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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 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. We're going to cover several topics today on the podcast, Mike, including a look at CIDRAP's forthcoming COVID-19 Viewpoint on testing and the latest vaccine news, but before we get started what are your opening thoughts for this episode of The Osterholm Update?

DR. OSTERHOLM: Thank you, Chris, it's good to be with you again, and it's good to be with all of you again, who are listening to this podcast.

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I must say that over the course of the past few weeks, getting the feedback I have from all of you, with your many very, very thoughtful comments, I feel like, if anything, we've somewhat developed a family here of people all who have a similar concern, are seeking the same information, and hoping for the very best, so I have to say that, thank you to all of you who are listening. As I've done in the past, I want to dedicate this particular episode to what was, to me, one of the most heartbreaking kind of situations regarding the COVID-19 experience. I saw an interview this past week with children whose mother was a nurse at a New York City Hospital who died as a result of her infection, which was very likely acquired at work, and you know, so I really dedicate this this session to all the families who have lost loved ones as health care workers or first responders who are on the frontlines.

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We thank you, we know that there will be nothing that will ever be able to adequately compensate you and your lives for the loss of your loved one, but thank you very much for being there, and just know that their efforts were not in vain, and we're a better country, and a lot better in terms of the health of our country because of what you've done, so in that sense we welcome you on board too.

CHRIS DALL: Mike, more than two months since the pandemic really hit the U.S., many parts of the country appear to have, for better or worse, entered the post lockdown phase, with some states moving more quickly to reopen than others. Where are we in the trajectory of this pandemic?

DR. OSTERHOLM: Well, what we have to remember is what we were originally attempting to do with these lockdowns when they first occurred back in March,

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and that was we had just come out of a situation as it unfolded in China where we saw the very rapid escalating of cases, the very serious health challenges in Wuhan, in the Hubei Province, and seeing this as in a sense a house on fire kind of event. It was at that same time we were seeing the situations emerge in Europe, in particular in the areas of northern Italy, the Milan area, and with this, we in this country, and particularly as we saw unfolding in New York responded with the idea that we are trying to flatten the curve. If we heard that term once, we

heard it a hundred times in our discussions about what we were attempting to do, and I think what's happened is that we have not evolved our thinking into, "Where are we going next? What is happening next? Why are we doing what we're doing? And how does this sustain us for the entirety of the pandemic?" Again, I come back to this situation of the past few week's discussion, about the fact we're in this for many more months to come, and so what are we going to do next?

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And I think that one of the challenges we have is we've just not evolved that thinking, and what we're trying to accomplish, and we're really focused right now on somehow reconciling information about cases that continue to increase in number in some locations, other locations where they're dramatically decreasing, and coming up with a consistent national policy. In the process of all of that, we've also had the situation where we have clearly severely depressed our economy. We have put people out of work in this country. We've had a tremendous amount of suffering from an economic standpoint, and so what has happened is we've now evolved from a discussion of flattening the curve, where everyone kind of more or less you know put their shoulders into it initially because they saw this as coming to every little town, every county every state, in the country, to one now saying,

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"Wait a minute, you know, I'm not sure how bad this is in my area. I think this is one of those things about nursing homes and prisons and drug treatment centers or homeless shelters, meatpacking plants, but it's not so much in my community, in many cases," and for those areas that were very severely impacted early on, they can now say things are getting better, and so what we need to do now is ask ourselves, "What is our next goal as public health?" One, we have to recognize, it will not be a uniformly distributed kind of outbreak, meaning that someplace it'll happen sooner than others in this first wave of activity. Second of all, as cases do come down, how do we do any further action to try to prevent cases if there suddenly is an increase in cases?

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You know, we saw basically almost all the states in this country decide to relax their distancing recommendations, governors who I think are seriously trying to do the right thing, trying to understand what is best for their state, both from a public health standpoint and from an economic standpoint, are now trying to find out "What's our next step?" But we had an agreement, I thought, generally speaking, in terms of the White House criteria that were supposed to be used to relax states into releasing the populations back into everyday life, bringing back the economy as we know it. Those seem to have gone out the window. I really haven't seen states at all try to match up with those requirements, and I'm not being critical, as much though as it sets us up for the next phase, it's if I don't know how we came back, how will we ever know what to do if we're going to have to somehow restrict our economy again, bring more distancing back in? Is it going to be a one fold, two fold, five fold increase in cases?

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What will it take? And how will we come to some decision that this is what needs to be done again? And I will just continue to say over and over and over again, it's all about viral gravity.

This virus is going to keep transmitting. We are a long, long ways from that 60 to 70 percent herd immunity level, so I think the challenge we have now is really saying, "Well what are the models tell us?" And this is where I think we're really, in a very limited way, not going to be able to rely on any, really what I would consider to be solid data, about where we're going. And what I mean by that if you look at models, and you know, I have said this on multiple occasions on this

particular podcast, you know, all models are wrong, and some may give you helpful information, but there are basically two kinds of models, and one is a forecasting model, which basically just takes information that's already happened and tries to, in a sense, tell you, based on this, I extrapolate to this is the next one.

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It's kind of like taking a sequence of numbers and guessing what the next number is going to be and getting it right because you see a pattern. Very shortly, when we see the cases drop, that's going to continue to tell us the case is going to drop. I'll come back to that in a moment, because we're making an assumption that they're dropping for reasons I don't think we can necessarily say, but they also then don't tell us if they may come back up. The original version of this model was the one from the University of Washington, the IHME model, that basically have not provided us necessarily, even on just extrapolating the numbers, really reliable estimates of what might happen. The other kind of models we call mechanistic models. This is where, basically, they're trying to take data and bring it together, like, for example, "How much transmission might occur? What might it look like? What's the rate at which will occur?"

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How many people will be immune so that they become rods in the transmission reaction situation? And what does that give us in terms of kind of predicting long term outcomes?" The best examples of this were, in fact, the model that came out of the Imperial College group in England that projected out to two years, assuming that this herd immunity would have to occur, how might this look? And I think all of this really, this information is constrained a tremendous amount, by just what do we know about this virus? And so let me come up with a third model, that is surely not based on statistics, but it goes back to the original estimate of potential scenarios that we laid out several weeks ago in our scenario document, and what if we have the following happen? It doesn't matter what we do, we release people back into society as they ever were, businesses open up, and cases keep dropping.

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One, I'm certain that everyone will be pleased, and we surely don't want anyone to be infected, ill, seriously ill, or die, and we'll claim victory. We'll say, "Wow, we did it. Look at, we won". That will be so, so short-sighted, because then, if that's what's happening, I am much more convinced that it's very possible what's going to happen is. I'm gonna have that influenza-like scenario model that I shared with you in that previous document, where for reasons we have never understood, I've been asked this many, many times, "Why does this happen?" We don't know, and let no one tell you they do know, why an influenza-like virus will disappear, and I say disappear, literally, cases may just come to a grinding halt. We go several months, and then all of a sudden, we see this next big peak, a second wave, much like has been seen in previous influenza pandemics.

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Now, as you may recall, I've said all along, I don't know if this virus is going to act like an influenza virus or not, it sure has up-to-date, but I don't know that will be the case, but my biggest fear is, if in fact we see a big drop in cases, and it's not due to any human behavior, meaning, we're actually opening up, we're not locking down, and I've already shared with this podcast audience, that seasonality does not appear to play any significant role in coronaviruses. I mean, look at the transmission right now. We've got it in Brazil, we've got it in the northern hemisphere at the same time. This thing's not acting at all like a seasonal virus. So my concern is, if this goes away and from that standpoint, we then see models which could not predict that, there's nothing a model could predict here. No model is going to give you this story. The only thing that's going to give you this story is if, in fact, the cases just disappear, and so stay tuned, I think we are really in, what I would consider to

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be right now, one of the most critical periods of this pandemic, in terms of projecting forward. You may recall, our group, as early as mid January, began predicting the pandemic, we made predictions about how it unfolds in late February, early March, we made predictions about how it might very well look in countries, and then, I've shared with you, that I was as far as my headlights could go. I don't know, after that, what it might do. This next few months, this next month even, will be very telling, and we're gonna know a lot more, I think, about what this might look like, whether it's one of the slow burns, whether it's this kind of foothill type approach, where the outbreak bumps here, bumps there, they keep occurring, going, or if we basically go quiet, and that's the quiet before the storm, which could be a very sizable wave. Remember, we are at 5% to 15% across most the country, a limited number of places in New York area may be at 20%, but I just keep reminding people over and over and over again,

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from a planning standpoint, think of all the the pain, suffering, death, and financial destruction we've done, with only 5 to 15 percent of the people in this country infected, and for that matter, around the world, and so it gives you a very sobering sense of what we have to anticipate going forward to get to that 60% to 70%, just to begin to slow down transmission.

CHRIS DALL: You've been saying we're in the second inning of a nine inning ballgame, are we still in the second inning?

DR. OSTERHOLM: You know, it's funny, because I'm getting that question a lot now too, like, you know, are you stuck in the second inning or not? And actually, I've actually gone to a couple ball games where one inning took up half the game, because of the strategies, the hitting, etc, etc, I do think we're still in the second inning, and while some people find that hard to believe if I've been saying that for the last two months, but you know we're at the end of what would be this first wave, this first situation if this is going to be an influenza-like experience.

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If we see the cases decrease to the point of where it appears everything is under control, then I think we're quickly shifting in 3 to 6. If we see more of a slow burn just continue, then I'd say we're in inning 3, maybe getting to inning 4, but what we have to understand is just like in real baseball one inning can take an hour, four innings can take a half an hour, it's all about what

happens, and I worry desperately that the next inning could come quickly, it could be a long, long inning, longer than the ones we've had. So I still say we're in the second inning, I suspect that within the next month we'll know if we're going for inning three to six, and in big order.

CHRIS DALL: So, one of the big challenges in reopening the country and the economy and moving forward, as we've previously discussed, is having enough testing. What does CIDRAP's next viewpoint have to say about COVID-19 testing?

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DR. OSTERHOLM: Yes, in fact today we just published our most current CIDRAP Viewpoint entitled "A Smart Approach to COVID-19 Testing". Right now, in this country, there seems to be a general sense, that it best is understood in the mantra "Test, test, test". I've heard one governor say that, I've heard most of them say that. I've heard that from public health officials, people who are in the policy area, many who have never worked in this area at all, of public health, who basically continue to say "test, test, test," as if the current testing reality is going to bring us some difference in terms of what's happening with this pandemic, and what really is the reality, is that this is a very complicated system, and it's a cascade of interconnected factors that and most of our approach must be strategic around those factors. What I'm talking about is what we've defined as smart testing,

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where what we're really talking about is developing the right infrastructure in a laboratory area, and how we support that within the supply chains that we need, not just in terms of reagents and swabs, but a whole number of different chemicals, machine parts, even expertise. Then we have to be testing the right population. Who are we testing, and why? What's our purpose? And then who are we testing within that population? Then we need the right test. There are a number of different tests today, there's molecular, there's antigen, there's antibody, and they're all appropriate in different settings. and we're not distinguishing that. We don't understand even within the different categories the tests that are most effective or not in giving us the results we're looking for. Then we've got to get the right interpretation. You know, we've been frustrated with the fact that if you look at test sensitivity and specificity in many locations, these tests have been poorly, poorly applied to the population, and interpretations made that are absolutely inappropriate, and then, finally, the right action.

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What happens if you get a test result? Does it get back to the patient? When it gets back to the patient, what happens? If, in fact, it is something public health needs in order to track the pandemic, do they get that information that they need? Does that help in terms of making sure contacts are following up and that action is taken? So, smart testing is really right infrastructure, right population, right tests, right interpretation, and right action, and if you don't have that whole system, you really don't accomplish anything with just a test. So what we really tried to do is lay out, what are the pressing issues. We have a whole series of recommendations. We tried to define the points that we're trying to make. Let me just give you an example of testing that is not part of a smart system approach. You've all heard about, over the course of the past week, the challenges that have come up at the White House, where they were using the Abbott ID Now test,

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which is a rapid detection test, results in 15 minutes, and they were using it as if it were an absolute wall around the White House, the senior leadership, protecting the people that we all know need to be protected, and yet this test had a clear challenge in terms of false negatives, people who were really infected not getting picked up. I wrote about this over three weeks ago in my New York Times Op-Ed piece about the problem with this test, and yet it was continued to be used at the White House, where up to 50 percent of the people in one study were found to be negative when they were really positive for the virus. Well, you know, that's like, basically, you know, having a submarine with five screen doors. It's not gonna last. How did that happen that test got applied there? How did that happen that no one caught the fact that you needed to screen anyone who was test negative with the PCR test to be sure that they were negative, which of course is going to take a day or more to get done?

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So, if it could happen at the highest levels of government, where we're supposed to be protecting those in terms of at all costs, I can go through a litany of other situations where testing has just been wrong, and it's not been effective, and so when you hear this mantra "test, test, test," it is mindless. It is not what we're talking about. We do believe testing is very important to responding to this pandemic, but we have to understand the success of a testing program should be measured only in part by the number of tests completed. We lay out in our recommendations how to approach the smart testing for COVID-19. We lay out a recommendation to the Secretary of Health and Human Services about the appointment of Blue-ribbon panel of national experts that we recommend then, that they address a very

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specific list, eight different points that are desperately needed right now, from supply chain management and supplies in general to the infrastructure and laboratories. Has anyone here thought about the fact that we're now running these machines 24/7, in ways they were never anticipated to run? Think about if you bought a new car, and you ran it at 100 miles an hour, 24 hours a day, for four weeks. Do you think that thing would be running the same way at the end of four weeks with no maintenance at 100 miles an hour for four weeks? No, it wouldn't. We're seeing that happening with the machines right now. No one thought about that. An infrastructure needs to be there, well beyond just, "Can I run a test today?" And then, when we get into the system today, we have many locations where having taken curbside testing, incomplete information was obtained, we can't get a result back to somebody, somebody can't get the result because their name and ID doesn't match up with what the person wrote down on the test, and so, therefore, for security reasons, they won't give it a result back.

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We have very incomplete information, often from testing going back to health departments, and so this has got to be part of the system, and so we try to lay this out in very real terms, with clarity, what needs to be done, and if you're not doing smart testing for COVID-19, we are missing opportunities to address the situation with fewer tests, but much higher quality outcome, and that's where we need to go.

CHRIS DALL: You talked about vaccines last week in the podcast, Mike, and this week we had

some more vaccine news, as Moderna Therapeutics announced that its RNA vaccine candidate produced an immune response in eight volunteers. Are there reasons to be excited about this news? And are there reasons to be wary?

DR. OSTERHOLM: The image I'd like to leave everyone with right now, as we've talked about COVID-19 vaccines, is one, the gate has just been opened at the Kentucky Derby.

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The horses are in their first ten seconds of the run, and we're already trying to declare winners and losers, and who makes it and who doesn't. Any kind of interpretation about the data from the Moderna study is very premature. Good news is that they did find what they found, but in fact if they hadn't found that, we'd all be in big trouble. We're a long, long ways from understanding with these eight people, where we found antibody, that, in fact, we now have an effective vaccine. I just continue to remind people that there are over 100+ vaccines under consideration right now. They have different sub platforms for how they're going to be used, what they do in terms of trying to elicit immune response, and we just have to wait. I think that, right now, I would expect that we would see successful movement forward with these vaccines.

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The thing that would be concerning is if we do have problems. And I think that it's just way too early, and I'm struck by the stock market. I have from a public health standpoint, God knows we all know I have no expertise in money, trust me, but having said that, I can't believe how people rush in and rush out on news that I would find highly incomplete, without giving us any real nod "yes or no?" what we have here, and so, I think, this is a possible vaccine that could be in the mix. We all want a vaccine so badly, but I would urge people, yesterday, May 19th, Helen Branswell had a story in Stat, of vaccine experts saying Moderna didn't produce data critical to assessing COVID-19 vaccine, and I think she's right. We still have huge questions about this, doesn't mean that it is a problem, but we can't assess it, and so at this point I remain optimistic that we are,

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as a globe, without a doubt, applying the kind of incredible infrastructure, planning, and execution of vaccine evaluation. If we can get a vaccine in as short a time as possible, I believe this system is set up to do that. I think there are many challenges ahead for us with vaccines as I've already said I look no further than what happened last week, when Sanofi, a company in France, announced that they would, with United States support for their vaccine research work for COVID-19, would make their first doses available to the U.S. The French government reacted with clear and compelling anger about, no, you're a French company. The next day the CEO had to retract his previous statement. We haven't even begun to work on yet, the issues around what it means right now in terms of global supply,

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how we will not just make sure that the vaccine works, but that, in fact, that the vaccines can be made, that the supply chains for every aspect of the vaccine is there, to make those doses, to make those vials, those syringes, those needles, whatever is needed, and then we have an agreement where the vaccines going to go, so we're in the earliest stages, keep thinking about, I'll start using the Kentucky Derby analogy now, and tell you when we get to the first turn, and

we're a long ways from that, but the bottom line, all the horses are still in the race, they are looking good, but we're just beginning.

CHRIS DALL: So, Mike, let's get to an email question from one of our listeners, this one from Dan, who asks, I think, an important question as we get into the summer months here, and Dan asks, "While I'm sure it's possible to contract the virus outdoors, is there anything about respiratory transmission, or the virus itself, that would make outdoor transmission less likely? Does an outdoor gathering, like an afternoon barbecue, pose a significant outbreak risk, if there's an asymptomatic person in attendance?"

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Good news this week, not surprising, there was a study that was released out of China, in which they evaluated more than 300 outbreak clusters of COVID-19, looking at people who were all exposed to one individual, and in these outbreaks they vary in terms of three or more people at an event, included more than 1245 cases, and they found that only in one instance, and even this one is not clear how they found this because only two cases, occurred where the contact was actually outside. All the rest of them were inside. Now I do have to say there is some challenge with that, because it occurred during the winter when the Hubei Province outbreak was most prominent and it was cold, so people may have spent more time inside, had they been outside, but I think the data generally support what we've been saying all along,

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is that the aerosols that one creates and even the droplets dissipate much more quickly outside, any air movement moves them, and that the chances of time and exposure, meaning that how much virus is someone excreting, how close are you to that virus, and how much time you spend, because you do have to have infectious dose acquired there, is such that being outside and walking, moving probably poses a very, very small limited risk, and if there was ever a time that we as a country would like to get our seedlings under us again, it's now. The spring is here, moving into summer, and so I strongly encourage that people do get outdoor activity, but not in large crowds. You know, again, I would say walking, you know, in parks, in locations where you're not cheek to jowl with someone, is one of the best things you could do, and I think that the risk is incredibly low for those kinds of events.

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So everybody on this podcast, start getting your walking shoes on, stay healthy, walk, and when you're outside avoid crowds, avoid people being all congregated together as much as you can, but even then, the outdoors surely does provide us with a buffer there, as these aerosols and droplets dissipate much more quickly. They move quickly with any air movement, which we're more likely to see outdoors.

CHRIS DALL: There were some other interesting findings out of Asia this week, the Korean Centers for Disease Control and Prevention yesterday released a report with some new findings on 285 COVID-19 survivors who had tested positive for the coronavirus after their illness had resolved. What's significant about the new findings in these patients?

DR. OSTERHOLM: Well it's exactly what we've been telling you. As you know, I've discussed this on previous podcasts, I was highly concerned that the initial results coming out of Asia, studies both in Korea and China, continuing to find people chronically

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infected, or reinfected, were mistakes, and I have felt that from the very beginning that what we were witnessing was a natural annoying phenomena with PCR testing, where when someone has viral infections it's not unusual to actually clear the virus itself, but in the process of having made all these the virions, these individual viruses, what happened was they created a lot of debris, meaning that was incomplete parts of the virus that never assembled into full virus, we know you can excrete that in certain body fluids for potentially long periods of time. This is not unique to COVID-19 disease, or SARS-CoV-2 infection, and so I had raised multiple times, again addressed it on this very podcast, that I was certain that this was just PCR picking up residual debris being excreted, and that it could even be intermittent, so when someone says, "well they tested for four straight days and they're negative for three days, now they're positive, haha they're reinfected,"

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that was just part of the natural biologic phenomena declaring viral debris. Well we're very happy to report that yesterday, the Korean CDC actually released a study of 285 COVID-19 survivors, many who they previously said were these chronically infected individuals, they all had tested positive for SARS-CoV-2 after their illnesses have long resolved, and in some cases they went from intermittent status of yes, no, yes, no, no, no, no, yes, that kind of thing. What they did, and many of us were voicing our strong support for doing this, was they actually then began looking at virus culture, so they started testing these people both by PCR and virus culture, and guess what? Not one of them had a live virus found any of these body fluids or PCR positive, and so it really confirms what we've been saying.

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We have no evidence of chronic infection at this point, I wouldn't rule it out, it could happen in an immune compromised individual, but it's going to be a very, very rare event, and number two, we don't have any evidence of people getting reinfected. This point that people had made before about "haha, you know, now that I've been negative for a week, and I've got it again, I must be reinfected," so this is good news. Hopefully this ends the debate over the idea of reinfection, and people stopped calling PCR tests, in a way, that makes it sound like their virus recovery, they're not, and I think this also speaks, by the way, to the fact that in many of these patients, they were PCR positive for some time, when in fact they couldn't be found, they didn't have virus, supporting that as people recover, clinically, even though they are still PCR positive, we can't assume that they're still infectious. I think, for most of them, they're not, and I think this was very good news, and welcome news that gives this chronic infection, reinfection issue off the table.

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CHRIS DALL: Mike, over the last few weeks there have been increasing reports of an inflammatory syndrome in children that appeared to be linked to COVID-19, how concerned are you about this, and how will this impact discussions around school starting up again in the fall?
DR. OSTERHOLM: Anything that involves kids is a numerator. It's never a rate. It's not a numerator and denominator. We know that, and as a parent, as a grandparent, I'm the first one to tell you that. At the same time, we have to look at this from the standpoint of a numerator denominator in this regard. We do see a new multi-system inflammatory syndrome occurring in

children. It was first reported in Italy, back as the outbreaks begin there back in April, in which cases were from one local area there in Bergamo, that the peak of the pandemic, they ended up seeing seven boys and three girls who had this Kawasaki-like disease.

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Kawasaki is a disease named after Dr. Kawasaki from Japan, who first described it, in which we've known for years, many, many years, that, in fact, this was likely a post viral syndrome condition, where there was an immune response causing vasculitis or inflammation of the organs, particularly the blood system, that also often resulted in aortic aneurysms in these kids that would occur, and so this is not new. I might add, parenthetically, that I was involved with Kawasaki research back in the 1980s and 90s, and had the good fortune to meet Dr. Kawasaki at that time, a very old man, at a meeting in Hawaii, and I was always struck by his incredible kindness and thoughtfulness about this, and we still, to this day, don't understand completely what causes Kawasaki other than it often follows having had what appears to be a viral syndrome.

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So now we have these cases that first occurred in Italy, we see cases now in England, the Netherlands have reported cases, the United States now has reported cases. In this past week, the CDC actually issued a health alert entitled "Multi-system Inflammatory Syndrome in Children Associated Coronavirus Disease 2019" where they've asked for cases to be reported. Ones that have fever, laboratory evidence of inflammation, the kind of classic symptoms that we see with these. Generally speaking, the best data we have says that most of these patients will fully recover, their treatments have been using actually immune globulin, which was used back in the Kawasaki patient days of even 30 years ago, but appears to be somewhat successful. If you look at the number of cases in the U.S.,

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which in New York right now, has the highest number, which as of yesterday, had 15 patients with this, and New York state itself has identified 102 patients with similar presentations. I just have to remind people, that this is an important disease, it's a serious disease, but at the same time, on a given year of influenza, we'd expect to see 80 to 100 young children die from influenza, and we don't close schools, we don't change what we do with these kids in terms of daycares, when they get influenza. I'm not suggesting that we not be sensitive of this, we have to be, I can't imagine being a parent of a child who does develop this and dies, I can't even imagine that, but at the same time we have to put it in perspective, that it is clearly a manifestation that is rare, and we're going to learn a lot more about it. Now that may change over time,

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maybe it'll become more prevalent in our population as the SARS-CoV-2 virus spreads, and we'll just have to stay tuned, but right now I think it does reflect clearly, a post infection syndrome with COVID-19, and it's not something that is brand new, relative to the overall condition, but it is new relative to COVID-19.

CHRIS DALL: Mike, you mentioned the CDC in a recent Wall Street Journal opinion piece, former FDA Commissioner Scott Gottlieb wrote that, "the CDC hasn't been fulfilling its traditional role during this pandemic of publishing data that clinicians can use to care for patients, and that

the agency in general has spoken infrequently and with reticence on COVID-19". Is that a fair criticism?

DR. OSTERHOLM: Anyone who's listened to me on this podcast over the recent weeks, or knows me at all from a professional, personal standpoint, knows that I'm not afraid to just tell the truth, and let it be where it is. I learned a long time ago, anyone who works with me, my students all know, when all those fellows just tell the truth, it's the most important thing you can do.

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So I'd be the first to criticize CDC, and I did that, in hopefully a constructive way, back in February when we had major problems with the testing situation. There's no two ways about it. CDC failed us in that regard, but as an agency goes, CDC has been a crown jewel in public health in this country for years, and I think it's done the very best it can do in this situation. It's easy to take potshots at this place right now, just as I saw one of the senior White House officials do last Sunday in the TV talk shows, and it's absolutely unfair. Very few people realize right now there are hundreds and hundreds of CDC employees out in each of the states helping state health department's deal with many of these conjugate living and conjugate working outbreaks. I, you know, a comment that was published by Scott Gottlieb in The Wall Street Journal, former commissioner of the FDA, was just absolutely off the mark.

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It was wrong, basically saying that CDC's not doing its work to get information out. Here on the CDC website, they've done an amazing job of getting information out under some difficult circumstances of getting clearance. Many cases of disease don't get reported to state health department's right away, which then go to CDC. They're a recipient of this information. They can't make it up. They can't be at the bedside. One of the problems we have with large outbreaks is that everybody's under stress at the time. The fog of an outbreak can be absolutely oppressive, and so it's really a hard time about thinking about publishing things or getting information in, when you're just trying to save people's lives. CDC works through that all the time. So I just have to say, I'm so sorry for the people at work at CDC that have to take this kind of discussion, as if somehow they're failing the nation. I think they need to be able to step up. I have every reason to believe that their lack of public presence on the Washington DC scene,

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is much more a function of what they're made to do, not what they want or can do, and I think that that's a very important consideration. So I would urge anyone listening to this podcast, you know, if you have a chance send somebody you know at CDC an email and tell them thank you for what they're doing, and, you know, we need them. They have an incredible level of expertise. They're starting a major study right now, looking at the seroprevalence of this virus in cities throughout the country, very important study. They just quietly keep doing what they do, and their website is complete with information. It's a very impressive effort, and even when they can't get us the kind of information we want, just know that's not because they haven't tried. You all know about the reopening recommendations, how they were stopped, by the White House, from being published, and then revised ones were published. So, you know, I'll be the first one to say if CDC, I think, doesn't fulfill its duty, is what they need to do, but I'll also be the first to stand up and say,

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"Thank you, CDC. We're very fortunate to have you. What you're doing, state health departments, local health departments, around this country are so appreciative of what you're doing to support them," and I hope all of us on these podcasts understand that we owe them a debt of gratitude for what they're working on under very difficult conditions.

CHRIS DALL: Well, we've covered a lot of territory today, Mike, but do you have any last thoughts?

DR. OSTERHOLM: First of all, I do have some thoughts. Haha, me without thoughts. I want to thank all of you who have been listening to these podcasts for the recent weeks with such poor audio quality on my behalf. You know, I'm doing this from my home office. We surely have not been set up to provide the quality of audio that you all want and need and should have. I take responsibility for that, trying to get it fixed, but in one of those moments where you kind of have to say to yourself, is this really possible?

41:00

There's a company in California, Universal Audio Company, owned and run by Bill Putnam Jr., and one of you is a very important critical lead individual there, Dan Fulop, had been listening to our podcast, and unbeknownst to me they've taken an interest not just in the podcast, but the quality of the sound, and so, you know, Universal Audio company is a designer and importer of audio and signal processing hardware for professional recording studios like sound broadcasting fields, etc. They're well known among the most prominent bands in the world, and they informed us at CIDRAP, to help improve on this, they are sending us an entire audio studio for us to use to record these podcasts. I can't tell Bill and Dan nearly enough, thank you, for that very, very kind gesture. Now, I can't promise you that the actual content is going to get any better, but I can promise you the sound will get better.

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So from that regard, I just wanted to say, what great news, and hopefully by next week we'll have that new studio in place, and I'm going to have to up my game in every way possible. The other thing I just wanted to discuss before we go, is something that, I've had one of those weeks again, where trying to pull all this together, where we're at, what we're doing, what we're feeling, what we're saying, and I am committed, and everyone at CIDRAP knows we all are committed to not only thinking but feeling, and, you know, I never understood in all my years, what it must have been like to be in the Civil War and watch families divided, where some fought for the North, some fought for the South, and how that would have been so painful, and, for the first time in my life, I'm actually watching that happen in modern history.

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This issue has so polarized our country. I know of families right now, where kids are not talking to you, siblings are not talking to each other, not talking to parents. I've seen some of the actual language shared back and forth, where there is an absolute belief that this is a conspiracy, that it's not real, that it was an attempt to destroy the administration, of the economy, public health people who can't understand why people are out and about where they should all be locked up, etc, and I only can say that we have a lot of work to do to understand this, because, again,

coming back to the fact we're in the earliest days of this, and we have to understand that, this is the virus that's doing this. It's not public health trying to, you know, say we're going to do this or that. This is this is a laws of physics, chemistry, and biology, all wrapped up into one package called a virus, and it's going to damn well please do whatever it wants to do,

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with our limited ability to shave off the curve, to try to reduce the full impact of what might be happening at the moment, but so I just want to say that I think all of us have to take a step back and say, "What are we allowing ourselves to be part of? What's happening now? What's happening in our families?" And I've seen this too much, I actually have a good friend, I hope so, I hope it's a good friend, who won't talk to me right now, because I'm part of the conspiracy, and I've known this individual for a long time. I can't tell you how hard that is, and I know there are many of you on this podcast who are experiencing exactly the same thing, and so, we're learning. We're learning how to die by this virus, as I've said many times, very painfully learning about that, and we're now painfully learning how to live with it, but I have to end this with emails. I am now getting upwards of several thousand emails a day.

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I am not doing a good job at all of staying current, so for those of you who sent wonderfully kind emails, thank you. One day I will read all of them, I promise, and hopefully respond but sometimes, for some reason, certain ones just come through, and I just have to share a couple of these with you, because I think they embody what the people who listen to this podcast are all about. Bob sent an email, in which he says to me, "How do you stay positive during this crisis? How do you stay grounded in science and deal with the emotions of anger and frustration when you observed so much of the country going against science and common sense?" And, at the same time, another very thoughtful email came through from Paul, who is a psychologist, and someone who is a research psychologist, his work focuses on the effects of human behavior on our stress response, and he wrote and said, "I've been telling patients and colleagues to engage in healthy behaviors, so that if and when they become infected their body is functioning as optimally as possible, as opposed to already rundown".

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In other words, if you're about to embark on a brutal road trip, take care of your car beforehand, change oil, rotate the tires. You have a much better chance of completing the road trip if your car is running optimally begin with. I just don't hear this point being emphasized, and it's something everyone should do, and then he went on to say, "You touched on the importance of healthy behaviors at the end of each podcast, when you emphasize the importance of being kind to one another. I wonder if you might be it might be beneficial emphasizing importance of being kind to yourself as well. Take care of your body, reduce stress, meditate, etc, whatever is restorative," and, you know, I share that message with both of these. As we heard from Bob, I think it's really important that we do understand that we're going to feel these emotions. We're going to be angry, we are going to be frustrated. We're not going to, in some cases, have the wherewithal to have a respectful conversation.

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We just need to walk away, and at the same time I think what Paul has shared with us is equally important. In that regard, we still have to take care of ourselves and find those things that make

a difference that, and I'm the first one that has to do what he's preaching here, because I think he's right, and I'm not sure I've done it all so well. I continued on, March 10th is the last date I got to see my grandchildren except on FaceTime, but I think that now is the time that all of us need to look more, we're in the long haul. We got to prepare for that, and I don't want any of you to fall by the wayside, before that long haul is over. We need to stay together. As Ben Franklin once said, you know, "We must hang together. We surely shall hang separately, and I'd much rather hang together with you all than hang separately," and finally, I just want to end it, again, making a plea. You know, there's only some things we can do about this pandemic and unfortunately not nearly enough right now,

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but there is something we can do about the epidemic of kindness, and I urge everyone of you again this week, mark on that calendar, one a day, at least be kind, and, you know, I'm not naive enough to suggest that our acts of kindness will undo the pain and suffering of what this virus brings, but you know what, we will have a better way of being who we are, what we are, and I would just close with one that story for a couple of you on this podcast who are old enough to remember, the late great Harry Chapin, a songwriter balladeer of the 1970s, once asked the great songwriter singer Pete Seeger, who was leading a number of demonstrations during the Vietnam War era, he said, "Pete why do you do that? You really get anything out of it? Does it make a difference?" And Pete looked at Harry, and I heard his voice in this recording, and said, "You know, Harry, I don't know if it makes any difference or not, but I know that when I go to bed at night,

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I put my head on that pillow, I spent the day with the good people," and, you know, although I don't see all of you out there, I just know people on this podcast, I get the chance to spend this time with you, because you're the good people. Thank you very much, I look forward to talking to you next week with a much better sound system, and be safe, be well, and be kind. Thank you.

CHRIS DALL: Thank you, Dr. Osterholm, and thanks for listening to The Osterholm Update: COVID-19, a weekly podcast from the Center for Infectious Disease Research and Policy. We'll be back next week with another episode. Until then, you can keep up with the latest COVID-19 news by visiting our website: cidrap.umn.edu.