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CHRIS DALL: Hello, and welcome to the Osterholm Update: COVID-19, a weekly podcast on the COVID-19 pandemic with Dr. Micheal 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. It's the height of summer. A time when school is typically the last thing on most people's minds, but as the coronavirus pandemic rages across the country, with no seeming end in sight, the question of whether schools are going to be able to fully reopen, if they can do so safely, and what the coming school year will look like for students, teachers, staff members, and families is on everyone's minds.

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Some school districts have already made their decision. For many, the plan is still evolving. How to safely reopen our schools is a difficult question with no easy answers, but that's the question we're going to focus on in this episode of the Osterholm Update. We'll also get an assessment of the situation in the United States and answer a listener email, but as he does in every episode, Dr. Osterholm will start with a dedication.

DR. OSTERHOLM: Well, thank you Chris, and welcome to all the listeners today, particularly welcome to those who might be new to this podcast, and a very warm thank you for returning for all those who are with us today who have been on previous podcasts. As I've said often, and continue to say with deep appreciation, we know that you have many other sources of information that you can go to, and so spending time with us here means a lot to us, and we sure appreciate it. I also just want to make a note that I can't begin to thank all of you for the kind comments, thoughtful comments, and very constructive comments that you send to us each week.

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As I noted in previous podcasts, we try to read all of them, and I try to respond to as many as I can. Unfortunately I'm now in the thousands of emails a day stage, and it makes it tough to get back to all of you, but thank you, and we are listening. We do hear you, and we're all trying to learn from you. My deepest appreciation and thank you. In terms of a dedication, it was pretty easy to think about who I should dedicate this one to. Today we're talking about schools, reopening of schools, and I can't help but focus on all the kids. All the way in those even in daycare, to K12, thank you for what you bring to our lives. You are our future, and I hope we're doing right by you and what's happening right now.

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So, I dedicate this podcast to you, and hoping that we get it right. One day, when history looks back on us, we will have said, "We did the best we could to make it right by the kids."

CHRIS DALL: Mike, to use your analogy, the forest fire in this country continues to rage, and this is leading to new calls for lockdowns like we experienced in March and April, in some of the hardest hit cities and states. Is that the best option we have right now for reducing the number of cases we're seeing?

DR. OSTERHOLM: Unfortunately we're continuing the trend that we talked about last week of increasing number of cases. I always find it uncomfortable to talk about cases like this, because it sounds so analytical. It sounds like I should be an auditor, not an epidemiologist, and so I just want to remind everyone, we at CIDRAP completely appreciate, and with great reverence, the fact that all these numbers we talk about are people, they are loved ones, they are those who we've worked with, we care about, we know,

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and so I just want everyone to remember that when we talk about these numbers, I hope we do it with a certain amount of sensitivity at the same time, looking at them as very important indicators of what we're doing or not doing. You know, I tend to be one of those people that believe it's always good to look in your rearview mirror as much as you look in your windshield in terms of remembering where you came from, and when you look at what's happened with the number of cases of COVID-19 in recent days, it's a very sobering look through the windshield and through the rearview mirror. This past Monday, the world hit, officially, 13 million cases. Now, we know that there are many, many, many more SARS-CoV-2 infections out there that aren't detected, either as clinical cases because they weren't tested, or because of being mild to asymptomatic infections,

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but if you just use clinical cases being detected as kind of the tip of the iceberg, to give you a sense of the relative piece of the iceberg under the water level that's there, in other words, all the infections. It took 100 days for the global tally to hit 1 million cases. Then as cases continued to occur, the SARS-CoV-2 transmission continued to accelerate, it then took only, in recent weeks, 10 days to go from 5 million to 6 million infections, and only took 6 days to go from 8 million to 9 million infections, and when you look at the speed at which this is increasing it becomes clear and evident that we are really facing a very major point of what's going to happen with this virus and the world. If you look in the United States, we have seen this major escalation of cases that continues.

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Some have speculated the Southern states where the case numbers have been so high will peak in the next 2-3 weeks. That's surely a possibility. I would say that there's still many, many people left in those areas to get infected, and so it doesn't mean that necessarily it will peak, given that we're also still seeing lots of, what I would call high risk behavior, groups together both indoors and outdoors in ways that might very well continue the transmission. If you look at just what's happened in Florida, Texas, and California yesterday, there were over 30,000 cases reported just in those 3 states. That was 18% of the entire world's total. Just those 3 states. That should tell you where we're at. If you look at new cases as of yesterday, the case numbers are 61,492 new cases,

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the 7-day total, meaning the 7-day moving average, was 60,251. That means that new cases are still bringing that 7-day average up, and we could expect to see that number continue to climb. In part, it's a function of just testing capacity right now to be able to catch up with the actual infected cases getting tested. Also, another very disturbing trend is if you look at the number of deaths. The 7-day moving average of deaths was 724 yesterday. That surely is down

from the high 7-day reading of April 16th, where there was 2,228 cases. Yesterday 724. When you look at the fact that just a few days ago, July 5th, the 7-day moving average was 471. So we've gone up from 471 to 724,

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and that number appears to be increasing substantially. It's clear that this number, as it increases, is likely to increase substantially more, because of the fact that we have overrun a number of our intensive care units around the country, and in fact, we're hearing reports now of just real challenges finding an adequate number of medical personnel with training in intensive care medicine, whether they be physicians, nurses, or other critical healthcare providers in the hospital setting to actually be there, so if we can open up more beds, so be it, but does that really make a difference? We're witnessing an absence of remdesivir in many locations that had it prior to this, because we've just run out, and supplies will be in short supply for some time to come. So, I can only predict that over the course of the next 7-10 days the number of deaths is going to increase substantially over what we see here in that we, in fact, shouldn't be surprised by that.

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What is really the question is what are we doing nationally, and we've talked about these hot spots, but if you look at the number of states and the District of Columbia, 51 different units here, 39 right now are continuing to see increases in cases, of which over half are seeing major increases in cases. Only 10 have been level for the last 7-14 days, and even there, as I talked about last week, an increasing number are starting to trend towards higher cases, and I wouldn't be surprised if next week that number was down in the 6 or 7 range, and some of those states bumping up, and only 2 continue to see decreasing cases, Maine and New Hampshire. This really tells us that this is, more and more, a national forest fire that is burning hotter and hotter,

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and I don't know what is going to change the course of this, unless we make some really critical decisions that we're going to have to lockdown the economy in some way, and I know that term is like nails on a chalkboard for many, I understand that. It's horrible. It's people's livelihoods. It's their jobs. It's their ability to socialize, and I don't want to minimize that, but I don't know any other way to really bring this virus activity level down to a point of where we're not overrunning our intensive care units, and you can say, "well it hasn't happened in my location," but it is going to happen in more and more locations. We're beginning to see more rural areas experiencing this same ICU overload, and so from my perspective it is, we have a second chance to get it right. A second chance meaning that the first time we locked down, we didn't lock down long enough, we didn't lock down in a more comprehensive manner, and we started to release the population back out into everyday life long before we should have,

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whereas other countries have demonstrated needs to be done in order to hold this virus activity at bay with testing and contact tracing once you get it to a certain minimal level. I think the state of New York surely has continued to be our model in that regard in the United States, they seem to be doing it as well as anyone. We'll learn from them over the days ahead, you know, just how well it can be contained by trying to keep the foot on the brake, sometimes applying a little bit harder, sometimes taking it off, but not this idea that the entire house is on fire. So we'll have to

see, and I think that at this point if we don't see one unified approach from around the country, it's going to make it more difficult for state by state efforts to accomplish the reduction of cases, and then to make certain that new cases don't come in to the state at large numbers. I thought it was quite interesting today. I never ever thought about this.

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My own state of Minnesota was added to the quarantine list for the state of New York, and we now are not able to go out there without a 14 day quarantine. I never thought I'd see the day where that would happen. Right in our own country. Now whether it's effective or not, or can be effective, is a whole other discussion, but the bottom line is that the message is there, and so I can only hope that we have national leadership that will come together and say, "We need a national policy. We need a national approach, and it can be targeted. It can be tailor-made for locals, but with the overarching indication of what we're trying to do." We're trying to knock this virus down to a point where we can then control it with testing and tracing. It has been done successfully in other countries, and if we don't learn from those, I don't know if we'll ever have a third chance.

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I think that it's going to be a situation where the number of cases will only continue to increase, and I fear that we're going to get closer and closer that herd immunity number of 50-70%, but not because of a vaccine, but because we got there the most painful and deadly way possible and that was not controlling this pandemic. One day, I am certain, as much as I dedicated this podcast to the kids, those kids, when they're adults, are going to be look back and saying, "What did my parents and grandparents do? Why did they let this happen?" We will be written up in history for what we do and don't do over the weeks ahead, and I can only imagine the number of cases and the number of deaths if we don't do something different and how that will play out in history. It will be cruel, and so, surely not meaning hyperbole here, I can't emphasize enough how critical I think this issue is right now where we have to lock down, and I for one, and again I've said this before, I'm not an economist,

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I'm not some financial wizard, that's the last thing I am. I'm more than willing, as a citizen of this nation to put forward whatever support we can for those individuals who are harmed financially in terms of small businesses, essential workers, if we have to, in fact, lay them off from their jobs, but we've got to get this virus under control. If we don't, it will do what it's going to do. This is not an either-or for us. We basically are going to get hit by this unless we do something very different.

CHRIS DALL: As noted in the opening, our focus this episode is on the reopening of schools, and we're going to use two listener emails to get into this topic. Just a note to our listeners that we've received a lot of emails on this question, with a variety of different views, and these emails represent just two of those views. Kendra writes, "I live in Santa Barbara, California, and I have two children, ages 7 and 9. The school is planning on reopening on August 20th, and right now our cases and hospitalizations are going up in our county.

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I don't feel comfortable sending my kids to school. I can afford to stay home with them and teach them, and the school is offering an independent study program. Do you think I'm

overreacting? Would you feel comfortable if your grandchildren went back to school in a hotspot like I am in now? I'm also worried about teachers at our school." Tony writes, "The American Academy of Pediatrics has strongly encouraged the reopening of schools. I personally have seen little evidence that shows schools shouldn't be reopened with minimal changes, if any. Our local school has proposed a hybrid schedule, where elementary children will be in school for only 2 half-days. The remainder of time they'll be doing distance learning. From a general public health standpoint, isn't it safer for the community to have children in school full time versus this hybrid approach?" So, Mike, I know you've been thinking about this issue a lot, and there's so much to consider. Where do we even begin?

DR. OSTERHOLM: I can say without any question, that this has been the most difficult topic that I've dealt with in terms of this whole COVID-19 pandemic.

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It is, at the first instance, something very near and dear to my heart, as I have 5 grandchildren, of which 3 are in school, 2 are in daycare, and I understand the issue from a very personal standpoint. I can't tell you how many agonizing discussions I've had with my family, my kids and other family members about this very issue. At the same time, I also recognize that how we deal with this school issue is probably going to be one of the defining moments of how we learn to live with COVID-19, and I want to say at the outset, I'm probably going to disappoint a number of you today, because I'm not going to come and give you a black and white answer. Rather I'd like to start a dialogue about this.

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I will go into as much detail as I can in a reasonable amount of time, on the issues related to this, but I am convinced that very well-meaning people, with very thoughtful considerations will come at very different conclusions about what to do and how to do it, and I think we need to respect all of these. There are very real differences of how we might approach this, and why we might approach it differently, and some of it will be from where you sit, are you at risk yourself in terms of the child? Are you a family member? Are you a teacher? And so I just hope that we can have a very respectful conversation trying to understand each other, and I don't think there is a single answer. I think there are going to be multiple answers to this, and it's going to be up to our creativity to deal with this, but the one overriding factor that we can never forget: this is about our kids,

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and I hope that in the course of this discussion we never forget that, that this isn't about me. This isn't about you. This isn't about so many of the other aspects of what's going on in our communities right now, at the first instance, it's about our kids, and hopefully we can keep that front and center. Now, to start out with, let me just say that there was a new updated statement that's come out on July 10th, from four different groups who merged their comments together: the American Academy of Pediatrics, as you all know representing pediatricians in this country, the American Federation of Teachers, which represent 1.7 million pre-K through 12th grade teachers, paraprofessionals, and related personnel, the National Education Association, which is the nation's largest professional employee organization, representing more than 3 million elementary and secondary teachers, higher ed faculty, etc.

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and the School Superintendents Association which represents more than 13,000 education leaders in the U.S. and throughout the world. As this common statement, I think it would be helpful to read this, because I think you're seeing a merging of mutual interests and concerns into what I think is a very thoughtful statement. July 10th: "Science and community circumstances must guide decision making. Funding is critical. The American Academy of Pediatrics, American Federation of Teachers, National Education Association, and SAA, the School Superintendents Association, join together today in the following statement on the safe return of students, teachers, and staff to schools. Educators and pediatricians share the goal of children returning safely to school this fall.

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Our organizations are committed to doing everything they can, so that all the student's have an opportunity to safely resume in-person learning. We recognize that children learn best when physically present in the classroom, but children get much more than academics at school. They also learn social and emotional skills at school, get healthy meals and exercise, mental health support, and other services that cannot be easily replicated online. Schools also play a critical role in addressing racial and social inequality. Our nation's response to COVID-19 has laid bare inequalities and consequences for children that must be addressed. This pandemic is especially hard on families who rely on school lunches, have children with disabilities, or lack access to internet or healthcare. Returning to school is important for the healthy development and wellbeing of children, but we must pursue reopening in a way that is safe for all students, teachers, and staff. Science should drive decision making on safely reopening schools.

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Public health agencies must make recommendations based on evidence, not politics. We should leave it to health experts to tell us when the best time is to open up school buildings, and listen to educators and administrators to shape how we do it. Local school leaders, public health experts, educators and parents must be at the center of decisions about how to and when to reopen schools, taking into account the spread of COVID-19 in their communities and the capacity as a school district to adapt safety protocols to make in-person learning safe and feasible. For instance, schools in areas with high levels of COVID-19 community spread should not be compelled to reopen against the judgment of local experts. A one-size-fits-all approach is not appropriate for return to school decisions. Reopening schools in a way that maximizes safety, learning, and the well being of children, teachers, and staff, will clearly require substantial new investments in our schools and campuses.

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We call on congress and the administration to provide the federal resources needed to ensure that inadequate funding does not stand in the way of safely educating and caring for children in our schools. Withholding funding from schools that do not open in-person full time would be a misguided approach, putting already financially-strapped schools in an impossible position that would threaten the health of students and teachers. The pandemic has reminded so many what we have long understood, that educators are invaluable in children's lives, and that attending school in person offers children a wide array of health and educational benefits. For our country to truly value children, elected leaders must come along to appropriately support schools and safely return students to the classroom and reopening schools. End of statement." I think this

statement says it as well as anything I could say, and why I elected to read it into the record here with you. A couple of points come home, I think, in this message.

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Number one is, there is no one way. Anyone who purports that there is just one way to do this, whether it's all in-person, whether it is in some cases in classroom for some, not for others, it's going to be a local decision. I have had the opportunity to examine closely, data now from three different surveys done in school districts in different locations, and what I was struck by is the uniformity of the response of parents, when asked by the school district, "Do they want to have their child in an in-school learning situation or not?" A third of the parents were adamant about the fact that they wanted their children to go to school. Many of them acknowledged that it was of utter importance that that happen, not just for the child, but for the child's livelihood, because the parent's otherwise would not have work, they would lose their job, and that was a consequence that was absolutely devastating for that family.

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A third of the additional parents said that under no condition will I send my kids to school. This is a dangerous situation. I don't feel safe sending my kids to school, and I won't, and a third of the parents said that please, help us understand what we should do. Now, with that kind of decision making going on in all of our homes right now, I hope we can all understand that this is a time for discussion, for tolerance, for understanding, for, in a sense, validating people can have all these different kinds of feelings, and that, they are legitimate. Personally, I look at this and I do have a couple of responses to the statement from the four different organizations that would like to fine tune them or tweak that statement.

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Number one: we have to stop telling parents we can do this safely, and what I mean by that, is that yes, we want to use that word, yes that's what we imply, but nothing is safe in this world. If I put my child or a grandchild on a school bus today, there's nothing that says that school bus can't be hit at an intersection by a semi and have some horrible outcome occur. Now the risk is very, very low, but the bottom line is we have to acknowledge this will not be a perfect response. There may be outbreaks that occur in schools, there may be challenges with teachers or staff becoming infected, and we just have to understand that now, but we can do is minimize. Minimize that risk, and we can try to make it as safe as possible and tell people that's what we're trying to do.

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One of the lessons I learned over the course of my 45 years in this business, and many of those years as a state epidemiologist here in Minnesota, that as much as we as epidemiologists deal with risk, that is a two-number event. It's a numerator and it's a denominator. So is it 1 out of a million people have this chance of something bad happen, or is it 1 out of 5? And what kind of frequency are we talking about of serious outcomes? But when we talk about children, it's a one-number issue. It's a numerator. I've seen many times when a single child who becomes severely ill, and unfortunately in some cases dies, the worst tragedy of all, that is what will drive or dictate public policy often for many, many other children, and so we have to anticipate now, and this is hard to talk about this, but we have to acknowledge, we will not do this perfectly safe.

We're going to do it as safely as we can, and I believe that is the intention of everyone involved with this process.

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So how do I look at this issue? Well, I've kind of tried to put it into priority buckets, you might say. Who should be at the very top of the importance pyramid? It's our kids. What is the safety of our kids? What is their risk from COVID? what's their risk of collateral damage from school cancellations? Given by age, how will they learn or not learn? How will this set them back? You know, I look at other activities with kids right now, I've shared this with you in previous podcasts, but I just looked at the data last week for kids from week 10 to week 25 of the year for 2019 in Minnesota, versus week 10 to week 25 of this year, meaning, in March when the pandemic started, and if I look at those very same time periods, the number of doses of the Measles, Mumps, and Rubella vaccine administered in the state of Minnesota was down by almost 25%.

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That was because kids just didn't get vaccinated. That is part of we're talking about, helping to normalize their lives as much as we can, because when, for example, kids don't get vaccinated, I worry desperately about a measles outbreak that could occur in this state over the next year that could far, far exceed the number of serious illnesses and deaths that COVID will bring. So we want to look at kids first. I'll come back to them in a moment. Second of all, I think the second highest priority is the safety of the teachers, the staff, the administrators, the custodians, the bus drivers. When we look at that group, who are highly committed, and I have talked to many teachers who want desperately to get back in the classroom. They miss their kids. They just miss their kids, and when you think about what they're up against, 57% of school teachers in this country in public schools are over age 40.

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59% of private school teachers are over age 40, and a recent survey that just came out showed that up to 1/4 of those may be at increased risk for having a serious illness, once infected with SARS-CoV-2 virus, and predisposed to dying. Now, obviously we've had a number of essential workers who had to deal with this everyday. People who had to go to work, they had no other choices, it was their livelihood. They were having all kinds of contact with the public, and we know they paid a price. We know our healthcare workers have paid a price. I've talked about that many times on this podcast, and I still, am torn desperately when I hear about healthcare workers dying, so the challenge though if I'm a school teacher, I want to be with my kids, but I'm afraid to be with them. We have to acknowledge that. We have to understand that. It doesn't do any good to ignore it and say, "suck it up." That's not right. So we'll talk more about the staff, and then I think it's the families of kids and staff.

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We know that if these kids do come home with a virus they picked up at school, even if it's rare that might happen, even if the kids themselves don't get that sick, even if they don't transmit the virus readily, now they're in a closed family setting, and for some families, this is surely going to be a challenge, but if it's younger parents and younger sibs, if there are any sibs at all at home, surely that poses less of a risk, but there's going to be kids coming home to multigenerational families living in apartments, where three generations live together and where someone is going to be at very high risk for a severe outcome. We saw that in places like New York where there it

was the adult child living with their parents who went to work, because they were an essential worker,

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came home, transmitted the virus to their parents, which then, as older and elderly individuals in the community, suffered severe disease and died. So, we have to recognize the importance of the family and how we deal with that, and then final is just the community in general. How do we respond to the community? How does this all fit in? And I don't want to minimize that, but that's the least of our concerns, and what I mean by that is that I don't see major community implications for transmission. I still see the real challenges is going to be in young adults, it's going to be in people that are outside socializing, etc. but we have to look at that. So, where do we go with this? Well, first of all, I will be very clear from an epidemiological standpoint, reopening schools in areas with high transmission is simply not realistic. When a house is on fire, it's just a real challenge.

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The chances of schools amplifying transmission is likely to be considerably higher when there's major activity occurring in the community, workplaces, households, etc. and so it's going to be a natural spillover event. Kids, we know, do not get infected easier than adults, or even older children, but they do get infected, and they can transmit the virus. We've seen that, but again, it's of often very, very low consequence. On the other hand, if you're one of those children that does develop a severe COVID infection, and you develop what has been known as basically a Kawasaki Disease-like picture, then in fact, that is a real concern. So, how do we decide when that is high risk? Do we have some kind of arbitrary cut-off? Do we have some well decided cut-off that says it's high, moderate, or low?

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This is an area we have to define soon, and I think this is best left up to each school district in consultation with the teachers, family, local leaders, the medical community, all of them, to decide that. This is where I do not believe that a national standard can be applied, other than the fact recognizing that there will be this need for local decision making. Can we frame this conversation to suggest that action intervention needs to be taken now to reduce activity and allow schools to reopen in a safer way? I have been saying over and over again, do you want to choose schools or do you want to choose bars and restaurants? And right now, as we continue to see the enhancement of transmission, particularly in those indoor settings, of bars and restaurants, we have to ask ourselves, are we really that interested in getting schools up and going? And that's going to be a huge issue. So, now I think we have to ask ourselves that hard question, again, I'm all for helping however we can to support bars and restaurants, but we've got to know that's a major enhancing factor.

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So what do we know about the safety of kids with COVID? Well we know that severe outcomes do occur. They're rare, and this is the example where I talked about the numerator issue. It's not clear yet what role kids play in transmitting disease. I can tell you from looking at the influenza world, they're like little viral reactors. In the winter, when they get infected with flu in the schools, they readily transmit it to all the other students, they transmit it to the teachers, and they take it home and transmit it to the parents, and that is often a major seeding event for community wide

outbreak of influenza. We don't have the same evidence of that for COVID, and so we have to understand that we have some advantage in terms of dealing with this in that regard, and I would suggest that again while any death in a child is a tragedy beyond description,

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I can't even imagine that in a parent, so far the data would support that COVID transmission in children and serious illness has been less than what we would expect to see than with seasonal influenza. Grant you, we've not gone through a school year yet. We've not had kids in school with this virus circulating, but it surely seems that's not a huge challenge. One of the questions we have to ask ourselves, if we see SARS-CoV transmission within our schools, what do we do? Will we shut down? Will we have cohorted students into one classroom with one teacher in such a way that we can just isolate that group? But now's the time to make that decision. In addition, we have to understand that we may only have limited, timely testing in our communities, as we're finding more and more situations where testing is taking many days to get a result back, and so we can't count on that.

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So, again our plans have to accommodate, what would we do if we suspected cases of COVID-19 in kids and potentially in the school staff, teachers, administration, etc.? So that is another area. We also then have to look at the collateral damage from no school. I can tell you without any doubt, from my own experience with my grandchildren, this has been a challenge. We know that younger children in particular have real trouble with distance learning, and in some cases of course that is related to also a lack of access. We know that special education and English language learners receive much less in class instruction as they desperately need with online learning only. We have clear evidence that in the younger children in particular, distance learning could spur disinterest among the students, and it could present a major challenge for families with limited internet access, or lack of devices for kids to actually access the courses.

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They can't afford necessarily, the computers that might be needed. So that is one area that we have to accommodate for, regardless of whether we open schools, and have students on site or we don't. We have to understand what this means. We all recognize the emotional, social, mental, and physical health challenges of not having children in school, and I would suggest that those are even greater for the youngest children, those I would call, basically, in grade school, and how we set students back a year or more without that kind of interaction is still yet unclear. We're just beginning to learn that, and I'm afraid that we won't fully understand the damage of that situation for years to come, but it's real. We know that we leave kids, sometimes, in harmful home environments for longer periods of time.

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We have limited access to meals for those who need them most, and so we have to understand why it's important to have kids in school, and one of the things I think we need to consider here, is in fact a difference in ages, and what that means in terms of might we have different approaches for different ages. When we look at the issue of safety of faculty, staff, such as teachers at risk for severe infections, can we in fact base this on a self-reported risk picture where we don't hold faculty to a strict medical standard, meaning that it's absolutely yes or no,

you're at risk or your not, but it also accommodates the fear, and I can't say this strong enough. This is real.

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These are really dedicated professionals who are frightened to be in these settings. That's not going to make for a good teaching experience. So do we do a hybrid program where we match up those teachers with those students who's parents do not want them in that building under any condition, and make that the kind of educational online experience so that they both get to do the best they can under those conditions, and we also need to understand the issue of limited transportation options to school, and, you know, making bus drivers essential, but how can we physically distance them is going to be really important. How we, in fact, try to minimize the number of students of buses, if we try to cohort them or cocoon them in rooms will be very important, and then, as I mentioned earlier, we do have the families of these kids and the staff too. How do we consider their safety and concerns since school acquired infections puts everyone in the household at risk?

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We understand in this multigenerational household issue that this is a class issue, it's about finances, it's about the resources there. It overlays with this desperately needed issue around addressing racial and ethnic disparities, and so we will only make that matter worse if we don't try to accommodate these families where we have these kinds of household settings which could put family members at greater risk. One of the issues I've heard over and over again, and just this week I had a professional who has several children, who is desperate for school to start again because of the work setting as a single mom, and said basically if we don't have school in the fall I can't do this any longer, I'm going to have to take a leave of absence from work, for which then I won't have a paycheck, because the only backup I have for my kids right now are my mom, and my mom has an underlying health condition,

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and she's in her 60s. Now imagine the struggle of that individual. Loving her children, caring about having a paycheck, and loving her mother. We have to do what we can to help accommodate that. So in this case, she desperately wanted her kids to go to school, and I can't even say that it was without not some remorse, because I think her questions to me surely lead me to believe she was concerned about their health, but she also had to think about her mother's health, and she had to think about, well I have a paycheck that I can't even pay the rent. So, we have to understand that there are going to be situations from a work setting standpoint, where people are going to need to get an answer soon, because they literally have their jobs hanging on that. So, we're going to have to also consider here about the issue of families that don't want their children in school, and under normal circumstances it would be like someone who doesn't want their child, you know, to get a vaccine, I might come down and say, well they need to be there.

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I think to get us through this pandemic, let's give us this year. Let's be understanding. Let's be supportive. Let's not make people feel like somehow they're doing wrong by their children. Let's figure out the ways to accommodate each and every one, whether it's in class, whether it's hybrid, some in class, some not, how do we bubble in the class? How do we actually get kids to

and from school? How do we do in home learning, and if we do, how do we accommodate these other concerns? This is where we need to really go, but this is all going to come back to several things. One is, what is the difference in available funding? We have to understand if there was ever a time for our federal government to support education it's right now, because it's supporting our families, and you know, you all know I have been apolitical throughout my career.

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I have continued to serve my country the best I can, or my state, whoever is in charge, but I can't implore enough right now for the need for federal leadership to do this, because it will be the key difference whether we tear ourselves apart over this issue or we do the best we can, and I think we could be, one day, viewed as having risen to the occasion if those resources are there. Space. We have big space issues, but you know what? Can we do creative things? We've got a lot of empty buildings right now. Could schools take over some buildings where we basically reduced the crowding that these are buildings without anyone using them right now? How do we deal with rural versus urban settings? This is a huge issue. We know that. Some people would say in rural settings, "well, this isn't a problem for us," and maybe it isn't the same problem, but so then how can we have a standard that might put rural or urban centers?

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I think we must. We have to look at the capacity of state and local health departments to help support anything that goes on in the schools. If you already have state and local health departments that are strung to the max, that have no ability to help respond if you start to see an outbreak, that's a challenge. How do we do that? So I think that what we need to do is, rather than just have the pros and cons of approaches needed here, we need to have the enlightenment of approaches. How do we do all of these things, and get everybody through together? No one is left off the life boat, and that, to me, is so different than "Are we going to open schools or not open schools?" That is such a different dichotomy. So, let's get that mindset now. Let's figure out how we're going to help everybody get through. So, at this point, I would just say that age is going to be important. I don't think K-6—they're not going to mask well. (Laughs). They're not going to distance.

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Remote learning doesn't work for them well at all. In school prioritization must be seen as what's really important, and for those parents who are afraid to let that happen, let's try the best we can to accommodate it. For teachers, let's try to cohort teachers with students who are there, who they themselves are not at increased risk of severe disease, and maybe cohort teachers who can do online education with those that are. When we get to middle schools, and high schools, they are going to be able to use masks. They're going to be able to do distancing in a better way, although we all know how students at this age will clump together. Remote learning is something that's easier to do, still not the best, but surely possible, particularly for those who's parents do not want them to be at school. I will say right now that if these kids are not in school, they will be together anyway,

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so if we're worried about transmission I can't imagine, particularly in high school students, that they still will not have the same kind of contact out of school that they would have had in school,

and so that has to be a consideration. I'll never forget, we had a large outbreak of bacterial meningitis in a Minnesota community some years ago, and I was in charge of this outbreak investigation, and it was serious. We had 9 students in 1 school, 1 eventually died, and we wanted to keep students in school, not away from that school, because we knew that the primary means for transmission was via saliva, and saliva was often swapped, as such, by sharing things like soda cans, glasses, things like that, but the parents insisted so the school closed, and the next day, I actually have a picture of twelve young junior girls, junior high school girls, who were all sitting at one McDonalds,

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all twelve of them, and they had two different cups from the soda machine, and they were all sharing all the cups. I mean talk about putting themselves at increased risk. They weren't at risk at school, they were at risk at home, so we need to also look at that piece. So let me just close here by saying, I haven't given you a prescription yet. Next week I'm prepared to give you more about what is the real risk of kids, what do we know from studies that were done in other countries where they did go back to school. I can report just in general right now, it's doable, but I think the message we have to start building right now is we have to start building a message of understanding. We've got to get away from this rigid you're either in school, you get your money, if you're not, you're not. We have to acknowledge that students, parents of students, teachers, staff, all are going to have their own issues that they bring to the table that are legitimate, that are necessary to be dealt with, and they won't be dealt with in a single way.

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This is where wisdom will take precedence over knowledge, and I think this is what I hope we can start to foster in this discussion and we have to do it quickly. We all know school is coming, but I think right now we do that, and the last thing I would say is please, please, I've never done this in my career, never, please talk to your elected officials. I don't care what party they're from, wherever. The federal government has to help support this effort or it will not get done. It won't, and then, boy what did we accomplish with that. So I hope that we can turn ourselves into advocates for schools and children in a way that one day, again, we can all look back and be very proud.

CHRIS DALL: We have another listener email this week. This one about the role that superspreaders are playing in transmission of the coronavirus. Gregory writes, "I'm hearing that so-called superspreaders are responsible for much of the contagion, and that many of the people who have the virus are not particularly likely to spread it to others.

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Any reliable word on this yet?"

DR. OSTERHOLM: Well, thank you Gregory for that thoughtful question, and in fact it is one that is front and center for many of us trying to understand the epidemiology of this disease. We do have evidence that this disease is a little bit like SARS and MERS and yet, also a little bit different. That, more like SARS and MERS, there are these individuals that appear to put out a lot of virus, and given the environment they might be in, such as an indoor environment, they can transmit to many, many people. Now, where this virus is different than MERS and SARS, is that most of the people who transmit the virus with those two coronavirus diseases, transmit usually by day 6, 7, or 8, but not early in their infection, and clearly not before they become

clinically ill. As we all know, many of the individuals who transmit this virus do so when they're presymptomatic, not yet sick, or potentially completely asymptomatic,

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and that they then transmit in a way that continues through the early course of their illness. Now why some individuals transmit a lot is just unknown. We don't know why. It's not because they're more clinically ill. It's just unclear. To give you some sense of this, two epidemiologists—colleagues and friends from Hong Kong—wrote a piece in the New York Times on June 2nd. Dillon Adam and Ben Cowling wrote a piece called "Just stopping the superspreading," and in their study, 20% of all the COVID-19 cases they saw in Hong Kong accounted for about 80% of the transmission to new cases. This is remarkable. In addition, about 10% more of the cases accounted for the remaining 20% of transmission.

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Boy, if we only could know who those people were, and they had a little purple light that went on top of their head just before they were ready to transmit, we could do this pandemic in overnight, but we can't. So, one of the challenges that's come up with this whole issue is this is why people have been confused of what is the primary mechanism for transmission. When you look at droplet precautions and this idea that someone has to be within a certain number of feet of you, if you're in a household where almost no one transmits, or in a work setting where almost no one transmits, you would be very legitimate in saying, "well, this has to be droplet, because if it were aerosol, there would be a lot more transmission." On the other hand, if you have a situation where you're transmitting to many, many different people, and I could go through a whole series of outbreaks. One of the ones I'm very familiar with is one where, you know, 94 of 216 employees on a single floor of a call center in Seoul, Korea became infected after just 1 person working in there was infected.

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I could go through a laundry list of these. Those clearly are aerosol-related events, meaning that there was virus floating in the air that had to hit a lot of people, because this person wasn't even close to many of the people that got infected, and so this whole superspreader situation is about the individual who's shedding the virus, but also, again, indoors. We have virtually no major outbreaks associated with just outdoor activity, and that I think is something that, you know, we continue to emphasize in terms of trying to minimize your risk. So, to me, I come back to what has become affectionately known in this business as the three C's: closed spaces, crowds, and close contacts. We've got to avoid those. If you can do that, we can really reduce the risk of transmission, and we've got to understand why these superspreading events occur, and I call them events because it's the individual plus the environment they're in,

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but you're right on the mark. This is a very different picture than we see with many, many infectious diseases, and unfortunately I think it's one of the reasons why we're seeing the epidemiology and the transmission as we are in such a rapid transmission model, because those 20% of the people who transmit, that account for 80% of the cases are doing so very, very well.

CHRIS DALL: So, Mike, I want to ask you about some comments that were recently made in the media. Ken Frasier, the CEO of pharmaceutical company Merck made some comments about

vaccines and about his concern that government officials and other pharmaceutical executives are over-promising on vaccines, and CDC director Robert Redfield made comments about masks and the source of coronavirus outbreaks in the Southern states. What did you make of these comments, Mike?

DR. OSTERHOLM: These comments, I think are important in terms of context and as the listeners here may hear about these comments,

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you know, I'll try each week to pick a couple of these out and share with you a perspective. First of all, Ken Frasier, who as Merck's CEO, has been one of the really outstanding leaders in the country in responding to COVID-19. I have nothing but the highest respect for Ken and the staff that he has around him, some of the best minds, particularly in the vaccine world are there, and Ken did an interview with a professor from the business administration group at Harvard, and in that, he actually said, and I quote that, "the COVID-19 vaccine hype that we're hearing from many right now, is actually a grave disservice to the public," and what he was really talking about is not an anti-vaccine position at all, hardly that, but that promising these vaccines later this year could be really hurting our fight against the pandemic,

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and he says that because what it does is gives people a sense that something is going to be here soon, and that we can kind of ignore, as he said the common sense measures to slow the spread of COVID-19, and he laid out in very clear terms, as he said, "what worries me the most is the public is so hungry, is so desperate to go back to normalcy, they are pushing us to move things faster and faster. Ultimately if you're going to use a vaccine in billions of people, you better know what the vaccine does," and you know, you've heard me say this multiple times on this podcast, is I want a vaccine more than anything I can tell you, but at the same time, I know it has to work at least in a way that we all agree is at least minimally helpful, and it has to be safe, and when you look at the kind of activities that it takes to bring a vaccine to the market, you know,

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and Ken laid this out in his interviews, saying that typically it takes years or longer to develop vaccines, you know, Merck as you said, won approval for its Mumps vaccine after 4 years of research and development, and that was a record, and it took 5 and a half years to get the approval for the Merck's Ebola vaccine, and he described that in the last 25 years, pharma companies worldwide have developed only 7 truly new vaccines, and Merck was responsible for 4 of them. Scientists have continued to work for an HIV vaccine for decades to no avail, but he knows what he's talking about. So, I hope that you know, whether it's the business world, whether it's the public health world, whether it's the general public, we all hope for a vaccine that is safe and effective, but remember that's not a strategy. Hope is not a strategy, and that we do understand that we are working hard to get to a point of having a safe and effective vaccine,

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but we have to be very, very careful not to over-promise, because some people will feel like, oh I'm so close to a vaccine it doesn't really matter anymore, or number two, when we don't have that vaccine, there will be such a response that will be incredibly negative about public health in general, and I think that's the key issue. In terms of the comments by Bob Redfield, director of

the CDC, a colleague and a friend, I was a little bit surprised to see these comments, and I just want to lay them in context, because as you know I believe CDC is a very important part of the public health response, or should be in our country, and Bob is leading that effort, but he made three different comments in the past couple of days that I'm a little bit surprised by and I just want to add context. One, he said, "if everyone wore a mask, in 4-8 weeks we could drive this thing into the ground," and there are no data that supports anything like that.

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Again, remember the whole masking issue from CDC's perspective, came about from the standpoint if I'm wearing a face cloth covering and I might be transmitting before I'm symptomatic, that this would stop some of the droplets from basically escaping, but the mask as it's often called, wouldn't protect me. Now, you know, we recommend people go ahead, use your face cloth coverings, do it, but also be mindful that we don't know how well they work and there's reasons to challenge they may work real well, and that therefore, it's still about distancing, distancing, and distancing, and I worry that this message that Bob just put out is so totally counterproductive,

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because it basically makes it sound like all you have to do is mask and we're done! That negates the distancing issue. That would be so counterproductive, so I'm concerned about that comment, and I hope he truly explains it or walks back a bit, I think that's really a challenge. The other comment he made, he commented yesterday that most U.S. counties are in a position to reopen their schools, and when you look at what's going on, and what I just talked about house on fire in almost 40 states, and many localities where there's just no way they can start schools again. I don't understand how you can say that most counties are in a position to reopen their schools. Now, I'm taking that to mean full, in class participation. Everybody's going to open a school somehow this fall, whether it's distance learning, whatever. But if we're actually talking about having everyone back in school I think that this is a real challenge, and I hope I'm misinterpreting this comment, I'm taking it off of the media obviously, and I think that that's a challenge,

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and then the last comment he made today, is he says that, and this is a interview he did with the editor of the Journal of the American Medical Association today, and he said that basically, Northerners heading south for vacation may to be to blame for a surge in coronavirus cases, not state reopenings, and he commented, if you look at the South, everything happened around June 12th-June 16th, it all simultaneously kind of popped, and he said, you know, "we're of the view that something else was the driver there other than reopenings, maybe Memorial Day and the activities there." Well, I have to tell you there are many states where a lot of people didn't go south for Memorial Day from the North. You know, whether it's, you know, Texas, Florida maybe, but not many of the other states, and again I think this just causes more challenge to understanding the epidemiology, like somehow we could stake it down there and this would never have happened, but for northern virus entering.

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Well, the southern virus was there all along, you know, if it was going to pop, it didn't need the Northerners to come down and put it in there, and that fundamental lack of understanding of the

epidemiology of the disease concerns me, because it points out that, oh yeah, you know, we're okay, we reopened, but it was just keeping you guys out, misses the whole point of why reopening, in and out of itself, was the challenge of all the young adults getting back in the bars, the restaurants, etc. etc. So I only bring this up, I know many of you on this podcast, the last thing you want to do is hear controversy, but I worry about these statements, because it goes to public health credibility and right now, we're under a lot of fire already for credibility, and one is that, you know, I can say right now masking will not drive this thing into the ground in 4-8 weeks.

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That's just simply not true, and it really concerns me about the issue of enforcing and reinforcing distancing. Number two, is the fact that most counties are not in a position to reopen their schools right now, and this should be a county by county issue, but there are a lot of really red hot counties out there right now with transmission, and finally, you know, the Northerners heading to the south bringing this virus almost looks like it's a blame game issue without really trying to understand why did transmission occur, and I only need to understand why transmission occurred so we can stop it from happening again, and if we're going to lockdown and bring back the economy so these local areas, we have to understand why it happened, and it was not because somebody came to visit. So with that, I hope that these comments get clarified very soon.

CHRIS DALL: Any final thoughts today, Mike?

DR. OSTERHOLM: Well, again, thank you everyone for being here,

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I know this was a long one, and for those who I've not satisfactorily covered the school opening issue, I'm sorry, I will do more next week. This is when I hope just the idea sinks in of some of the principles we've put forward. And you know, in trying to come up with a closing I always find it a wonderful gift to consider all the positive great things, going on out there, and all the kindness that we talk about, and so the beginning of this was for kids today. This whole podcast really is about our schools and kids, I couldn't help but picking out a song that is something that my grandchildren would enjoy, and that's from the Kiboomers, a wonderful, wonderful source of great preschool music, and it's a song "I Love You Song," and it was really created for preschoolers,

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that helped children get excited about learning, and it goes, "I love you. Your button nose. Your eyes. Your ears. Your knees and toes. I love you up to the sky, past the moon, and stars so high. If you feel alone and scared, always know that I'll be there. Just like one and one makes two, you love me, and I love you. I love you in every way and all you do and all you say. My love for you will always be deeper than the deep blue sea, even if you're sad or blue. It's cause I love you. Just like one and one make two. You love me, and I love you. I love you. Your button nose. Your eyes. Your ears. Your knees and toes. I love you up to the sky, past the moon, and stars so high. If you feel alone and scared, always know that I'll be there. Just like one and one make two, you love me and I love you." Again, I want to thank all of you for being with us, please keep up those acts of kindness, we are.

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The pandemic of kindness, is moving forward I'm hearing from more and more of you that have had an opportunity to experience that kindness, and right now we really need it. We really need it. Be understanding, be thoughtful, be sensitive, be patient, listen, and most of all believe. If you believe in kindness, I am certain this is going to make going through all of this such a much, much better experience, and as we would say to our kids, you love me, and I love you, and I hope today, tomorrow, all the rest of the week until our next podcast, you never, ever, ever forget that. 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,

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and be sure to keep up with the latest COVID-19 news by visiting our website: cidrap.umn.edu. The Osterholm Update is produced by Maya Peters, Cory Anderson, and Angela Ulrich.