

## Ep 24 Osterholm Update

**Chris Dall** [00:00:42] From the very beginning of the Corona virus pandemic, public attention on COVID 19 cases has focused on two ends of the spectrum. Those who are severely affected and die from the virus and those who have mild or even asymptomatic illness who quickly recover. But among the more than six and a half million US COVID-19 infections since March, there've been a growing number of reports of people experience lingering symptoms for several months and getting few answers from the medical community. On this September 17 episode of the Osterholm update, we're going to explore the phenomenon of these COVID-19 long haulers and look at what we know about the lingering symptoms associated with the coronavirus. We'll also discuss the current state of the pandemic, the controversy over the president's response, and answer listener emails about reinfection and flu vaccination. But first, we'll start with Dr. Osterholm's dedication.

**Michael Osterholm** [00:01:29] Thanks, Chris. As we have said on many other of the other podcasts, I want to thank the audience for being with us today. In terms of the dedication today and following up on your introduction, we want to dedicate this to the long haulers we're going to be talking about them today and the challenge that they face with their post COVID 19 acute infection situation. It is a challenge. And we will we will do the best we can to give you the most current information.

**Michael Osterholm** [00:01:59] I also want to make a note in light of last week's podcast on mental health that some additional information came out this past week addressing the issue of loneliness among older adults before and during the COVID 19 pandemic. It came from the National Poll on Healthy Aging by the University of Michigan, a very, very well done piece of work. And what they did is they asked a national sample of U.S. adults aged 50 to 80 about lack of companionship and isolation or loneliness, social interactions and health behaviors in June 2020. This was a follow up to a similar survey conducted in October of 2018, and it was striking the results they found again. But similar to what we saw last week, in October of 2018, 34 percent of this population felt a lack of companionship. Quite significant. But from in the June 2020 survey, it was at 41 percent, 27 percent in October 2018 felt isolated from others. Fifty six percent of this population felt isolated from others [in the June 2020 survey]. And in October 2018, 28 percent reported infrequent social contact. Now it was up to forty six percent. And I think this is just another piece of evidence that we have to do much more as related to dealing with the mental health aspects of this pandemic. And it's a real commentary on aging and this population of individuals 50 to 80 years of age. We need to do much more to assure that they don't have to experience a lack of companionship, that isolation or that infrequent social contact. We'll talk more about that later.

**Chris Dall** [00:03:49] Mike, looking at the situation here in the US, the Midwest appears to be in the midst of a surge of COVID-19 cases, especially Iowa and the Dakotas. What's driving the surge? And is this going to look like what we saw first in the northeast in the spring and then in the south and the west over the summer?

**Michael Osterholm** [00:04:05] Well, we've been on a journey with cases in the United States as this group listening to this podcast knows that early house on fire situation in New York, primarily. Chicago, Detroit, New Orleans, Seattle gave way to basically a sense of from going from thirty two thousand new cases a day in April to that twenty two thousand cases per day just before Memorial Day. We saw what happened after that when we in a sense, opened up physical contact, became much more of a normative behavior.

And we watched the number of cases go up to sixty seven thousand cases per day in that July, August time period and then, of course, we saw it come down after those houses on fire in Florida, Georgia, Texas and California in particular, really put forward great deal that the young adults and older adolescents in society today are not taking this pandemic with the seriousness that they should. And I'll comment on that more later as we get into the long hauler discussion, which is severely impacting those young adults. And it's a situation where once we see this explosion of cases in college age students, the spillover is very likely into older populations, people with underlying health conditions that predispose them to severe disease. And then on top of that, the rest of the country seems to also be experiencing chronic fatigue syndrome. Level two, as we're seeing in many instances, outbreaks associated with a variety of different social activities, strictly bars and restaurants. The story in today's Washington Post showed the very rapid rise in cases within three weeks in areas that opened up their bars and restaurants again. And so I think you put this all together, then lay over it, the ever increasing indoor air exposure we're going to have as we get into the fall and winter months in in particularly large parts of North America. And I just think the case numbers are going just increase and continue to increase. Remember, we're only about eight to 10 percent of the U.S. population having been infected with this virus, suggesting that they would be immune with so many of us not yet experiencing any sense of immunity. So even with vaccine potentially coming down the pike, we've got a number of months yet to go where things could really get out of hand again. And I have a real fear that that's what's going to happen.

**Chris Dall** [00:06:51] Internationally, we've spoken on recent episodes about the uptick in cases in Europe, and the WHO said this week that deaths will likely rise in October and November in Europe. Is Europe about to become a house on fire again?

**Michael Osterholm** [00:07:04] Well Europe actually is in part a house on fire right now. If you look at Spain, France and the UK they're at case numbers now that are higher than they were back when they were on fire in April. The Czech Republic, which has been a model in terms of responding to the pandemic, showing very few cases for a number of months, they're now seeing a major increase in cases. And I think that what is happening is, as I've shared before, is that the European countries and to some degree the Asian countries, unfortunately learned a sad lesson from the United States. We should have learned from them back in April, May and June. You can drive this virus down. You can keep it contained. If, in fact, once you get it to a low level, you then have that ability to respond quickly to slight increases in cases. And we basically didn't ever get there, so we never had a chance to do that, with one exception. And that is the state of New York, which, again, I know some people on this podcast wonder why I keep coming back to that again. I acknowledge they had some serious challenges in the early days of of the pandemic with with the number of deaths and the nursing home related events. But since that time, they've basically demonstrated that once you get the numbers of cases down, which they did, and then they had this extensive follow up as case numbers begin to increase the percentage of positives. They have now gone almost 12 weeks at a flatline number of cases. The last 30 days, they've been below one percent of tests positive.

**Michael Osterholm** [00:08:48] So I come back to the European situation because what they did is they got it down, kept it down for a while, and then kind of started to relax their distancing without controlling it, meaning they basically started to take their foot off their brake big time, whereas a place like New York took it off a bit at a time and looked to see what the response would be in terms of number of cases. So now we're seeing these big increase in cases there. We also have substantial activity right now in the Middle East. Israel is, you know, starting on Friday of this week, will impose a three week lockdown.

We're seeing a big increase in cases in the West Bank, Gaza, and we continue to see case numbers that are just just sad in much of South and Central America, Argentina, Colombia, Panama, Brazil. So I think that that the world in itself right now is just coming to grips with, I guess, this ongoing pandemic fatigue that's occurring where people just can't seem to to avoid the kind of physical contact that's resulted in transmission. So they, too, as the United States will go over the course the next few months. I think we're going to see a big increase in cases around the world. And I think the WHO's projections on deaths are right on the mark.

**Chris Dall** [00:10:09] You were on Meet the Press last Sunday, and you were asked a question about President Trump's intentional downplaying of the severity of the coronavirus in February and March, as has been reported in the new Bob Woodward book. So, as you know, you only get a limited amount of time in TV interviews. So I'm wondering if you can expand on how you view the president's response to the current virus and the questions you have about how this administration will respond going forward over the course of these podcasts and, of course, in our activities of CIDRAP.

**Michael Osterholm** [00:10:39] We've made every effort to be nonpartisan while at the same time having a very proactive public health agenda. Our job is to call balls and strikes. It's not to declare allegiance for or any against any one area or side or individual. Just call the balls and strikes. And what I commented on last Sunday on Meet the Press, which I think some found somewhat difficult because they wanted very clear cut answer, was the fact that if you go back and look at that February, March time period for which has been the focus of much of the Woodard book, I just tried to again declare a ball on a strike situation where, as some of you know, on January 20th, I put an email out to a number of people who work with us that in fact, this was going to cause a pandemic. This COVID-19, was going to be responsible for a pandemic, and we needed to get ready. It was going to be tough. Between January 20th and February 24th when I published an op ed with Mark Olshaker in the New York Times saying, let's get on with it. This is a pandemic and we need to deal with it.

**Michael Osterholm** [00:11:55] Even though no country and the WHO had not yet declared it throughout that entire time, I received lots of negative criticism from colleagues, from Democrats and from Republicans who said you're just scaring people needlessly. Don't do that. You know this. Why do you always have to do this? What bad news, Mike? And, you know, of course, my effort was really to try to ignite preparedness. And so, you know, I'm here sitting here today saying, you know, let's let's take a free pass on the February, March time period. Because if you want to look at it, everybody who had information and could have had the same information we had at CIDRAP and we were surely sharing that information. It wasn't like we kept a close hold, should have understood this was going to be a pandemic.

**Michael Osterholm** [00:12:40] So at this point, I don't think it helps us at all to advance our activities today by going back and revisiting February and March. It'll be doing clips on the Internet as to who said what, when and where by all these different parties. But I do care, absolutely care, about where are we at today? What have we done since March? We still don't have a national plan. We have 50 different state plans, many of which are not necessarily scientifically sound. We have a great deal of confusion about all kinds of aspects of public health interventions. And to me, that's where we ought to be focusing right now. Let's keep our eye on the ball, folks. Let's keep remembering that we've got a long ways to go yet. You know, even if vaccine becomes available at the end of the year. It's going to take months and months before we can vaccinate the U.S. population. And

with a vaccine, by the way, we don't know how well it's going to work. And so I just want to stay focused on demanding our leadership provide us the kinds of plans, the kinds of actions right now that we need, not only here in the United States, but around the world. This is not an indication that I, as a public health person, are not willing to take on these tough issues. But I also am one that basically doesn't believe it helps to go out and howl at the moon. And hope that that's going to change the course of the public health challenge we have with COVID 19. So, yes, I do hold our leadership accountable now. And I've held them accountable for months. I just don't want to get back into that other, that that time period from from February and March and think anything productive is going to come from it.

**Michael Osterholm** [00:14:29] The other thing I just want to comment on, because this has come out time and time again relative to the discussion about who knew what, when and where is I keep hearing people saying, you know, we didn't want to say anything because we didn't want to panic people. And as we've discussed on this very podcast about risk communication and how to communicate with the public in crisis. The bottom line is the public never panics when you tell them the truth. They never do. Just tell them the truth. Tell them what you know. Tell them how you know it. Tell them what you don't know and what you're gonna do to find out. And they will follow you. That's what great leaders in the history of our world have done. They have not misled the public to make a situation worse or better than it really was. And so that's the other message I think, that come through right now. You know, I learned as a kid back in that rural Iowa hometown, when in doubt, just tell the truth then you don't even have to remember what you told somebody else before and might get it wrong. Just tell the truth. And I think that's what we have to focus on here. Action now until the truth.

**Chris Dall** [00:15:36] On another political point, there was a report late last week in Politico about communications aides in the Department of Health and Human Services demanding the ability to review and even edit COVID-19 studies in the CDC's Morbidity and Mortality Weekly report to align more closely with the president's statements on kind of virus. Mike, can you explain to our listeners why the MMWR, as it's known, is such an important public health document and why political meddling with it is a concern to so many people?

**Michael Osterholm** [00:16:04] The MMWR or the morbidity mortality weekly report from CDC is almost like a jobs report that comes out from the Labor Department, which are considered to be beyond reproach in terms of their accuracy.

**Michael Osterholm** [00:16:21] No influence, except these are the numbers and we have counted on the MMWR for many decades to be a vehicle upon which public health could take as the best science we have. And it's what we know now without any kind of alteration by policymakers, by any kind of other influence other than just the science. And, you know, as I have said over and over again, and I'm sure you're probably getting bored, hearing this on this podcast but science must rule the day. Science is a self-correcting discipline that you're right if we don't always get it right, because the data we have don't sufficiently allow us to understand a situation there with additional data we do understand it, in a more sophisticated and and hopefully correct manner. But science is, in fact, the gasoline that should run the critical policy motor that we have in this world for making decisions about what to do about public health. It should be without emotion. It surely is something that does ultimately develop into a public policy discussion about that. Public policy discussion should be on data that are irrefutable, that are basically they don't change. You can't have alternative facts here. And again, I just come back to a point I

made a few minutes ago. It should all be about balls and strikes. You know, when I think about the power of science and I look at society today, I just have to take a step back. Remember, you know, it was science that got humans to the moon. It was science that built medieval cathedrals that were incredible. And how those ceilings were able to be assembled and stand up hundreds of feet above the ground with that heavy rock. Science is what eradicated smallpox, one of the worst scourges of all humankind. Science is even dramatically reduce the risk of polio and childhood vaccine preventable diseases. That science, if we don't have this type of science where it is free of any kind of policy editorializing, whether it be partizan related to politics, whether it be related to any other social political aspect of our society, we're in deep trouble.

**Michael Osterholm** [00:18:47] So I just come back to say that, we have to defend the integrity of science. It's the only way that you and the public can believe us. You know, I've said to you on multiple occasions, you know, be skeptical of everything, including me. And I come back to that and say continue to be skeptical of people. But don't be skeptical of good science. And that's why if we don't have good science, you have no place to go to get anything that's worth of value in terms of how we should move forward in our lives.

**Chris Dall** [00:19:21] So now to the issue of COVID-19 long haulers. We don't yet have large scale estimates on how many people are suffering lingering, and in some cases, debilitating symptoms from COVID-19. But it's becoming clear that these are not isolated cases. Mike, as you've looked into this issue, what have you learned about this lingering symptoms associated with the coronavirus?

**Michael Osterholm** [00:19:42] First of all, I think that this is an area that, of all aspects of COVID-19 related disease, we have really been the slowest to understand what the implications are. When we had the house on fire in places like Lombardy in Italy, in New York and in places like that in March and April. There was so much incredible work that got done in the intensive care units by intensivists who were the simultaneously caring for patients, but learning about what we could do better for outcomes. And one of the reasons why we see today such a major improvement in the mortality rates from those earliest days without the presence of a blockbuster drug is because we learned how to handle these patients from a clinical standpoint, how to do mechanical ventilation when, you know what drugs we do have, how to best use them. So from that perspective, that has been a such a major success in COVID-19. But understanding the long term consequences of this disease has really been very, very slow to understand the implications of that long term situation. And it's only now that we're coming to to appreciate that when we hear the name long haulers, you know, I, for one, was wanting to know where did it come from? Because I you know, I think it surely is is a good description of what's happening. The best we can find is that in the June 4th issue, the Atlantic story was written about it. And at that point, some of the people who were impacted and reporting it on Facebook and so forth refer to themselves as long termers and long haulers, and eventually the long hauler term became accepted.

**Michael Osterholm** [00:21:37] These individuals have an illness that is reminiscent of, and I don't want to say it's the same because it's not, what we used to call chronic fatigue syndrome. Today, we have a new name for that myalgic encephalomyelitis . We have had experience in the past with the chronic consequences of infectious diseases. For example, in the 1950s, after an outbreak in a London hospital of some infectious agent never determined, there was this outbreak of myalgic encephalomyelitis, a mouthful, basically EM.

**Michael Osterholm** [00:22:15] And it was a condition that with further study, and in fact, in the 1980s, mid 1980s, a similar outbreak occurred in the Lake Tahoe region. And the CDC called it chronic fatigue syndrome. That is today the MECFS combination that we talk about with the kind of condition which I'll describe more in a moment. But today we estimate there may be up to 2.5 million Americans who have MECFS.

**Michael Osterholm** [00:22:47] And this whole long haulers experience does make us think, wow, there are some real similarities here. It's been estimated that up to about 10 percent of mild Coronavirus cases who are not admitted to hospitals have reported symptoms lasting more than four weeks. A number of hospitalized cases reported continued symptoms of eight or more weeks following discharge. And that number is going to continue to change as we have more time to follow these individuals, while there surely are recoveries there are a number who are continuing on. When you look at the kind of persistent health problems we're talking about, they include respiratory symptoms and conditions such as a chronic cough, shortness of breath, lung inflammation, fibrosis and pulmonary vascular disease. Clearly, cardiovascular symptoms and disease, such as chest tightness, acute myocarditis and heart failure. There's been protracted loss or change of smell and taste. In terms of mental health problems, we see depression, anxiety and cognitive difficulties, inflammatory disease such as my allergies. The multi-system inflammatory center, which we've seen in kids Guillain Barre syndrome. We also see gastrointestinal disturbances with diarrhea, continuing headaches, fatigue, weakness and sleeplessness, liver and kidney dysfunction, clotting disorders and thrombosis, lymphadenopathy and even skin rashes.

**Michael Osterholm** [00:24:16] And these are not one common constellation that everyone has. Some have more than others. And the key thing, though, is, is that they basically are experiencing these days to weeks after infection. Now, when you think about the fact that we have about six point five million reported cases of infection in this country, and yet we know that we have, you know, many, many more really infected than that, probably, you know, one out of seven to one of the ten patients ever are documented. Therefore, you can understand that when we look at that. That's 30 to 70 million Americans who have been infected to date. And if that 10 percent number holds, which I think it may or may not once we look at the denominator more carefully, but is still a lot of people.

**Michael Osterholm** [00:25:08] This is a real challenge in terms of the number of people who are experiencing this kind of problem. In terms of why this might be occurring. It's not clear yet. There are three possible avenues that we've explored with regard to what might be causing this. The first one is the virus is gone, but the immune system is stuck in a lingering overreactive state. One is that maybe we could harbor the virus in a reservoir organ that we don't know about, there's no evidence to support that at this time. And finally, that fragments of viral material might trigger an immune overreaction, meaning as we're clearing that viral debris, it's still there.

**Michael Osterholm** [00:25:47] It's going to be a very important as we try to understand what the etiology is for this. And just as we've seen with EM, chronic fatigue syndrome, it's going to be a challenge. We have to realize that this is going to be a challenge. If you look at what we've seen so far in terms of cases with long-haulers disease, let me make it really clear. One of the major challenges around the mental health side of this is so many of these people were not tested in the early days of the pandemic. We didn't have testing available. And so they've tried to go in and seek medical care for this chronic condition. And they've, in many cases, been written off and they shouldn't have been.

**Michael Osterholm** [00:26:34] Now, you know, if they test today for the virus, obviously, they're not going to find it. At the same time, this is where we should be testing people with antibody to find out if, in fact, these people might have had evidence there. And many people who have had infection, who have become long-haulers have now been found to be positive via antibody testing. So that's an important thing. If you're listening to this, you think you're a long hauler, you didn't have a PCR test done when you first became ill. Do not give up. Go back in demand to have an antibody test and to see if that's the case of what's gone on.

**Michael Osterholm** [00:27:14] Now, if we look at the situation in terms of what we might be talking about here, this survey data is really limited in that it's only been a limited period of time that we've had since the time that you got infected. Till now, one study that was reported this past week out of England found that about 10 percent of mild COVID cases who weren't admitted to the hospital reported symptoms lasting more than four weeks. A number of the hospitalized patients reported symptoms for more than eight weeks following discharge, and they had a list of 12 items. And as I just pointed out, there are many of the same that I just summarized for you.

**Michael Osterholm** [00:28:00] Also, if you look at a survey that was done by the CDC reported in the July 31st Morbidity Mortality Weekly Report, that critical science based report, this was a survey done between March and June of 2020 when the case numbers were fewer.

**Michael Osterholm** [00:28:18] And again, there wasn't as much time for them to to have developed long term long haulers like symptoms. There they found in a telephone survey of two hundred ninety two non-hospitalized symptomatic adults who did have a positive test result, that 35 percent of those respondents reported ongoing symptoms up to three weeks after testing. So you can see that this has continued. Our experience with this, I guess, shouldn't be a total surprise. If you look at SARS-CoV-1, the cause of SARS back in 2003, there have been now 15 year study looking at the issue of heart related conditions that have occurred in people who were SARS cases back in 2003. And four point six percent of these still had visible lesions on their lungs from their original infection, meaning damage that occurred and 38 percent had reduced diffusion capacity. So this was a long term type of problem that they had. When the study that was just published this week from Austria, found that at six weeks, 88 percent of long haulers had evidence of lung disease based on radiographs or X-rays, at 12 weeks, fifty six percent still. So it's improving.

**Michael Osterholm** [00:29:38] I think if there's anything I can share with this group that's really important is if you have these symptoms, again, you do need to be seen and and there are a growing number of locations around the country, around the world that are now specializing in seeing long haulers. Get on the Internet, identify those places that have expertise in this who are very willing to to dive into what you're experiencing and provide, I think the very best opportunity for you to to get the better care. Again, dealing with ongoing and immunological reaction, whatever. People ask often, well is this really different than we've seen with other infectious agents? Yes, we have seen post viral syndromes with other viruses such as influenza, SARS, MERS, West Nile, mononucleosis, but not at the level we're seeing here. This is unprecedented. This is really remarkable. And I think that that's the kind of situation where it hopefully will not continue, that we'll see gradual improvement that will occur over time. But for right now, at least, it is real.

**Michael Osterholm** [00:30:50] And where this all takes me to is the fact that today a number of these long haulers are young, healthy individuals who are never hospitalized,

the same people who are not afraid of getting infected now because they don't see any of their friends necessarily in the hospital. They don't see them in intensive care unit. And if I had one message, why not to get infected. If I can't get it across to you, that, number one, you do run the risk of being seriously ill, grant you it's low, and dying. You may transmit this virus to others that you love and care about who are susceptible to serious disease. At least think about for yourself the issue of this long haulers condition. I know far too many people myself who are professionals in the medical care area who literally are at home on oxygen right now, eight, 10 weeks after having been a patient with mild illness, not even hospitalized.

**Michael Osterholm** [00:31:49] And so as we continue to study this and we will keep you updated on this, we will keep you posted on what we're finding. This is a really important area for those who have the symptoms. Please know that there are people who believe you. There are people who understand what you're going through and there are people here who want to help you. Don't be one of those individuals who goes to a care provider who says, well, there's nothing I can do. You're not positive by virus. No. Know that you can still be tested for antibodies, this is one of those few times where I tell you this is important. And get into one of these studies, get into one of these centers that are working on this and and know that from a physiologic standpoint, your body. That this is an important area to study and to learn what can be done and also take care of your head. This is one of those ones where the brain fog that's been reported is important, that you have the the emotional support to get through this. So long haulers are a big deal. They're very important. And they are going to continue to grow in numbers substantially. So please don't get infected with this virus. Young adults, please don't. This is unfortunately one of your options. And you don't want this. You just don't want this.

**Chris Dall** [00:33:06] We've received some emails from our listeners about reinfection with SARS-CoV-2, which is the topic you've addressed in recent episodes, and SARS-CoV-2 mutations. Carol writes, When you spoke about reinfection on a recent update, you said the two viruses were, quote, different viruses. My assumption is the difference consists of mutations in the virus. Can you clarify this? And then Jim asks, with the US on fire in recent with recent cases, isn't it possible to see yet another mutation or two here in the U.S.? And does that keep you awake at night?

**Michael Osterholm** [00:33:37] Well, thank you, Carol and Jim, for two really good questions. And Carol in particular for asking me to clarify something I said, which obviously I didn't do a very good job explaining. First of all, as a corona virus. Think of it as a ever evolving virus, but not one that really changes. What I mean by that is if you, if we had pictures of you, Carol, when you were five, when you were 10, when you were fifteen, when you were twenty five when you were 30. Not sure how old you are, but if you're 30 now, you see a very different Carol in all those pictures. But it wouldn't be a different Carol. It would be the same, Carol. And that's what's happening with this virus it's changing and so is aging. But there is not some mechanism that's changing the basic way that it either is transmitted or its ability to cause severe disease. And in fact, we just had a major paper come out this past week from a really highly, highly skilled group in Singapore, which confirms that what they've seen in the differences in these viruses do not at all cause a difference in how they're transmitted or how infectious they are and cause disease. And so from that standpoint, when I say that there are different viruses, what I mean is it is the same virus. It's you, Carol. It's when you were five versus when you were 10. And we can just say they're two different viruses. But in fact, it's not in a way that is causing some great mutation to change it. So, Jim, the same thing is true with you. The more virus transmission we see that, we'll see these kinds of changes that surely can be documented

as different strains. But nothing that would suggest from a mutational standpoint that this is somehow going to change how it's transmitted or the severity of disease it causes.

**Chris Dall** [00:35:27] Then we have a question from Rosita about flu vaccination, which is an important issue given that we are entering into flu season. She writes, As seniors taking the high dose vaccine, my husband and I usually get our flu shot mid-October, but heard this year that it might be advisable to get them sooner. So, Mike, should people of any age consider getting the flu vaccine earlier than they normally would this year?

**Michael Osterholm** [00:35:48] Well, first of all, let me just be really clear. Get your flu vaccine. That's what's important. OK. You know, we don't know what the flu season will look like, but you don't want to complicate COVID-19 and flu and trying to understand what you might have at the time. And again, just reducing morbidity and even mortality associated with flu is an important issue in terms of when you get your flu shot. This is gonna be a bit of a complicated answer only in the sense that I have a straightforward answer if this weren't a COVID year, and that is I always wait until November to get my flu shot and follow what's happening with flu in the community. And if there's no flu, I even wait longer. Just because we do have data that the protection with flu vaccine wanes over time.

**Michael Osterholm** [00:36:40] And so that if I'm looking at a potential late flu season, February, March, being where we're really most exposed, then at that point I want the vaccine to work. So I will still work to get my flu shot in November following what's going on with flu activity and also able to get into clinics. But it may be more difficult this year given COVID to get into your medical clinic. And so getting your flu shot, you know, after October 1st to mid-October, as you said, I think that's the best you can do. Try to schedule it as far ahead as you can and work whatever venue works best. I think that's also a very important thing. So no one gets your flu shot if you can wait a little bit longer to get it later October, early November. I think that's better. The important thing is just be able to get in and you might want to check now with your clinics to find out how you can access the flu shot depending on where you got it in the past. You may want to check with them too, some people are still getting it in the drugstores. You know, the pharmacies, sections at the grocery store, etcetera. Wherever you've gotten to the past, just check to make sure you can still get it again.

**Chris Dall** [00:37:52] Mike, a quick follow up about the flu in the Southern Hemisphere. Countries like Australia, South Africa, flu levels were very low this flu season. Does, is that a hopeful sign at all for the oncoming flu season here in the U.S.?

**Michael Osterholm** [00:38:08] Well, as I have said many times, the more I understand about influenza, the less I understand about it. You know, anyone who's never been able to predict a flu season has always been at some risk of doing that because it can change so quickly. What we've seen in the southern hemisphere's winter, our past summer, was, in fact, one of the lowest flu years on record. Now, one could argue that is somehow tied to COVID. All the protections we take to protect ourselves from COVID itself also reduce flu virus transmission. The only thing that I have a little concern about interpreting quite like that is you take some of the countries like Australia and New Zealand where because they had quite good control of COVID during that time of the summer, early winter there, they weren't taking a lot of the steps that we are now seeing them take as they have more recently getting into their spring. And yet they still didn't have extensive flu activity.

**Michael Osterholm** [00:39:16] We've also seen substantial transmission of COVID-19 in some of the other countries of South America or in Africa. And again, it's clear with that much COVID virus transmission, they weren't doing things that would have prevented flu virus transmission. Now, what could be happening is some kind of interference between the two viruses. And we have seen some evidence of that possible viral interference in the past, potentially between two flu viruses. So I think it's just not clear. I would tell people you've probably got a 50/50 chance of either having more flu or less flu this year. And you can take whichever 50 you want to put it. And we don't know. So, again, I just come back and say, don't take your chances, get your flu shot.

**Chris Dall** [00:40:02] So finally, we have a question that several of us here at CIDRAP are getting from friends and relatives who listen to the podcast, who all want to know what innings are we in?

**Michael Osterholm** [00:40:13] Chris, that's a great question. I think right now we're in the middle innings and I can't be more precise than that other than to say depending on what happens with COVID-19 related vaccine, what we see with the potential for durable immunity or lack thereof, how fast vaccine, if approved, can be made and distributed in countries throughout the world and how much uptake of the vaccine actually occurs. If, in fact, think about this, if we have a vaccine, it's only 50 percent effective, which could be a possibility and only 50 percent of the population takes it. That's 50 times 50, which comes out at twenty five percent of the population would be protected. Now, that means 75 percent would not be and we would still have tremendous amount of transmission going on. So, you know, for me, the inning is still a relative issue. In the ideal world, I could say we're getting close to the closing innings. If we had a highly effective vaccine and everybody wanted to take it and we could get the world saturated with it quickly, and that's not going to be the case. So we're still in these middle innings and we got to really hope, realizing hope, not a strategy, but we've got to really hope that the vaccines can do more for us than we might otherwise expect.

**Chris Dall** [00:41:38] Mike, I know you're a big Bruce Springsteen fan, as am I, and I understand you have some lyrics from The Boss to close out our episode this week.

**Michael Osterholm** [00:41:46] I do. You know, I kind of was, you might say, in my early adulthood, raised on Bruce Springsteen some of the concerts that I most appreciate and never forget are Bruce Springsteen's. That's the kind of man that can blow you over with his music and not because of loud sound, but because the softness of his words. He is truly America's troubadour. And for all of you who are wondering, Bruce and the East Street Band, have a album coming out, a studio album on October 10th. But he released the first song off that album just this past week. And it's out there. I'd urge you to go and find it on the Internet. The entire piece is very moving. And the title of this particular song is called Letter to You. And as you'll see in a moment, why it's relevant to this podcast.

**Michael Osterholm** [00:42:47] Neath, a crowd of mangrove trees, I pulled the bothersome thread, got down on my knees, grabbed my pen, bowed my head, tried to summon all that my heart finds true and send it in my letter to you. Things I found out through hard times and good. I wrote them all out and ink and blood. Dug deep in my soul and signed my name true and sent it in a letter to you. In my letter to you, I took all my fears and doubts in my letter to you. All the hard things I found out in my letter to you, all that I have found true. And I send it in my letter to you. I took all the sunshine and rain, all my happiness and all my pain. The dark evening stars in the morning sky of blue. And I sent it in my letter to you. I sent it in my letter to you. In my letter to you. I took all my fears and doubts in my

letter to you, all the hard things that I found out in my letter to you, all that I found true. And I sent it. And my letter to you. I sent it in my letter to you.

**Michael Osterholm** [00:43:54] This song, these lyrics probably describe as well as anything I could just use to describe why I do this podcast. You know, I'm blessed to work with this team at CIDRAP that clearly are critical to this. But in the end, I take responsibility for all the mistakes that come out and sometimes the crooked words and not always clear in meaning of some of the things that I say. But it comes from my heart and it's my letter to you. And I will continue to do that for the duration of this damn pandemic, because it's the only thing I know how to do. And so I just say to you each week, just know that I will do my best to give my letter to you. And it's in that regard. I just want to follow up to the many, many emails I received this week about the episode last week on mental health.

**Michael Osterholm** [00:44:57] I know that we're all suffering in one way or another. The challenge of this time in our hearts and in our heads. And, you know, I have to say that, you know, if for every ounce I put into these podcasts, I get back tons and tons and tons of support. Very thoughtful comments and a connection that I can't begin to describe. As I said a long time ago in one of the podcasts, which seemed like years ago, you know, I've come to know you and I think you've come to know me. And so I just say thank you for participating in these hours a week. I know that it takes a lot to listen to these. I also just want to urge you, in light of what I commented on today about the loneliness and that University of Michigan survey, please reach out to people right now more than ever, more than ever. We need to reach out to people who need us. People who can't ask or they're afraid to ask or they don't know who to ask. Now's our time to do that. And so I hope with all the science that you might accumulate in this podcast, the most important thing you take away is not the science. It's what we need to do right now to get through this pandemic and how we can connect with each other and what we can do to make that connection work.

**Michael Osterholm** [00:46:20] So be kind. Please be kind. Even when it's hard to be kind, be kind, be tolerant. This is our call this year. We're gonna get through this. We just have to get through it with as much grace and class as possible. Be safe. Be kind.