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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 for 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. The United States keeps setting single day records for coronavirus cases this week, with approximately 60,000 new cases reported on Tuesday, followed by 59,000 on Wednesday, bringing the total number of cases since the pandemic began in the U.S., to over 3 million, and in hard-hit states like Texas, Arizona, and Florida, hospitalizations are on the rise, ICUs are filling up, and more people are dying.

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The surge in infections is causing many states to pause their plans for reopening, restaurants and bars are closing again, and public health officials are once again urging people to stay at home as much as possible. The weather may be different, but it feels like the country is back where it was in March and April. How we got here, what we can do about it, will be the focus of this week's episode of the Osterholm Update. We'll also discuss the debate over how the coronavirus is transmitted, but before we get started, Mike, who are you dedicating this episode of the podcast to?

DR. OSTERHOLM: Well, first of all, thank you Chris, for another podcast opportunity here, and let me also just welcome all of our listeners, particularly any new listeners, and I just want to thank those who have been with us for some time, as well as the new listeners, for spending time with us. I know that you have many opportunities to get your information from a lot of different sources so it means a lot to be able to spend time with you.

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I've had an opportunity over the course of the last 7-10 days, to have conversations with a number of colleagues throughout the United States who are working in hospitals, in intensive care units, in the Southern states in particular, and just as we saw in New York in March and early April, the challenges that occurred among the medical care personnel working in the intensive care units. Not just the doctors and the nurses, but the respiratory therapists, the station clerks, the janitorial staff, the food service, just everybody. I know right now, your life is hell, and no getting around it. Anybody who's talked to people who are going through this know that, so you know, I don't think there could be enough dedications to this group of individuals, wherever you are in the world, but particular right here in some of the real hot spots in the United States, so I dedicate this to all those brave people who risk their life everyday to try to save us from this terrible virus.

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CHRIS DALL: Mike, the number of new infections in the U.S. just keeps rising everyday and that trajectory does not appear to be changing anytime soon, and while some have been citing a decline in COVID-19 deaths in recent weeks as a potentially hopeful sign, given that deaths lag behind new cases, is that a trend you see continuing?

DR. OSTERHOLM: Unfortunately, I believe we're at a major inflection point in this pandemic, and while I have referred to that since before, we really are, here in the United States, in a position where what we do over the course of the next several weeks will dictate, I believe, what will happen to this country in COVID related deaths and occurrences for months to come, and I say that for two reasons. One is just the actual number of cases today, but also the decisions we're going to make about how we're going to respond to this virus.

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Remember how we've come along together as a family almost on this podcast, over the course of the past 3-4 months. Every week, interpreting what was happening, and what might happen next, and some of you got very impatient with me, and you had every right to, because I wouldn't get off the second inning dime. I kept saying, "we're in the second inning," and it was because I wasn't sure whether or not we were going to be seeing an influenza pandemic like scenario where we had a first wave, and then regardless of what we did or didn't do, the cases subsided, caused a trough to occur, and then came back with a mighty second peak, and that scenario surely was a great concern, as you know.

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Well, we've blown past that point. We now know that this is a coronavirus acting as a coronavirus, not like a pandemic influenza virus, but a corona pandemic virus, and in that regard, we now know that this is just on hot burn, and it's not a hot burn that's a slow burn. It's a hot burn that's burning fast, and I've used this analogy in recent days, and I believe it's the only way I can describe what's happened in this country, for many parts of the country, we are in the middle of a huge coronavirus forest fire. It is burning, and it's burning hot, and not only is it burning hot, but the embers are getting cast off into new areas where there's lots of human wood waiting to be infected, or in this case, set on fire, and we have to understand that we are now in a very different phase of what's happening with this virus and our population in the United States, and I'm going to come back to the United States versus the rest of the world in a moment, but that we're in a period where it's not one local area.

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It's not like New York, and a little bit Detroit, and Chicago, and New Orleans. This is now widespread. There are 36 states, as of this afternoon, where cases are continuing to increase, 13 where they're level but of those 13, at least 4 could be tipping towards increasing numbers of cases, and only 2 where the virus is decreasing, both Vermont and New Hampshire. If we look at what's happening in those heavily impacted states right now, states like Arizona, where yesterday 26.9% of the people tested were positive, that is a huge number. I don't care how much more you're testing. That's a huge number. They're testing about 1.8 individuals in that state per 1,000 population.

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You had Mississippi, 23.8% of those tested were positive, about 1 per 1,000 were tested. Florida 19.1, South Carolina 17.2%, Texas 15.6%, Alabama 14.7%, Georgia 13.5%, Nevada 13.1%, Idaho 11.9%. All of these are exceptionally high percentages of people testing positive, meaning that there is a tremendous amount of transmission occurring in these states, and all of these have roughly about the same number of people tested per 1,000, somewhere between 1

and 2. So it's not a function of just, we're testing a lot more people to find more infections, this is truly a country on fire. Now, why is that happening?

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Well if you look at overall epidemiology of this infection, as we made efforts to suppress it through what we call mitigation strategies, shaving the curve, you know, locking down the economy, any number of these terms, the key piece was distance, distance, and distance. We kept people from congregating together in large groups. We kept people from traveling a lot of different places by the recommendations or mandates made. We have data showing how traffic dropped in many locations throughout the country, businesses where people would normally congregate together in bars, restaurants, were closed, and we saw what happened to our economy and how it drove people to the point of pandemic fatigue. All of them very legitimate and real issues, but in our effort to release us back into everyday life, the reopening as we would say, we actually then also gave this virus ample opportunity to continue to increase transmission,

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because we had not done nearly enough to suppress it to a level where we could control it, and again I'll come back to that when we talk about international issues. So now we have states like Florida where we're seeing almost 10,000 cases a day, Texas yesterday 8,900 cases, California 8,500 cases, what we're seeing here really is an example of the kind of transmission that at the time it happened in New York, we thought was a house on fire, this is so different, it won't happen again. Well, what we've missed is the fact that what has happened around the world is very different than what's happened in the United States. Now we have some countries like Brazil, India, South Africa, Russia, Mexico, where we are seeing large numbers of cases, and while these numbers are not adjusted for population,

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the United States yesterday had about 59,000 new cases reported, knowing that that's surely a major undercount. Brazil 41,000, India 25,000, South Africa 8,000, Russia 6,500, Mexico 6,200. All far, far below what we've had as cases, Brazil being the one closest to us in terms of population, they have about two-thirds of the population we do, so their numbers are quite high, but what is striking are the other countries of the world where they have worked hard through the mitigation/shutting down society to get levels of virus down sufficiently low, and then take the break and slowly ease off of it, bringing people back into public places, into workforces, even schools, and then using case testing and contact tracing, which are now manageable in those conditions.

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Contact tracing and testing right now is almost meaningless in these states with these very, very high levels of cases. You know, I liken it to trying to plant petunias in a category 5 hurricane. It's virtually impossible, but if you look at China, 7 new cases yesterday, Ireland 11, Denmark 12, Hong Kong only 24, South Korea 62, Switzerland 129, Singapore 158, Japan 193, Italy 193, Canada only 267 cases. Germany, which is seeing some outbreak activity in the meatpacking plants, still 410 cases. Let me just be really clear, that the world has demonstrated that we can take this virus on. We can challenge it in such a way as to limit the number of cases without causing our society to go into some kind of cocoon.

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If you look at the countries around the world that have had horrible, horrible house on fire moments, Italy, you know, look at the Asian countries, what they've done once they broke the back of this heavy transmission of the virus by doing the kind of lockdown that was necessary, then very carefully, and with timing and thoughtfulness, eased the brake ever so much, watching carefully to see when transmission might appear to be starting to kick in again, and then using testing and tracing, which then has the potential to really work, and I think that's what we have to get ourselves to. We've got to break the back of this virus which we are a long ways from doing right now, and get to that point.

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We have a choice, a major choice. Are we going to, in a sense, lock down again, in many locations around this country in order to achieve that lower level of cases that then makes it manageable for public health to actually test and trace. Now, I liken what we have right now is a bunch of small town, local fire department fire trucks, where we can handle backyard brush fires, we can handle, you know, very small forest fires itself, but the big super forest fires are never going to be handled by that, and if we don't basically bring cases down so that this small fire departments and small towns can handle these things, we are surely going to see these large forest fires of COVID virus infection out there and we're not going to stop it.

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Let me just run a scenario by you that gives you a sense of what will happen if we don't bring this virus under some kind of control like has been done elsewhere around the world. We have 331 million people who are residents of the United States. If you think about the fact that to date, 7% of the population has been infected with this virus based on a growing number of serologic studies, that includes the higher percentage of people infected in New York and across the board in the United States. 7% of 331 million is about 23,175,000 people. That's 23,175,000 people have been infected to date. Now we've only had 3,188,000 cases reported, and I say only with great pain, because these are our loved ones, our family members, but that number, basically if you look at the total, that compared to the 23 million, is only about 14% of the total cases.

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We've understood for sometime cases are underreported, even when clinically ill, and of course we have asymptomatic infections, so let's think about that. 14% of the cases to date make up about 23,175,000 people in our population. So if we extrapolate that to the 331 million people alive, and we assume, let's just say 50% of the population will get infected. If you look at 50% of that 331 million is 160 million, and if you make the assumption that if again, 14% of that population will have clinical illness that we will detect that gets you to 19,587,000 cases.

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So that's what we can expect to see, just to keep a 14% of all cases detected actually being registered as a case, and 50% of the population getting infected. Well, if you do the math on that, if for 365 days straight we had about 53,000 cases reported, that's what the number would come to, that is one year of what we're seeing right now happening every day. That would mean half the population would be infected, which, of those, about 14% of the people that would get

infected would be clinically detected. Now imagine our country experiencing 53,000 cases a day for the next year. That is not voodoo math, that is not, you know, crazy numbers.

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Now, surely we hope a vaccine is going to come along, and we hope that it will help get us to a herd immunity level 50-70% of the population, but if we don't, if even just half the population gets infected over the next year, this is the number of cases you could expect, and so I think we're confronted right now with the major challenge of deciding who we are. This is as much about us making a decision who we are, as anything about this virus. Are we going to take the short term pain, and this time do it right, and shut down, get the numbers down, keep the distancing in place, or are we just going to let it continue to transmit as is because it's inconvenient and then see this kind of scenario unfold? Now, I believe that frankly if we don't make these decisions now, we may make them next month, because I think a sustained daily number of cases of 52,000 cases is just unsustainable,

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and by the way, I just artificially said equal number of cases for the next year. We could see double, triple of these number for a short period of time, maybe a month, which would even be more devastating. So, when we think about where we're going today, we have to pull back and say, "Think about this. Don't just think about next week, next month, knowing that the devastation that will occur to society and to the economy will be substantial if we, in a sense, lock down again, and if you think I'm naive and crazy, so be it, but the virus is going to do what it's going to do, and you know, I have often said, with this virus, you know, you can argue with a thousand 2 year olds and have much better likelihood of a good outcome than one argument with this virus,

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because in fact, it will do what it's going to do, so I don't see any other choice, but right now we have to reconsider this, and I know politically it will be absolutely devastating, economically the impact will be substantial. We need to try to do what we can to take care of those who are suffering economically under these terms, and I got to tell you, I don't understand how we are going to reopen schools in this country if we have many states with these kinds of levels of virus activity, and we've got to get our kids back to school. Next week, by the way, I'll be covering schools in our podcast to address that very issue of what we can do to reopen schools, a critical, critical issue for us. So I know this is not a popular statement. I'm sure there are those who I will hear from who will be very angry with me, as they do, and how naive and how devastating it is, but I'm not the message.

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I'm just the messenger. This is what this virus is going to do. So we'll see, and we do have the examples, the good news examples that other countries have figured out how to get to a point where vaccine might be available without bringing down their country's economies, without having to, in a sense, distance themselves into this kind of pandemic fatigue, and it's up to us. Are we going to do it or not? It's going to take leadership. It's going to take courage. It's going to take vision, and it's going to take one pretty good public relations program to help people understand what our choices are. So, Chris, in short let me just say that I think we'll look back on this podcast 3, 4, 5 weeks from now, and we'll have some answers at that time,

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and all I can do is hope that we understand that as the old Oil Fram oil commercial used to say, you can pay me now or you'll pay me later, and I can tell you, as an infectious disease epidemiologist the cost of being accountable for paying later is going to be so, so much more than paying sooner.

CHRIS DALL: So, Mike, late last week two scientists sent a letter to the World Health Organization, signed by an additional 237 scientists, challenging WHO position that the coronavirus is not transmitted by airborne particles, but mainly by respiratory droplets. Just today, the WHO, in response, said that aerosol transmission can not be ruled out in some circumstances, but that more research is needed. Where do you stand on this issue? And what is your understanding of why the WHO has taken the position that it has?

DR. OSTERHOLM: Well, as anyone who has listened to this podcast over recent weeks knows, I am very much a supporter of the fact that aerosols do play a very important role in the transmission of this virus.

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Again, let me remind everyone what we're talking about with aerosols, or as sometimes called, airborne transmission. When you think about anyone basically taking in air or breathing out air, we are constantly bringing in to our body what is in the air around us, which often is influenced by the air that somebody else just breathed out. When you and I breathe out in normal everyday respiration, we breathe out lots of very, very small particles, basically aerosols. These are particles that, if I had to think of a way to illustrate it, we would consider them the BBs of the respiratory particles, with the bowling balls being those we call droplet particles, or droplet nuclei,

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and those are the ones, the bowling balls, that typically come out during coughing, sneezing, but can come out in some cases with speaking, but the vast majority just come out with the aerosolized particles when we're speaking or even just breathing and standing still, and what has happened over the course of the recent years, has been this kind of growing division between those who are often in clinical medicine and those who are in the areas of aerobiology, or studies of materials floating in the air or in the air and how they move, and what has become abundantly clear over that time is that aerosols, which can float in the air, and as I've described before to you, think of them as the dust you see when the sunlight comes through the window and you see it all floating there in front of you and go, "Oh my, I have a dusty house,"

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or, you know, you're somewhere in a department store and you smell perfume, realizing you're four aisles away from the perfume section, or even walking down the street, and you realize that someone walking 30 feet in front of you is smoking. Those are all aerosols that you basically inhale, and can in fact, in some cases detect their odor, but what's important here is that can they also transmit infectious diseases? And what this group did in terms of the letter that was published in the Clinical Infectious Disease Journal, with the 239 authors, basically said, you know what, we have clear and compelling data that these aerosols, this airborne transmission, does occur. It's well described for influenza, and it is a very important part of what's happened

with SARS-CoV-2. How important, we're not sure, but we know it's an important part. The reason this is important is because the World Health Organization has maintained for years,  
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that viruses like this, influenza virus, SARS, MERS viruses, etc. do not routinely get spread by aerosols, but rather by droplets. Those things that fall out close to you when you breathe out or you cough or you sneeze, and only rarely would viruses like MERS or SARS be transmitted by aerosols only if you're doing an aerosol generating procedure in a hospital, like doing a bronchial lavage or something where you actually cause particles to come out deep in the lungs, and I can tell you as someone who's worked a lot on influenza, that the data are abundantly clear that aerosols play an important role in the transmission of influenza viruses. The literature is complete with that, and there is clearly very substantial information today supporting the airborne transmission of the COVID-19 virus, SARS-CoV-2,  
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and that's what this document was all about that was published in Clinical Infectious Diseases and signed by these individuals, saying, "you have to understand that this is important. We have many different examples of where, indoor air in particular, people were infected by being in the same room and not close to someone necessarily, but they were breathing their air in, sharing air, and this has important implications for prevention, in terms of what kind of respiratory protection we need. It has implications for just how close do you have to be to someone to get infected," and so this is not just an academic discussion. So I commend the people that are doing this work, and the two primary authors of this piece, Lidia Morawska and Don Milton, are two of the giants in the business in terms of understanding airborne transmission or the aerosols.  
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Now today, news came out that WHO is at least considering this, as you mentioned Chris. I found their response still to be lackluster at best. They actually said, and I quote, "Many unanswered questions about transmission of SARS-CoV-2 remain, and research seeking to answer these questions is ongoing and it is encouraged. Current evidence suggests that SARS-CoV-2 is primarily transmitted between people via respiratory droplets and contact routes, although aerosolization in medical settings where aerosol-generating procedures are used, is also another possible mode of transmission, and the transmission of COVID-19 is occurring from people who are presymptomatic or asymptomatic to others in close contact when not wearing appropriate PPE. Now, I think that that was really one of those statements that said a lot but said nothing of them to say,  
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well maybe it's possible but we need more evidence, and this has real important implications as I said. One of the things you see in the media today already has been the fact of what do we make of this 6 foot circle around us. Is that always going to be protective? And the answer is no. Surely not meaning to start another great debate here. Clearly the farther away you are from someone the better it is in terms of potential transmission of SARS-CoV-2 virus, but even, we now have data today showing that with droplets, a cough, a sneeze, goes much further than 6 feet, and so this is not going to be a simple situation in terms of understanding what the implications are, but I think that it's a very important one. As many of the listeners know, on our

podcast, we at CIDRAP, are working with a group right now to try to answer the question of what is the infectious dose of SARS-CoV-2?

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How many of the virus particles do you have to actually inhale before you become infected? It's not just one, and that will in part be dependent on the time you're exposed, and the amount of virus that's in the air you're exposed to, and then any kind of effort to limit that transmission, such as using different kinds of respiratory protection, and so we're looking at that very carefully. We have 21 international experts in areas of aerobiology, industrial hygiene, respiratory protection, animal model studies of SARS-CoV-2, modelers who can help us put this all together, and we will be coming to you, hopefully in the near future with information that says, look, if I go to grocery store A and I'm in there for X number of minutes and there's two people in that grocery store,

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who, unbeknownst, are actually infected with this virus, and potentially blowing it into the air, they may or may not be wearing a face cloth covering, what can I do to protect myself? How long do am I in there before I'm at risk of getting infected, and we hope to bring this information to you soon. I will have to say that, again, you're going to hear more about this issue of airborne transmission. I think the bubble has, in a sense, been punctured now, and you're going to see a lot more of the information inside that bubble, supporting this coming out, being available in the public, and helping us to better understand how to protect ourselves. I come back to this over and over again. I worry when I hear people say, "well you can't tell the public that, they'll panic about that if you say 'maybe 6 feet isn't the right distance,'" and I've always believed, just tell the truth. Tell the public what you know and what you don't know,

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I am confident that they can not only handle the information, but they will process it in a way much, much better than we could've imagined. So, you know, we will do that, and we will share with you what we know and don't know, and hopefully that will help all of us do a better job to protect ourselves and our loved ones from getting infected.

CHRIS DALL: We have an email question this week that concerns when the coronavirus began circulating in the U.S. This question asks specifically about Minnesota, but we'll expand on this, because there have been reports from other states about the virus circulating, prior to the first reported cases. So, Linea writes, "I often hear people say they were 'so sick' in early February that they're sure they had COVID illness at that time. These are cases in Minnesota. As far as I can tell, there is nothing that suggests that COVID was infecting people here in Minnesota in February. Will you clarify when it was that Minnesota had its first documented or suspected cases of COVID?"

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So Mike, I looked this up. Minnesota's first official confirmed case was March 6th, but to Linea's wider point, is it possible that it was here earlier?

DR. OSTERHOLM: Well, thank you Linea, for that question, and I appreciate it. We will get you a copy of my book this next week for a very thoughtful question. Linea, your friends are like many who believe that someone in their lives or they, them personally were infected with this virus in December, January, February, or even early March, and it's very possible that we had

virus activity in Minnesota as early as January, given the international transportation routes and the number of people who come from Asia to Minneapolis/St. Paul, or through the Minneapolis-St. Paul international airport over the course of that time period. However, I can say that while the March 6th, the date for the first case documented here very likely is not the true first case,

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I don't think we have any evidence that there was widespread transmission of anything happening before early March. I'm aware of at least 8 individuals who live here in Minnesota, who had marked illnesses in January and February, in many instances these were very similar signs and symptoms you'd expect to see with COVID-19 disease, and they were all tested using antibody tests recently, and all of them were negative. None of them had evidence that, in fact, they were really infected. Now did any of them lose that antibody level as such that we couldn't detect it? It's possible, but surely for most of these I still would've expected to be antibody positive, even when they were tested. So, we know that every year in the wintertime in particular during the flu season, that we see these illnesses that we can't always understand necessarily what caused them,

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meaning we don't have the right testing done. Often times with influenza only 10-20% of the people who report with influenza-like illness actually have influenza. There's been a number of other virus agents that cause this. So I think that's probably what most people had during that January/February time period, and at least to date, we have no evidence that there was widespread transmission even if sporadic cases did occur that we missed.

CHRIS DALL: Now we're going to revisit an email question Dr. Osterholm answered last week from Joe, who had said he was getting some pressure to hang out friends who've been socializing in small groups, with masks, but was concerned about the safety, and wanted to know if there was a safe number of people to be around. Mike, you received a follow up from a different listener who didn't really feel like you addressed the question Joe was asking. Do you want to take another crack at it?

DR. OSTERHOLM: Well, I do, and thank you Anita for your very thoughtful email, and I went back and listened to my answer, and I let you all down.

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I should've done a better job. I didn't. So, Joe, I'm going to at it again, okay? And I promise to do a better job this time. In this case, you're talking about being pressured by friends to go out and hang out with them. Nobody said anything about going to a bar, and I kind of jumped to that level of going to a bar issue, and you didn't really talk about where you were going, except you were wearing masks, and so I would, again, reemphasize what I did say last week about being with your friends, if you're distancing, you're not driving around in cars, you're meeting somewhere, particularly if you're outdoors. You may be, you know, having a good time barbecuing in a park somewhere. Those are all quite safe type of activities. Stay apart, open air, I think that you'll do just fine, and so it's when you get to the bars that I get worried. That's when indoor air comes, you're together.

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Bars also are well known for being loud, and so you talk louder, which in the process of talking louder, you actually generate more aerosols out of that, and so at this point, I kept you from potentially "social contacting" people by giving you wrong information on physical distancing. So, Anita, thank you. As I've said to you before, old dogs can learn new tricks here, and you were right on the mark when I went back and listened to that. I thought, "who said that?" So, Joe, do socialize with your friends, particularly if they're hanging out like you talked about here, and wearing masks, in small groups, and they're not all together, that's exactly what we should be doing, so I appreciate that very, very much.

CHRIS DALL: And then we have another listener, who took issue with a statement you've made on two occasions about testing. Blaine challenged whether the U.S. ranks only 27th in the world of tests completed per capita,

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as you've noted in previous episodes. Blaine also pointed out that while testing started off slow in this country, it's gotten much better. So, Mike, does the U.S. really rank 27th overall in testing?

DR. OSTERHOLM: Well, thank you Blaine for your actually very thoughtful comment, and you're right on the mark about adding some perspective to this. At the time that I made the comment we were 27th in the world in testing among countries, in fact we were. Today we're now 25th. There are 24 countries that have done more testing than we have per million population, but what Blaine very appropriately noted, is that if you add that all up and look at it, a lot of the countries that are included include countries like Gibraltar, Monaco, and the Falklands, and they really are not comparable in size or in everyday activity like the United States, and that if you only looked at those countries that have at least 10 million in population,

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then there are only 4 countries, the U.K., Portugal, Russia, and Spain, that are ahead of us, and you're absolutely right, and so that's an important contextual point. I do want to just share, so you get a sense that our testing is not so different than many other countries, that would account for why we see so many cases, which has been put forward by some as an explanation for the case numbers we're seeing. If you look at the United States today, we have tested about 121,000 people per million population, so all of the numbers I'm going to give you are per million population. 121,000. Canada, below us, is only at 80,00 per million population. So, again, we're at 121. Spain is 122,000, Israel 129, Singapore 148,000, Russia 151, U.K. 166, Denmark 205,000 per million, and Iceland 277,000 per million.

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So, we are surely not testing as much as some countries, but in a sense, it's only appropriate to compare them to like countries in a way, and so thank you very much, Blaine. That's a very important point, and I appreciate your input.

CHRIS DALL: Finally, CIDRAP has a new Viewpoint out this week on surveillance. What can you tell us about that report, Mike?

DR. OSTERHOLM: Yes, we actually have a new surveillance Viewpoint out that I'm very proud of. It is a document that includes a number of authors who were former colleagues at the Centers for Disease Control and Prevention, or at the Minnesota Department of Health who

participated in this, and really it's a document that provides a national framework for looking at how we do surveillance for COVID-19 and SARS-CoV-2 infection,

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and there are really 3 takeaway points here with this report, and I urge any of you who have more interest in this to go to our website under the Viewpoint section and pull it off, but I think I could really distill it down into 3 areas that we really tried to hit home on. One, is our country's approach to surveillance so far has been lacking in both consistent methods and strategy. Each state has been like an island, and in many cases each county, and cities are like islands within the island of a state, and this has made it a really difficult activity then, in terms of interpreting, what do these data mean, because we've been challenged into finding the epidemiology of this infection and monitoring the impact of it, without having standardized collected information with all the data sources that we need to collect.

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So, for example, more information on the individual, what was their clinical status, etc. and this really makes it difficult to use these kind of data to understand where we're at, and again I come back to the Lewis Carol quote, "If you don't know where you're going, any road will get you there," and that surely has been in part, what's happened here. It's critical in terms of decisions like how do we do return to school policies? So we need to standardize this. We need to make it consistent. So, you know, if I can take my bank card anywhere in the world and put it into a machine and get money out, you know, and standardize that kind of information flow, why can't we standardize surveillance where we're trying to figure out who's infected, you know, what are the basic identifying information about them, and quickly consolidate that so that we can, in fact, provide the public with a better sense of what's going on.

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This is very important as we know that COVID has been disproportionately impacting communities of color across the nation, and we're missing data on race and ethnicity and surveillance data in a number of locations, and this severely limits our conclusions that can be drawn from these analyses. So we should be publishing for each state on their COVID dashboards, standardized and detailed data for demographic subgroups defined by combinations of, I'd say age, gender, race, ethnicity, location, etc. and these should all be publicly available so that we can understand what is going on, and finally I think surveillance is going to be very important to understanding what's happening with the cocirculation of the influenza viruses and SARS-CoV-2 this fall. We need to have better information to understand when is the big boost or increase in cases if they should occur due to SARS-CoV-2, what do they do to influenza, and how do they impact each other.

43:00

So I urge you to go take a look at this report, and I think you'll find it to be very helpful. The next report coming out soon is on drug shortages and what we're doing to address that and I can tell you right now they are very, very serious challenges for us, particularly as we see so many life saving critical drugs being used extensively in treating COVID patients, we are clearly in a situation where we have drug shortages that have major public health and personal health implications.

CHRIS DALL: Mike, are there any final thoughts or song lyrics you want to share with us this week?

DR. OSTERHOLM: Thanks, Chris. Again, I want to thank all of you who are listening to this podcast for being with us, and for taking time to get a sense of what we're thinking about at CIDRAP,

44:00

as I said at the beginning, I know you all have many opportunities for places and other venues to get your information, so thank you for being with us. This week, for some reason, was one of those, I guess you call it "tough weeks" where the information that we're all dealing with is very difficult at best, meaning that we're all dealing with our own way of trying to deal with this pandemic, and I say it was difficult because I heard from people who, it wasn't quite clear if they were upset with the messenger or the message. I heard from a minister who was very upset with me, because I wouldn't bless the fact that they could have a church service, indoors, with regular church, with communion and singing and wearing masks, without me blessing it, and I had to lay out all the challenges we'd seen recently with church related outbreaks, and just saying that, you know, I couldn't,

45:00

and I knew that I was respectful. I was trying to provide the best information I could, just on a factual basis. They wanted me so badly to confirm for them that it was okay and when I didn't, they didn't want to deal with the message, they wanted to deal with the messenger, and you know, I see that happening with a lot of people in a lot of different venues right now over this issue. You know, I watch it happen to many others, and I think it just reminds me, that again, this is a time we have to expect people are going to feel things like this. We're all frustrated. We're all feeling this pain and frankly, in some cases almost anger about what's happening, and it's only going to get worse over the course of the weeks ahead.

46:00

So I come back to the fact that now's the time for us to have our pandemic of kindness. I've moved on from epidemic. I want a pandemic of kindness, and you know, I would love nothing more, and we're exploring the possibility of actually putting together a website of COVID-19 kindness, and just examples of people who are doing kind things, and I have surely heard of a number of things like that in this past week too, and so I want to be very clear about that, and many of your emails have been inspiring. They have been so helpful. I try to read all of them. I'm sorry for those that I don't get a chance to respond back to. Information overload right now is a bit daunting, but we're all hungry for that kindness and that sense of helping each other. So think about it, if we come back to you with the idea of a website, COVID-19 kindness, you know, how we could populate it, because I think we've got lots of stories that could, in fact, be there.

47:00

In fact, those I dedicated this podcast to in the healthcare side I can tell you there are an incredible number of stories there. So, let me just move on and say that, thank you to Lisa, one of our listeners here that suggested a song to me for this week as fitting and appropriate. Lisa had no way of knowing when she said that, that this song has intense personal meaning to me. It was written by, I guess I would say songwriter of the century, kind of voice Paul Simon. We all, those of us who are older at least, all grew up on Simon & Garfunkel and Paul Simon, and in

January of 1970 he released "A Bridge Over Troubled Waters," and it was, I think, one of the most spectacular songs written in my high school/college age generation.

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This song has intense meaning to me. It was a time in my life that was very difficult as a young teenager, and I remember listening to this song many, many times, in some cases tears literally streaming down my cheeks, and so I think today, we are in troubled waters, and we've got some tough days ahead, but you know, this song should be the anthem that we remember. So, here it is, Bridge Over Troubled Waters by Paul Simon: "And you indeed are at our side. When you're wearing, feeling small. When tears are in your eyes, I will dry them all. I'm on your side, but when times get rough, and friends just can't be found. Like a bridge over troubled water, I will lay me down. Like a bridge over troubled water, I will lay me down.

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When you're down and out, when you're on the street. When evening falls so hard I will comfort you. I will take your part, oh, when darkness comes, and pain is all around. Like a bridge over troubled water, I will lay me down. Like a bridge over troubled water, I will lay me down. Sail on silver girl. Sail on by. Your time has come to shine. All your dreams are on your way. See how they shine. Oh, if you need a friend. I'm sailing right behind. Like a bridge over troubled water. I will ease your mind. Like a bridge over troubled water. I will ease your mind." Thank you, Lisa, for that beautiful suggestion, and thank you to all of you, I look forward to hopefully, some of you at least returning next week when I will cover the issue of reopening and schools, and what we must and can do about taking care of our children.

50:00

Have a good week, all. Be safe, and most of all, be kind. Thank you.

CHRIS DALL: 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 come up with the latest COVID-19 news by visiting our website: [cidrap.umn.edu](http://cidrap.umn.edu). The Osterholm Update is published by Maya Peters, Cory Anderson, and Angela Ulrich.