# Episode 94: The Next Normal

**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. Roughly two years since the COVID-19 pandemic began to take off in the United States, after five waves of infection that caused more than 79 million US COVID-19 cases and over 960,000 deaths, the nation appears to be entering a new phase of the pandemic. Whether you call it the new normal or the next normal, or whether you even think we're close to it yet, the discussion about what comes next and how we deal with it is well underway. Last week, the Biden administration laid out a plan for the road ahead. This week, a group that includes Dr. Osterholm, members of the Biden Transition COVID-19 Advisory Board and other experts released their own roadmap for how the country can manage the coronavirus going forward. The shift to the next normal should not induce complacency, inaction or premature triumphalism, the group wrote in the executive summary of their report. To rapidly reach and sustain the next normal, the country must implement a comprehensive and coordinated map to both address this pandemic and develop the capacity to confront future biosecurity threats, they added. Today, on this March 10th episode of the podcast, we're going to talk about the roadmap for living with COVID and the vision that it lays out. We'll also get an update on the trajectory of the pandemic here in the United States and around the world, discuss the W.H.O.'s strengthened endorsement of booster shots, answer a COVID query about how fully vaccinated but immunocompromised people should approach indoor settings, and share a very personal beautiful place submission. But before we get started, as always, we'll begin with Dr. Osterholm's opening comments and dedication.

**Michael Osterholm:** [00:02:18] Thank you, Chris, and welcome to all of you, back to another edition of the podcast. For those who may be listening for the first time, welcome, we hope that you find the kind of information today that you can use in your everyday life. For those who have been regular listeners to the podcast, today let me just share a sense of perspective as we begin to record this. Number one, I promise you that the dedication, the beautiful place and the final thoughts will be unique today in light of the world that we live in today and what it means. We are all focused on COVID as a very personal issue. But I can't help but believe most of the world is also focused personally on what's happening in Ukraine. It is surely a challenge for the human spirit to watch the pain and suffering, the agony, the deaths that are occurring there. And again, as I talked about last week, this is occurring unfortunately, in too many locations in the world where there are groups, there are individuals who are suffering who are dying at the hand of fellow man. And so today we will focus on COVID. It is surely extracting one very, very high price in the western Pacific right now, and we'll talk about that and what it means. We'll talk about what we might think about as a new normal going forward here in the United States. But let me just reiterate to all of us that we are in very complicated times trying to understand what is happening in our world, whether it's from a virus or from the hand of man. And we're trying to put this into some sensible future. And today, I hope that we can do that for you in a way that for some of you in particular, the immunocompromised listeners here, that will be helpful. In terms of dedication, you know, we've in the past tried to highlight groups of individuals who have been impacted by this pandemic, some through the actual illness itself, some in how they've responded from an occupational or from a personal perspective. Today I'm dedicating this to a person, to an individual, and it's with great honor that I do that. Maya Peters, who joined CIDRAP in August of 2018, was a very critical voice in the early days of this podcast formation. In fact, it was Maya along with Cory Anderson, another one of our podcast crew that convinced me on March 10th of 2020, two years ago to actually go on the Joe Rogan podcast and discuss the issue of what was about to emerge. Maya has been really the primary caretaker of this podcast activity from the very beginning. She's done an amazing job of organizing all the communications with so many of you who write into the Osterholm update. She's been invaluable in orchestrating every week's podcast, review and editing, and I can never say enough in terms of what she did to contribute to this whole entire effort. Well, we want to congratulate Maya, who this past week took another position at the University of Minnesota a real advancement, a new opportunity for her. And we're also happy for her, but we're going to miss Maya. And I can honestly say that I've learned so much from her and that she has contributed so much to this podcast that we dedicate it this week to you, to you Maya, thank you for all that you've done to help us all and for making this podcast possible. And finally, we have a well-known saying at CIDRAP that is a quote from "Hotel California" by the Eagles, a song that will be familiar to many of you. And in that song, there's a line that goes you can check out, but you can never leave. And so, Maya, we just also want to remind you, you can check out, but you will never leave CIDRAP. Thank you so very, very much. And to close the opening with another bright spot, let me just refer to our moments of sunlight. I know for some of you, you frown when you hear me say this and think how crazy this whole thing is. But I got to tell you, for many people, we welcome this. March 10th today, we will have 11 hours, 38 minutes and four seconds of sunlight here in Minneapolis-St. Paul. That's up from 11 hours and 16 minutes and nine seconds one week ago. That's an increase in 23 minutes and 55 seconds of sunlight. Right now, we're averaging an increase in almost three minutes and eight seconds of additional sunlight each day. And we are far beyond that December 21st winter solstice when we were at eight hours and 46 minutes and 11 seconds. We will continue to appreciate and welcome that increased sunlight. And as I say, often to our southern hemisphere colleagues, we will be shipping some of that to you in intent. So thanks again for joining us, and I look forward to our discussion.

**Chris Dall:** [00:07:25] Mike, for our look at the international situation, we're going to start once again with Asia. And let's begin with China, which is starting to see a surge in cases despite its zero COVID strategy. Now you predicted back in January that China was going to have problems with Omicron. Is that what we're seeing here?

**Michael Osterholm:** [00:07:43] Great question, Chris. Some of you may recall that back in January, January 25th specifically, I coauthored an op ed in the New York Times with Zeke Emanuel about China's zero tolerance approach with COVID. In the op ed, which was published in the week leading up to the start of the Winter Olympics in Beijing, we acknowledge the success China has had with this approach from the standpoint of limiting disease transmission. Remember, this is a country that reported a total of 80,000 cumulative cases by the beginning of March 2020, just a few months after news of the virus first broke. However, from that point until January 25th, 2022 the day our New York Times op ed was posted, cumulative cases in China stood at less than 106,000. So less than 26,000 cases in the span of 23 months. Here in the U.S., our current daily average ranks above that. Of course, China's ability to limit transmission hasn't been simple or straightforward. In fact, I think it's essentially been the exact opposite. And there's no denying that any discussion about China's ability to limit the impact of COVID should also include the many examples of societal and humanitarian issues that have occurred because of their approach. Again, you're basically talking about the only country in the world that has had the political will, the level of control over its population, and the resources to commit to an absolute zero tolerance approach with this virus. Other countries such as Australia, New Zealand, have also tried this approach, but have given up after realizing the futile nature of it. Locking down entire cities, testing millions or even tens of millions of residents multiple times in the span of a week or two, and only loosening restrictions when outbreaks are stamped out really only exists in China's playbook today. However, even with the draconian approach to COVID they've relied on to date, which has fostered a lot of debate and discussion, what Zeke and I hope to get across in the op ed was that Omicron fundamentally changed the game. Based on everything we know about Omicron and how infectious it is, any pursuit of zero COVID essentially turns into a game of cat and mouse on steroids. All it takes is one slip up, one missed contact, one infected traveler, and suddenly you could be dealing with a whole network of exposures across multiple cities with millions of residents. The stakes have been raised. Omicron is not Delta, it's not Alpha. It is very different with regard to the transmission potential. Now what has China done to prepare for a significant outbreak? Well, there's no doubt that they've vaccinated a large portion of their population. As of Tuesday, 88% of the population is reported as fully vaccinated and 40% had received an additional dose, that third dose approach. However, just over half of the Chinese residents 80 years and older have been vaccinated with at least two doses of vaccine, which means that a total of more than 17 million individuals in this age group have not yet received two doses of vaccine. Speaking of vaccine, there are still a lot of questions about just how well the Chinese vaccines, including both Sinopharm and Sinovac work against the Omicron variant. Both vaccines, which use inactivated virus, have fared worse than the mRNA vaccines in lab based serological studies, which measures how well the vaccines neutralize the virus. In the case of Sinopharm and Sinovac little to no neutralization of Omicron was observed with a two dose regimen, signaling that they might not all be effective in preventing infection from the variant. Additional studies have hinted that a third dose could help a bit, but there is still a lot of questions remaining. Unfortunately, that's the case even when it comes to severe disease and death. Again, there's not a lot of real world data measuring the effectiveness of these specific vaccines, but what's been shared to date raises some real concerns. For example, in a study out of Brazil last fall, which occurred between January and July 2020, long before we saw Delta or Omicron, it looked at nearly a million patients hospitalized with COVID. They reported that the two doses of Sinovac was around 71% effective in preventing severe disease in 40 to 59 year olds, 60% effective in preventing severe disease in 60 to 79 year olds, and only 30% effective in preventing severe disease in those 80 years of age and older. The same study reported the vaccine's effectiveness against death in individuals 80 and older was less than 50%. In fact, countries like Brazil and Chile, which have relied on Sinovac, have opted to use different vaccines as a third dose. So despite the high overall vaccination rates that China has achieved to date, there are still some pretty significant vulnerabilities. We're seeing what's happening in Hong Kong, which has now the highest per capita death rate in the world as of today. As of Tuesday, the per capita COVID deaths in Hong Kong were nearly three times higher than the levels reported at the height of the deadliest surge in the U.S. last January. Let me just repeat that as of Tuesday, the per capita COVID deaths in Hong Kong were nearly three times higher than the levels reported at the height of the deadliest surge in the U.S. last January. Of course, Hong Kong hasn't vaccinated as much of their population as Mainland China has, but one of the primary reasons there are death rate is so high is due to the fact that just one third of their population 80 years and older have been vaccinated with at least two doses of vaccine. Again, China isn't much further ahead, with just over 50%. Another issue is the relatively limited number of critical care beds per capita. In China, there are around 3.6 ICU beds per 100,000 population. For comparison, the U.S. has over 30 ICU beds per 100,000. Again, Hong Kong and China 3.6 ICU beds. The U.S. with 30 ICU beds per 100,000. So any sudden surge in hospitalizations can quickly become overwhelming in China, much like it has and is currently doing in Hong Kong, contributing to even worse outcomes. This leads me to my next and final point. For the past two years, China has relied on a practice of sending every positive case to a health care facility for observation and treatment, even if the case wasn't severely ill. Any sudden shift in that policy, which would almost certainly have to happen in the event of a large outbreak, presents the risk of hospitals being further inundated with cases who might still feel like their best option is to seek out health care. So all that being said, we're now seeing some pretty telling signs of Omicron outbreaks in China, and I don't think we should be at all that surprised. This past weekend, the country reported more than 800 new cases, nearly matching their total for the entire week leading up to that point. And it represents their biggest outbreak to date since the early days of the pandemic. According to a New York Times article published on Monday, nearly a dozen major cities are dealing with outbreaks, many of which are being tied to Omicron. In total, 17 of the country's 31 provinces have now detected new cases. While this is happening, Chinese leaders are in Beijing for the National People's Congress, representing the country's legislative body. Up to this point, there hasn't been any clear indication or mention of the country pivoting away from a zero tolerance approach. But according to the South China Morning Post, the closest reference thus far was a statement made on Saturday by China's Premier, who pushed further for efforts to enhance vaccine development and mention the need to quote "strengthen epidemic controls," unquote. So we'll see what happens in China. As it stands, it looks like they're doing their best to fight the recent uptick, with many of the same what I consider heavy handed tactics that they've used to date. Otherwise, there are signs that the country is in the process of researching and developing their own mRNA vaccines for COVID. Clearly, those results will not yield new vaccines anytime soon. In addition, they've authorized emergency use of Pfizer's antiviral drug last month, which is time that they've authorized a drug or vaccine for COVID developed outside of their own country. Some have suggested that these developments could be hints of China's moving away from a zero tolerance approach, but it's not likely to suddenly have these resources overnight. It's going to take time, and at this point, I'm not sure how much time they'll be afforded. So overall, Chris, I think China is in a very precarious position. If the measures they've used to date don't work, they might find themselves adapting their approach, whether they really want to or not. If that's the case, then it becomes a question of how well can they cope with this major surge? Other countries that have had success limiting transmission prior to Omicron are finding out how difficult it is to do that now. In places like New Zealand and South Korea, cases, hospitalizations and deaths are at record highs. And while the Omicron surge has no doubt been challenging in both countries, their vaccination rates, particularly in the older age groups, have also helped. Around 90% of South Korea's elderly population has received a third dose, 90%. Again deaths are rising there, and that can't be overlooked. But their current per capita rates are still two and a half times lower than what the US reported during its Omicron peak. In fact, the latest death rate of 4.11 per million population is still higher than what's being reported in South Korea today at 3.1 per million population. New Zealand has provided two doses of vaccine to nearly 95% of their population, 12 years of age and older. Virtually every resident in the country over the age of 75 has received two doses, and they've administered additional doses to more than half of their entire population. Their latest death rate 0.25 per million, more than 16 times lower than the current U.S. rate. Then you have Hong Kong, where less than two out of every three residents aged 70 to 79 have received two doses of vaccine and less than one third of residents 80 and older have received two doses of vaccine. Again, those glaring gaps, combined with their relatively limited health care capacity and a variant as infectious as Omicron, has caused their death rate to skyrocket, far exceeding even the deadliest wave faced in the U.S. to date on a per capita basis. Unless China can shore up their vulnerabilities quickly or manage to fend off this looming outbreak, I think they could be in for some very challenging times ahead. Let me just close by reminding us all that I've told this story a number of times, but it deserves repeating, I think. Throughout the course of this pandemic, I have received lots of advice from a lot of people about what I should or shouldn't say. One of the pieces of advice I would get regularly is if we just did it like China, then we could bring this pandemic under control. And as I've said, time and time again, just give it time, give it time. Based on what we're seeing with these variants, there's no reason that China or any of the Western Pacific countries should be uniquely protected against this virus, given what they've done and how they've done it in terms of vaccination and the fact that this virus, like the wind, cannot be stopped. Well, you can see what's happening right now. One of the lessons here is if we had modeled what was happening in Asia over the last two years, we could have come up with these elaborate statistical models showing all the things that make a difference in protecting us against this virus and they would all be out the window right now based on what we're seeing. It just reminds us of that word I use over and over and over again to the point of absolutely, probably just frustrating you, but it's humility. It's humility. It's also anticipating, you know, when Zeke and I wrote this op ed in the New York Times back in January, we didn't have any great crystal ball activity that told us exactly what was going to happen, but you could anticipate this, and we didn't. China didn't. Asia didn't. And so I think that one of the messages we also have to have here is that number one, expect the unexpected, number two, be prepared for it. And as we talk about what we're doing nationally and where we're going, I think the lessons we're learning right now is that for many of these countries that have been labeled as having controlled COVID, they know how to do it. All it takes is that one highly infectious variant and that goes out the window. We must not forget that lesson.

**Chris Dall:** [00:21:04] Here in the U.S., cases, hospitalizations and deaths continue to decline from the Omicron Peak, and according to the CDC's new metrics, 90% of Americans are now in areas with medium or low COVID-19 levels. But you and your colleagues wrote in the roadmap for living with COVID, and we're going to talk a little bit more about that in a minute. You wrote quote "On March 1, 2022, the nation is not yet at the next normal," and I think many people would agree with that statement. How far are we from that threshold?

**Michael Osterholm:** [00:21:37] Well, Chris, let me pick up where I left off in discussing the international situation and to say again that one of the key elements of addressing what will happen here in the United States is humility, humility, humility. I'm not sure that I can provide a clear cut answer to your question. Let me start out by saying that first of all, we are in a much better spot with this virus than we were the past several months. No doubt about it, but we were here a year ago too in the same spot. Average daily cases have dropped to just below 43,000, our lowest level since last July, and all 50 states have reported an overall decline in the past two weeks. Hospitalizations have dipped below 30,000 again the lowest level since July, and we've seen the number of patients in an ICU with COVID fall beneath 6,000, down from more than 26,000 more than just a month and a half ago. Of course, with just almost 1,500 deaths a day still being reported, it's not all great news, but it looks like the declines in this area are at least starting to pick up momentum. So I think we can expect the number to drop relatively quickly over the coming weeks as well. Things are definitely improving. However, despite these improvements, I don't think that we've reached the position to say yes, this is our next normal. Now, if these trends only continue throughout the next month or two, I think we could be in a more fitting position to maybe have that discussion. But our current levels aren't unprecedented. In fact, we've been in a similar situation before. Remember, from early May to mid-July of last year, a span of more than two months, we reported lower average daily case totals than we're currently at now. Throughout the month of June, the average daily cases never climbed above 16,000. Let me remind you, we're at 43,000 cases being reported today. In regards to hospitalizations, we've been at similar levels a handful of times, including during the summer and fall of 2020 and this past summer. And while I'm sure we'll reach levels lower than those reported in 2020, we need to see hospitalizations decline to 15,000 or half of what they are now to match our lows from last June. The number of patients in the ICU would also need to be halved. This, again, is all about shifting baselines. And finally, I don't think there's anything normal when it comes to reporting 1,500 deaths a day from this virus. But for some, it has. In a story published on Tuesday in The Atlantic, titled "How did this many deaths become normal?" Writer Ed Yong, someone who I have such deep respect for as a chronicler of this pandemic, captured this concept so very well. Ed wrote the following, "The United States reported more deaths from COVID-19 last Friday than deaths from Hurricane Katrina, more on any two recent weekdays than deaths during the 9/11 terrorist attacks, more last month than deaths from flu in a bad season, and more in two years than deaths from HIV during the four decades of the AIDS epidemic. At least 953,000 Americans have died from COVID, and the true toll is likely even much higher because many deaths went undercounted. COVID is now the third leading cause of death in the U.S. only after heart disease and cancer, which are both catchall terms for many distinct diseases. The sheer scale of the tragedy strains the moral imagination. On May 24th 2020, as the United States passed 100,000 recorded deaths, the New York Times filled its front page with the names of the dead, describing their loss as incalculable. Now, the nation hurtles towards a milestone of one million. What is 10 times incalculable?" He went on to write, "many aspects of the pandemic work against a social reckoning. The threat of virus is invisible, and the damage it inflicts is hidden from public view. With no lapping floodwaters or smoking buildings, the tragedy becomes contestable to a degree that a natural disaster or terrorist attack cannot. Meanwhile, many of those who have witnessed COVID's ruins are in no position to discuss it. Health care workers are still reeling from death on a scale I'd never seen before as an intensive care nurse told me last year. The bereaved faced guilt on top of sadness. I think about the way it would run through families and tight-knit groups and the huge psychological toll as people think, Am I the one who brought it in? Whitney Robinson, a social epidemiologist, told me. And though 3% of Americans have lost a close family member to COVID, that means 97% have not. The two years that were shaved off the average lifespan undid two decades of progress in health, but in 2000 it didn't feel like we were living under a horrible mortality regime. Andrew Noymer, a demographer at UC Irvine, told me it felt normal. To grapple with the aftermath of a disaster, there must first be an aftermath. But the coronavirus pandemic is still ongoing and feels so big that we can't put our arms around it, Pete told me. Thinking about it, like staring into the sun and after two years, it is no wonder people are looking away. As tragedy becomes routine, excess deaths feel less excessive. Levels of suffering that once felt like thunderclaps now resemble a metronome's clicks. The background noise against which everyday life plays. The same inexorable enduring happened a century ago. In 1920, the U.S. was hit by a fourth wave of the great flu pandemic that had begun two years earlier. But even as people died in huge numbers, virtually no city responded, wrote John Barry, historian of the 1918 flu. People were weary of influenza and still were public officials. Newspapers were filled with frightening news about the virus, but no one cared." Thank you, Ed Yong. I think he hit the nail on the head. For many, this has become normal. But for many, including myself, I think it's only the earliest days of some reprieve that we need to take full advantage of. What approaches can we take to protect ourselves over the weeks, months and years ahead? How do we encourage vaccinations, including additional doses, and convince people they're a necessity when virus activity is low? What are we doing to address our badly damaged health care systems? Do we have the systems in place to identify and monitor any potential new variants? What are our goals? Again, there are a whole litany of questions that we should be working to answer. None of them are easy and they're not going to be solved overnight. But by failing to strategize during opportunities like this, we can leave ourselves all the more vulnerable to another variant driven surge later on. And that's not at all what we surely want.

**Chris Dall:** [00:29:01] So now let's get some more details on the road map for living with COVID, which really goes much farther than the plan laid out last week by the Biden administration. Mike, what is the overarching vision of this plan and what are some of its core components?

**Michael Osterholm:** [00:29:17] Well, let me pick up where I just left off talking about the situation here in the United States and where do we go as we continue to respond to this pandemic? I feel very fortunate to have participated in this effort that was largely led by Zeke Emanuel, one of the members of the Biden-Harris COVID transition team that I also had the opportunity to participate in. But it involved more than two dozen experts and a number of reviewers and support staff to put this particular document together, and it was our best effort to understand what do we need to do in the next year to minimize the impact of COVID in our everyday lives? The title of our effort was "Getting to and Sustaining the Next Normal A Roadmap for Living with COVID." In the document, we actually laid out 14 different chapters that went from exploring what the new normal might look like, what were possible scenarios, what are we able to do for testing and surveillance, how do we deal with indoor air? What do we need in personal protective equipment? And how do we move that forward? And what do our current vaccines and therapeutics allow us to do? And what might we need in the future? We dived in deeply into long COVID and understanding the challenges that we have today to understand what is it? What do we do about it? How do we prevent it? We talked about health care data infrastructure and the challenges we have today in trying to make really important decisions on often black holes of data. How do we deal with the public health infrastructure? It wasn't just health care workforce that was severely challenged, it was also the public health workforce. So we have chapters on both of those public health and health care workforce. Communication, education, if we learned anything throughout this pandemic, it was the shortcomings of our ability to effectively communicate with the public. We address schools and child care, and while they underlay both the primary education of our kids and how important that is, they also are all about our economy. When kids aren't in school and parents have to stay home with those kids, it has a tremendous impact on what we do every day in our work lives. And then finally, we talked about worker safety, the fact that there were many people who didn't have a choice to avoid public contact during those early days of the pandemic right up through now. You know, it's very hard to actually bag groceries from home. It's very hard to serve as a first responder from home. Some of us had that opportunity. We could get in front of our computers and do telecommuting. Others couldn't, and we really tried to hammer home the issue of worker safety. So what we really tried to do in this report is lay out what can we do in the next year? How do we think about it? One of the issues we did is try to define what should be our goal. As Lewis Carroll has said, if you don't know where you're going, any road will get you there. So one of the things we laid out was in fact, considering major respiratory viral illnesses in our country as the base, not just COVID, but influenza, RSV. The things that challenge our health care system, the things that increase the likelihood that someone will become seriously ill and die. And we need to bring them all together to say if one or more are causing us real challenges at the moment, then we've got to take them all into consideration. We don't live in a world free of each of these diseases. We talked a lot about how do we get better data? How can the public be more informed? How can the media have more effective data? What can we do about testing and surveillance and the data infrastructure? This is a huge issue as it relates to providing people with early treatment. We talked about test and treat this idea in the real world setting how difficult it is to get reliable testing, meaning both its availability and its sensitivity and specificity to someone during a surge. We saw during Omicron, many people could not get that kind of testing done. Well, if you need that result to get treated, then that's a huge barrier. And so we laid out what we need to do to bring testing and highly effective testing together with then making it seamless to getting that drug that you need so that that could help reduce significantly the number of severe illnesses and hospitalizations. There is so much we need to do in indoor air quality that with better indoor air quality, we could reduce the likelihood that one would get exposed in a public setting and the technology is there. It's not about the fact we have to invent new technology. What can we do with vaccines and therapeutics? We talked about the development of new and more effective therapeutics and vaccines and what that could mean going forward. And we surely covered the issue of global investment. A pandemic is a worldwide epidemic, and we will all be at risk if it's a risk anywhere in the world. And so the idea of what it will take globally is clear and compelling. We cover the issue of long COVID. What does it mean today to be someone experiencing long COVID? There is tremendous fear of getting COVID, and there is an equal fear of getting long COVID, particularly when we hear the horror stories of people who are months and months later basically contained by brain fog, by the inability to accomplish much in everyday life, the pain. So we addressed what do we need to do to further the study of this and to intervene? We talked about equity. Better address the health disparities by creating a permanent cadre of community health workers and what we could do to support the overall communities in our country that have been left out or left behind. So in a sense, we have elaborated on many of these issues here that I believe can and will be fundamental to making it so that any future variant that might show up, we're in a much better position to handle. Please, no more independence from COVID language like we saw a year ago in July. We can't afford to do that. The other thing that we will do is we will make it a better world for all respiratory illnesses. Remember, we've talked about flu. Flu kills lots of people every year, and a new flu pandemic could be right around the corner. We want to be prepared for those, so I hope this report will give you a sense of what's possible, what can be done. This is not just all a black cloud that we're at the mercy of the virus and only at the mercy of the virus. There's much we can do. This report is linked here on the podcast website. I urge you to go take a look at it and know that we will continue to check back on what's being done with regard to what's in the roadmap and use this as a guide. Last comment is that I want to express my deep appreciation to the Biden administration. It's been very clear that they have welcomed this report. We have shared it with them in its entirety. We have been working with them from our beginning days of putting the report together, not with their input as such, meaning this has been an independent effort. But they have been recipients of this information with enthusiasm and with a real intent to use it. And so from that perspective, I want to just congratulate the administration for their embrace of this effort and what we can do to all move forward in a way to minimize the impact of what the COVID pandemic and the days ahead might share with us.

**Chris Dall:** [00:37:02] Mike, you just mentioned complacency, but what are some of the other hurdles to getting to and sustaining the next normal?

**Michael Osterholm:** [00:37:12] Chris, I'm convinced that it's wanting to move beyond where we're at today and trying to forget where we've been. You heard me mention Ed Yong's description of John Barry's words about what happened in the 1918 to 1920 influenza pandemic. By the second year, they didn't want to deal with it anymore, and they didn't. And look what happened. And so I think the challenge we have here is not that we're trying to keep bringing back bad memories. Listen, this virus is not going to go away, so we'll constantly be reminded of it. But we're trying to do is say we don't have to learn again and again that this virus will be back. As I've said on many occasions on this podcast and all of my public statements, I look at my life with this virus right now, somewhere between the left guardrail and the right guardrail. On the left guardrail we're dealing with a virus that becomes more like a seasonal influenza picture where we don't see the major major spikes of cases overwhelmingly impacting our health care systems, surely impacting, but not necessarily overwhelmingly impact our health care system. Wouldn't that be great if that's the future? No variants emerge that evade immune protection, that are a challenge. That's the left guardrail. My right guardrail is one where we see a new variant emerge, much like Delta and Omicron surprised us. And now today, with the number of animal species we're seeing infected with this virus, ongoing transmission in humans, we have every reason to believe that more variants are around the corner. And I don't know what they're going to be like. What if one actually is capable of evading immune protection, unlike even the previous variants we've been experiencing? That's going to be a really huge challenge. And then I remind everyone that several weeks ago, I covered this very important commentary by Don Burke, former dean of the School of Public Health at the University of Pittsburgh, who laid out the four different scenarios of how this virus might evolve. All of them based on already real existing coronavirus situations in the world. And three of those four were not pretty scenarios, and they're realistic. This isn't me saying this, this is somebody like a virologist like Don Burke. So I would come back and answer this question by saying now is the time, as the old Iowa farm saying would be, make hay while the sun shines. You know, now's our time to continue to work on this to get better vaccines. Vaccines that may have much broader protection, longer durability, better drugs, better tests and to try to understand why are some people not willing to be vaccinated? Can we learn from our mistakes? What can we do to change that? Look at the data I've just shared with everybody today. What is killing people? It's not being vaccinated. That's what's killing people. That's a huge issue. And so that's part of our future too. So complacency. The final piece, I would just say the world is going to be challenged financially. Look what's happening right now with gas and oil and Ukraine and what we're spending to potentially continue to support a war effort for what could be months ahead. There's going to be a notion that we cut back here. We don't need to worry about this anymore. Already, we're seeing this week the Congress cutting the administration's request to take COVID activities to the next level. The amount of money we believe is necessary to do what we've laid out in this report is even a substantially higher than what the administration has identified. Now is not the time to cut back. It's like that old line from the old oil fram commercial of several decades ago. You can pay me now or you will pay me later, and I will tell you right now, if we pay later, it'll be much more expensive, not just in dollars, but in human lives. So my concern, Chris, is this complacency of prioritization because it is now a done over with pandemic. In a sense, it's the same kind of symptom we had last July with independence from COVID. Now is not the time to do that.

**Chris Dall:** [00:41:36] Earlier this week, the World Health Organization said it quote "strongly supports urgent and broad access to COVID-19 vaccines for primary series and booster doses, particularly for groups at risk of developing severe disease" unquote. This was the strongest endorsement of boosters that we've seen yet from the W.H.O.. Mike, what is the significance of this?

**Michael Osterholm:** [00:41:57] Chris, any routine listener to this podcast is going to know that for more than six months, I have been on the quote unquote booster bandwagon. Now I must say right up front, just as a matter of consistency, I really dislike that term booster. I think we should have considered that three doses were going to be necessary and called that full vaccination. We continue to be confused by, well, full vaccination is two doses, but you got to get the third dose too. Makes no sense. I wish the W.H.O., the CDC, and other public health organizations would get together and standardize this. Well when the original discussion about the need for a third dose came up last summer, there was an immediate response by organized public health, including W.H.O. and CDC, as well as a lot of clinicians saying it was absolutely unnecessary. And since that time, there continue to be a lot of back and forth mixed messaging about when it comes to the issue of additional doses. As I said early on, there was some pretty clear skepticism about the reality of waning immunity with a primary series and what it meant. Of course, this led to some pushback when countries like Israel started administering additional doses to their population this past summer. And unfortunately, some very prominent physicians in this country basically continued to say that these were unnecessary doses that in fact they were in some ways almost extravagant. And one of the things that this group kept saying was, in fact, we needed to get the whole world vaccinated. Well, as we all know, global vaccine equity is and will continue to be a critical issue. There were those concerned that the booster campaigns it was called could only exacerbate these inequities. In fact, the W.H.O. would eventually call for a moratorium on additional doses for healthy adults through 2021. Now I'm very much aware of vaccine inequities. And as I've said time and time again, I think we need to make every effort that we can to improve the supply and access of COVID vaccines for the entire world. It's both a humanitarian and a strategic issue. Every time there's transmission somewhere in the world, it just leads to another opportunity for a new variant. But at the same time, having said that, what we don't want to do is find ourselves vaccinating people partially to the point of protection and then losing some of that protection over time. I looked at the early data out of places like Israel last summer and realized that waning immunity was a reality with the two dose regimen most Americans had received. And after I saw those studies showing the benefit of an additional dose which helped restore protection against infection and enhanced effectiveness against severe disease and death, I viewed additional doses not as luxury. They were, in fact, a necessity. Again, we've seen real pushback on this notion. Just as recently as this week, I had a prominent physician and I on a Zoom get into the idea that these were luxury doses. So let me just say that I think the narrative is really starting to shift. As some of you know, last November, Dr. Eric Topol from Scripps and myself wrote an op ed piece in The Washington Post. The title of it was "What CDC Got Wrong with COVID-19 Booster Shots." And our concern was that CDC had not really appreciated the data that existed showing these additional doses were very important. And then, of course, there was the W.H.O. continued to come out saying no to booster doses as it was laid out through 2021. And now the W.H.O. has changed its position, frankly, quite dramatically. It updated its vaccine guidance on Tuesday of this past week to recommend the administration of COVID-19 booster shots marking a reversal from what the United Nations organization had previously said about additional vaccine doses. In a statement, the W.H.O. said the Technical Advisory Group on COVID-19 Vaccine Compensation strongly supports urgent and broad access to current COVID-19 vaccines for primary series and booster doses, particularly for those groups at risk of developing severe disease. So they now have, in a sense, almost gone 180, and it's time we move on from this. So what does the data actually show us? And we have worked hard to try to collect even more data, and I don't have time to go into detail on all of it today. But let me just give you a glimpse. If you look at the latest data from CDC, you can find a breakdown of per capita rates for cases, hospitalizations and deaths by both vaccination status and age group. Now, this data lags behind a bit since it takes time to run these analyzes, and there are some limitations in simply comparing per capita rates. But you can find weekly data on cases compiled from 26 U.S. jurisdictions through January 22nd, weekly data on hospitalizations from 14 U.S. jurisdictions through January 29th and weekly data on deaths from 24 U.S. jurisdictions through January 1st, which provides really a solid sample to identify trends. If you separate this out by age, it doesn't take long to see the benefit of additional doses in individual 65 years of age and older, and I would argue that that really has been the one group that people have started to coalesce around to say, OK, 65 years of age and older need it. In that group, those who received the third dose versus just two doses had a one point fold lower case rate of 3.6 fold lower hospitalization rate and a 4.2 fold lower death rates in those who had two doses. Now, if you look at the most current data and break it out by age over 65, 50 to 64 and 18 to 49, this is where the rub has been and people said these individuals under 65 do not need this additional third dose. Well, if you look at these same data from CDC based on what I just shared with you, the sources and you look at this per hundred thousand population, if you actually look at the case rate ratio between unvaccinated, fully vaccinated as they define it, meaning two doses and those with the additional dose, let's just look at case rates. How frequently does infection occur? If you consider those who have received three doses as the reference, those who are fully vaccinated, i.e. two doses, had 1.2 times higher risk of being a case and if you're unvaccinated, you had a 2.6 fold higher likelihood of becoming infected. But where it gets very important is if you look at those 18 to 49 year olds and hospitalization ratios. Again, assuming the persons with additional doses are the reference, you had 1.9 times greater likelihood of being hospitalized if you were fully vaccinated only two doses and a 6.1 times higher likelihood of being hospitalized if you're unvaccinated compared to the third dose. If you look at where it really becomes evident and again, this is 18 to 49 year olds, this is that group that people challenged. If you look at the reference as being three doses for those 18 to 49 and you look at deaths for those who are fully vaccinated, two doses, you had a 3.3 times higher likelihood of dying, being vaccinated with two doses versus the three doses, and you were 26.3 times more likely to die if you're unvaccinated compared to the fully vaccinated group. I mean, these data are compelling. If you look at the L.A. County data for hospitalizations, if you actually take the fully vaccinated without additional booster dose, meaning those with two doses and compare that to those with three doses, you had a 3.6 times more likelihood of being hospitalized with two doses versus three doses for those 50 to 64. And you had a 4.3 times higher likelihood of being hospitalized 65 and older if you had two doses versus the three dose. This does carry through below 65, so I hope that we are now behind this issue a booster doses. First of all, CDC, please W.H.O., please redefine what it means to be fully vaccinated. It's three doses. And for those who had J&J and I hear from you and I know you feel left behind, and to some degree you have at least two doses, at least two doses. Ok, we need to move on from this. We need to be fully vaccinated, meaning three doses or two doses with J&J and potentially a third dose, and we need to keep following it. We need to see over time what happens with waning immunity. Then we'll understand what the impact of these vaccines are. I'm willing to accept a vaccine that may only have some limited ability to prevent infection, but boy, oh boy, if I can prevent hospitalization, serious illness and deaths, that's huge and the data are clear and compelling. So for those out there on the pulpit who continue to say these doses are not necessary. Stop saying that you're keeping people from getting vaccinated because they're confused. You know you are. You're very prominent. Some of your big talking heads in the media. And I think right now we owe all of the world the data that demonstrates that these third doses are really important and thank you to W.H.O., I give you credit for reversing your position because it really does show that data can drive what it is that you are putting forward as public health recommendations. And let me just conclude by saying yes, get two doses in everybody. Ok, we want that now and we can walk and chew gum at the same time, you can get three doses in people and still get vaccine around the world. We shouldn't confuse that as one or the other. We need to do both.

**Chris Dall:** [00:52:20] This brings us to our COVID query segment. This week we have a question from Deirdre, who wrote, "As someone who is triple vaccine but immunocompromised and over 65, how anxious should I be about being inside as long as I'm wearing a well fitted N95? And for how long?" And Mike I'll add quickly that we've gotten several similar questions from immunocompromised listeners. So what can you tell Deirdre and our other listeners who have similar concerns?

**Michael Osterholm:** [00:52:47] Well, thank you, Deirdre, for that very thoughtful question, and for all of you who are immunocompromised in some way, really fearing what a COVID world looks like to you. And you have every legitimate reason to feel that way. Let me start out by really separating out the vaccine from respiratory protection. Right now, if you're immune compromised you should be receiving a fourth dose of vaccine. And that recommendation has been made by the CDC for you to do that. And so what data we have shows that clearly there can be some substantial improvement in your protection from dose three to dose four. So that's the first thing. Get that. The second thing on respiratory protection I've heard from many, many people say that well, lifting the mask mandates is in a sense, you know, basically putting people who are immune compromised or others who may have conditions that would mean if they get infected, they'd have much more severe illness at great risk. And we're not considering that when we lift mask mandates in given areas. Well, let me just be really clear. Respiratory protection can be a very important adjunct to your vaccine related protection. Clearly, an N95 respirator that is tightly fit, well fitted without a beard for a man can provide additional benefit. I would urge you all to go back to the link that's in this podcast, to the roadmap plan that I just talked about. There's an entire section there on personal protective equipment PPE, which it actually goes into detail addressing the effectiveness of PPE today, i.e. any kind of masking and what it means for you. One of the challenges I have with mask mandates and have continued to have is so much of the masking is just grossly inadequate in protecting anyone from being exposed or from getting infected. Cloth face coverings, surgical masks limited limited utility in prevention of transmission. So many people, even when they wore something, wore it under their nose. And as I've said, time and time again, when that happens, it's only a chin diaper, and it provides no benefit as it relates to breathing the virus in or out. So I haven't counted on the public to help protect you for many, many months, particularly given the inadequacy of what we've done in this country to provide quality, effective masking. So again, N95s. Now the question you're asking, though, is how long do I have to wear my N95? And I think right now I would continue to wear it for some time to come. Whenever you're in a public setting with additional people that may be infected and you not realize it and they put you at risk of getting infected. So I think at this point, stick with it and understanding how difficult this is, how challenging it is. But you don't want to be the person to get infected who may be at high risk of a bad outcome. Now there is one additional piece to this, though, which is good news, which should take a fair amount of the fear out of your everyday world with being immune compromised and COVID. And that is that the drugs we have today, particularly the Paxlovid, the drug by Pfizer, as well as the monoclonal antibodies, are really effective in reducing the likelihood that if you do get infected, you'll go on to become seriously and need hospitalizations or deaths. So now is the time to have your backup plan and every physician who listens to this, do you know if you have a patient who is at high risk of a serious outcome, how they can get tested quickly and how that can translate into receiving either the monoclonals or the drugs? Because that is by itself a real stopgap that can be very important. So number one, first line of defense vaccines. Get your fourth dose, if your immune compromised, you can. Number two, wear your N95s, assuming that you have to be responsible for yourself, others are not going to be. I wish that were different, but the bottom line is you still have control. The third thing is know that if you develop the earliest signs and symptoms of COVID, just even the sniffles have access to quality testing. And then if you're positive, quickly being able to convert that positive test result into the receipt of either of the monoclonal or the drugs. And I believe that will go a long ways to reducing the likelihood that you'll need to be hospitalized or be seriously ill. So I hope this is helpful to you. You are in control. You are in more control than you think. Don't give your control away to the public by saying when mask mandates went, I somehow no longer am in control. Fourth dose, N95 well-fitted, men don't wear a beard, you invalidate all the fit. And number three, have a plan. Either find a primary care physician that you can attend or a clinic that you can go to if you should need to get tested. Make sure that the system is in place to get you tested quickly and then to get the drug to you. If you're a physician, a nurse working in a clinic, someone who runs a clinic. What are the procedures? What's the standard protocols in your location to get people identified quickly as infected or not and treated quickly? I think that's the answer, and I believe that we can keep most of you out of the hospital and surely keep you from getting serious illness and dying.

**Chris Dall:** [00:58:25] Mike, I understand this week's Beautiful Place submission has a bit of a personal bent. So what can you tell the listeners about your beautiful place?

**Michael Osterholm:** [00:58:35] Well, this is a beautiful place from me about something that's happened in my life. And you might say that somehow for me to pick a beautiful place of my own is a bit egocentric, and I'm sorry if that's the case, but I think there are those moments in life where you have to believe in something that may not always be believable, but nonetheless has a very important impact on your life. I had such an experience. You've heard me rail against pixie dust science and things like that, but I will have to tell you that there was one of those spiritual moments almost in my life that made me think that there is a connection that we have with the world that often we don't appreciate. Back in the mid-1980s, early 1990s, I had the audacity to train to swim the English Channel. And in doing that, I frequented many Minnesota and Wisconsin lakes, spending sometimes up to 12 hours a day, swimming 30 miles or more. And for me, it was all about the training. There was one particular situation that to this day brings such great peace and still almost wonderment to my life that I just share with you today as a beautiful place. Over the three different years that I trained, I actually was also a speaker at an annual public health meeting that was held in Minnesota at a northern Minnesota resort on a lake that I would train in in the morning, then go to my everyday activities at the meeting. And the first morning that I was there, I was going to swim across a bay that was about three eighths of a mile long, and I was going to do laps in there for two hours back and forth and back and forth. And I took off and I had only gotten about a quarter of the way across. And I noticed as I lifted my head slightly. If you have done distance swim, you know, you never take your hat out of the water, it's extra weight to lift. And you just basically cocked your head to the side and you have one eye that sees what's above the water and one eye under the water level and you get your breath and quickly keep going. And I looked out and there about 20 yards from me. It was a loon, one of America's most beautiful birds with bright red eyes. And it was following me and I didn't change my cadence. I thought, Well, this is interesting. I wonder how long that will happen. And I went across the lake and as I got closer to the shore, it kind of disappeared. I didn't see it again. So I thought that was it. I turned around after getting to that shore to do my lap back, and there it again appeared same side. And it did this as I did laps back and forth in this bay. Well, I did that two consecutive mornings at this meeting, and both days it was there. Well, then it came two years later, I was training again. Same meeting, same bay. And guess what showed up? The loon. Now, was it the same loon? Very likely it could have been because loons are very territorial. They come back, they migrate out of Minnesota to the Gulf region, and but they do come back. Well, this happened a third year and every time I swam that bay, that loon followed me. And it was almost as if there was some kind of connection there, it was very beautiful. And to this day, when I have these really, really bad moments and God knows we've all had them. I just think back inside my head and remember that loon. Why was that loon following me? What was it doing? It was magical. It made me believe in magic. I'm a scientist, you know, I want equations. I want data. I want to be able to explain everything by some kind of scientific fact. I could not explain that with that loon. And the one thing I regret is I never went back again to swim in that lake. And loons can live 20, 25 years, and I've often thought to myself, I wonder how many years that loon was there. I assume it's no longer there now, but it was one of those experiences. So that's my beautiful place. It's about magic. It's about mother nature. It's about the world has more good in it than bad. We just have to take the time to remember it, and I will always tell the day I die never forget the feeling of having that loon with me. It was like I had a partner. It was magic.

**Chris Dall:** [01:03:10] Mike, what are your take home messages and closing thoughts for today?

**Michael Osterholm:** [01:03:15] Well, I think as you've heard me say over and over again, and I'll repeat it, it bears repeating. We're living our lives somewhere between the right and left guardrails, and we don't know which, but either one requires us, requires us to be better prepared for new variants. And I hope we don't forget that. I hope we don't get comfortable in that left guard rail that's more like a flu like picture every year, only to wake up one day and find out no, we've just bumped in hard to that right guardrail. A new variant that's very challenging. So we have got to continue to move forward. We want to live this new normal. I can't wait to have more of that happen in my life, but I refuse to accept the fact that this is the way it's going to be forever. Second of all, China is in trouble. China is in big trouble. And while my heart goes out to the Chinese people and what they're experiencing also, it's a subtle reminder that China is part of our world in a way that almost no other country is. Their supply chains are critical to a number of the essential medicines, to the important products that we use every day in this country or around the world. And so we have a real interest in what goes on in China in a way that is almost unlike any other country. Stay tuned. We'll see. And finally, as I just answered the question from Deirdre, you have to protect yourself. That's what you can count on, count on yourself. But if you do, you can do a lot to protect yourself. Get the fourth dose of vaccine, wear your N95, and if you do start to develop symptoms, get tested quickly and get treated. And I think we can have a big impact on your life. So to me, those are the three take home message today that I just really believe need to be internalized in a way that says we're not done even if we think they are. There's more happening around the world that's important to us, and yet we can protect ourselves.

**Chris Dall:** [01:05:23] And you're closing.

**Michael Osterholm:** [01:05:26] Well, Chris, you know, as someone who has been a very important voice in these closings for the audience that doesn't know Chris Cillizza, I think a D.J. in his other life, somewhere of real affection out of music and lyrics. This is one of mine. I picked this one today just because it's been one that has meant a lot to me over my lifetime and one that the more I listened to it, the more I love it. It never grows old. It tells a story. It tells a very important story about, I think where we're at in this world right now. This is a song by the late Stan Rogers. Stan was a Canadian folk musician and songwriter. Unfortunately, at 33 years of age, on June 2nd of 1983, he perished in a fire aboard an Air Canada flight 797 on the ground in the Greater Cincinnati airport. The plane actually had caught fire in the air. It was on its way between Dallas and Toronto, landed in Cincinnati. Some of the people got off, but about 90 seconds after the doors were open, the oxygen rushing in caused a flash and everyone else in the plane perished. Rogers was noted for his ability to capture real life and put it into a song in such a way that you could feel it. He spent a lot of time on the water, often wrote songs about his experience with the water and just connecting with people. I think one of his most important songs, one of the real ballads, was one he wrote in 1979, called "The Mary Ellen Carter." It's a story about a ship and those who love that ship. And I think today this is the world I feel like we're in. So I hope you enjoy this, if nothing else. And I would urge you the version of this song I love Stanley Rodgers actual version. But also there was one done by Tommy Makem and Liam Clancy, and I would urge you if you can hear that one too, it's really moving. So this is the song "The Mary Ellen Carter." "She went down last October in a pouring driving rain. The skipper he'd been drinking and the mate he felt no pain. To close to Three Mile Rock, and she was dealt her mortal blow. And the Mary Ellen Carter settled low. There were just us five aboard her when she finally was awash. We worked like hell to save her a heedless of the cost. And the groan she gave as she went down, it caused us to proclaim that the Mary Ellen Carter would rise again. Well, the owners wrote her off. Not a nickel, would they spend. She gave 20 years of service boys then met her story end. But insurance paid the loss to us. So let her rest below. Then they laughed at us and said we had to go. But we talked of her all winter some days around the clock. She's worth a quarter million of float at the dock, and with every jar that hit the bar, we swore we would remain and make the Mary Ellen Carter rise again. Rise again. Rise again. Tell her name. Not be lost to the knowledge of men. All those who loved her best and were with her till the end will make the Mary Ellen Carter rise again. All spring now we've been with her on a barge lent by a friend. Three dives a day in hard head suit and twice I've had the bends. Thank God, it's only 60 feet and he currents are slow. I'd never have the strength to go below. But we've patched her rents, stopped her vents, dogged, hatched and porthole down. Put cables to her fore and aft and girded her around. Tomorrow noon, we hit the air and then take up the strain and make the Mary Ellen Carter rise again. Rise again, rise again. That her name not be lost to the knowledge of men. All those who loved her best and were with her till the end will make the Mary Ellen Carter rise again. For we couldn't leave her there, you see, to crumble into scale. She saved our lives so many times, living through the gale and the laughing, drunken rats who left her to her sorry grave. They won't be laughing in another day. And to you to whom adversity has dealt the final blow with smile and bastards lying to you everywhere you go. Turn to and put out all your strength of arm and heart and brain. And, like the Mary Ellen Carter, rise again. Rise again, rise again, though your heart it be broken or life about to end. No matter what you've lost be it a home, a love of friend like the Mary Ellen Carter, rise again. Rise again, rise again. Though your heart may be broken or life about to end no matter what you've lost be it a home, a love of friend like the Mary Ellen Carter rise again." Stan Rogers. Now is our time to rise again. I think this is such an important point in the world we live in today. Thank you very much for being with us. We appreciate you spending your time. We know you have many options to get this kind of information. I want to thank the podcast team again for their wonderful support and putting this together. Thank you, Chris. And I want to thank all of you for the many, many letters and emails we receive from you. They mean everything to us. We read every one of them we do, and we take them to heart. I wish we could respond to all of them. But thank you so much. Now's the time to remember those three main points. We can do a lot to make a difference right now, so be kind. Have a good, safe week. I hope you join us again next week. And thank you so much for being with us.

**Chris Dall:** [01:11:39] 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.