



Transcript from

COVID-19 Testing Toolkit Webinar Series: Lessons from eMed: COVID-19 At Home Testing and Verifying the Results

October 19, 2021

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Welcome to today's webinar covering 19 testing tool kit webinar series lessons from Emed. Dr Gigi Gronvall will now begin.

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Thank you for joining us today. As you Gronvall, a senior scholar at the Johns Hopkins Center for Health Security and an associate professor at the Johns Hopkins Hopkins Bloomberg School of Public Health.

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Today is our fifth installment of the webinar series uncovering 19 testing strategies and best practices from organizational leaders. This webinar series is part of the center's COVID-19 testing toolkit, and we will put the link for that in the chat.

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The toolkit provides essential information for organizations of all sizes seeking to develop or adapt their testing strategies to fit their needs. When they're taking a test prescribed by your doctor choosing a test for your employees.

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It's important to choose the right type of test to provide the most useful information. There are testing services that are available now that offer tests and strategies to organizations, we provide information about this specific tests and testing services

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to help employers and decision makers figure out what works best for them.

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This project is funded by the Center for Health Land Therapies and the Gordon and Betty Moore Foundation.

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After the panel we will answer questions from the audience so please submit questions in the q amp a box, and we will answer as many questions as possible.

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Our panelists today are Dr Michael Mina from Harvard, Dr. Mitch Morris, who is the president of a med. And Dr Patrice Harris co founder and CEO of a med.

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Our first panelist is Dr. Michael Mina. Dr minute is an assistant professor of epidemiology at the Harvard School of Public Health, and assistant professor of immunology, and Infectious Diseases at the Harvard Chan school and associate medical director

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and clinical microbiology and molecular diagnostics in the department of pathology at Brigham and Women's Hospital at Harvard Medical School.

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His research combines mathematical and epidemiological models with high throughput phase display based theological laboratory investigations. This includes development of new technologies and statistical pipelines to better understand the underlying patterns

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and infectious diseases, Michael, thank you for being here and over to you.

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Well, thank you very much and I apologize to others for my video working, I just want to be sure.

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Okay, sorry I've had some technical difficulties. So I want to start by sort of laying laying the groundwork in terms of where we are with this pandemic today.

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And sort of where, where we're likely going, but also the the role for testing. So this is something that I that I've spoken very widely about, but to briefly lay out the different types of testing.

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We started with pcr back in, in the early phases of this pandemic PCR and I think everyone probably remembers the headlines of people waiting in line for hours and hours and hours to get a PCR test PCR is the very very good medical diagnostic test.

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But we've also found that it has its limitations in. In this pandemic in terms of how well it can actually serve us to stop transmission which is generally what we're trying to do when we're testing for public health during a pandemic like this.

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And so, as we've moved into a phase of this pandemic where we have vaccines, where we're seeing,

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I think generally a decline in hospitalizations as a result of those vaccines. We're getting to a state where we're trying to figure out how are we going to be living with this virus for the longer term, public health experts, myself included, I think

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are an agreement that this virus is becoming endemic. And so what that means is that it's going to stick with us for a while, but the impact that it has on society is going to continue to get lower and lower and lower, as we build up population immunity.

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But as we're in the process of doing that this virus is obviously still taking a major toll on Americans and people across the globe. And so we have tools that can help us to deal with it.

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Testing is one of those tools, it is.

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I like to think of testing in this pandemic as the tool that gives us knowledge, it gives us empowerment to continue about our days without worry that we might be infecting other people, and unfortunately with things like with virus and variants like

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Delta, we're seeing that break your cases with transmission are very common.

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And so we need to essentially identify the tools, the right tools for the job to make sure that when when our kids go to school. When we go to visit grandma in the nursing home, whatever the case may be, or when we go to work, that we're not affecting

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others and so that brings us to tests that can detect transmissibility in the right amount of time, and that's in real time. And that's what rapid tests do so rapid antigen tests or tests that give us a very good ability to identify who is infectious

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and for me to be able to brush my teeth in the morning, use a rapid test and say, I'm not infectious right now, and therefore I'm safe to go to work or my kid is safe to go to school if they're not infectious right now.

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So these are the these are what rapid test will really very very good for, and they've become increasingly important, and in demand in this country. But, along with rapid test for schools to, and employers to be able to utilize these tests, but this panel

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is going to get into is what can we do to improve their use. Not just give everyone in America tests or access to tests, but to actually create the platform for how businesses and industries can use the tests most appropriately.

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And that's, that's where he met and services like a med come in and that's because what we've found is that when people are given rapid tests and employers are given around the test for example, there is a, an issue with them not wanting to necessarily

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use them based on the honor principle, you can ask your employer employees to use the test, and and just tell you if they're positive or negative and work, A lot of people feel very uncomfortable with that.

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And so, where different services like a med come in, is to be able to create the fabric that enables these types of tools to work, and that's through verification to actually be able to say yes john doe did in fact use this test this morning.

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And, and he was negative, and then the nice thing is that these tests can then also be reported to public health and that's been one of the greatest issues with rapid test is that they're generally not reportable to public health because they're just

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being done in some days living room.

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But on the other hand, if we have the, we have the platforms, we have the software we have the technology to essentially make all of this work, where people can use a rapid test in their home, or before they go to school before they go to work, they can

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get a verified result, and the results can go to the public health agency is to be able to say negative or positive for public health, that becomes exceedingly important, and actually really increases the benefit of a rapid test.

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and the reason is it for rapid test is positive, then from my perspective, all alarm bells should be going off to say hey this person is currently transmissible.

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So if that results can then get reported to public health agencies for contact tracing, then that's sort of, that's the best case scenario in terms of what who would be contact traced essentially you if I find that I'm positive.

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Essentially you if I find that I'm positive. And that result in five minutes goes from my house to the public health agencies, then all of a sudden the public health agencies have have a view into where of currently infectious person is.

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And they can call me up and ask okay Who are your contacts yesterday or the day before, and with very good accuracy be able to actually trace, people who may truly have been exposed which has been a big problem with PCR when you're trying to figure out

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okay when was somebody actually transmissible PCR doesn't generally give you that information, but a rapid test us because if it's positive, you're currently infectious.

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So it's, it's actually a very good tool for public health and when you link it with different platforms that now exist, then all of a sudden it can be an exceedingly powerful tool to actually curb spread in the workplace and schools and really help us

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to to get society back, and I would say, arguably society is getting back to where we want it to be. But we continue to run the risk of closing things down together quarantines.

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And so it gets us to a point of of near normalcy.

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And so that brings up one other one other piece or two other pieces, which are, how can these be effectively utilized besides just having this fabric, you know software services like you meant to to bridge the gap between what what employers need and

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what individuals need. We also need the structure and the platforms and the and the policies around how to best use these tests. One of the most impactful ways to use them is to prevent the need for quarantines amongst exposed to people.

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And so schools for example right now, when somebody gets infected.

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In a classroom, the whole school classroom will sometimes be quarantined and asked to stay home for 10 days.

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That's an information problem, we, we don't need to be quarantining individuals who may be exposed. If we know who was actually exposed, and infected.

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And so we can use testing before school for example amongst individuals who would otherwise be staying home or in the same applies for work.

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People who would otherwise be staying home because they're not sure if they were infected and infectious. We can test them in the morning. And we do that every day for seven or eight days.

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And once they get through that we know that they were not actually exposed and they didn't have to quarantine, and therefore they continue going to school or going to work so that's a policy that we could implement called test to stay where instead of

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quarantining and shutting things down. We test. Instead, in the morning and test to stay.

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And I think one of the other major roles for rapid testing which I think we'll hear a bit more about in this panel is test tree, and that's where we're getting new therapies that are going to make this pandemic much more tolerable to individuals, and

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to society by having there is that if you do get infected and sick, then you can get a treatment, and a crucial component of this is that the speed to actually get a result and to start the therapy is absolutely essential.

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And that's because the speed that this virus grows is very fast and so you want to start therapy soon, so rapid testing becomes very very important to help to help bring bring those therapies and make them the most effective, and I think we're starting

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to see if the tools develop to to essentially get rapid testing into people's homes so that if they get infected. We will be able to get them treatment very very quickly. So test to treat us another approach to being able to use these tools, very effectively.

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So, in general wrap up now.

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But these tools are now emerging across the landscape in the US.

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They're in people's homes, and we now have to be developing the policies and the programs to make them as effective as possible. And this really supports the President's policies around the \$3 billion.

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That is now going towards testing and rapid testing in particular, to ensure that Americans are getting access to these tests, and this panel is really about how can we make the tools that are now being provided to Americans or will be over the coming

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months, as effective as possible to return to normalcy.

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Eight. Thank you, Michael. Our next panelist is dr Mitch Morris, who is the president of a med. He has focused his career and healthcare transformation by applying innovative technology and emerging business models to make the health system work better.

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He's a writer and a speaker focusing on macro changes in the health ecosystem and in the evolution of care delivery. He's got more than three decades of healthcare experience as a business leader, technology innovator and clinical scientist,

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most recently he served as CEO of optimum advisory services which is the consulting arm of United Health Group. Prior to joining Optum Optum he was the vice chairman and global industry leader for Deloitte Life Sciences and healthcare business.

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you also previously served as the chief information officer and Senior Vice President for healthcare systems at the University of Texas, MD Anderson Cancer Center.

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In addition to being professor of gynecologic oncology and in health services research. He's also adjunct professor of Biomedical Informatics at UT Health Center, a Health Science Center in Houston, Mitch thank you so much for being here and over to you.

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Thanks.

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Appreciate the introduction Good morning, everybody.

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I'm going to expand a little bit on what Dr. Miller was talking about around test to treat, which is an area of interest to us, you know as an oncologist.

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I know that if you detect cancer really early the treatment is less than intrusive to your life, the outcomes are much better and it cost a lot less money to treat you.

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Then if we get it later. And that's also true of most infectious diseases and very, notably, now that we're starting to have therapies emerged for coping 19 coven is something that's potentially treatable.

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So, as we think about the real value proposition of testing, I think it's been some of the things that Michael talked about around do Should I quarantined and I go to school kind of go to work and I get on that airplane.

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early because it would give the results were so positive would be unethical to continue. Some of you may have read that regeneration is looking for an easy way for a novel monoclonal antibody cocktail that's different than region code that they've been

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using.

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So and, and there are reports that Pfizer in rows are also working on compounds. So it looks like in the near future there will be therapeutic options, and that gives us a real opportunity to expand on this concept of tests to treat me when I was still

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When I was still at optimum. Last year, the head of r&d for United Health Group came to me and said, you know, we really like to get monoclonal antibodies into our members, but by the time we learned that they have coded they're often in the emergency

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department and it really said stuff doesn't work that well then you have to get them early in the first couple of days that they have symptoms. So what we did is worked at that time, work with the men to place.

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Rapid antigen test in high risk members homes with the instructions that if you don't feel well call this number or go online and take the test. And amen will then guide you through the test validate the results create a laboratory report report to third

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parties and one of the third parties, was to optimize, and they would then give that person, an opportunity to get monoclonal antibodies for regeneration early before they got too sick and a lot of people took them up on it and did very very well, and

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the program was deemed a success. And since then, we've been looking for other opportunities to deploy the concept of tests to treat before people developed severe or even moderate illness because we really believe early diagnosis is the key here.

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So using digital point of care, which is a term recognized by the FDA as a proctor guided at home test and of course not only at home. It can be done anywhere.

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We think that's the best way to do tests to treat. It's better than the honor system because you're not necessarily going to write a prescription, because someone says that they had a positive test.

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Was it really you did you do the test correctly shorter was positive and there would be a need to repeat it.

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And then, you know, the other model is people go to a central testing site, whether it's at work or school or something else system sets up if they're infected there's a potential of infecting other people.

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Then we also talked a lot about in our, in our world about the thresholds for testing. When does someone actually get a test, and many Americans wait till they're pretty sick for all kinds of illnesses before they say, I'm going to take off from work

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or I'm going to pay \$100 copay or take the kid out of school. And in that time they get sicker and when you have a test already available at home for someone to take the threshold for testing is lower and they're more likely to take to take the test.

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So again you know our, our focus is on verifying the identity of the test taker, make sure they took the test right validate the results were clear wave lab so we create a lab report, and then can report that not only to the public health authorities

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but to other entities that would be involved in in prescribing. So, digital point of care goal is to shorten the path from diagnosis to contactless treatment delivery, because the other piece is E prescribing and getting, whether it's the new compound

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from Merck or another nother compound, getting into someone's home, and in their mouth as fast as possible, that's the, that's the priority, and the goal is to do it the same day or, or the second day, and we also think that that has an opportunity to

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address some of the challenges of rural health and for other populations that are underserved in in different in different ways.

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So right now we're working with several states, we're working with health plans and employers on how would we deploy test to treat, if any ua is issue for Manila Premier, and other compounds that are coming out.

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I don't think anyone would say that the distribution of virgin coasts, went very well. I think we're getting better at using that, but because it's an infusion are now sub q injection, but we got off to a slow start.

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and that's why we're working with states on figuring out how do we take it the last mile, because if we, the supply that the Biden administration purchase from Merck will likely be distributed to states, how do we get it to people, early so it does most

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good, there's unanswered questions like how much of the supply will there be, how do we triage individual so that we make sure those who are most in need.

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Get the medication, at the right point of time, but we think this is a powerful tool that will be able to use in conjunction with the administration's priorities to treat people early and effectively.

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We're eagerly awaiting what happens with some of the applications for a combination coven flew

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trip back trip back test using rapid antigen, because just like covered influenza is something that there's a treatment for, it's not particularly expensive it's been around for a while.

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And if you can get Tamiflu to someone within the 21st 24 to 48 hours if they're not feeling well, they can go back to work sooner, they are less likely to go to the emergency room or even Urgent Care they're less likely to get admitted and less likely

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to die. So we think this test to treat is applicable to lots of things coven influenza, but also strapped UTI sexually transmitted infections, many different tests that are emerging and there's a rich scientific pipeline of digital point of care and at

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home tests and linking them were appropriated to rapid therapy is important. Now we recognize that not everybody just needs some pills delivered to their house, some people, by the time they test they are already ill and need clinical attention and need

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to be seen. And that's why there's a triage built into this where those who are for example, short of breath or have a high fever have significant risk factors would then be directed to an in network provider to help them in, or get them to an emergency

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department.

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But our goal with all this is to reduce the burden on our health system of coven influenza and some of these other illnesses that are treatable earlier on, lower the total cost of care.

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And very importantly, save lives and have a positive public health impact.

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So Dr ground ball my back to you.

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Thank you so much. Our final panelist today is Dr Patrice Harris, Dr. Harris is board certified in psychiatry and has diverse experience as a private practicing physician, public health director and patient advocate in 2019 she was elected as the hundred

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and 74th, President of the American Medical Association, the first African American woman elected to that position. Her life is marked by her passion to improve the lives of children and communities around her especially communities of color.

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She's a recognized expert in children's mental health and childhood trauma, leading both local and national efforts to integrate public health, behavioral health and primary care services.

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In addition to our leadership at Emad she is a visiting professor at Columbia University, an Adjunct Professor of Psychiatry and Behavioral Sciences at Emory University School of Medicine and an adjunct clinical assistant professor in Psychiatry and Behavioral

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Sciences at Morehouse School of Medicine. She's also a fellow of the American Psychiatric Association Patrice thank you for being here in over to you.

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Well, thank you so much for having me. And just when you think it's safe to go back in the water your computer dies and you have to suddenly plug it in, but I so appreciate the opportunity to be with you today to participate on this panel with Mitch and

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Michael and I will tell you that I believe the take home message from all of our presentations is this testing is important.

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Today, testing was important at the very beginning of this pandemic and really as we think about preparedness for future pandemics testing is important, but I want the, the audience to think about testing as more than just the test.

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It is the test of course but it's also the infrastructure that has to surround, a test. And so I believe it's always important to understand the full context of testing, as we think about the now and solving problems as both Mitch and Michael have mentioned.

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And as we think about the future because Amen, was born out of our desire to solve a problem and that problem was access. Michael mentioned the fact that we all saw on our TV screens, people waiting in their cars for eight to 10 hours for a PCR test.

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Once they received that test they then had to wait 72 hours for the result. So they didn't have the knowledge that Michael and Mitch mentioned to act on anything and so they had to more or less quarantine some and remember a lot of these folks who are

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our essential workers who were on the front lines when some of us, myself included, had the privilege of staying at home.

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So Emacs all those problems with access and barriers and by the way yes they were in their cars, which meant that those who were fortunate enough to have cars had access to testing.

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And so we looked at all the barriers and wanted to solve for those problems, particularly the access problem.

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And so we also want it as a sub level of that think about making sure that the communities that were a disproportionately impacted by coded had access to the test so the common theme was access realizing there's no one size fits all.

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Michael mentioned PCR and rapid antigen and I think we all agree on this panel that we had the wrong debate about testing, we debated PCR versus rapid antigen when the answer was both, you know it's right patient right time, right test right treatment

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as Mitch alluded to, and so there is a solve for many options again not a one size fits all solution to make sure that we are getting folks tested early, when they needed so that they have the knowledge to make a decision about a next action, but not

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only on an individual level on a business level on a state level on a government level on college campuses on a school level so that's how we need to think about testing and then a little bit more about the infrastructure.

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Again, not just the test, what's required, what human resources are required. You do need a lab area. What physical plant resources are required. So again, we have to have these conversations in context and so looking at all those issues barriers infrastructure

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needs a med said let's solve that problem, let's develop this platform to bring at home, or to bring diagnostics rather in the home solves the problem of not having a car so I was a probably not needed to go to a location, also solves the problem, or

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or at least mitigate some of the risk. When you go to a location where others are being tested if you are infectious you risk infecting others. If you are not infected but around others who may be and are waiting to find out.

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Then you risk infections and so for all those reasons, we developed the Emad platform and it's again right person right patient right test right time, at a lower cost because we do also know that affordability is a solve a problem, an issue that needed

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to be solved and as I've said on so many platforms, we need to make sure we make the right thing to do the easy thing to do. And again, email has been a part of that equation, thinking about the disproportionate communities we went to this thinking about

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a mobile solution, who has mobile phones Now we all know that as a society, we need to solve for broadband access that's certainly an all of society problem but we do know that most people have a mobile phone and so we look for a solve where people could

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do this on a mobile phone.

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Certainly, we know that another wrong debate if I might, that we had is is a vaccinations, or testing I get this question a lot. And my answer is the same, it's both.

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And in fact, I won't open my jacket, but I have yes on testing yes on vaccines, yes on masking were appropriate yes on ventilation systems where appropriate.

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We need to make sure that we are having conversations around an all of the above approach, and we do know we still do not have everyone vaccinated. We are still waiting approval for our young children to get vaccinated.

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And so again, testing and testing programs and the infrastructure remain a critical piece of the salt. We want our children to go to school, I am a child and adolescent psychiatrist, and clearly I am not hopeless about our ability to catch our children

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up with the appropriate resources, but certainly it has been traumatic for all of us, and the disruption has been traumatic for all of us during the time of coven.

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And so we really want to do all that we can to keep our children in school, and the amen solution Michael mentioned testis stay is so critical, not a one size fits all solution, each school district can tailor their testing protocols to best meet their

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needs. And I will say that is another added advantage of Emad is that we are able to work with all of our clients to tailor a solution that best meets their needs.

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But the key is using testing to move our economy forward to keep our children in school to keep our businesses open, all are part of the solution not either or not public health or our economy, but public health and our economy.

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So I look forward to any questions that the audience may have fantastic This is great. Thank you to all of our panelists. I am going to please put your questions in the q amp a box, I'm going to kind of synthesize some of these questions so that we can

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get to as many points as possible. There are a bunch of questions about test to stay and just for a little context test this day is the idea that if one person, for example, one student in a pool testing, looking, you know we're using PCR one student

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test positive, there's going to be a time period where all the individuals are being tested. And so, there's this all the students in that pool will be will be quarantined until until the results come back.

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The idea with test to stay would be that all the students that were around the positive case might be able to continue going to school.

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Even, and if they, as long as they test negative and a rapid test. That's a lot of batch testing for a school nurse to handle so he met does provide a possible solution to that problem.

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But one. There's a question about you know just the timing of the test. So, say, a person is negative when you're doing the test in the morning but becomes positive later in the day.

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You know is that, what do you say what people think about that that kind of risk that you're taking by doing the test to stay protocol.

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So that's, that's a pretty remote scenario in terms of in general if somebody's negative, right now, it, it will take a while before they become highly infectious so within the course of that school day.

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They might break into becoming low, like what I would say low infectious. You know, and then there's it's impossible to know exactly when somebody who is in fact that it's going to move into that category.

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But over the six or eight hours that somebody's going to be in school after testing negative in the morning, it's very very unlikely that between that moment in time when they get a negative testing time they leave school that day that they are going

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to become highly infectious. And that's because they're negative in the morning it still takes a number of hours for the virus, if it was just on the verge of moving into infectious category.

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it still takes hours before it becomes particularly infectious and so.

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So this is it is it 100% perfect.

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No, there is a remote possibility that somebody who's negative can then become infectious within the school day. But it's a very good compromise to not have to be having somebody said home for 10 days out of school.

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It's an extremely safe relative. All things considered, it's extremely safe approach to being able to use these tests to actually keep kids in school keep businesses running without having to continue to this practice that has been ongoing for the whole

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pandemic of having a kid quarantine because they might have been exposed and then they go back to school. And then the week later they quarantined again because another kid in their classroom, you know turns up positive.

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And so we've seen many, many cases where a lot of children have been out for months, you know, with little breaks or they can go back to school and so this is a, an approach to really stop that practice and, and I, what we've seen is that there is no

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increased risk of test to stay relative to sending all kids home, and there was a nice study out of the UK that actually evaluated this, they use test to stay and they used cartoons and they found that both we're, we're essentially the same in terms of

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mitigating any additional transmission.

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Just to note that you know when kids are at a school then that means usually means that one or both parents have to be at a school too so this is not just a situation for schools, it's a situation for businesses as well.

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So there are a couple of questions just about the mechanics.

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Mitch maybe you can address.

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You know I have experienced a med before you. It's like a you open a video call, and they walk you through the test.

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And then you you administer the test and then the question is, does the men monitor the testers they wait. The 1520 minutes for the results. How does that work.

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And then, you know, how does how do you share the results.

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That's a great question in verification is, is important in order for us to issue a lab report, we have to know the person who's taking the test is the person they said they are, and that there is an integrity of the testing process.

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So we scan the data code for the test card at the beginning of the test and watch the person, prepare the test. During the next 15 minutes, no one's watching, but when the proctor comes on to interpret the result of them, we scan the code a second time,

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and make sure that's the same card, that was used at the beginning of the test that no one did a switcheroo on us. And we believe that that creates the integrity that we need in the testing process.

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So, our test in a word test manufacturer agnostic, we can embed many different tests, but they have to be able to be verified in a way similar to what we're talking about.

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It's interesting, there are other testing approaches at home for sample collection, where they don't verify your identity, they don't verify your blood or or swab contents and you just mail it off.

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That makes us actually a little bit uncomfortable and we believe there is greater integrity in the approach that we're taking, and our pricing is not only for the test because an over the counter test.

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Thankfully is inexpensive now. It's for the tele health service that also includes the issuance of the lab report, and we're pretty confident that our approach is less expensive than having an onsite testing program with medical personnel, which tends

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to be two to three times our cost per test, when you include not just the cost of the test but the people the resources, and we're not taking time away, and I think that's an important thing as well before school before work before getting on an airplane

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in Paris, you can test yourself at the kitchen table or in your hotel room at the time of your choosing a convenience, not when you necessarily queue up outside work or school.

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So, I'm not, not to the, the airplanes from Paris sounds lovely, but can we talk about some of the health disparities that we're facing here when it comes to testing Patrice Can you say, talk about a little bit about how he med can help with that.

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Absolutely, we've seen from the beginning that the very communities black and brown communities who have been disproportionately Of course all communities haven't been impacted by Kobe let's just start there.

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But we saw the data early on and that data even was incomplete because we have yet to do a great job of collecting data regarding race and ethnicity getting better, of course, HHS is ensuring that that data is collected but even from the partial data

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that we saw.

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There has been a disproportionate impact on black and brown communities. And again, those were the very communities at the very beginning of this pandemic.

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That didn't have access to testing let's be very honest, perhaps, those of us in this room on this call could have afford to have someone even come to their home those services were being offered at the very beginning, but the very people who are impacted

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did not have access and so this test solves for that problem getting these tests into the hands of those who most need them and can least afford them has been critical for us and we have had that as a goal from the very beginning.

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In fact, we are a Miami based company, and we donated some tests to school systems, right in our own backyard about five blocks away, the school system that has some of the highest students living in some of the highest poverty in Miami Dade.

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And so it really does help to be able to get these tests at home that you don't have to have a cost of transportation, which might be a bus if you don't have a car.

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If you don't have paid time off from work which we're generalizing here but those. Some of those who are in poor communities don't have that access, and so clearly email is a solution, it gets us further along the way to making sure that there is equitable

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access to testing.

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Wonderful.

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Michael Can you. I have a question here about, if there is an actual positive case to somebody test positive. Can Can these tests help shorten the time needed to quarantine.

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If somebody genuinely positive, you know by learning like how long somebody is infectious. Or, you know they're there are CDC guidelines that that are likely to hold sway here.

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So this is a great question. So, CDC at the early stages of the pandemic and the who place that isolation period of here infected and positive at 10 days.

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But 10 days is a conservative number in terms of most people will be infectious for for less than 10 days. And that's that 10 day window is really if you happen to find yourself on the first day that you're becoming positive than 10 days is sufficiently

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long to ensure that when you leave isolation, you're not infecting people.

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Now, 10 days is just essentially a population average of conservative number not necessarily an average. Some people will actually stay positive longer than 10 days it's rare but we see it.

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And some people only stay positive for four days where they're infectious for a very short amount of time. So I think to also decrease the burden of isolation of positive people we can be utilizing these tests, more wisely.

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And in this case, we could say use conversion from a positive to a negative for two days in a row, if you stay negative for two days in a row.

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Then you can start to assume that you're negative and I would argue that probably somebody if they're going to leave isolation early still continued testing for a few more days just to be sure, but after you've been negative for two days I would say that

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there's a very, you know, it's pretty safe to leave, and that could really decrease the burden which has been, you know, a major concern. A lot of people say well employers aren't paying people to, you know, stay home if they're infected and things along

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those lines. So people just start saying well I won't get a test, so that I don't know if I'm infected.

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That's, that's the worst case scenarios where somebody just bury their head in the sand, because of cost or because of losing pay. So the more we can decrease the burden on individuals, and this is one approach of many that should be instated I would

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but this is one approach to really reduce that time, I want to tell some mentioned just because I saw it in the questions a lot of people asking about test to stay as a burden on businesses actually I think testing doesn't require pool testing it doesn't

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doesn't actually require individuals testing on premise or additional resources and one of the reasons that I feel so strongly about the event model is because it can actually take the burden off of the schools and off of the businesses, so that nobody

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is actually doing any of the testing we don't have to have those nurses at the school or at the business to do it, people can actually just do the entire process from home, so if somebody needs to be quarantining or they're testing, instead of quarantine.

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Then they just do the entire process from home and you can actually do the two, you don't have to hire new staff to actually bring this to fruition and so I think that the more we can build up these sorts of programs and the policies and the fabric that

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enables us to work the veteran easier this forever on GG if I, if I might, because I saw a question and I'll start and then Mitch, can, can add on, if I miss any points but I don't have the question up from the chat verbatim but there was a question about

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Emad validating the test administrative validation. And so as Mitch said or alluded to, we are videotaping the entire session, and the test taker must show their test results to our test taker so when they do that we are scanning the card to make sure

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it's the it's the card, but we are looking at the results right that the lines one line or two. And so let's say that I decided that I wanted to try to game the system.

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And I know I am positive, but I tell the proctor, the guy that I'm negative.

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If the guy sees that I am positive, though I may say I'm negative. The guy, or email accounts that as an invalid result. And the person does not get a lab test so I wanted to make that clear and I don't I'm sorry does not get a lab test that says that

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they have a negative results so wanted to make that clear and Mitch I don't know if you have any more to add on to that, not good summary we that validation part is the month is the key of our mom is people can take tests on on their own.

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It is amazing how even with fairly straightforward tests from great companies like quit Dell and added people mess up the self test and don't do it right, that's part of the rationale for having selling them the two packs, it's not really for cereal testing

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is like I have another one if I didn't do the first one right. And in guiding someone through it really improves the results there's some data from the UK, that using an antigen test that's done on your own, as much lower sensitivity that if someone does

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it for you and the guiding process of making sure you put a swab in the right amount do turn it around the right number of times, do all the right steps is really important to get insensitivity to the highest point within the scientific boundaries of

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the test so that's the value of having a guided and validated test.

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Speaking of sensitivity, Michael, do you want to dress so there are some questions about sensitivity and specificity of the tests.

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rapid engine test versus other kinds of testing.

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You're on mute. Okay, this has been one of the biggest sort of debates around rapid tests in particular has been that they're not sensitive enough. and that started early on because there was continued comparison with PCR, the short of it is that they

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are highly highly sensitive to answer the question that we're all talking about, am I infectious. I don't want to be told that I'm positive and go into a 10 day isolation, if I was infectious three weeks ago.

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But that's actually what happens with PCR we continue to PCR stays positive for a very long time. And so it's really good for a physician who's kind of doing their physician detective work, if you will, to say my patient had symptoms a couple weeks ago

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I want to know if it was covered, and then use the most sensitive test that we have, but if the question is simply. I may or may not have been exposed yesterday.

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And I want to go to school today, then the question is, am I infectious and for that. These tests the rapid tests are very very sensitive, they exceed 90 95% we actually just published a paper a couple days about it and we've published a lot of different

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articles and events about this and past. And so, I hope that eventually we can kind of lay this, this particular question to rest which is that these tests are different than PCR, they have different purposes the speed and accessibility.

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And the question that they answer are different and they're fast, they're accessible, or they should be accessible, and they can answer the question that we care about which is am I infectious and they're very specific to that question.

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And in terms of false positives which has been a concern as well.

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Many of the tests like Abbott's test for example is now showing that it's extremely specific meaning it doesn't have a lot of false positives, one in every few thousand which means somebody could use the test every week.

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positive. And so they're very very specific as well and if you get a positive and you're really don't think you've ever been exposed and you want to figure out if you actually are. Then there's also rapid ways to confirm it could get another rapid test,

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you don't have to assume that a false positive means an automatic 10 day isolation, we can confirm these things and so there's a lot of different programs but in general for the questions we're talking about the tests, the rapid antigen tests are very

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very sensitive and specific for our needs.

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Right.

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Mitch said we've talked a little bit about testing and schools but just to focus on businesses a little bit.

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There is a question about how rapid test should be deployed for screening and a business, how many times a week.

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Do you recommend and what if the employees are fully vaccinated which all adults should be.

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So, how does that change your protocol and I imagine it's going to be changed in different circumstances but if you can kind of address that. Yeah, no, that's, that's a fantastic question, which there is no easy answer we're all waiting, the issuance

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of the ETS from OSHA on the presidential mandate that either you're vaccinated or you get tested once a week, and is once a week the right amount. Well, probably it's a little under testing, but I think it's a balancing of economic realities and practicalities

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with what might be more ideal with two or three times a week Justin.

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The OSHA rules I think will dictate in many ways what practices go forward in this country with employee testing as just a matter of fact, some employers may choose to test more often than once a week.

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So for example, in our business we test everybody what we're all required to test two times a week, vaccinated or not. And the reason we say vaccinated or not, is because we know that people who are vaccinated, you know, they may not get very sick of

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course there are notable exceptions.

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They can become infected and be infectious and transmit the virus, others. So, one of the points of testing in the workplace is to prevent everybody else there from getting getting sick, and what we like and we test on a sometime before 8am on Monday,

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between 8am Sunday at a Monday, and the same idiom Wednesday at 8am Thursday. And if both of those are negative, your chances of coming to work and being infectious are loaded.

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Is it perfect, you know, getting back to what Michael said earlier, no you can't predict exactly when someone's going to become infectious and this is all about risk reduction, and you're never going to be 100% risk free, but we shouldn't allow know testing

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no masks no vaccines we know that's wrong too, so we try to achieve a balance that people are willing to do, and that's economically feasible. I don't know Michael you might want to add on a little bit to that.

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Yeah, so the question of what what is the right frequency and things along those lines I actually one of the things I love about rapid tests, is that they're distributable, and they can be used in a very dynamic way.

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So when we have a big PCR logistics pipeline going, you generally have to have sort of a more stable like okay this is the, these are the contracts me up at the lab etc etc and so we have to set a priori a frequency.

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But with rapid test because they can be scaled up and scale down, essentially, in, you know, instantaneously. We can use them in a very dynamic way, so we could have a certain level of testing, and that might not even be with rapid testing that might

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that might be with wastewater monitoring and all different approaches. And then you can say okay if we start to see cases in our community, then you scale up the testing, and if you start to see an outbreak in a school then maybe you go to test everyone,

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every day for 10 days and immediately squash the outbreak entirely, and then go back down to sort of twice a week testing, and if you've had very low cases for a while good at once a week testing, and then maybe if your whole community has been generally

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cooking free. Go to no testing, you know, in an individual level or maybe some surveillance level of testing. So that's, I think that it that we really need to start thinking a little bit more dynamically about how to really use these tests or advantage

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in this pandemic without overwhelming systems without, you know, causing people, nobody wants to be tested themselves twice a week if there's not been a case in their community for three months.

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That, that's just a waste of resources. So we can use these in a much more sort of dynamic way that really addresses the needs of the day.

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So we're getting to the final minutes we're actually over but thank you everyone for these great questions I'm sorry we haven't gotten to the mall but Patrice Could you just say a little bit about what you think the future might hold not just for for

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covered but you know what you see for for this kind of testing and access, and, and then I'll close the session.

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Well, we've seen exponential acceleration of the acceptance of digital technology and telehealth through this pandemic right if we can think about silver linings.

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That is one. And so the future is full of promise, as we think about digitally enabled care I can tell you that at Eamon we are thinking about future opportunities where as Mitch said, there's an opportunity to diagnose early, which means earlier treatment,

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which means healthier individuals healthier population endless say cost savings potential cost savings. And so we think there is great promise in at home diagnostics, there's great promise I'm here at health in Boston, about chronic care, managing remote

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monitoring at home. So I think there's great promise in the use of platforms like image to enable better healthcare so that we can get to that quadruple hain that all of us talk about all the time.

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Now I will say, and we think about this at a med. There is parallel. If we don't think intentionally about not worsening health inequities and other issues and so we do at Emad, we're committed to think in full context about these issues, to ensure again

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we get to better outcomes, lower cost and higher quality.

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That's great. Thank you to our panelists for these really insightful remarks and addressing all these questions thank you to our audience for joining us today.