of my four kids to be eligible. On the other, giving him two doses of something that has not yet proven to be effective feels like taking out all the risk without any potential benefit. My understanding is that the under five Moderna trial will be wrapping up in the next month or two and that they chose a significantly higher dose than Pfizer did. My inclination is to wait for their data, as well as the final Pfizer data. If it were your kids or perhaps your grandkids, which way would you lean? Get going sooner rather than later in the hopes that you have a jumpstart on the full series or wait out the data?"

**Michael Osterholm:** [00:58:16] Well, Chris, this is really, again all about nuance. It's exactly what we just talked about. Let's break this into the different buckets. I think that are really important. One is let's just talk about the vaccines. Abby has correctly pointed out that in fact, there is a real question right now about how well the vaccines work or have worked in those under age five relative to the trials that were done. And in fact, it was found that the two dose approaches for both of the vaccines did not provide adequate protection among those under age five, and therefore the companies were sent back to look at a third dose possibility. Now, in the process of this, of course, particularly as a result of the Omicron surge, which again is going to be over with not too distant future, the FDA decided, Well, let's get the information on the two dose and really look at it. They requested the companies to submit that data, not the other way around. And their logic is well, if we have sufficient safety data here and we see that those initial doses actually start the process of developing a chain of immunity boosters, then let's go ahead and get it started. Think about where we're at with adults started out with two doses, eventually got to three, where you couldn't even look at three until you had the first two in, so you had to get them done. So their point is is that we likely can based on safety data we have and on what immunogenicity data, data about how well the vaccines induce an immune response, get this initial approval with the idea that when the third dose data are available, it's kind of a hand-off one to two. Now that's never happened before in all of our vaccine science review and process to have a vaccine kind of come in as an interim to try to get you ready for the one that is still coming. And I understand the logic of that. I think that some people at the FDA should be credited with thinking through that. You know, I surely stand guilty as charged because I was one of those people out there saying last August the idea of a booster, that third dose which occurs, you know, I always want to call the three prime dose vaccine was in fact needed well before the final definitive data were available and urged strongly that we get third doses into people, which today is not even a you know, anyone should have a counterargument to why we want third doses. But the data were incomplete at the time, but in fact, in the time of a crisis, a pandemic, you have to make decisions sometimes that are not normal regulatory science decisions. So I very much understand where FDA is at. My concern and and I wish I could define it in a way that would give you an absolute number, you know, five for for and three against or you know, eight for and two against. In terms of understanding what the FDA should do, what my concern is that today parents will look at this as a shortcut. We already have a problem in five to 11 year olds, where only 31% of the kids who could be vaccinated are vaccinated. Now how many do you think of those five and 11 year olds made that decision on their own? No, it was their parents, their guardians, whoever in their family. Ok, well, now imagine there will be those who will absolutely want their under five year old child to be vaccinated, and they will be the first to sign up. They'll be at that door waiting for that office to open so they can get their vaccine a half an hour before anybody gets there. Thank you to those parents. But there is going to be a large contingency of parents going to say, I'm going to wait. You know, the case numbers are coming down. Doesn't look to be the big problem. The schools that had the major outbreaks in January are not seeing them now. The daycares are not seeing major outbreaks. I'm going to wait. And that by itself, you can argue, is logical. But what this really comes down to is what does this mean for parents and their faith in the U.S. vaccine regulatory science process? And does this now make them begin to wonder about other vaccines? Well, wait a minute if they took a shortcut here, and I think it's a shortcut. What did they do in other vaccines? So I think this comes back to the point I made earlier. We have two different kind of pandemics going on. We have one of the actual virus, and we have one with a loss of trust in public health. And this could be one of them for childhood vaccines, and I wish I had the best answer, I don't have the right answer. I am not here as an armchair quarterback or on the bully pulpit to say do it my way or the highway. I don't know what the right answer is. I see the logic in the FDA approach with these vaccines. They will surely go through full review at the FDA with the Outside Advisory Committee, they'll go to the ACIP. But I also worry about the message it sends. This is an incomplete vaccine in the terms of it wasn't capable of being approved on its own before without the idea that the third dose may be coming. And how will the public respond to that? I don't know. So if I were you, Abby, just because I do believe that there would be benefit in the two doses and as someone who has a grandchild in this age category who can't wait for them to get vaccinated, I would go with the two doses right now with the idea that it's priming the immune pump of the child, and if we need to have third dose, then they're ready for it. But I also have faith that the safety data will be completely and exhaustively reviewed and that I don't have a challenge with that and that I do have reason to believe that the immune response that they get from these two doses will still be very meaningful in potentially reducing severe disease hospitalization if that should occur. But I surely understand your concern. I acknowledge that, I think you're right, and I wish I had the right answer. I don't know.

**Chris Dall:** [01:04:38] And just a follow up note for Abby and our listeners, the CDC's Advisory Committee on Immunization Practices will be reviewing that data, I believe, on February 15th. So Mike, where is our latest beautiful place submission from this week?

**Michael Osterholm:** [01:04:55] Well, Chris, I'm very happy to report that we have a submission from Diane and this is one that is in our neck of the country, as you might say. And it's an area of our state that I love so very, very much a very beautiful part of the world. So Diane wrote, "I'm a family physician in northern Minnesota. Last week, my partner covered the practice so I could go to the Itasca State Park for a much needed three day silent retreat. I shared air with no one, skiing unmasked through the woods was balm for my soul. The headwaters of the Mississippi have always been one of my beautiful places. There is nothing about being in the presence of this mighty river's quiet beginnings that gives me hope and strength. My visit Wednesday was magical. Temperature was minus four degrees Fahrenheit and the sun was out. The river's music filled the air and the stones were blooming with ice. The pictures and short video speak for themselves. Thank you, CIDRAP Team, for all you do. We often quote Dr. Osterholm when talking with our patients and steer people to the podcast for reliable information. Keep up the good work and we will too. We are in this together, Diane." Two things first of all, thank you very much for your beautiful place the mission. It is beautiful. I love the headwaters of the Mississippi and anybody who has seen me on any kind of zoom, whatever see a picture of me with my dog Max behind me, and one of the most beautiful pictures I have is the one that we share sitting at the headwaters of the Mississippi River on those very rocks you just talked about. Let me also say, Diane, thank you. Thank you. Thank you for what you do for all of us as a practicing physician in a time of COVID. You are one of those individuals on the front lines, day in and day out. This has been, I know, an incredibly challenging time. And so thank you for what you do. You are truly a hero in all of this COVID pandemic, something that doesn't get said nearly enough. And so I thank you for all you've done and I love your beautiful place.

**Chris Dall:** [01:07:10] So, Mike, what are your take home messages and closing thoughts for today?

**Michael Osterholm:** [01:07:16] Well, Chris, let me just start out by saying that if you were to describe my brain right now is somewhere between a black hole and a hurricane wind, it would be right you're somewhere in there. Ok. I just have to acknowledge that to our listeners in the sense that they realize that these are very difficult times to combine science, wisdom, compassion and that unknown that is so important leading people to a better place in life. But let me tell you, I really have three main summary points for today's podcast. Number one, we are entering a new phase of this pandemic. Will it, in fact be a repeat of the storm category four five hurricane? Or will it be the last days of a blizzard where we can all count on digging out and maybe never see this blizzard again, at least for years? I don't know. I worry that we might be in the eye right now of the hurricane that makes us feel like everything's OK, we've made it. I hope that is the case and I hope the back wall of that hurricane totally dissipates before the eye completely crosses where I'm at. But I don't think that's the case, so we need to be prepared for what can come ahead. And I know people are fatigued. They don't want to hear this, and it doesn't mean you need to change your life to repair. What it means we in public health have to do a better job of understanding how to get people vaccinated. We need to do a better job of getting testing in place so that people can readily during a surge in cases, get tested quickly and then using those very rapidly available results to get people to drug therapies that can make all the difference in the world between having a serious, life threatening infection and a much milder one. There are a lot of things we can do and must do. And we've got to learn a lot more about how to communicate with the public. We need to understand from the public how we've missed the mark in many of our messages and what we can do a better job of. So I don't know, are we in the eye of the hurricane? Are we at the end of the blizzard? Either one. I do know we're going to have some good days ahead. What I don't know is how long they will last and how good they'll be. And point two: this week's controversy du jour is mask mandates, you know, don't allow ourselves to make great the enemy of good. You know, if you're going to use high quality masking to protect yourself, consistent masking that term, then you've got me on your side. I'll do whatever I can to help that happen. But if you're using inadequate respiratory protection gators, face cloth coverings, et cetera, you know, are we going to literally, you know, take that issue on for a mandate? When the data are so soft. If those who are against the mandates were to use data like that, we would scream. It's not scientifically sound data. So I think we're at that point right now where in fact we have to ask ourselves, what's the right way to go to protect the most number of people? Common sense, we have to understand that mask now is a very troublesome Four-Letter word for us because we've made mask that. We have a lot more work to do. I can't wait until, as I said earlier, somebody invents the Nobel Prize deserving invention of a really effective respiratory protection covering that is easy to wear, that can be rewashed, it can be used over and over again, and kids will wear it. Wouldn't that be something? And finally, number three, as we hit this upcoming lull, which I believe we will, we must not stop our efforts to be prepared for this potential future of a new variant. As I said just a moment ago, I don't know if it will happen or not, but we have to be prepared. And this is the point I just made about vaccines, drugs, testing. All those things need to continue. We need to move on. We need to find better vaccines. Not that the ones we have right now are not good. They're really remarkable. But what if we could find one that has more durable immunity that has a wider breadth of protection against even variants yet to have evolved? So we need to keep working on all of this. As I learned a long time ago in rural Iowa, you make hay while the sun shines. And I think the days ahead are going to give us that opportunity. And finally, we have to, as a public health community, learn how to communicate with the entire population. And how do we help our elected officials lead in a way that we're all on the same page? We're all attempting to save lives without causing these great challenges in personal values. Maybe that's naive, but I think we have to do a much better job of understanding how can we actually ratchet down the rhetoric and ratchet up the science? So I think those are all very important aspects of what we've hopefully learned today.

**Chris Dall:** [01:12:40] And any closing songs for us?

**Michael Osterholm:** [01:12:44] Well, Chris, today we actually have a gift from one of our listeners who thought that this song might very well be one quite appropriate for the time. And I thought it was a quite thoughtful piece. He suggested "Better Days" by One Republic. "Better Days" is a song by the One Republic band taken from their fifth studio album, Human. It was released as the fourth single from the album on March 25th 2020. It was co-written by frontman Ryan Tedder, along with bassist Brent Kutzle, John Nathaniel and Tyler Spry. The song was actually inspired by the ongoing COVID-19 pandemic upending the lives across the globe, according to frontman Ryan Tedder, who said "We were in the final weeks of our fifth album deadline when a global pandemic was declared by the W.H.O.. A few of us unknowingly got exposed to somebody with COVID-19 in London and ended up in quarantine in LA at my studio for two weeks. With only two songs left to finish, one of them happened to be "Better Days." We write about real experiences and events that happened to us. This is what happens when you write a song during a crisis." The song actually did well. It on the U.S. digital song sales by Billboard, it got as high as number 11. So I share with you today "Better Days" by One Republic. "Oh, I know that they'll be better days. Oh, that sunshine bout to come my way. May we never, ever shed another tear for today because, oh, I know there will be better days. Waking up in California, but these clouds, they won't go away. Every day is like another storm. Yeah, I'm just trying not to go insane. Yeah, in the city shining so bright, so many dark nights, so many dark days. But every time I feel the paranoia, I close my eyes and I pray, Oh, I know that there'll be better days. Oh, that sunshine bout to come my way. May we never, ever shed another tear for today because, oh, I know there'll be better days," One Republic. So thank you very much for recommending that song. It is very fitting. I want to thank all of you today for being with us. I know it was probably not that satisfactory of a podcast and that I didn't give you a lot of answers that I wish I could have and should have. But I gave you my best shot at what I know. I know we're in both a very good time, and yet we have the potential yet for some more challenging times. Mark my word the next week will be a whole series of heated discussions about mask mandates, and sometimes I worry that we get caught up arguing about how many angels can dance on the head of a pin without actually asking ourselves, What are we accomplishing? How are we? I want to acknowledge all of you on the podcast who have lost loved ones, who have family members, friends, colleagues who have been so severely impacted by COVID, including those with long COVID. This pandemic just continues to accumulate tragedy day after day after day. But I also want to thank all of you who have written in shared with us your thoughts, your encouragement, your beautiful moments. Really, you have been so kind. And as I do every week, just reminding you that how your kindness one act of kindness a week can start an entire chain of kindness that can last forever. So I hope we all continue to remember that and do that. Thank you for your time today. We appreciate it. Chris, thank you to you and the team for all your efforts to put this podcast together. Just be safe, be kind, and thank you so much for being with us.

**Chris Dall:** [01:16:48] 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. This podcast is supported in part by you, our listeners. If you would like to donate, please go to CIDRAP.umn.edu/donate-now. The Osterholm update is produced by Maya Peters, Cory Anderson, Angela Ulrich, Meredith Arpey, and Sydney Redepenning.