

Jeff Bernhard:

Hi, I'm Jeff Bernhard, Senior Vice President of Commercial Markets at Highmark. Welcome to Hitting a Higher Mark. In this podcast, we explore topics that are transforming how healthcare is delivered and paid for. This is the final episode of the COVID-19 mini series. Be sure to listen to our previous two episodes to learn more on how we are facing the pandemic. Today, we will be specifically discussing the different COVID-19 diagnostic tests, as well as what it means to have antibodies after recovering from the virus. We have a special guest here today to provide expertise on these very important topics. Please welcome Dr. Brian Parker, the Chief Quality and Learning Officer at Allegheny Health Network. Brian, welcome, and thank you for joining us today. Let's get started on today's topic.

Jeff Bernhard:

Let's start off with the basics. Can you explain the two different types of COVID-19 tests, specifically the difference between a viral and antibody test?

Dr. Brian Parker:

Sure, Jeff. To break it down and make the two really distinct from each other, the viral test is really the test that determines if you have active disease, and it represents a point in time, meaning that if you have symptoms or that you've been exposed to somebody who is known to have had COVID-19 and you go and get that particular test, it has the ability to tell you at that point in time whether or not you have active disease. It's really looking for the presence of the virus itself by, most commonly, through a nasopharyngeal swab, a very long Q-tip that they put in the back of your nose and throat. That gets put into a test tube and shipped off to a lab, to then determine whether or not there's presence of the actual genetic material that is the virus itself.

Dr. Brian Parker:

The antibody test is really further down the road. Means that you will have had to have been exposed to the virus, you will have had some sort of disease or potentially, as we're finding out, maybe asymptomatic or very mild symptoms. Then, your body, over time, has mounted a response to produce antibodies. Typically, early on you make what are called IgM or immunoglobulin M antibodies, which is your body's early response to an infectious disease. Then, the more mature immunoglobulin Gs come along later on, typically seen after 10 to 14 days, and those antibodies then are present because they have the ability then to lock onto the virus itself in a lock and key mechanism, and help to deactivate it so it actually can't enter your cells. One's really around, what's happening to me today and am I sick? The other one's really more around, was I sick in the past? Did I have it? Now, do I have evidence that I have antibodies to protect me in the future?

Jeff Bernhard:

Thanks Dr. Parker. The other question I have, and we often talk about this is, can you explain the accuracy of both the viral test and the antibody test?

Dr. Brian Parker:

The antibody tests and the viral tests are measured with what are called sensitivity and specificity. Sensitivity is, can I see what I'm looking for with this particular type of test? Then, specificity is, is it looking for the very specific thing that I want to know about? Or, can it cross react with something else and give me what's called a false positive? The way the tests are measured, and the PCR tests, which are

the viral tests, have very high sensitivity and specificity that are run in these commercial and hospital laboratories. When you get that test back, you can have high confidence that if it says it didn't see it, you don't have it right now, and if it says that it's detected, it has the ability to see it and see very minute portions of that virus and its genetic material. Those laboratory tests have very good sensitivity and specificity.

Dr. Brian Parker:

Some of the early antibody tests weren't as specific as they are now. When those tests started to come out earlier this year, they've been refining that technology, and finally, you see some of the large commercial labs like Quest and LabCorp adopting that technology because now they have confidence in the technology as well. It's approaching the same level of sensitivity and specificity to say that, yes, these are antibodies your body made that we can detect, and they're specific for this particular coronavirus.

Jeff Bernhard:

Very helpful, thanks.

Dr. Brian Parker:

Sure.

Jeff Bernhard:

You talked about the impact of some may have the virus right now from the viral test. If someone suspects they've contracted coronavirus, when is the best time to get tested to ensure the most accurate sample?

Dr. Brian Parker:

That really plays into the question of whether or not you're symptomatic or not. The big issue is, is that if you find out that you were exposed and you're contacted through either your work or through the county health department, or whatnot, to say that you need to go get tested because you were exposed to somebody who is positive, it's probably depending upon the number of days since that contact occurred. It's important to say that, if the contact occurred yesterday or the day before, you're probably not going to get much value out of going and getting tested immediately, because you have to go through what's called that incubation period, where enough virus starts to replicate that we would be able to get a good swab and then be able to detect it.

Dr. Brian Parker:

Most people will tell you probably never go earlier than at least a couple of days after that contact to allow that incubation period. But, most people typically start to develop symptoms after contact around five or five and a half days. If you get out into that four or five day range and you still don't have symptoms, if you went and got tested, there's still a high likelihood that we'd be able to determine whether or not you have active disease.

Jeff Bernhard:

Got it. What's the future of COVID-19 testing look like? Are we likely to see saliva tests that are available, or faster turnarounds on the current nasal swab test?

Dr. Brian Parker:

I think there's a couple of different things that can change this. One is the current testing methodology based on the different type of vendors and manufacturers out there have created all sorts of different types of platforms, and they all run a variety of number of tests over a certain time period. I think one of the things that many of them are looking at is that, what are the things that they can do to speed up that turnaround time so you can do more tests per hour? As opposed to what was originally thought, some of these machines didn't run as many as probably we would like seeing the type of case loads that we have, especially in the sun belt during the summer.

Dr. Brian Parker:

I think the other thing to consider is the saliva tests, when they first came out, there was a lot of fanfare and activity around them because it meant you could self administer the test in terms of the collection. It didn't mean you had to go to find a healthcare worker to do the swab and put it in a test tube. You simply have to spit into a test tube, put the top on it and then get it to a lab. The problem with those particular tests is that they require the laboratory to extract the virus from the saliva. It's not a simple test where you just throw it onto the machine and run it, and quite frankly, what a lot of the laboratories have found is that, by running these tests on their current machinery, it sort of gums up the works a little bit and can actually cause some interference with the machine that needs to be maintained, because the types of samples that you were using before were really just coming in media, they weren't coming in saliva.

Dr. Brian Parker:

There's some drawbacks to it, and there's certainly a time factor. There's the accessibility to be able to do something like that at home and not have to go to a hospital or a drive through test site. That being said, there's much more effort on the part of the lab to get that sample out to be run, in order to get the answer of whether or not you're positive or negative.

Jeff Bernhard:

Interesting. Let's make the, and I don't, but let's make the assumption that I had COVID-19. Am I able to catch COVID again?

Dr. Brian Parker:

There have been a handful of case studies that have come, both out of China, South Korea, and a handful of other places where they, quote unquote, found a patient who they claim had tested positive prior has developed symptoms, and now has tested positive again. There's some belief that some of those individuals who were tested very early on, so these are folks in countries that were tested back in February and March in Asia as the disease started to spread out of China. The belief is that some of those tests may have been false positives at the time, as they were trying to develop the technology and improve upon it so that they would be more accurate. That, potentially, that person didn't have it at that time when there was low community spread, and they weren't in the middle of a large area where there was a high incidence of it, and now they actually do have it and they're testing positive for the first time with a much more sensitive and specific test.

Dr. Brian Parker:

The general belief is, is that right now you would have conferred immunity if you've had it before. What we don't know is how long that immunity truly lasts, because this has only been going on now for about six months at scale. Just like most people don't get the same cold twice in the same season, the assumption would be that, at least right now, anyone that's had a recent infection shouldn't be able to be reinfected.

Jeff Bernhard:

Thank you. If I suspect that I've been exposed to the virus, what's the safest way for me to find and receive a test? What are the next steps? What should I do, regardless of what area I live in?

Dr. Brian Parker:

I think the simplest thing to do, and quite frankly the safest thing to do, is to pick up the phone and call your healthcare provider, whether it's your PCP or the clinic that you're familiar with or whatever, but don't get in the car and drive to your doctor's office and don't get in the car and drive to the emergency department. But, make a phone call and talk to a healthcare worker. Whether it's the physician, the physician's assistant, the nurse practitioner, the nurse in the practice, give them the circumstances of what happened, whether or not you're feeling ill or not, and to your best recollection, what was the timeframe of that exposure compared to the date you're calling right now, and let them help sort through when's the best time to seek care, to isolate, to start taking your temperature to see whether or not you do become febrile over time. Then the best is, we talked earlier about, based on that incubation period, if you don't have symptoms, when's the best time for us to determine whether or not you have an asymptomatic infection.

Jeff Bernhard:

Thanks, makes a lot of sense. Thank you for joining me to discuss the different types of COVID tests and the impact of antibodies. If you or a loved one suspect you have contracted the coronavirus or have been exposed to someone who has, be sure to self isolate and contact your healthcare provider to discuss the safest way to receive a test.

Jeff Bernhard:

Thank you for following along with our COVID-19 mini series, and thank you to all the wonderful guests who have helped spread the word of how we can keep ourselves, our loved ones, and our community safe during the pandemic. Be sure to subscribe and stay tuned for more future episodes on hot topics in healthcare. I'm Jeff Bernhard with Dr. Brian Parker. Thanks for listening to Hitting a Higher Mark.