

Episode 73: Don't Think Like June

Chris Dall: [00:00:00] This month, CIDRAP is commemorating its 20th anniversary. Since we first opened our doors, our team has created what is now a globally renowned center tackling the world's toughest challenges in infectious disease and public policy. In celebration of this milestone anniversary, a generous CIDRAP supporter has offered a transformational matching gift to support our efforts and ensure we're able to continue our important work into the future. For a limited time, your gift will be matched at 50%, helping to build a solid endowment to support CIDRAP work. Please visit CIDRAP.umn.edu/donate. 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. It's October 14th, but if it feels a little bit like June to you, you're not alone. There's a little bit of optimism in the air as new COVID-19 cases continue to decline in the United States and the delta fueled late summer surge appears to be receding. The rate of workers returning to the office is the highest it's been since the pandemic. With booster shots being rolled out and an authorization for use of COVID-19 vaccines in younger children soon to come, a return to normal seems a little closer. Of course, cases, hospitalizations and deaths are much higher than they were in June, and the Delta variant is still enacting a tremendous toll in this country. Still, it feels like maybe the worst is behind us. But as Dr. Osterholm will explain in this episode of the podcast, we may need to readjust our thinking about this phase of the pandemic and what these next few months will look like. We'll talk more about that as we take a look at the state of the pandemic here in the U.S. and in the rest of the world. We'll also discuss a new CIDRAP paper on masks. Review the latest data on vaccine protection and booster shots. And answer a COVID query about boosters. And you'll hear about the latest beautiful place submission from one of our listeners. But first, as always, we'll begin with Dr. Osterholm's opening comments and dedication.

Michael Osterholm: [00:02:35] Thank you, Chris, and welcome to all of you to another episode of the update. This episode is going to give us a glimpse into the future from the perspective as we see it coming and what you might expect in terms of the incidence of disease, what the vaccines might look like going forward and their use, as well as try to provide some clarification on what I think has become a very confusing issue around the masks. But before I do that, I want to provide a dedication that is actually a very hard one. It's a painful one, but it's one that we must never forget. As you've heard me say over and over again in this podcast, the numbers we talk about are real people, they're loved ones, they're family. And this week I'm dedicating this podcast to all those children in the United States and, for that matter, around the world who've lost a parent or a caregiver due to COVID-19. In a recent study published in Pediatrics conducted by the Centers for Disease Control and Prevention, the Imperial College in London, Harvard University, Oxford University, and the University of Cape Town South Africa, they detailed the number of COVID associated deaths that actually involve a parent or a caregiver for a child. From April 1st, 2020 through June 30th, 2021. Their modeling data suggests that more than 140,000 children under age 18 in the United States lost a parent, custodial grandparent or grandparent caregiver who provided the child's home and basic needs, including love, security and daily care. Overall, the study shows that approximately one out of 500 children in the United States has experienced a COVID-19 associated Orphanhood, or death of a grandparent caregiver. There surely were very substantial racial, ethnic and geographic disparities in the COVID-19 associated deaths of caregivers with children of racial and ethnic minorities, accounting for over 65% of those who lost a primary caregiver due to the pandemic. Such a painful, painful understanding of what this pandemic has done to these families. I can only hope that these kids find the support that is so important to them at this time. Having lost such a caregiver, whether it's other family, whether it's friends and neighbors, school teachers or anyone else. But in fact, today we dedicate this to all of you children who have been so permanently changed by the loss of one of these very important people in your life. For every reason possible, I can imagine this should be a reason for adults to get vaccinated. You don't want to leave behind children that need you, want you and love you.

Chris Dall: [00:05:30] Mike, on a global level, we continue to see an overall downward trend in new COVID-19 cases. Africa notably has seen 11 consecutive weeks of declining cases. What's your assessment of where we are globally with this pandemic?

Michael Osterholm: [00:05:46] This is a theme that we've been covering for weeks now trying to understand what I guess I would call the rhythm of the global pandemic. And there is a rhythm to it. As you mentioned, Chris, if we look at the international picture as a whole, we're surely in a much better place than we were in August. Weekly cases fell once again, with 2.6 million reported, bringing us to a level similar to what we experienced in previous valleys. Think of this as a roller coaster of case occurrence around the world. We're now at the bottom of that peak in the roller coaster. For example, in mid-February, weekly cases were under 2.5 million, just a month and a half after the January peak of more than five million cases. In April, two months after the February valley, they climbed to a record 5.7 million cases per week. Of course, a large chunk of those cases were coming from just one country, namely India, which at that time as you know, experienced its delta wave. Fast forward another two months to June, and we found ourselves back down to 2.5 million cases per week. Two months later, we're back up to 4.5 million cases per week, and now they're back down again. At this time, deaths are also on the decline, with 43,000 reported this past week. This actually marks our first week with less than 50,000 COVID deaths in nearly a year. Of course, while this is an improvement, I just want to remind everyone once again that those were still 43,000 people parents, grandparents, siblings, aunts, cousins, uncles, friends whose lives were cut short by a virus we didn't even know about two years ago. A zoom in a bit, we can see that nearly every region of the world contributed to these declines, with the recent U.S. decline having the biggest impact of overall numbers around the world. The only regional exception to these declines is in Europe, where overall cases and deaths increased in the past week, as we discussed in last week's episode, Europe's uptick is largely being fueled by activity in the eastern half of the continent, which has lower vaccination rates than countries in the western half. On a per capita basis, countries in or near Eastern Europe continue to have some of the world's highest recent case and death rates. These are countries like Armenia, Romania and Serbia, all which are enduring their worst surge to date. In Romania, for example, where less than three in 10 residents are fully vaccinated, senior health officials have as of this week described the country's record breaking fourth surge as catastrophic. There were no ICU beds available in the entire country at multiple points over the past week, with availability often coming in the form of admitted patients dying. Romania has now suspended all non-emergency surgeries and admissions and is considering transferring patients to neighboring Hungary to help relieve pressure on their health care system. I

also want to briefly cover what's happening in Russia. Beginning in June, activity there spiked upwards, which coincided with the delta becoming their prominent variant. Places like Moscow were hit hard and deaths in the country more than doubled in just a month. This set all time new record highs. After reaching a peak in mid-July, cases in Russia gradually begin to decline following the general pattern we've seen play out with delta driven surges. However, that declined in September at that point, after nearly two months of declines, they reversed course and have risen since. Now, Russia is once again reporting their highest average number of daily deaths, which are more than two and a half times higher than they were just prior to Delta's emergence. Of course, vaccine uptake has been an ongoing issue for the country. Where just 31% of residents are fully vaccinated. The level that the Kremlin recently described as unacceptably low. I would remind everyone that Russia has more than enough vaccine on hand to vaccinate the entire country. This is a challenge of converting a vaccine into a vaccination. So if you want a sign that this virus hasn't completely retreated, look no further than Eastern Europe. At the same time, there is no denying the declines happened in so many other parts of the world. Although you can find a handful of countries that serve as outliers in most regions, the declines are evident. For example, according to the W.H.O. dashboard, weekly case in the Americas are at their lowest level since last June, and deaths are at their lowest levels since last April, just several months after the virus first started circulating. There is a footnote, however. The W.H.O. dashboard did state that reporting for this region hasn't been finalized yet, at the time of this podcast. In Southeast Asia, cases and deaths are at their lowest point since this past March. Similar trends are playing out in the eastern Mediterranean and western Pacific regions. And finally, you have Africa, where weekly deaths haven't been this low since May. Again, as you'll hear me say, till I'm blue in the face, I think vaccines are far and above the best tool we have for gaining an upper hand in this virus. There's a treasure trove of data showing their clear impact on the reduction of severe disease and death, and they're the only sustainable option if you want to avoid situations like what Romania is currently experiencing at this time. However, as critical of these vaccines are, I think it would be naive to credit vaccines alone for this decline. We have yet to fully vaccinate even 4% of Africa's population. Numerous countries in Latin America have yet to fully vaccinate half of their population, with several at or below even 30% coverage. Still, activity in both regions keeps ticking downwards. So while I welcome these declines, it would love nothing more than seeing them continue week after week till the end of time. I know that this virus has more tricks up its sleeve. We haven't won

the fight against this virus. If anything, we're in between rounds. And until we vaccinate more people, the next round will be starting up. I can't tell you when, but I can tell you that it will happen. Now is not the time for complacency.

Chris Dall: [00:12:02] Well, that feeds in well to my next question. In our meeting this week, as we discussed what you wanted to say about the current situation here in the U.S., you said that we should not think like June, which was our previous period of optimism. So how should we be thinking about where the country is right now and what the rest of the fall and winter will look like?

Michael Osterholm: [00:12:23] Well, as the listeners to this podcast are aware. You know, I have probably been one of those voices out there that is often not welcomed in most settings because of my assessment of what I think will happen and why we have to be better prepared for that. And as you know, last March and April, with the arrival of the Alpha variant and seeing what that variant could do, that was so very, very different than all the other viruses we had seen up to that point. And knowing that we had such large gaps in our vaccine coverage, plus the fact that there are still many, many people who had not yet been infected and therefore would have had any kind of immune protection from that infection. And as you may recall, I said at the time that I thought that we still had some of the darkest days of the pandemic ahead of us. No one wanted to hear that. I take no comfort in having said that, but the variant data just made it clear and compelling to me that this was likely going to be the case. Well, we saw what happened in June, July, August into September, and the price we paid for in this country. So I just come back to that again. We still have at least 65 million Americans who could be vaccinated today based on the recommendations for vaccination, who are not. Many of these people have not previously had had infection. And as I've pointed out, time and time again and I know you're tired hearing of this, but we have a lot of human wood yet for this coronavirus forest fire to burn. So let's just start at that point right now. This surge we're seeing that is subsiding generally across the country. This is not the last of this virus in this country. For example, if you look right now, we're still in the throes of a serious surge activity in at least six states in the United States. Just in the past two weeks, cases have increased 37% in Colorado, Minnesota has had a 29% increase, Michigan has had a 26% increase, North Dakota 12%, New Hampshire 12%, and Maine 6%. Other than Colorado, these are all basically northern tier states, and Colorado is close. Why are we seeing this activity now? And just think about this whole

last surge. Remember, it started in the hot hot south during the months of August and then expanded from there, covering parts of the northwest, making its way up the East Coast and now sitting here in these northern states during the colder months. Things are surely cooling down. There's no consistent pattern here whatsoever. There's no risk factor for being indoors, out of doors, whatever. And so I think that, first of all, we have to dismiss the fact that we can anticipate what this virus is going to do because of a season. I think maybe one day that will be the case, but it's not now. If you also look at the fact that this surge has missed basically the New York metropolitan area and the L.A. and Southern California area. Yet as I pointed out last week, L.A. County right now has overall 61% of their population fully vaccinated. Those who are 12 and older, only 70%. If you look in New York, for example, in the Bronx, 57% are fully vaccinated among those 12 and older, the Queens 71%, Brooklyn 57%, Staten Island 60%. There are lots of people left in the New York metropolitan area to become infected, and we've seen that from the other countries of the world where vaccination levels are much higher, like Singapore, like Israel. And yet we see what happens there. So all I can say is we're now more than a year and a half into this pandemic. And while that time might feel like an eternity to many of us, it hasn't been long enough to really figure out what this virus is going to do. I don't say that to shrug off or dismiss any of the remarkable work that researchers have done and continue to do at an international level. All the work is critical to understanding how we can limit the impact of this virus, but we still have so much left to learn. In fact, just this past week, I was asked about this virus in the New York Times, and I stated in the article that "we are in the cave ages in terms of really understanding how and why this virus, much like some of the influenza virus activity, does what it does. I don't know." In a way, I feel like there are probably some things that are predictable. If we look at the delta surges in the United States, we've seen activity for six to eight weeks after the surge begins, drops down, but then it may pick up in another area. I think our experience in the US this past spring and into the summer is an example of one of these lessons that we need to learn. Again, we were on the downward slope of a record high winter peak. Vaccinations were ramping up and warmer weather was on its way. We even shifted the podcast to every other week because people seemed to think the pandemic was over. For many in the U.S., the combination of those things might have led them to believe the COVID days were over. This represents June thinking. When daily cases dropped to less than 12,000 per day and hospitalizations and deaths hit their lowest level of the pandemic. We thought we were done. Well you saw what happened from there. And I'm not saying this to discount

any feelings of optimism. In fact, I think the latest trends in the U.S. warrant some optimism. Although, as I will discuss later, the vaccine uptake among those who have not yet been vaccinated has come to almost a screeching halt. So that's going to be a challenge. So we are excited by the fact that the average daily cases fell below 90,000 this past week. Again, they were above 160,000 per day just a month and a half ago. Hospitalizations have also fallen from nearly 104,000 to 64,000 a day. And slowly but surely, we're seeing deaths creep downward, although they still remain about 1,600. Overall, this is an improvement compared to where we were. But we must not prematurely declare victory. I worry that again we'll convince ourselves we're on the exit path with this virus, only to be confronted with yet another rise in activity. Based on vaccination rates, some states are certainly in better positions than others, meaning the Northeast, including Vermont, Connecticut and Rhode Island, have successfully vaccinated 65% or more of their entire populations. However, there are still 15 states with less than 50% of their populations fully vaccinated. So at this point, let me just say we're not done. We look at other countries like Singapore, the United Kingdom, Israel that have much higher vaccination rates than we do, and they're seeing ongoing activity. We will see activity. Will it be a fall/winter surge? I don't know. Could be. Anybody that tells you it absolutely is, they don't know what they're talking about because there's no data to tell us that's what it could be. We certainly saw a surge last year in that December, January, February time period could happen again this year. I think the areas that have been hit hard with this virus over the course of the summer will likely see potentially less activity. Although with the increased number of people not vaccinated in those same states, we could see substantial surges again. So I leave you with the fact that we can't make the mistake of returning to thinking like June. We still have a lot of work to do.

Chris Dall: [00:20:32] As I noted in the introduction, the COVID-19 vaccine booster campaign is well underway, and today and tomorrow, the FDA's advisory committee will be meeting to discuss authorization of booster shots of the Moderna and Johnson and Johnson vaccines. But let's take a step back for a minute and discuss what we know about vaccine protection at six months and beyond. What is the data telling us? And how is that going to shape the booster discussion going forward?

Michael Osterholm: [00:21:00] Chris, I think one of the really good news aspects of our response to COVID, which is not well understood, I think by many, is how the worldwide

monthly output of approved COVID-19 vaccines has jumped at least by 25% just in the month of September. Now, if we look at 1.58 billion doses of vaccine were made in September with an impressive 65% rise in India, 45% rise in the European Union. Thailand has now emerged as a major manufacturer of the Oxford AstraZeneca vaccine, producing 52.5 million doses in the month, compared to just 8.4 million doses in August. Output in American plants remains volatile, unfortunately, with output 47% lower in September than August. However, at this monthly pace, total output by the end of 2021 looks set to be near 12 billion total doses. We're getting there. Now if we look at who is making vaccine, we have to realize that the Chinese have been leading the way with their Sinovac and Sinopharm vaccines for not just China, but the world. If we look at the total production since the vaccine rollout began, it's about 7,257,000,000 doses of vaccine. If you look at China alone, it's 787 million doses of vaccine at the monthly production capacity. The European Union is 274 million doses production capacity now. India is 240 million. The United States is down at 81 million doses per month. As I mentioned before, Thailand is next at 52 million doses per month and Russia's also at about 52 million. But when you add this up, we're getting there. We are making vaccine. Now the challenge is getting that into people's arms. And I think that one of the things that we haven't talked much about is how do you convert vaccines into vaccinations even in the low and middle income countries? That may very well be hard hit with this. Well, let me just take a perspective of how that vaccination picture is beginning to look. As of Monday of this week, 48% of the global population has received at least one dose of COVID-19 vaccine, with 36% of the population fully vaccinated. And we look carefully at that when we talk about what's happening with the incidence of infection, cases, deaths, etc. with that regard. About 0.5% of the population around the world has received an additional dose for a total of over 6.5 billion doses administered globally. If you look at the countries who are leading in the vaccination race, it's the United Arab Emirates, Portugal, Malta, Singapore and Qatar. They're leading with vaccination rates at 86 to 78% of their population fully vaccinated. Forty countries, however, have vaccinated 10% or less of their population. 68 countries have vaccinated less than a quarter and over one hundred countries have vaccinated less than half of their population. The picture should become clear. There's kind of the haves and have nots right now. And this is a critical issue, particularly as we look at continents like Africa. If we look at Israel, Uruguay, Chile, Iceland and Turkey, they're now leading with booster doses with between 14 to 41% of their population having received an additional dose of COVID vaccine, respectively. Nearly 400 million vaccine doses have been administered

in the United States, with over 65% of the United States population having received at least one dose. That's up 0.5% since last week and 2.4 percentage points since four weeks ago, and almost 53% of the population are fully vaccinated. It's a rather sad commentary that right now, only 21,000 people are availing themselves to vaccine per day that have not yet been vaccinated. This is in contrast, of course, to the 65 million people who could be vaccinated who are not. So this is a challenge we have going forward again, converting vaccines into vaccination. Now, if I look at these numbers and ask myself, what does it all mean? Let me just from a vaccine discussion standpoint, say, what do we know? Well, we know the pandemic is not over. We know that COVID-19 vaccines are remarkably effective, but they're not perfect. We know that vaccine protection wanes over time, at least for some of the vaccines, maybe all. A substantial proportion of the world's population remains unvaccinated. But if we look at what did the data tell us, the study from Israel shows that receiving a booster dose of Pfizer reduces the risk of confirmed infection or severe illness across all the age groups compared to unvaccinated and compared to those who received only two shots. Now, I think we're going to be doing a lot of looking closely at that across all age group issue to see does that really hold? If we look at data from a recent New York study, it showed reduced protection over time in all age groups for recipients of J&J, Pfizer and Moderna vaccines. Data show a clear decline in effectiveness against symptomatic infections for Pfizer, Moderna and AstraZeneca in multiple settings, including studies from the University of California San Diego, Public Health England and Qatar. These studies were done recently during the time when the Delta variant was common. Most breakthrough hospitalizations occur in people over the age of 65 and deaths in people over age 60. What do we not know? Well, they are some of the things to keep an eye out for in the vaccine world in the next few days, weeks to months. Will a third dose of Moderna and a second dose of J&J be recommended? And if so, for whom? This week the FDA Advisory Committee VRBPAC will take up that very issue. We'll learn more about how effective our heterologous or the mix and match booster doses. Is it possible that boosting with a different vaccine than the first doses you receive help solve some logistical challenges, including cold chain and supply chain issues, and might even mitigate some rare adverse events? Even more so, might it enhance the immune response you get, when will children five to 11 be eligible to receive a vaccine? Will we convert children who could be vaccinated by the new recommendation into vaccinated children? Big question based on what survey data we're seeing. Ongoing questions, will we continue to have meaningful, waning immunity over time after a booster dose? How

are people who are immunosuppressed or immune compromised be protected after a booster dose? Other ongoing challenges to vaccine studies, we do not yet have good correlates of protection. We don't have a blood test that can say you are protected, you're not, and this is a level of whatever it is that we call the correlate, you have to have to be protected. If it slips below that level, then you're surely in need of additional boosters. We don't understand yet for certain just how does this vaccine waning immunity play out with regard to overall infection, symptomatic disease or even severe disease, hospitalizations and deaths? What are we trying to do there? Well, we're going to have more information coming. Stay tuned to the upcoming meetings of the VRBPAC, the FDA Advisory Committee. Today they're meeting and they'll discuss the use of booster doses of the Moderna COVID-19 vaccine and the Janssen COVID-19 vaccine. Also today, the committee will discuss an amendment to the emergency use authorization of the Moderna COVID-19 vaccine for the administration of a booster dose in individuals 18 years of age and older. We've already seen some evidence that that may be in jeopardy based on an FDA review. Friday, tomorrow, the committee will discuss amending the emergency use authorization of the J&J vaccine for the administration of a booster dose in individuals 18 years of age and older. During Friday's meeting, the committee will hear a presentation from the NIH National Institute of Allergy and Infectious Diseases on the heterologous use of booster doses, meaning mixing and matching following the primary series of three currently authorized or approved COVID-19 vaccines in the U.S.. During this meeting, the committee will hear presentations from the companies and the data for the respective vaccines. The FDA will also present its own analyzes of each of the manufacturer's data. These are open public hearings each day, during which the public will be given an opportunity to provide comments. We will cover the results from this week's VRBPAC meeting in detail next week. Two weeks from now, the FDA anticipates receiving a request from Pfizer to amend its emergency use authorization to allow the use of the COVID-19 vaccine in children five through 11 years of age. In anticipation of this request, the FDA is moving forward with scheduling an advisory committee meeting on October 26th. Now let me just try to pull all this together. Just gave you a lot of information. The bottom line is people are growing more and more confused. Are these vaccines working or not? Do they make a difference? I'm hearing about these thousands and thousands of breakthrough infections after having both doses of my Pfizer vaccine, even my Moderna vaccine or my one dose of J&J vaccine. Do these vaccines actually prevent me with two doses from having severe illness? Will reduce the likelihood that I might be

hospitalized? What good are the boosters? How long do they last? I'm already hearing about cases of people who had a booster 35 days ago who are now hospitalized. Clearly not clear what their underlying immune status might be, etcetera. But we're hearing about them. All I urge people to do is take a step back and I know you're anxious, I'm anxious, I'm very anxious. But what we're going through is a classic example of corrected science. Remember, I keep coming back to the point we have two buckets of information about these vaccines we must be very concerned about. One is, are they safe? In terms of safety, we have a very good profile of what the safety issues are as they relate to adults. We're learning more about what it might be in kids. And those are important data we all want to have. But the safety bucket really has been dealt with. The bucket that we're really dealing with right now is how do these vaccines work? What is the dose? How much antigen do you put in? What do you put into a vaccine dose? What's the dose spacing? Should it be a time one and time to be at x weeks or x months later? And do we need a third or fourth dose, meaning that all along there should have been a multiple prime either two or three dose vaccine? Those are all the things we're learning, and this is part of corrected science and it's a good thing. It's a very good thing. We learn, we apply it, we implement it, we study it, we learn, we apply it, we implement it and we study it and we keep getting better each time. So just know that over the next eight to 12 weeks, we're going to have moments where everything is going to be somewhat unclear and that should not be a surprise. But we will get greater clarity all the time. In the meantime, we know that this is your life. This is the life of your loved ones. This is the life of your family, your friends. And so we also can't take this in a cavalier manner. Just saying we're doing this study, we have a need for timely studies to answer critical questions that can protect you, your families, your friends and your colleagues. And I do believe that in fact, we are accomplishing that right now with these studies. So I'm I'm excited about what data I think will be coming out. I'm wide open in terms of what it might tell us. I think there are still more unknowns we will unearth within this whole study of the vaccines. Don't be surprised by that. And we'll keep you informed with the best analysis we can come up with of what all these data mean as we go forward.

Chris Dall: [00:34:03] That brings us to this week's COVID query. This comes from Mary, "who wrote third doses of vaccine are now available for the immunocompromised and those over 65. Yet immunity is reported to begin waning six months after dose two. Many who are neither immunocompromised or over 65 are now past the six month point

on their dose two. Do you have any idea how long we can delay dose three before we might have to start over with a new dose one or will dose three boost immunity no matter how long after dose two it is administered?"

Michael Osterholm: [00:34:35] Well, you know, I read this very thoughtful inquiry. And my first reaction was that old comical description of who's on first, what's on first, who's on second and how they went on and on. Abbott and Costello did that so well. And sitting there and Mary, you're asking all the great questions. But let me just say that at this point, don't get confused by suddenly something goes from dose three to dose one again. The time period between dosing is something that we're still studying. As I pointed out before, we found out that it's very likely that the best dosing for some of these vaccines may be quite extended periods between the original administration and the second or third dose. So, Mary, we do need to bring clarity to this issue, but at this point, I would say you can sit back, relax a little bit knowing that there is going to be more clarity coming. Mary, even though I can fully understand where you're coming from and the potential confusion, the good news is just wait. You don't have to worry at this point will you somehow miss out on something because there's a lapse between dose one or dose two in the time period. We will get further clarification on this. You will be clearly okay in terms of if it's been a bit longer in the time period between what might be the recommended dosing schedules. And this, again, is part of what I just talked about with regards to the clarity that we need the FDA and the CDC Advisory Group to help bring forward. We need the studies out of the NIH and all the other scientific organizations around the world that are doing these studies to help us understand how to best use these vaccines. So for right now, you can just basically take a pause, don't worry, and we'll be back to you with the answer one day soon.

Chris Dall: [00:36:45] Mike, as our listeners know, well, you've been a vocal advocate for higher quality masks and better studies on the impact of masking. And you've discussed these issues frequently on the podcast. So this week, CIDRAP has published a two part viewpoint on masking. What can you tell our listeners about it?

Michael Osterholm: [00:37:04] Well, Chris, as any listener to this podcast knows over the recent podcast dating back to the spring of 2020, the use of masks has been an important topic that we've tried to address from a scientific standpoint and then apply that from what we consider to be good public health policy. It has been a challenge.

There has been, unfortunately, a very divisive debate over using masks or not using masks, what is a mask, etc. Well, we've developed a two part commentary, as you noted, one of those the parts are published today. Tomorrow will be the second part, and the first part of the commentary is what can masks do? The science of COVID-19 production. And what this really is all about is helping to explain the difference in cloth face coverings and surgical medical masks and the science of respiratory protection as it relates to what we call the hierarchy of disease control. How do we get the most bang for the buck and trying to protect somebody from this virus? We get into a great deal of discussion about the different kinds of respiratory protection explaining the difference between, for example, face cloth coverings or surgical medical masks and respirators in the context of infectious aerosol inhalation, meaning these aerosols are very unique these particles that float in the air. We delve into the science of respiratory protection in general. You know, what is it that we're trying to accomplish to protect individuals? And then we discussed the role of mask and respirators in the hierarchy of controls for disease prevention in the first commentary. In the second commentary, we actually delve into a very different kind of picture, and that is what can masks do, what makes for a good mask study and why do most fail? Recently, there's been a number of studies reported in the lay press without any peer review, without any way of anybody really going over these and making some pretty substantial claims about the protection of a mask without even defining what a mask is. And then the public is led to believe that the more of these studies that occur than it's just proof of the fact that they work so well and we actually go in and critique some of these studies and provide you with an understanding of why they're a challenge. So again, I want to emphasize we are very pro-respiratory protection, but it's about quality respiratory protection. After reading these commentaries, I hope one comes away with a much better understanding of what are we talking about with quality respiratory protection? Why the studies that continue to pile up, which often make wild claims about what they've accomplished or what findings they have, actually have real challenges, and we give you a basis upon which to judge those. So we are for quality respiratory protection. That means, yes, wearing something in a public setting, that is what most people would call a mask. We call a respirator KN95 or an N95, and we get into great detail in these issues in these commentaries. So I hope that you find them helpful. They surely clarify things that have not yet really been put out by any of the federal agencies or other public health groups. And and hopefully they can at least add some academic rigor to the debates and the discussions we're having about the respiratory protection of our loved ones.

Chris Dall: [00:40:51] Mike, where is this week's beautiful place?

Michael Osterholm: [00:40:56] Well, you know, I just have to say, first of all, thank you to everyone that continues to share their beautiful places with us. It is really a privilege to read these and I wish we could use them all. Unfortunately, we can't. But this beautiful place comes from Cecilia, and she writes, "Dear Dr. Osterholm and the other good people at CIDRAP. That's you Chris, by the way they're talking about here, OK? I'd like to share my beautiful place. I live in Central California, and our family has a cabin in the high country of the Sierra. The creek fire roared through at this time last year, turning the surrounding forest into a lunar wasteland of gray ash and black matchsticks for trees. Four months later, it was 100% contained and had annihilated almost 400,000 acres. Our cabin, along with others close by, survived thanks to the heroic efforts of firefighters. But this is where I want this story to begin. For me, the Creek Fire and its destructive path has become a metaphor for this pandemic. Out of the ashes, life has sprung again and out of the desolation lies hope for healing and renewal. The forest has changed forever, but the Earth never stopped moving. Small pine trees like fingers poking up through the ash dot the lunar landscape. Birds I'd never seen before are taking advantage of the changed world with new possibilities. The meadow closest to our cabin a quarter mile walk through a cindered forest is coming back to life with the spring fed waters that feed it. Wildflowers I've never seen before bloomed all summer there, perhaps needing fire, even the destructive Western fires we are experiencing to germinate. Butterflies and native bumblebees take advantage of the many meadow flowers. In the midst of such desolation, there was a great hope and beauty. I couldn't get enough of it. I wandered around the changed and charred landscape for hours, discovering and documenting through photography what I witnessed. One early morning, upon arriving at the meadow, I looked up to see a flock of juvenile bluebirds in the blackened trees. If ever there was a symbol of hope and renewal, these blue birds were the perfect sign. I go back to them in that moment in my thoughts over and over again, like you have said, we can get through this. Thank you. Your efforts are so much appreciated. Sincerely, Cecilia." And she has included a picture of one of the bluebirds. It's just beautiful. So please go take a look at our website. Cecilia, thank you for sharing not only what you saw, what you experienced, but the implications this has for all of us as we move through this pandemic. Out of this terrible forest fire, we will see new life and we must never forget that.

Chris Dall: [00:43:47] Your closing thoughts today, Mike.

Michael Osterholm: [00:43:51] Well, Chris, let me summarize the I think, three highlight points of this podcast. Number one, the pandemic is not over. Hopefully the worst of it is over for the U.S.. But there are some areas even in our country that could still get really hit hard again and other areas that have been hit hard will still see additional rises in cases in the future. On a global basis, we still have many parts of the world that are very ripe for new surges that could be very substantial. We must never forget that and meaning that that means we can't let up on our efforts. Second point it's all about corrected science when it comes to the vaccines. We are learning how best to use them. We must be patient and trust that process. I know when life and death hangs in the balance, it's not a great time to be talking about be patient. And I understand that and I have that same urge. But what I mean by patience here there is a real process that's in place trying to find the best answers of how to use these vaccines. And don't be surprised if eventually we find that the way we're using these vaccines may be different than was initially envisioned. But the bottom line we'll get better. We'll get better. We're not going to go backwards. We'll get better. The third point that I covered is, you know, we've really mismanaged the mask issue. We in public health have dropped the ball on how to best deal with this meaning that how do we lead with our science and then use that to bring about good public policy? Personal respiratory protection can be very important, but we must never forget it's the lowest level priority of the hierarchy of environmental controls, meaning it's the least effective of all the things we can do. And we have spent so little time talking about the other things we can do because we have gotten so focused on this issue of masking. Please do see our two part commentary published today and tomorrow. And I think this will give you some perspective of what I mean. It is an important issue. Respiratory protection is important, but we've got to talk about it from a scientific basis and not from an emotional standpoint. Let me just conclude today's podcast in a somewhat different approach than I've taken in the past. I'm actually going to use an email that we received from one of our listeners a beautiful, beautiful submission. And it's one that I think like the beautiful place I just talked about from Cecilia. This is one that helps tie, I think, all of the aspects of where we're at today in this pandemic. This is from a listener who talks about bags of gratitude for frontline health care workers. "Hi, there, my name is Alyssa. I live in the Greater Portland, Oregon area. I serve on a board of directors for a local free clinic. Our board chair, who

works for a Portland hospital, recently told me about how the continued uptick in COVID cases is impacting his ICU staff and the respiratory therapists who work there. I wanted to do something to help encourage these incredible but exhausted and demoralized workers. So I reached out to friends across the country and asked them to consider writing a note to a frontline health care worker. I collected 23 notes of gratitude and encouragement from people in the Washington state to Virginia. I've attached an example from friends in Bellingham, Washington. My local church let me make copies of all the notes, and a local book club helped me assemble 73 bags of gratitude for frontline workers. Each bag contained the 23 notes, along with nine little gifts, including lip balm, gum chocolate, etc. After delivering the bag of gratitude to the hospital, my board chair sent me the following text "We just took the bags up to the ICU. Wow, I'm telling you instant tears when they open up the bags and started reading the notes. Seriously, we were all tearing up, just watching them and seeing how touched they were. Thank you." Hoping this inspires your audience to do something similar in their own localities. In these very difficult times, it feels good to do something positive and know that it has encouraged someone. Alyssa." You know, Alyssa didn't change the world. She didn't necessarily change what happened in that ICU that day for patients, but she did change the world in some people's lives, just feeling the love of this particular action. So I just want to say thank you, Alyssa, for reminding us the gratitude doesn't have to be across the entire continent. It doesn't have to be across the entire state. It doesn't have to be across an entire institution. Sometimes it's just that one moment of gratitude with one person to another person, and you've done that here. And I hope if I can leave you with any message from today is that Alyssa shared with us the issue of bags of gratitude. But we all have our bags of gratitude that we could share. Maybe not the same way, but let's do that this week. Let's keep that pandemic of kindness going. This is what will help us get through it. It makes it makes us feel better. You know, I've always said, you know, what's that one thing in the world that one thing in the world that defies all laws of physics, it's called love. The more you give away, the more you have. How can that be? How can that be? If you give it away, you have more of it. And I think this week is a good week to remember that. And obviously, you hit it, you hit it so well, thank you. So thanks for spending your time with us again this week. Next week will be a barn burner. We'll have lots of data to share with you as it relates to the vaccines and what came out of the FDA meeting. Again, we all celebrate the fact that the case numbers are coming down throughout most of the country. If you're in places like Minnesota right now, it's hard to celebrate because you are in such a crisis

mode. But that too will pass. What we have to never forget, though, is we don't want any more of these to happen, and the way to do that is to get people vaccinated. Thank you for spending your time with us again. As I've said so many times, we appreciate all the things you send to us. We read them all. We can't respond to everyone, but we do read them all. They have a big, big, big impact on our group at CIDRAP. Thank you for that. That's very kind. And let me just tie the two ends of this podcast together and again, remind us all of all those children who've lost a caregiver, a loved one, a parent. Now is the time to keep reminding all of us why it's so important to get vaccinated. So thank you. Have a safe week. Keep that pandemic of kindness going, and we'll see you next week. Thank you.

Chris Dall: [00:51:28] 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](https://www.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](https://www.cidrap.umn.edu/donate-now). The Osterholm update is produced by Maya Peters, Cory Anderson, Angela Ulrich, Meredith Arpey, and Sydney Redepenning.