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Female: Welcome to Conversations on Health Care with Mark Masselli and Margaret Flinter, a show where we speak to the top thought leaders in health innovation, health policy, care delivery, global health, and the great minds who are shaping the healthcare of the future.

This week, Mark and Margaret speak with Dr. Michael Osterholm, renowned infectious disease expert, and Director of the Center for Infectious Disease Research and Policy at the University of Minnesota. Author of the 2017 book The Deadliest Enemy: Our War with Killer Germs. Dr. Osterholm is among the team advising President Biden's transition on COVID-19 strategies. He warns that we're in the eye of the hurricane. The pandemic is far from over and more infectious variants are driving the next surge a pandemic.

Lori Robertson also checks in, Managing Editor of FactCheck.org, looks at misstatements spoken about health policy in the public domain, separating the fake from the facts. We end with a bright idea that's improving health and well being in everyday lives.

If you have comments, please email us at chcradio@chc1.com or find us on Facebook, Twitter, or wherever you listen to podcast. You can also hear us by asking Alexa to play the program. Now stay tuned for our interview with Dr. Michael Osterholm here on Conversations on Health Care.

Mark Masselli: We're speaking today with Dr. Michael Osterholm, Director of the Center for Infectious Disease Research and Policy at the University of Minnesota, a renowned epidemiologist. Dr. Osterholm recently served on President Biden's Transition Committee on COVID-19. Dr. Osterholm has also served as interim CDC director and advisor to Homeland Security and the National Institutes of Health.

Margaret Flinter: Dr. Osterholm is a Member of the National Academy of Medicine. He's the author of more than 300 publications, including the 2017 book, The Deadliest Enemy: Our War with Killer Germs, in which he outlined the exact scenario we are in with COVID-19. Dr. Osterholm, we want to thank you and welcome you back to Conversations on Health Care.

Dr. Michael Osterholm: Well, thank you for having me back.

Mark Masselli: That's great. I wanted to start off with asking you to give our audience a sort of a big picture view. What's, first of all, positive about what we're doing in our battle with the

pandemic, and what keeps you up at night?

Dr. Michael Osterholm: Well, first of all, I think you have to start out by saying it's a tale of two cities right now. One tale is that of the vaccines and the rollout of the vaccines here in the United States. It has been a remarkable accomplishment to date by the administration in terms of helping the private sector companies actually get vaccine, get it out to the state and local areas, and trying to get into people's arms. To date, we've had somewhere right around about 10% to 12% of the population vaccinated with two doses, or one if it's the Johnson & Johnson vaccine, which is a great, great start. But it still leaves a number of people left unprotected at this very moment, including about 20 million Americans 65 years of age and older. We've got a lot of work to do. The problem is we just don't have enough vaccine and they're putting it out as quickly as they can.

The other tale is one where we're very concerned that we're now beginning to see the emergence in the United States of this variant from originally identified in the United Kingdom, BB17 or the UK variant. This particular one is a virus that fits two of the three categories we call a variant of concern, more transmissible, causes more serious illness, or can evade the immune protection of the vaccines or natural disease. Today it is doing the first two.

In Europe, this has been a real challenge. Number of countries in Europe are in various states of lockdown and including major lockdown activities for the last two months in England. We're now seeing in particularly the eastern countries of Europe, and even continuing in Portugal, Spain and France have real challenges. That virus is about 40% to 60% more transmissible than we've seen with the previous SARS-CoV-2 virus as a cause COVID-19. Clearly, we're accumulating more data every day showing us a much more serious virus in terms of illness, and the kind of illnesses it causes.

Now that we see a very rapid development here in this country of the B117 variant in our various states, and right here in Minnesota, we have an outbreak going on right now with widespread transmission in kids that is now spilling over into adult. We worry that the next 4 to 12 weeks could be a real challenge with a surge that will surely far exceed what our vaccine will be able to protect us with.

Margaret Flinter: Well, Dr. Osterholm, thanks so much for starting with some great news that people have been really eager to hear about how we're doing as a country with the vaccine rollout and

then of course, following it up with the reality. It kind of juxtaposes with a number of states really lightening up, right, lightening up mask requirements, lightening up on the restrictions, and gathering just as we move into the nice warm weather, at least on the East Coast, we hope, where people are starting to plan more social activities, all of which seems like a recipe for a surge in the United States.

I'm wondering what you're thinking is likely to happen over these next 90 days or so with the reemergence of spikes. We've just gotten some good news over these last several weeks. But this sounds extremely worrisome, and I think the public on some level, we've all wanted to go with the good news for a bit about the rollout of the vaccine being successful. But this sounds like a cause for real concern about people continuing with the masks and the restrictions. What's the balance there do you think with the public?

Dr. Michael Osterholm: Well, let me just add some perspective first. Again, if you want to find out what is likely to happen here in the United States, just look at Europe. Today, Germany just put in place a new major lockdown just because of the challenges there, and I can go through country by country. Where this B117 variant has taken off, the case numbers have surged substantially.

Remember, in the United States, even with everyone who has been previously infected, and with even the amount of vaccine we've rolled out, we still have roughly 50% to 55% of the population unprotected. For all the pain, suffering deaths and cases we've had in the past year, we still have at least an equal amount, if not more of people who are still vulnerable to this virus, so we have to take it very seriously.

The second thing is, is you hit it right on the head with regard to we're done with the virus. As a society, we're done. We want to move on. I understand that. The pain, the suffering, the economic disruption, what it’s done to our lives has been dramatic. But unfortunately, this virus is like gravity, you might not like it, but you can't ignore it. One of the challenges we have right now is everybody is opening up because of how the numbers have dropped, and this has been a great, great outcome since January we've seen this big drop in cases. But we're still at 60,000 plus cases a day and any surge that would take off would take off on top of that.

Remember, last summer, when we had a house on fire, a period in the summer months, we were at 70,000 cases a day, and now here we are almost at same level. The real worry we have is as in loosening up, this is like the perfect storm, we are

all but inviting this virus to take over and do what it can do. I think that -- I worry that we're going to see over the course of the next weeks, even despite vaccine and by the way, the vaccine is effective against the strain. It's not somehow that we have to worry about the vaccine not protecting with this particular variant. But I also worry that people are going to get within days to weeks of getting their dose of vaccine, but unfortunately die beforehand, because they didn't just take that last few weeks of care to keep themselves from getting infected.

Mark Masselli: You know when I pull the thread in your statement, this particular variant, and we've had one year since the inception of CoV-2, and we have these two variants that have come up that seem to be somewhat highly transmissible maybe Virulent and B117, B1351. Educate us a little more, most of the world won't be vaccinated, I assume this is a place where more variants will arise. What are our worries? These are what's in front of us right now, we took a year. We've got a number of years before we can get the world vaccinated. What should we know about these mutations that go on with CoV-2 and what we might see in the future?

Dr. Michael Osterholm: Well, it just as you mentioned, the variant 1351 is actually a variant that was first identified in South Africa. This one looks to be really falling in largely that third bucket of variants of concern I mentioned, the ability to evade immune protection from either a vaccine or from natural infection, and it's not 100% evasion, meaning that there still is some protection, particularly against reducing severe disease, hospitalizations and deaths.

But there's also another variant P1, which originated in Brazil, which we're seeing right now wreak havoc in Brazil. It was one that has not only minimized substantially the protection from previous vaccination or previous infection, but also appears to have both increased transmissibility and causing serious illness. P1 is something we're very concerned about, should it become circulating around the world. Right now we see P1 in the United States, but in a very limited way. Clearly, B117 is the variant that is spreading rapidly right now in some areas over 50% of the [inaudible 00:09:53] for that.

But I think a point that you raise is a very critical point. In fact, I covered it just last week in an article I published in foreign affairs on vaccine nationalism, and this idea that yes the world can't make enough vaccine for everybody overnight. But we have to readjust the prioritization that we've placed on getting

vaccine to low and middle income countries. Originally COVAX, that organization under the auspices of the WHO, with a number of other philanthropic organizations CEPI, the GAVI group, all part of this, were aiming at getting 20% of the low and middle income countries vaccinated in the next year, meaning getting that much vaccine out.

Well, it turns out that these variants, the ones that are now a real challenge to us in terms of what they can do to vaccine, for example, are likely to come spinning out of uncontrolled transmission in low and middle income countries. We don't have a couple of years to wait to get people vaccinated in those countries so that we don't see our own vaccines in the high income countries challenged by these variants that would spin out from natural infection. This is a huge issue, and there's no easy solution because we just don't have global capacity to make a vaccine for everyone right now, and even if we did, would everyone take a vaccine?

But the bottom line is, is that we've gone from just humanitarian aid altruism in the low and middle income countries to a strategic investment. We don't want to see the vaccines threatened by these variants. If we're going to do that, then we've got to really take care of low and middle income countries.

Margaret Flinter: Well, Dr. Osterholm, I really appreciate the urgency with which you speak about that. Again, looking at some of the positives we've now had the Pfizer and the Moderna out for a couple of months, maybe three months now, in pretty wide use the safety data is wonderful to see. I believe, to this day, we still have not seen a death from vaccine, correct me if I'm wrong on that. We've seen very good efficacy in terms of fearing to give real protection against serious illness and death. We've seen great increase in capacity to get the vaccines out, while we're still working on making sure that we target all populations and address equity right here in the United States. Yet, still, we have the issue of vaccine hesitancy.

I'm curious what you're seeing in a big picture view. Has the safety profile of the vaccines and the reports caught up with people who have had issues with vaccine hesitancy? Are you seeing that kind of go down at the same time that the availability of vaccines, again, at least here in the United States is going up if we conquered that challenge?

Dr. Michael Osterholm: Well, again, let me just say the vaccine situation in the United States, and in much of the high income countries of the world is good news, these are highly effective vaccines that are

working well, just as you pointed out, the safety profiles are remarkable. The challenge we have right now is getting enough vaccine quick enough to enough locations, and again, it's all comes back to just global production. Even here in the United States, we may have enough vaccine for every adult by sometime in May to June. The challenge will be even then getting in people's arms. As you pointed out, vaccine hesitancy has been real.

Now, we have some information suggesting that maybe been reduced a bit that more people are now willing to consider taking it. At the same time, when we look at the BIPOC community, we look at certain -- people of certain political persuasions that are much, much more reluctant to even consider the vaccine for a variety of different reasons. We even see in healthcare settings up to a third of healthcare workers wanting more safety data before they'll be vaccinated, and so we have a lot more work to do.

As I've shared with you before, when you name this Operation Warp Speed in part was run by the military, you also had a situation where some people believe it was a political thumb on the scale to get it approved, which wasn't the case, but some people believe that. Then on top of that, you have these new messenger RNA vaccines injecting genetic material into you which then plays into all the fears and concerns about what that will do to my own health, is this someone wanting to put a chip inside of me, all disinformation, not true at all, but nonetheless, it's there.

We have to do a much, much better job of trying to educate the public, share with them what we know, what we don't know about these vaccines. The fact that mRNA vaccines have been researched for many, many years, this is not just a first time use of such. The fact that the immune response is very good and we're not seeing challenges such as to pregnancy or that this will cause someone to become fertile or infertile, which has been a challenge on the internet.

We have a lot of work to do, but we're, I think at this point, moving forward. Again, I just come back to the fact we got to get as many people vaccinated in the high income countries. But we cannot forget for a moment about low and middle income country individuals.

Mark Masselli: We're speaking today with Dr. Michael Osterholm, Director of the Center for Infectious Disease Research and Policy at the University of Minnesota. Dr. Osterholm recently served on the team advising President Biden and COVID-19.

I want to continue the conversation about equity issues and your vaccine nationalism. As more and more people get vaccinated, desire to open up businesses and return to normal grows. I think we're bound to encounter many ideas about how to open things up safely, including giving special preferences perhaps to people who've been vaccinated, and these ideas are bound to be well meaning but they will, perhaps, have detrimental consequences.

The idea of putting rules into place to minimize risk is not new in the not so distant past neighborhoods that were deemed to have higher financial risk were redlined. In many were communities of color. Should we be worried that we might be running into similar issues if we are redlining people who've not been vaccinated, and really in a good attempt to try to open the economy, past neighborhoods, perhaps with countries as well?

Dr. Michael Osterholm: Well, first of all, it's very important that we don't discriminate against people for any reasons relates to COVID-19. But it's also fair to look at risk, and we tell people now to avoid certain environmental areas with regard to risk, where is the virus more likely to be present? It’s not as if we don't deal with risk. I think the point we're trying to raise right now is just what is it going to take to protect you.

If you are vaccinated, frankly, you're in a totally different planet with regard to protection, versus almost any other thing except total distancing from someone who then might infect you. It’s not inappropriate to say, if you've been vaccinated these are the things you can do now, and feel much more secure in what you're doing and the safety of the vaccine is there to protect you.

For example, as the CDC said if you’re a grandparents, you want to go visit your grandchildren who you've not seen for a year, and they're -- although they're not vaccinated, and if they're not at high risk for getting infected, then go do it, go see them, hug your grandkids. I think the point we're trying to raise here is, is that what kind of incentives can we provide to people who say, why did I get vaccinated if I have to continue to lead my life the way I have for the last year, when in fact, the data do support that you're protected? I agree with you 100%, we don't want to redline any area or any individual. But at the same time, if you know that certain individuals are going to be at higher risk and you're trying to avoid that risk, then I think that is fair to at least describe what that risk might be.

If you have a large number of people who are not vaccinated,

were going into bars, restaurants, no masks, you know what, that's an environment, even if you're vaccinated, remember, they're not 100% effective, you want to likely avoid. The key thing I think is going to be finding that it might -- I'll call it a sweet spot where people can feel good about being vaccinated, they can feel good about it being identified as they're now protected, and at the same time, not trying to discriminate against someone else, but I don't want to be put at risk because of what someone else does.

Margaret Flinter: Dr. Osterholm, I think I'm still stuck back in my mind thinking about the global challenges, and you talked about it really being a problem of worldwide production. But we've, Mark and I have had the opportunity to be very engaged in setting up mass vaccine clinics and targeted population, vaccine clinics, and even on the end of delivering the vaccine, it's pretty complicated resource intensive process as currently exists, right, multiple dose files and drawing them up and keeping the chain of refrigeration and so forth.

Do we have any hope on the horizon for innovations? We've heard about things such as perhaps being able to use a patch that has a kind of pinprick administration of the vaccine, baby being freed up with only single dose vaccines as we go forward. Are you hopeful of any innovation in those areas that will really make it much more possible to get that global distribution of vaccine? What are you seeing on the delivery end that will help the global community?

Dr. Michael Osterholm: Well, I think that's a critical, critical question. Some months ago, I did a podcast entitled "The Last Mile, The Last Inch." The last mile was before the distribution of vaccine started, and I laid out all the challenges that eventually we encountered with just trying to get vaccine into the right communities. Didn't speak to whether they got -- they took the vaccine or not. That was the last inch. I think everything you just said is right on the mark. We have to look at every possible barrier that might be there in terms of getting people vaccinated, and what can we do to deal with that barrier, whether it is the kind of product that we use, the requirements we have for how it has to be refrigerated, how many doses, what are those potential side effects, I can just get on the laundry list, those are all real.

I think our first challenge is getting more what we have. We've got to get that and get that done, and that's going to be a big impact issue. The second thing is we have to look at the potential for new innovative vaccines that may be what we call the second or third generation vaccines that allow us to deal

with these variants much more effectively rather than trying to reconfigure an mRNA vaccine to now we accommodate this mutation versus that mutation, we can be chasing our tail as these new mutations continue to occur. Their vaccines, for example, may rely more heavily on T cell responses that could be nonspecific, and actually protect against any one of several different mutations that might occur in the virus.

The third priority is just what you said is for ease of production and distribution, how do we do that so that we can make the vaccines for the world that they will use, and I think that is a high priority. Just note, we're not going to be done with this virus for a long, long, long, long time to come. Every investment we make right now, in short term, intermediate and long term vaccine development issues is going to have payback. I think that's what's really important right now. I think your points are a good one. What can we do to make these even more friendly in terms of administration and consumer acceptance?

Mark Masselli: I noticed today that Germany, France, Italy, suspended the AstraZeneca vaccine for some time so they can take a look at it. Margaret was talking earlier about the -- we know about the efficacy, at least during the clinical trials. But those trials have continued for three months past. Is there a lot of transparency on what's happening there, or is there someone keeping it sort of separate AstraZeneca [inaudible 00:22:12] just sort of generally, how the public keeps informed on these?

Dr. Michael Osterholm: Well, I think at this point, we all have a number of questions about the AstraZeneca vaccine. Since more information is not in the domain of the public, I think that we just have to wait until it is available. We want every vaccine dose we can possibly get to take this on globally, and so I would sure hope the AstraZeneca vaccine will remain in the mix and the data will ultimately show that it is safe and effective. But I think until we see those data, we have to rely on the government bodies that are looking at what data they have and what decisions they're making.

Margaret Flinter: We've been speaking today with Dr. Michael Osterholm, Director of the Center for Infectious Disease Research and Policy, CIDRAP, at the University of Minnesota. You can learn more about his vitally important work by going to www.cidrap.umn.edu or follow him on twitter @Mt. Osterholm.

Dr. Osterholm, we thank you again for your career long commitment to global health, for being so willing to share

your expertise and wisdom and guidance during this pandemic, and for joining us again today on Conversations on Health Care.

Dr. Michael Osterholm: Thank you.

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Mark Masselli: At Conversations on Health Care, we want our audience to be truly in the know when it comes to the facts about healthcare reform and policy. Lori Robertson is an award winning journalist and Managing Editor of FactCheck.org, a nonpartisan, nonprofit consumer advocate for voters that aim to reduce the level of deception in US politics. Lori, what have you got for us this week?

Lori Robertson: President Joe Biden has made some misleading claims while boasting about his administration's progress and getting Americans vaccinated against COVID-19. In remarks he made in February at a Pfizer manufacturing site, Biden claimed that the Trump Administration had "failed to order enough vaccines." The Trump Administration had contracts in place for plenty of vaccines for all Americans, provided other vaccines gained authorization.

The President also claimed there was, "No real plan to vaccinate most of the country" when he took office. There was indeed a plan to acquire and distribute vaccines. The Biden Administration has done more on increasing vaccination sites and vaccinators.

As of December 31st, 2020, the Trump Administration had contracted to buy at least 800 million COVID-19 vaccine doses with delivery by July 31st. Those doses included vaccines from four companies who had not yet received FDA authorization. There were at least 1 billion doses under contract as of January 2021. The government could acquire additional doses by exercising options to do so under the agreements with vaccine companies. The Trump Administration had clearly ordered enough vaccine doses for the US population.

However, the issue is that only the Pfizer, BioNTech and Moderna vaccines had been authorized when Biden made his remarks on February 19th. About a week later, the FDA authorized the Johnson & Johnson vaccine.

In December, Pfizer and Moderna had agreed to provide 400 million doses by the end of July for the two dose vaccines. The Biden Administration announced in February that the two companies would provide yet another 200 million doses by the

end of July for a total of 600 million doses.

As for Biden's claim that there was no real plan to vaccinate most of the country, his administration has built upon vaccination plans made by the previous administration. Dr. Anthony Fauci, Director of the National Institute of Allergy and Infectious Diseases, told CNN on February 16th that there had been a vaccine distribution plan, but a “rather vague” plan on getting the vaccine doses into people's arms.

The Biden Administration has taken steps to increase the number of people who can administer the vaccines and where the shots can be given. These steps have also come as vaccine availability has increased. That’s my FactCheck for this week. I’m Lori Robertson, Managing Editor of FactCheck.org.

Margaret Flinter: FactCheck.org is committed to factual accuracy from the country’s major political players and is a project of the Annenberg Public Policy Center at the University of Pennsylvania. If you have a fact that you’d like check, email us at www.chcradio.com, we’ll have FactCheck.org’s Lori Robertson check it out for you here on Conversations on Health Care.

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Margaret Flinter: Each week Conversation highlights a bright idea about how to make wellness a part of our communities and everyday lives. If music soothes the savage beast, the question they want to answer at the Sync Project is how exactly?

There are lots of anecdotal studies supporting music’s ability to trigger memory or boost endurance or focus. But virtually nothing is known about how music truly impacts our physiological and neurological state. This is the question that intrigued scientist Ketki Karanma a Systems Biology PhD from Harvard, who wondered how could music be scientifically harnessed as a powerful precision medicine tool.

They formed the Sync Project with a cross-section of neuroscientists, biologists, audio engineers, even some rock stars like Peter Gabriel, and started by using artificial intelligence systems to analyze existing playlists that purport to promote relaxation, induce sleep, enhance focus or athletic performance.

Ketki Karanam: Once we have these set of songs that our machine learning algorithms predict to be effective for a specific activity, we can then run studies using these devices like your heart rate monitors, your Smart Watches, activity trackers, and actually

look at how effective indeed is that song for that purpose.

Margaret Flinter: Karanam met her colleagues note that most of us self medicate with music already, so why not harness this ubiquitous tool that's available to all of us and develop strategies and systems that might replace pharmacological interventions with musical ones. The Sync Project is seeking a million volunteers to offer their music suggestions as well as any information they can share on why these songs seemed to work for them.

Ketki Karanam: So we're literally walking around with 14 million songs in our pocket every single day. We saw a great opportunity and really being able to understand how music was affecting us to measure how different types of music effect both our psychological health as well as our physiology.

Margaret Flinter: Karanam and her team seen vast potential for reducing reliance on drugs by crafting personalized music interventions and the management of a variety of complex conditions such as pain management, PTSD, even Parkinson's disease.

Ketki Karanam: In Parkinson's disease, patients have trouble coordinating movements, so by playing them the right kind of music, it can be an external auditory support they have that's going to help them walk more smoothly.

Margaret Flinter: The Sync Project, combining computer technology and neuroscience, physiology, and musicology to harness the healing powers inherent in music to help manage a variety of human ills. Now that is a bright idea.

[**Music**]

Mark Masselli: You've been listening to Conversations on Health Care. I'm Mark Masselli.

Margaret Flinter: And I'm Margaret Flinter.

Mark Masselli: Peace and Health.

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