

JOANNA ([00:05](#)):

Hello, and welcome to another episode in our podcast series. I'm Joanna Breitstein from Global Communications, and today we are joined by Dr. Daria Hazuda. Daria is vice president of infectious disease discovery, and the chief scientific officer of our exploratory science center in Cambridge, Massachusetts. Daria has more than 20 years of experience in drug discovery and development. She has made a number of important contributions to the field of infectious diseases, including leading the team that identified a new way to attack and treat HIV. Daria, thank you for joining us. So what makes our company well positioned to tackle the COVID-19 crisis?

DARIA ([00:48](#)):

Merck has an almost unprecedented history and legacy in the development of novel vaccines. So it's that legacy, that understanding of the discovery, development, manufacturing challenges that are really required to address a global infectious disease pandemic.

JOANNA ([01:11](#)):

There have been several research partnerships announced recently. From a scientific perspective, what are you looking for?

DARIA ([01:18](#)):

So we think about what's really needed in the vaccine. One of the things that we thought was really important is to have a precedent platform that can be scaled to meet global needs. And the other thing that we felt was really important when we think about global implementation, especially in the context of an epidemic setting, having a vaccine that could be administered as a single dose is highly desirable.

JOANNA ([01:47](#)):

The research underway is leveraging already existing vaccine platforms, such as the ones used for the Ebola and measles vaccines. Why leverage already existing platforms instead of starting from scratch?

DARIA ([02:00](#)):

Vaccines are a tricky business. Having a platform where you have an established safety profile in a broad population is really critical. We're going to be giving this vaccine globally to millions and millions of people. And so we wanted to be as certain as possible that the vaccine was going to be safe. And we also wanted a platform where we were very familiar with the manufacturing process so that we could ensure that we could get a scalable commercialization process as quickly as possible.

JOANNA ([02:39](#)):

What are some of the scientific unknowns?

DARIA ([02:42](#)):

There's a lot of unknown biology in terms of how the virus impacts human biology and leads to the pathophysiology that we see. There is also a lot that we need to understand about the replication of this virus and related viruses. And I think that's important because this is the third example of a zoonotic transmission of a coronavirus in relative recent history. And so, you know, if the past is any predictor of the future, one might think that this will happen again. And so we really need to be prepared for the next pandemic.

JOANNA ([03:17](#)):

This week, you'll be speaking at BIO on the topic of antimicrobial resistance or AMR. AMR is an age-old problem. Why is it relevant to focus on it during the COVID-19 outbreak?

DARIA ([03:32](#)):

In the current epidemic, there is increasing evidence that there are a lot of hospitalized patients who are receiving antibiotics. And so there is a

concern that that will foster an epidemic of new antibiotic resistance in the in the near term. The viruses and bacteria, they continue to outsmart us. And so it's really only a matter of time that our current arsenal will continue to decrease in its effectiveness. And so it's very important for us to continue to invest in both traditional and nontraditional approaches to try and address antimicrobial resistance.

JOANNA ([04:18](#)):

What has your experience searching for HIV treatments and vaccines taught you about the need to persist in drug development?

DARIA ([04:28](#)):

It's been a long road in HIV, but it's really amazing how far the whole industry has come in a relatively short period of time. The unthinkable now becomes something that is actionable. There's always something new, there's always something exciting and there's always progress. And so with that kind of progress, I think we can look into the future and think that, you know, there might be a time in my lifetime where eradication may be possible.

JOANNA ([05:04](#)):

Daria, lastly, what's the most important thing you have learned in your lifelong fight against infectious disease?

DARIA ([05:13](#)):

I think one of the most important things that I've learned as an infectious disease person is to not just focus on the infectious agents, but when you think about what you need to do in terms of developing a treatment, developing a vaccine, developing a preventative strategy, is really think about the patient. Because you could have the most effective intervention, but if the patient doesn't take it, doesn't use it, it's not user friendly... it won't really have the desired effect.

JOANNA ([05:50](#)):

Daria, thank you so much for your time, which we know is precious, and certainly everything you're doing to bring new research forward to fight COVID and other infectious disease threats.