# Episode 32: Stop Swapping Air

**Chris Dall:** [00:00:00] Hi, everyone. Before we get into this week's episode of The Osterholm Update, we here at CIDRAP have an exciting announcement. We have a brand new podcast mini series launching next week called Superbugs and You: True Stories From Scientists and Patients Around the World. This new series will focus on highly drug resistant bacteria, or superbugs, and will feature conversations with patients, clinicians and researchers around the threat of antimicrobial resistance and what we can do about it. Follow the link in the episode description to subscribe and please enjoy listening to the trailer.

**Trailer:** [00:00:38] Infections caused by highly drug resistant bacteria, or superbugs, are becoming more and more common, making antimicrobial resistance one of the world's greatest health threats. Infectious disease treatment, is unlike many other medical problems. When I take an antibiotic, it has an impact on you, and that's very different than treating my high blood pressure. And so by 2050, the report says that it will cost a global GDP of one hundred trillion dollars and more than 10 million people will be dying every year. And right now that's more than cancer. But there are actions we can all take now to make sure the drugs we already have remain effective. All of us who know about antibiotics for every walk a life they're in should make sure that all our family and friends are aware that these drugs are incredibly important. They underpin all areas of modern medicine, and that's what we need everybody to tell everyone. It is very difficult to get into a hospital and talk about it. They hate to see me coming. I ask housekeeping to do better when they come in the room and you really have to be strong and speak up for yourself. Because we're all going to be in the hospital sooner or later and we're all going to be at risk for these infections. They're not going away and we are going to need a robust pipeline for antibiotics to treat the infections that will surely come. In this podcast mini series, we'll explore how superbugs became a global health threat and how to protect our communities moving forward through conversations with patients, clinicians and researchers. Of course, we are always going to be playing a catch up game and as soon as we get a new drug, resistance will develop. And so, you know, we can't rest on our laurels and not continue the drive towards development research into development and testing of better drugs. When humanity exists, we will have diseases, but it is in our hands to change it and prevent it from happening and maybe even beat it completely. But we can do it only if we are not afraid to speak up.

**Chris Dall:** [00:03:14] Hello and welcome to The Osterholm Update: COVID-19, a weekly podcast on the covid-19 pandemic with Dr. Michael Osterholm. Dr. Osterholm is an internationally recognized medical detective and director of the Center for Infectious Disease Research and Policy, or CIDRAP, at the University of Minnesota. In this podcast, Dr. Osterholm will draw on more than 45 years of experience investigating infectious disease outbreaks to provide straight talk on the covid-19 pandemic. I'm Chris Dall, reporter for CIDRAP News, and I'm your host for these conversations.

**Chris Dall:** [00:03:50] Throughout the course of the covid-19 pandemic in the United States, from the early wave of cases in the spring through the summertime surge, epidemiologists and public health experts, including our very own expert here at CIDRAP, have been warning that the fall and winter would likely be the most challenging period of the pandemic. And now, as we pass the midpoint of November, the breadth and scope of that challenge has become clear. The nation is averaging more than one hundred and fifty thousand daily new infections. More than seventy three thousand Americans are currently hospitalized with covid-19, and an average of more than one thousand people a day are dying. The virus is infecting every corner of the country. On this November 19th episode of The Osterholm Update, we're going to take a look at the current state of the pandemic in the US and what's fueling it, discuss how U.S. hospitals and health care workers are being impacted, and examine the potential strategies for reducing the spread of the virus, and how we talk about those strategies. Also, dive into the latest vaccine news, provide an update on a fund to help the children of health care workers who've died, and answer listener emails on how safe it is to be around people who have recovered from covid-19. But first, as always, we'll start with Dr. Osterholm's welcome and dedication.

**Michael Osterholm:** [00:04:54] Well, thank you, Chris, and welcome to all of you again to another episode. It's hard to believe that this is actually the thirty sixth episode. We've had thirty two regular ones already and three special ones. So this makes thirty six. And I've had a lot of questions over the past week per my new appointment to the President elect's and Vice President elect's task force on covid whether I'll continue to do these podcasts. And I just want to reiterate one more time that you couldn't stop me from doing these. These are absolutely as important to me and to our team CIDRAP as they are to you, I think. So we're committed to being here for the duration. And thank you for your many inquiries. As I say each week, and I must say because it's heartfelt, that thank you for being with us. We know you have many other options for getting your information, and I hope you do get it from other options. And as I've said over and over again, don't trust anyone's numbers. Check everyone's facts, including our own here. But we're so glad to have you back with us in this podcast family. In terms of the dedication today, it will become more clear why I'm dedicating it to who I am today, but in a very important way, we all look at who has suffered and how they've suffered throughout this pandemic. And one very special group are the families of health care workers who have died. And that includes everything from janitorial staff at our health care facilities, whether it be long term care or hospitals, all the way to the most trained and gifted physicians. And they are a team together. They are a team. And they represent the very best. But what they also represent are the loved ones and families throughout this country who are missing them tonight. There's an empty chair at the end of the table. And so we dedicate this to the family members of health care workers who have died. I do want to also add, though, in a more positive note, is the fact that our podcast website, osterholmupdate.com, which is where we are trying to illustrate the many examples of kindness that you all as listeners are performing out there, and we'd urge you to go to that. There's more information on the podcast, all the activities were involved with. So I hope you take an opportunity to go see what many of your colleagues, friends and co-podcast listeners are doing today to take on this pandemic of virus with a pandemic of kindness.

**Chris Dall:** [00:07:35] Mike, I think many people were likely stunned when you talked about the potential for 200000 new covid cases a day in the country by Thanksgiving. And yet now here we are moving quickly toward that number. What do you think is fueling the overwhelming number of infections we're seeing right now? And how do we even begin to reduce the spread of the virus at this point?

**Michael Osterholm:** [00:07:54] Well, as we have been describing each week, we are now a house on fire. The United States is by itself, collectively the fastest emerging area of new covid-19 cases in the world. We'll talk more in a moment about what's happening in Europe, which they, too, are very challenged right now. But I just want to start out with a perspective. When you just said that I had predicted the two hundred thousand, which I had back in August, it was not because of the seasonality, although indoor air was an important combination. But, you know, I've been trying to understand this pandemic from day one. And as you know, we put out a document last April with Marc Lipsitch and John Barry is a viewpoint about would this be like an influenza pandemic? Would this be like a coronavirus pandemic? Which we never had an experience with so we didn't know what that was going to be like. And it became very clear and apparent by August that this was not an influenza pandemic, as I had suggested in the summer. I think most people don't realize that if you look in each of the really severe influenza pandemics, and particularly 1918, the average time that a region, a state, a city were impacted by this very severe influenza virus was somewhere between six to 10 weeks. It was in and out. And if that were the case, just think where we'd be. We would have, quote unquote, dealt with it back in March and April and we'd be long gone from the end of the pandemic. And when that didn't happen, that right there was a real signal to me that this wasn't going to be like an influenza pandemic and it would be this coronavirus forest fire that would just continue to burn as long as it could find wood, that wood being humans, and it would likely take up to 50 to 70 percent of the human population to be infected before we would see some sense of herd immunity developed because people had been infected. And at that point, I was seeing really two separate things happening. One was the actual biology of the virus, you might say, the idea that the transmission was going to continue to occur as long as there were people who were exposing themselves to this virus. And I've kind of come up with a new term just because I'm trying to find a simplistic way to say it. They were just swapping air. Which what we've got to do is stop swapping air. And from that perspective, there was really an unlimited number of humans right around there with even in August, we knew that only 10 to 12 percent of the population at most had been previously infected with the virus. But the other thing that was happening was the way the public was responding. We saw this very rapidly emerging pandemic fatigue phenomenon of people who believe the pandemic is real, people who were convinced that this could be serious, but who were just so fatigued that they just started going back into everyday life bars, restaurants, gyms, weddings, funerals, school related events, sports related activities, social events in the neighborhood, birthday parties, anniversary celebrations, church services. I could just go down the list of all these things where people were getting close and including having more and more people to their home. That together with the emerging pandemic anger that I kept talking about, which was clearly tied in some ways to the political situation, those were kind of the perfect storm issues coming together for me that said, the fall is going to be tough and clearly indoor air is going to contribute to that, but this is not about seasonality. Which a lot of people have said, well, we all predicted the season now. I never did. I would have been wrong if I'd said seasonality. It was just these combination of factors. Why is that important today? Because it also helps us understand what we have to do about it. And we'll talk more about that as we go into this situation. But so today we're going to continue to consume that human wood out there with this virus if we don't change what's happening. We are now in what I call exponential growth. This is the worst place to be in a microcosm. This is what we saw initially in New York in April. We saw it clearly in some of the European countries, particularly the Lombardy region of Italy. We saw it in Asia, in Wuhan. And this is where basically you can argue whatever the r0 is that magical number that one individual on average transmits to two people, three people, I'll just say two for the sake of convenience. So in five days, which is roughly an incubation period, it goes from one to two, two to four, four to eight, eight to 16, 16 to thirty two, thirty two to sixty four. Add up the number of five days in there and you can see how long it takes to build. And that's what happened last spring. But then once it gets to that higher number and if it continues to grow that way without any kind of reactor rods in the virus transmission reaction, you see what happens. And now we're at that point where we truly are doubling really big numbers. And I think that when you look back on the week after Labor Day, when we were at roughly twenty six thousand cases a day being reported and now it'll just be a matter of days before we report over two hundred thousand cases a day. And that is not attributed to more testing. We yes, we are testing more, but we need to test more because that many more people are infected. If you look at the relative rate of the positives in that group and there's all kinds of issues about what are you looking at with regard to that? I know it's clearly indicative of the ongoing transmission. So today we look back on yesterday, one hundred sixty six thousand cases. As you talked about, Chris, over the last 14 days, it's been eighty two percent increase in cases. Nine hundred ninety five deaths today. That's a 40 percent increase over the last 14 days in deaths. And seventy three thousand persons hospitalized. It's forty six percent increase over the last 14 days. Remember that hospitalizations and deaths are lagging indicators. So, in other words, if I get infected today on day one, I get clinically ill potentially on day five to six. I get admitted to the hospital possibly on day 11 or 12. I'm in the hospital maybe for several days, but then I get admitted to the ICU. I'm in the ICU for two, sometimes three weeks before I die. You can see the lagging nature of death versus the actual number of cases, but the problem is the deaths still occur. And so even right now, what we're dealing with is already in the pipeline. As I speak here today, the next three weeks are virtually in the bad outcome pipeline. And so what we're trying to do is affect what might be happening well into mid-December before we really are going to see a change. This is why when I share later some of the issues around what we must do, this becomes so important. Just think about the fact we've gone from 10 million to 11 million cases, one additional million cases just in the last six days of last week. If you look at the states right now, all 50 states are seeing cases increasing, even those few like Vermont, Maine and Hawaii that have lower numbers of cases, even though they're on the upswing. And it's a combination not of just seasonality, it's a combination of I'm done with the virus. I don't need to worry about it anymore. Number two, I don't believe the virus is real, so I don't have to worry about it anyway. And number three, a combination of indoor air. So as I've been saying in the media over the past few days, and I know some of you probably are really tired of hearing about that, but I am absolutely convinced beyond a shadow of a doubt, we are now living in the most dangerous public health moment since nineteen eighteen. What we're seeing here and the potential it has to impact our society is mind boggling. We are already overrunning our health care facilities. We'll talk more about that in a moment in terms of what it's doing to our health care workers. And I don't see it slowing down. I'm convinced that we are going to see health care facilities begin to collapse, not because they failed by themselves, but we've asked them basically to do something they can't do. They're being asked to handle a number of patients. They don't have enough workers. And we'll talk more about that in a minute. Now, just to give you a sense where this is going, I don't know. If we have some kind of miraculous wake up and people actually do stop swapping air, people do not continue to participate in all those events I just talked about, we can bring this number down and I'll tell you in a moment what I mean. But at this point, if we don't, this is going to go unimpeded, at least, at least well after the holidays. And the case numbers are going to one day make us all say, oh, I wish we were back at two hundred thousand cases a day. That scares me. But then think about this. When when the house was on fire in April and we were at thirty two thousand cases a day, people kept saying, well, this can't get any worse. And then when it got to sixty seven thousand cases a day in July, we said, boy, I wish we were back at thirty two thousand cases. I can't even imagine getting back to sixty seven thousand cases a day, so I think that this is the mindset and I'm telling you this, not to scare you out of your wits, but to help you give perspective of why when we do the things we're doing to protect ourselves and our loved ones, we're doing it. We can protect ourselves. We have the ability to control what happens to us for so many at least. And I need to qualify that because I truly don't want to minimize our essential workers and people who don't have a choice to be out there. We can still do more to protect them with with protective equipment. But I think that this is a really important issue. And I just want to point out, because I'm going to walk into the flame of fire here in a minute, I know that. I just want to share with you what's happening in Europe. Because this was the area that basically was on fire like we were in April, they really did shut things down. We were, what is termed, and I hate this term, I'm going to remind you how much I hate it. It's like if I'm swallowing barb wire to say it. That is lockdown. Because remember, a lockdown, I don't know what it means. If I interview 50 people right now, I get seventy five different definitions. But let me just give you this, because this is the term being used in Europe right now. But in April, they shut it down. They continued to keep it down throughout the summer, as I've described before. And then in August, they started letting that all break up fast, just like we had started to do in July and then kind of put it down again. Well, you know what happened? Europe became a house on fire. Right now, they call it a second wave. It's this case activity, but it clearly has enveloped almost all of Europe. The Czech Republic, Austria, Luxembourg, Liechtenstein have Europe's highest 14 day cumulative number of cases per hundred thousand population over the past few weeks, Czech Republic at thousand seventy six cases per hundred thousand population. That probably may be some abstract number to you. That's high, but they're dropping. Over the period of the last several months, the Czech Republic, for example, reported over fifteen thousand five hundred daily cases. Last week the high was only, and I say that with some angst, nine thousand cases in a day with the slight decline each day since. So they're starting to see this drop there in countries like that. Sweden, on the other hand, which, of course, we've talked about before. If we haven't put a stake through the heart of that Swedish model myth, hopefully this is beginning to do it. They continue to see a major continued rise in cases with a record high of sixty seven hundred and forty three cases reported November 13th. The peak in the cases last summer was sixteen hundred and ninety eight on June 24th. They're way above that. Deaths are now starting to climb. They haven't reached the levels witnessed in the spring/summer. But then on the other hand, this is a lagging indicator. We'll see what happens. At this point also in terms of what they're doing in response to the surge in case number, Sweden is now banning all public gatherings of more than eight people, although the ban doesn't occur to places like schools, offices or private gatherings. The prime minister is urging people not to have any gatherings. Don't go to the gym, he said. Don't go to the library, don't go to dinners, don't have parties. Cancel. So even there, the challenge is trying to beat back these cases with activities. Now, if we look at Europe, the slowdown that I just talked about is in part because they did these kind of hard lockdowns, whatever this lockdown thing means. Ok, and I know people, this is worse than nails on a chalkboard to hear that term. But for example, Belgium was reporting some of the highest numbers in Europe until they imposed restrictions. Work from home whenever possible, you can't visit friends or family, a list of them. When they initiated their lockdowns on October 30th, they were reporting twenty four thousand cases a day. Yesterday, they reported forty six hundred and fifty cases, a six fold drop. France implemented a four week nationwide lockdown on October 30th when they were reporting about 50 thousand cases per day. Cases peaked the first week in November, with over eighty thousand reported just on November 7th. Now, the number of new daily cases is declining, with around thirty thousand or less being reported the past two days. So the numbers are coming down. Germany imposed new restrictions in early November, termed a lockdown light by the government, where they closed bars and restaurants but kept schools and shops open. They encourage people to avoid private parties till after Christmas. They refrained from public transportation if possible. And now Germany is no longer seeing this exponential growth of new cases. On the other hand, with this light approach, they still have stable cases. They're not really dropping, but they're just not going up. Several regions of Italy where a house on fire again, including Lombardy region, which was in the spring. Again, dismissing that whole idea that they had reached herd immunity, which I had heard from so many people. Well, they had so many cases there and we said, no, their prevalence of antibody in that the population was no more than eight to 12 percent. And there was no evidence of that. Well, their a house on fire right now. They have had major new restrictions since early November. In certain regions, they are deemed red zones. People can't leave their homes except for specific reasons such as work, essential trips to the grocery store or pharmacy, or for outdoor exercise close to home with a mask on. The new daily case numbers have stabilized, but they've now started to drop yet in Italy. So I think the point I'm trying to make here is that there are ways to help bring these case numbers down. And why is that important? Well, obviously, we don't want people to get sick and die, but we're all trying to minimize the impact of what happens to us from this virus until we get to the vaccine. So we're going to talk about that in a minute. There is light now at the end of the tunnel, not just in the tunnel, as one of my previous podcast titles was. So I think that if you look at that, I just want to say that we are going to have to confront in this country what are we going to do to actually try to reduce the transmission of this virus? And I will just say that at the outset, we are a hodgepodge right now of responses. And we'll come back to that in a moment.

**Chris Dall:** [00:24:23] So amid all the bleak news, Mike, there was more good news on the vaccine front this week, as Moderna announced early data on its vaccine candidate, which showed 94.5% efficacy against the coronavirus. So now we have two vaccines with indications of high efficacy. Can you take our listeners through how you see the next steps in this process playing out and what you think the challenges are going to be going forward?

**Michael Osterholm:** [00:24:47] Let me just say at the outset, yes, a thousand million times. Yes. The additional information we have this week is the Moderna vaccine, as you pointed out. And they answered an important question that the Pfizer vaccine hadn't, but still will. But the data have not been available. Let me just comment. The Moderna vaccine is like the Pfizer vaccine, that it's an mRNA vaccine. It has been going through a very similar trial that the Pfizer vaccine went through. This is a vaccine that has to be stored and transported at -4 degrees Fahrenheit, similar to a regular freezer where it is stable up to six months. Note the big difference between that and the Pfizer vaccine, of -94 degree Fahrenheit. Once thawed, its refrigerator shelf life is 30 days, although it's thought to be potentially as low as seven days, it's now appearing that 30 days is actually the number. The vaccine can last up for 12 hours at room temperature. Oh, my, have we improved on the logistics and the delivery of this two-dose vaccine, which, by the way, needs to be provided four weeks apart. This past week, they announced their Phase three trial information. They basically concluded that of the thirty thousand people enrolled, they actually had ninety five enrollees who were confirmed cases. Remember, this is roughly half and half vaccine, half placebo. Five were vaccinated, 90 were placebo recipients. This gave us an overall vaccine efficacy, about ninety four percent. But what was really important was there were 11 severe cases documented and each of those are in the placebo group. So statistically, we're going to be able to say that this also prevented severe disease. Now, these numbers are small. They will obviously grow in number as we get more information in. They also reflect the protection that was available at the end of a two month period following the last dose of vaccine. So clearly, this was a period when you'd expect to see heightened protection immunologically, you know, it hadn't been any evidence of waning immunity. But these are really, really good data. The Pfizer vaccine, as you know, has to be stored and transported minus ninety four degrees Fahrenheit. It can also be considered stable for up to six months. During transport you have these specialty shippers that can be used and loaded with dry ice to maintain the required temperatures, they each hold about up to five pizza trays of vials and can be refreshed with dry ice every five days for up to 15 days, which surely is a limiting factor, particularly for some areas of the world. However, the specialty shippers aren't supposed to be open more than twice a day and need to be closed within minutes of opening. Once thawed, this vaccine has a shelf life of about five days. Like the Moderna trial, the individuals were enrolled in this Phase three trial, and they had ninety four enrollees who were confirmed cases. They did not break it down by vaccinated or placebo, but they did announce that once they looked at that, there was a 90 percent efficacy at seven days after the second dose. We're still waiting to get additional data. This is really good news. It's giving us a sense that we can prevent severe disease. Now, I'm going to talk in another few minutes about antibody and how long it will last and what this means. But we are still going to have to understand with these vaccines, what is the durability of immunity? How long does it last? What will it do in terms of protecting us for months and months, not just two months after the last dose. But this is all the more reason why we want to do everything we can to prevent infections right now occurring in the population. There is light at the end of the tunnel. It's not going to come that quickly. I must acknowledge that. We will start to see vaccine I think probably roll in December and it will be a limited amount. After that we'll have to see depending on whose vaccines are approved, I understand that Pfizer may be submitting an application for emergency use authorization within the next several days. I think Moderna probably can't be too far behind. How many doses they'll be able to get to the US public per month in these first six months of the year is still a question. I've seen numbers anywhere from 40 to 60 million doses, which would be great. The challenge with that is you need two doses, so that really would mean 20 to 30 million people that would be vaccinated, which if you do the math for three hundred twenty five million to three hundred thirty million people, that's still going to be a lot of months before we get everybody vaccinated. Now, I'm sure not everyone is going to get vaccinated, but at least that's there. So the good news is we can one day, I think, get beyond this. I look forward to the day that I can take my grandkids back to the baseball stadium. I look forward to the days that I can have a party at my house and be there with all my dear friends hugging and kissing and just appreciating everybody. And I think this news this week gives us that hope. So we got to hold out to get to the vaccine.

**Chris Dall:** [00:30:25] New polling this week from Gallup shows 58 percent of Americans say they would be willing to get a covid-19 vaccine if one were available. Now, that's up from 50 percent in September, but still pretty low. How do public health officials address this? Mike?

**Michael Osterholm:** [00:30:40] Well, the Gallup poll, which is very important information, was released this week, actually surveyed the population from October 19th to November 1st, so just before the election. This was at a very critical period where there was still this concern about the political process putting their thumb on the scale of vaccine review and approval. And so some of us were being very cautious about that, saying, no, it's not ready. We need to get the kind of data that we're now talking about today. And I hope that that in itself did not leave people with the understanding or the perception that there must be something wrong with these vaccines. We just had to get to the point where we could collect this kind of information. So I'm willing to add some wiggle room into here to say, that is, we can do a better job of explaining the importance of these vaccines and the safety data that it will change. But as you pointed out, we now are seeing that fifty eight percent of the population says that they would agree to be vaccinated. That compares to only 50 percent on September 14th through twenty seventh survey. And even if you go back to the July survey, July 20th to twenty sixth, only thirty four percent. So we've actually increased substantially since July. But we have a lot more work to do. And it's important to understand that this vaccine, by giving it to an individual, will help protect them. But it also helps protect society. The more people vaccinated, the more people who contribute to that herd immunity concept, meaning that we didn't get there because of severe clinical illness, we got there because of vaccine. And if 70 percent of the population, for example, were to either be vaccinated and or develop antibodies from clinical disease, that would sure slow down a lot of transmission. It wouldn't stop it, but it would slow it down. And so we need people to be vaccinated for each other. We need people to be vaccinated for ourselves. And so that's what we're working on now. Now, my concern is we've not had the kind of campaign that I think is going to be critical to convince people what this means. We haven't told the story yet. This is our FDR moment. We are on a collision course with this horrible public health situation. And we need to talk about that, we need to make sure that we give everyone the honest information about what's happening. But with that, we can give them the light at the end of the tunnel and say, but this is coming. And so it's our job right now to begin working within our communities. And we know that for example, in the areas with racial disparities and the challenges we've seen in the black community in particular, to a certain degree, also in the indigenous populations, in other communities of color, that the trust in this process is a challenge. Not saying that we can't overcome it, but we're going to need to include our leaders from these communities to understand and to appreciate what this vaccine can do for each of them relative to the concerns about safety. And I don't want to dismiss that. I've worked with a number of leaders in the black community who have been very clear about the depth and the breadth of the concern, the distrust that's there. And so we've got to work towards an understanding and acceptance that comes from the community itself. I'm encouraged by the fact that if you look at the other numbers that were put forward by the Gallup poll is that actually if you look at age, it turns out that the older population is actually much more likely to take the vaccine, which is a good thing, because that's also where we see more severe illness. And so over time, we can only hope that the public will participate in this, that the world will have access to this vaccine. I'm very cognizant of the fact that it's the world that we must vaccinate, not the United States. If we're going to see a real reduction in transmission that could come back to impact us, if we have house on fires around the world in low and middle income countries and we haven't done what we need to do to greatly reduce that, then we're going to be challenged here. It'll still keep having breakthroughs. So bottom line is, everybody celebrate. This is a day to celebrate. We do have good news. And let me just be really clear on this. I give great credit to this administration for Operation Warp Speed and what's happened here. Even the Pfizer vaccine, which was not part of Operation Warp Speed, but received well over one point five billion dollars in support from the US government. These are remarkable accomplishments. They will go down as a type of Manhattan Project like issue. Now, where I'm still concerned is that last leg. We have a long ways to go to get the vaccine distributed, to get it in people's arms, going from a vaccine to a vaccination. And only when that happens, well, then I really, really become excited and some might even say animated.

**Chris Dall:** [00:35:47] So getting back to this issue of lockdowns, you were in the news last week for comments you made to Yahoo! Finance regarding lockdowns, and one of the points you made in that interview is that there is no consensus understanding what a lockdown is all about. So how would you reframe the conversation about lockdowns? And do we need to start using different language and how we talk about this?

**Michael Osterholm:** [00:36:08] Well, first of all, let me tell a story, because I think it's actually very helpful to understand information and what you can believe and not believe today. So I, you know, being now on the Biden/Harris covid-19 task force, everything I say is scrutinized with a very different level and everything I say is attributed to them. Nothing in this podcast is attributed to the Biden/Harris task force. It's me. And I understand, though, that I'm a member of that and I'm responsible for these comments. But what happened was, I was on Yahoo! Finance, I talked about the op ed piece that Neel Kashkari and I had in The New York Times back in August in which we talked about this whole concept of how are we going to basically knock down these cases? And one of the points that came up was just how important financing is. And what I mean by financing is the fact that we need to understand that we have to take care of those individuals or businesses who are going to be adversely impacted by either shut downs or reduced hours or whatever. You know, the bars and restaurants are important places for transmission. We need to basically bring those either to a screeching halt, or surely major reduction in hours. If we want to keep our schools open, I can tell you right now that that's going to be a challenge if we leave our bars and restaurants open. But at the same time, having said that, I'm the first to say that, you know, that single mom who's a waitress at that restaurant who basically has two kids at home in her apartment. And she's about ready to lose her apartment and she doesn't know if she will have enough food to feed her kids. We have to take care of that person or they're not going to be able to be part of the plan that we have to reduce transmission, sheltering in place. The same is true with the business owner. I don't know any small business owners myself that I've talked to that haven't wanted to do the right thing. But when you're hanging on by a thread, your life savings is invested in this business, you're challenged. And so the point I was trying to make is that right now, until we have a financial stimulus package or a survival package coming from Washington, this is going to be a real problem. So the reason that's important is because then later that day, CNBC's website, a news reporter listening to that session wrote a story that said Biden aide supports lockdown. And, you know, it was wrong. It was just plain wrong. I didn't say that. Well, then Business Insider, The Wall Street Journal and others took it off the CNBC story without ever talking to me. And at that point, I had an ABC Web News reporter contact me to try to clarify it. And I explained I didn't say that. So what's the headline of the ABC story says? "Osterholm walks back recommendation on lockdowns", which wasn't true. I can't basically walk back something I didn't say because I didn't, at that time, recommend lockdowns to the Biden campaign or anyone. Then from there, the AP story picked it up. And now there's a lively, circulating AP story saying that this had been proposed in the Biden camp and that I'm now walking it back. None of which is true. Never have I proposed this to the Biden team. And I've never walked it back because that's not what I said. Having said that, I understand the very, very difficult language we have today, and as I said earlier, if you asked 50 people what a lockdown is, they'd have seventy five different answers. And just to give a sense of what's happening right now, we're embarking on this very issue that I was talking about. We've got a number of states today that are taking major steps to do what some would call that lockdown. Let's agree we'll get rid of that term. I think we call it a pause, we call it some kind of a circuit breaker, but what we're trying to do is do what Europe's done. You know, if we do this light, I mean, for example, I do not understand that I'll be very clear, and I know I'll make some not happy people here in my public health role, but what do we really do by closing bars down at ten o'clock at night? Do we have any evidence that really makes a difference? We say, well, people drink more, they get closer. We don't have any data to support that. At the same time, we have lots of outbreaks. We have many people getting infected in bars and restaurants. So how do we help cities and states deal with this issue? I have received calls from five different governors in the last four days who are looking for my input of what can they do? How should they approach this? And they're feeling really caught. And this is one area I'll say there is no national leadership on that. There is not. No one is putting forth a basic prescription, an overview discussion of what should and could be done right now to limit transmission. And, you know, I'll say right now, we're going to take some dramatic measures. It's just that simple. Europe has just shown us that until they took dramatic steps, not talking about a lockdown down, where everybody suddenly was in their bedroom and they couldn't leave. As I just shared, we got countries in Europe that basically won't let you leave your house right now without some kind of ID and mission and so forth. And so we are going to get here. Trust me. This is my problem is that I know we're going to have to do much more than we're doing. But when we wait, it's that many more cases in that pipeline, remember, when we act today, our first breaking moment in cases will be three weeks down the road in terms of severe outcome and deaths. And so why wait? What are we waiting for? I can tell you it's going to happen. I don't want to be sitting here having this debate at two hundred fifty thousand cases a day and seeing what we're doing. And for no other reason, we are going to overrun our health care system. So number one, let's get rid of that term. That term I'll call it "that term". Let's begin to look at how we can come together on a pause to say it's the virus. I've called it 'pay to prevail'. That's my word for the program I would put forward. We need help from Washington, D.C., more than we've ever needed it. We need to help small business owners. Do you realize that there are many cities and even state governments that are in the process right now planning major layoffs of police, fire, all kinds of basic essential workers because their budgets are broke? And so bad that they are going to have to do these layoffs. Now is the time in this pandemic we need help. And it will be a very, very, very good investment in us. None of us are asking for welfare, not a social state. What we're actually saying is this is a time for government to come to rescue its country. If we could do that, I think we could really begin to implement some of these control measures that if nothing else, even on a voluntary basis, would give people the opportunity to reduce transmission of this virus. So next time you see a story in the media and you look at all the issues around it in terms of what you might say, the facts, just take that story I just had and understand what's happened. The last thing I just want to say about where we're at right now is, this is so hard for me to talk about, I will be honest with you, I sometimes can't talk about it because I break up. I have talked to so many health care workers in the course of the last couple weeks. The most recent one today. Who are quitting, they're leaving, they're broken. People, please understand what's happening in our hospitals and our health care centers right now. We are asking people to be well beyond any kind of superhuman. And it's a function of, we are short health care workers, we are short of equipment in many cases, and if these case numbers keep occurring, we will see literally a type of collapse of our health care system. And during that, please don't have a heart attack, don't have a stroke. Don't have any other very serious health consequences because we won't be able to take care of them. And the longer this goes on, the more of those people who are putting in double shifts day after day after day after day are finally going to break. One of the most painful moments was talking to an ICU nurse not long ago who just cried and sobbed through the entire discussion. And trying to have a conversation was tough because they just kept looking at me saying, "I'm broken I am broken. I can't do this. I am broken". Please hear that message. We owe ourselves the opportunity to get to that vaccine. And we owe our health care workers that. We owe them that. They're there for us right now, so when we talk about what we're going to do, I wish I could take every person in this country and make them spend one half an hour in a corner in an ICU and watch what's happening. You know, I just talked to a doctor last night, four to five times a day right now with her iPad, she is showing the family members outside the hospital what it's like to be with their mom or their dad or their aunt or uncle or their grandpa, or their grandma as they die because they can't be there. She's becoming broken. So I can't say it any more clearly. Stop swapping air because we can't continue to do what we're doing.

**Chris Dall:** [00:46:25] So, Mike, this is a good moment to talk about your involvement in the Front Line Families Fund, which officially launched this week. What can you tell us about the fund?

**Michael Osterholm:** [00:46:35] Well, it is one of those moments in this pandemic that gives me hope. Months ago, I began to understand in many of my discussions with health care workers, the pain and suffering that was going on in the health care worker community with covid. People who were dying from it as a result of occupational exposure and many who are dying from just living in the community, but also were part of the health care worker family. And finally, I felt like one day, you know, I've been given this incredible platform. I take this platform with great respect and humility. But I have to do something, and if I don't, you know, who the hell am I? So I dreamed big and contacted some of the foundation officials here in Minnesota and said we need to take care of the families of these health care workers who have died. Whether they died in the line of duty as a result of their exposure at work or whether it was because they were coming to work every day, but they were exposed to the community. And I have to say, I have had one of the most wonderful, rewarding experiences of working with the St. Paul & Minnesota Foundation here in the Twin Cities. And we have formed the Front Line Families Fund. It's a fund that is working in collaboration with The Brave of Heart Fund in New York and the Scholarship America Program, and we're going to be offering each of the fourteen hundred front line health care worker's families financial support, initially a grant, and it'll be retroactive for those who have died already and immediate for those who die unfortunately, in the days ahead, just to get through the initial horrible situation of, in some cases, just having enough money to bury your family member. Remember that as much as we have physicians who are incredibly well trained and who we owe so much, but they also are in a position to be more financially capable as a family to respond to a death, a life insurance policy. Now, that's not true if you're a trainee, etc. We understand that. But for many, the janitorial staff, the nursing assistant, the ward clerk, there's just so many people who make a system like a health care center, an intensive care unit run. And so we're covering all of them. And yesterday we launched this program. In the first twenty four hours, we brought in over one hundred thousand dollars. We've had people like Gloria Estefan and others who have already started tweeting it out. And our goal is to raise millions. We are going to raise millions. And we are going to do this to take care of the families of these fallen heroes. I've just heard far too many stories to know not only is the death of that individual a tragedy for the family, but the ongoing pain afterwards is such a tragedy. So I hope all of you go to the website. It's www.frontlinefamiliesfund.org, and make a donation act of kindness, help support this. I can tell you that this money is going to these families. It'll be handled immediately. We'll be working in the entire 50 state area with Bravo of Heart Fund to help deliver these resources. We'll be working with Scholarship America. I don't care if the child is two months old or is 18 years old. We're going to make it possible for them to go to school and with the scholarship. And all I can say is, is that that's the least we can do for them. We can't change what's happened with these families, but we can do a lot. We can do so much. Please consider a donation and know that it will be one of those acts of kindness that our fallen heroes would very, very much appreciate knowing that their families had been taking care of.

**Chris Dall:** [00:50:57] So we've gotten several emails this week regarding how safe it is to be around people who recently had covid-19 and are now recovered several variations on this. Here's one from Kim who writes, "At the end of September, my sister had coronavirus. She has since recovered. I'm wondering how this should factor into our decision to see her and recommendation for bubbling. If she's a couple of months recovered should we assume it's safe to see her? If she was re-exposed to the virus, could she expose others? Any insights you have are greatly appreciated". And then Nancy, who asks, "I'm wondering about immunity after a positive diagnosis with no symptoms. Our thirty five year old son had it four weeks ago and now thinks he doesn't have the social distance or mask around us. I can't find any recommendations on the situations. Please advise".

**Michael Osterholm:** [00:51:40] Well, you're walking into a very large vat of unknowing and at the same time one that is a very, very important issue. Right now, the CDC on their website to address the issues just raised would say basically you have to still consider these people potentially capable of being infected and transmitting. And I think that at this point, it's a very low risk. But I do believe that it is possible to be reinfected and to transmit again, particularly if you're back at high risk behavior kinds of things, swapping air out there at the bars or wherever. At the same time, I would feel more comfortable this year, and this is not anyone's recommendation, but my own. If you had a clinical illness or PCR positive and it's been in the last three months, I would feel comfortable with you being in that setting with someone so that you wouldn't infect them with your virus and therefore do it. I would just do it. This is one of those times when I would say, you know, take it. We do have evidence clearly of reinfections. We know that. There's a story in The New York Times this week actually about looking at the immune response of individuals after illness. And it was in Tuesday's November 17th issue, which they conclude that eight months after infection, most people who had recovered still had enough immune cells to fend off the virus and prevent disease. And I think the data may very well be there that that's the case, that very few people who would not be protected, but otherwise largely so. I think it's still personally too early to draw conclusions about how long term durability of the immune response is going to be there. But these results are encouraging. I think that immunity will be more durable after severe disease than mild disease. But again, we're going to have to learn that. So I think it's also too early to know whether vaccines will induce a similar immune response. Again, time will tell. So I'm hopeful that maybe durable immunity is going to be better than we thought. But in the meantime, for the holidays, I think you can feel somewhat confident if you have been infected recently, you're PCR positive, fully recovered, and it's been within two to three months that you could be in a setting and not pose a risk to anyone in terms of transmission. So take that is your Christmas gift for now. And I hope you approve me right.

**Chris Dall:** [00:54:24] We received a very moving tribute this week to Bethany, a young woman who died of covid-19 this fall, sent by a friend of Bethany's parents. Mike, can you tell our listeners a little bit about Bethany?

**Michael Osterholm:** [00:54:36] Well, this wonderful tribute comes from Ann who lives in Michigan. And she literally wrote to us and said, would you please accept this young woman into my weekly tribute for a person who has died of covid. And it's our honor, truly our honor. Ann writes, "Bethany's parents have been dear friends for 18 years. Her mom, like me, is a nurse and her dad teaches Spanish and French. Bethany is the youngest of nine children. Her mom and I had extensive conversations about a return to college and her parents and Bethany took special care to keep her safe. Her mom retired from hospital nursing to avoid bringing the virus home. They even asked for and received permission for Bethany to have her own dorm room and a bathroom as a condition of her return. She was due to graduate this spring as a child life specialist working with hospitalized children. She loved kids. Despite being masked and socially distanced Bethany caught the virus from a coughing classmate who sat next to her. Her symptoms started several days after her exposure, and she died a few days later from a pulmonary embolism. Her positive covid test arrived after her death. I'm nominating Bethany because she was a delightful, loving, amazing young woman. She loved adults and children freely and mentored children in a program that she helped put together. After her death, her parents set up a five thousand dollar scholarship fund for other child life specialist students. But it was quickly extended to twenty five thousand dollars because so many people have donated. Bethany would have loved this. I want to nominate Bethany for two reasons because she was such a gift from God to many people. Because I want people to know that even young people can get sick and die from covid. Thank you for the privilege of nominating this dear precious young woman. Stay safe and God bless, Ann". But then this week, she added a postscript. How heart wrenching her postscript was. "And if any of you dear people pray, please pray for Carol, Bethany's older sister. She is a nurse, caught covid from a patient and is now very sick". I'm so sorry for your family. Bethany's family has gone through a lot. Bethany, you sound as if you would have been everyone's favorite daughter. What a wonderful soul. And just a reminder that covid, while it surely doesn't take our young as often as it does our old, it does take our young, too. And we can never forget that. This memoriam to you, Bethany, thank you.

**Chris Dall:** [00:57:19] Your closing thoughts today, Mike?

**Michael Osterholm:** [00:57:22] Well, you know, this has been a roller coaster, to say the least. This is the best of times and the worst of times. We've got vaccines on the horizon. We've got the most dangerous situation in public health since 1918. We're watching health care workers being literally attacked by this virus and everything that it's doing in our health care systems. So I have a choice today, you know, I can leave us all feeling like, well, wow Oh, my God, or I can say, you know, we're going to do this. And I elect to say today we're going to do this. I'm ready to spit in the eye of the devil. And I hope we all do. I hope we walk away from this knowing we can protect ourselves. We know how to protect ourselves. We are not going to put ourselves at risk of Thanksgiving or the holidays. We are going to do the wise and smart things not to swap air. Stop swapping air. And so in that light, I picked a song today that is one of my most favorite. I could listen to this repeatedly hour after hour, originally written by Bob Thiele and George David Weiss, it was recorded in nineteen sixty seven by Louis Armstrong. And it was really not made famous here in the US in any way, shape or form until nineteen eighty eight when it appeared in the movie Good Morning Vietnam. What a wonderful world. I see trees of green red roses, too, I see them bloom for me and you. And I think to myself, what a wonderful world. I see skies of blue and clouds of white. The bright, blessed day, the dark, sacred night, and I think to myself, what a wonderful world, the colors of the rainbow, so pretty in the sky are also on the faces of people going by. I see friends shaking hands saying, how do you do? They're really saying, I love you. I hear babies cry. I watch them grow. They'll learn much more than I'll never know. And I think to myself, what a wonderful world. Yes, I think to myself, what a wonderful world. Oh, yeah. Thank you for spending your time with me again with our crew here in the CIDRAP podcast. Again, I urge you to visit our website, OsterholmUpdate.com. And I also just want to wish all of you the very best during these times. It's going to get scarier and scarier. The numbers are going to become more difficult. Restrictions and what government might recommend and act are going to be tougher and tougher. But we can get through this. We do really have light at the end of the tunnel. Now, these vaccines are getting me really, really excited. All I ask you to do is be safe. Be safe right now, be wise that way and be kind. If there was ever a time for kindness it's right now. Be kind, be safe and thank you very much.

**Chris Dall:** [01:00:39] 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. The Osterholm Update is produced by Maya Peters, Cory Anderson and Angela Ulrich.