RAJIV SHAH: In mid-to-late February we felt strongly that this was going to be a multi-year global threat. We had put in place a major, new $100 million program to address Covid-19. We said, "Let's create a national strategy for America on testing." We came up with a consensus plan to get from about 5 or 600,000 tests a week to 30 million tests a week.

What we were staring at was a lockdown that was costing America almost $400 billion a month. Almost all of the burden of that pain and suffering being placed on working American families, essential workers, minority, and vulnerable communities.

We've estimated this would cost about $45 billion to do. That is the best $45 billion America can spend right now. It would allow kids to go to school. It would allow elderly people in nursing homes to be safer. And frankly, it would be an expression of our values.

We can use this moment to reassess our ambitions and try to make the world more equitable, more fair, and more inclusive.

People ask me, am I optimistic or pessimistic about 2021 and Covid-19? And my answer is actually, "I am optimistic."

BOB SAFIAN: That's Rajiv Shah, president of the Rockefeller Foundation. Since the pandemic began, Raj has played a critical role in building Covid-19 testing capacity, forging a bipartisan coalition of governors, mayors, health officials, and business leaders.

I'm Bob Safian, former editor of Fast Company, founder of The Flux Group and host of Masters of Scale: Rapid Response.

I wanted to talk to Raj because he's at the center of one of the most important, high-stakes responses to coronavirus. The former head of USAID, former chief scientist at the Department of Agriculture, former executive at the Gates Foundation, Raj has a network and access to information that few can match.

He's also got on-the-ground experience, having been on the team that helped bring the Ebola virus under control in West Africa. This time, Raj says, we can apply those lessons to not only stop the virus's spread but rebuild a better economy and world.

All it takes is working together.
Safian: I'm Bob Safian, and I'm here with Rajiv Shah, president of the Rockefeller Foundation. Raj is joining us from his home in Washington, DC, as I ask my questions from my home in Brooklyn. Raj, thanks for joining us.

Shah: Thanks for having me, Bob.

Safian: Like many leaders you came into 2020 with well-thought-out plans, and then the pandemic hits, and everything gets upended. When did you realize that this was going to be a very different year, and how long did it take before you had a new plan, a new revision in place?

Shah: Well, the Rockefeller Foundation has for more than 100 years worked on health and public health and in 1918, we were part of the response to the pandemic influenza that took place then. So we actually had a team in place that has a lot of expertise on how to address pandemic threats and other health threats all around the world.

I'd say in mid to late February we felt so strongly that this was going to be a multi-year global threat that we actually restructured our health team. We brought in a leading global expert on this type of pandemic, Dr. Jonathan Quick. And by mid-to-late March, we had put in place a major, new $100 million program to address Covid-19 and its consequences in the United States and around the world.

Safian: So it feels to me like there are four pillars to Covid health response. There's prevention, there's treatment, there's vaccine development, and then there's testing and tracing. You guys chose to focus on this fourth point, and I'm curious why that, of these areas, was the one that you felt like you could have the biggest impact on or you felt was most important.

Shah: The one thing we've learned in combating every global pandemic threat for more than 100 years is, you have to have a data-driven, science-based response. And that's easy to say, and everyone nods and "yeah, that sounds right" and then you say, "Well, what's the data that you need at your fingertips?" And the single most important data point is: Who's positive? When are they positive? Where are they and how do we make sure they don't contaminate others? That's the key question to ceasing transmission of a pandemic threat.

And I learned, because I oversaw the West African response to the Ebola crisis when I served in the Obama administration, that we sent bioterror labs into small West African countries. And we flew blood samples by helicopter to those labs, in order to get the time to confirm a positive down from eight or nine days to under four hours – and when we did that, all the other stuff you mentioned started to work.
Once we knew who was positive, all of a sudden you could take that person out of the chain of transmission. So when we saw in early February through late March that America had made almost no progress at all in identifying who is positive where, we realized that if America didn't get on top of that fast, we'd be in a much worse place, so that's why we focused initially on testing.

SAFIAN: And in West Africa as you're describing this, you trained thousands of people in tracking and tracing. You got this response time down as you said, "from eight days to four hours." That was 2014 in West Africa. Why has it been so hard to do it in 2020 in the United States?

SHAH: Gosh, so many answers to that question. Right? But the reality was we had heads of state we could work with. Ellen Johnson Sirleaf was a Nobel Prize-winning president of Liberia, who told all of her people to not shake hands. We replaced the handshakes with elbow bumps. And more importantly, people listened because we enlisted community leaders to ask people not to hug and kiss and wash the bodies of the deceased.

That was a way you pay respect in the culture there, and it was also the primary form of transmission. We enlisted everybody – local tribal leaders, local medicine men and women. We trained, as you point out, 11,000 local community health workers and deployed them all over West Africa, and we did it in a data-driven, science-based way.

And I look back and I say, well, could America have done that? Yes, we're a diverse country. Yes, parts of Florida are different than parts of Washington, DC, or Seattle or Tulsa, Oklahoma, but at the end of the day, every community has community leaders. Every city has a mayor. Every state has a governor.

And had we all come together and said, "You know, this is not a political issue. We're all in this together, left and right, rural and urban, white and Black, religious and atheists. Everyone's in it together, and whoever your community leaders are, we're going to enlist them in an effort to get everyone to wear masks, to get everyone to social distance and frankly, to get everyone to get access to a test so we know you're positive and then you take yourself out of circulation for two weeks." Had all that happened with the spirit of American sacrifice that we're facing an enemy here, this would have had a very, very different course of progress.

SAFIAN: So you didn't see that community activity happening, and so you decided to step in and create your own coalition and try to do it yourselves?

SHAH: Basically. I mean, we have tried from the beginning to work with all forms of government, but you're right. We created a coalition of about 30 cities, states, tribal nations in our country. We look particularly for vulnerable communities: the African American community in Baltimore, the Native American community in Navajo Nation, the
very diverse Hispanic American communities as part of Los Angeles. And we said, "How are we going to get testing, tracing, behavioral change messaging to those communities at scale?" And so we put $100 million into that, and it has transformed what we know about testing, about tracing, and about enlisting people in effective behavioral change through our country.

SAFIAN: For a lot of folks, there has been an inability to get tests, or not understanding which tests they could get, or feeling like it takes too long to get the results back from the test. I know you made it a priority to try to amplify the number of tests from the spring until the fall. How has that trajectory gone? Are we on track? Are they the same test now as the tests we were trying to get back then?

SHAH: Well, I'll just say people ask me, am I optimistic or pessimistic about 2021 and Covid-19? And my answer is actually, "I am optimistic." And the reason I'm optimistic is in part the vaccine but mostly because of progress America is about to make on testing. In part because of work we did but really an extraordinary collection of experts and partners around the country coming together, back in the spring.

So what did we do then? Well, at that point in time we said, "Let's create a national strategy for America on testing." We brought together former Democratic and former Republican officials. We brought together scientists and industry. We brought together investors and major manufacturers of testing equipment, and came up with a consensus plan to get from what at the time was about 5 or 600,000 tests a week to 30 million tests a week.

When we put that number out there by the way, a lot of people said we were just thinking of this incorrectly, and it was not feasible. But what we were staring at was a lockdown that was costing America almost $400 billion a month. Almost all of the burden of that pain and suffering being placed on working American families, essential workers, minority, and vulnerable communities and unemployment at a rate we haven't seen since the Great Depression. So we felt, no, we can afford this and we should do it.

The plan costs $100 billion. The goal is to get to 30 million tests a week, and we hit our first target, which was three million tests a week, within five or six weeks by expanding access to the PCR test. What we knew we'd have to do to get to 30 million is have a whole new category of tests that were fast, point of care, maybe a little bit less sensitive than the gold-standard PCR tests, but fast enough that you would get your result quickly and take yourself out of the chain of transmission as quickly as possible.

That's what I think we're on path to do. I suspect that America, in the month of December, will have 120-plus million tests a month. We think by Q1 of next year we'll be looking at almost 200 million tests a month. And the vast majority of them – 170 million of the 200 million – will be rapid point of care or lab-based antigen tests that allow people to basically screen themselves before they go to work, allow schools and
teachers to be safe and productive together, allow nursing homes to operate with a
greater degree of safety for residents and critical healthcare providing staff, and frankly
allow America to operate during a Covid pandemic in a manner that's much safer for
those who are at risk.

SAFIAN: And this coming wave of more availability of testing, and I assume at lower costs than
the PCR tests are, is that because of manufacturing, the capability to make it? Or is it scientific,
like we figured out some different way to do tests? Or a little of both?

SHAH: Well, it's a little of both. So we know that getting scale in manufacturing and
production brings down the unit cost. And that's why we partnered with 10 governors –
five Democratic, five Republican – to put an initial order in for 5 million of these types of
tests, just to get that scale going. We've worked with the federal government and they
announced the pre-purchase of 150 million of these types of tests shortly thereafter. And
that was another shot in the arm to get towards scale, so you get a lower cost of
manufacturing and a lower unit price.

And frankly we've had important scientific and innovation advances that have allowed for
lateral flow assay, antigen tests to be, in my view, will become the new normal in 2021.

SAFIAN: And you said lateral flow antigen testing, is that the saliva-based testing that we're
talking about? I'm not even sure what all those terms mean.

SHAH: So lateral flow assay tests are like an HIV test or a pregnancy test. In the point of
care context, they can be conducted in your home. You can get a 5- to 10-minute
turnaround. The unit cost of one of the tests ought to be pretty low, call it $5. And at that
price point and at mass availability, I think we in America should start treating teachers,
doctors, nurses, like NBA superstars, and making sure they get a test very frequently so
they can go to work and feel safe, because they're the ones that are preparing our next
generation for greatness.

SAFIAN: Yeah at this point, the testing has been either for people who are already worried that
they're not feeling well, or might have some symptoms or might've been infected, or as you say,
NBA players or politicians in the White House, or people who have access to tests that the rest
of us don't necessarily have. You're saying that the next wave of tests will be sort of broader,
that we'll have them kind of prophylactically. And maybe as much to gauge what's going on in
the community as for me personally, to know how I'm doing.

SHAH: Yeah, that's exactly right. I think it's to make sure critical institutions in our
communities – schools, hospitals, healthcare institutions, home care workers, essential
workers – can be safe as they go about their work. And it's a strategy for allowing key
institutions to be open and active during a pandemic crisis. And it rests on ubiquitous,
low-cost, frequent testing. Now I will say there are a couple of barriers that we're still
working on. One is, the Centers for Disease Control has yet to come out with protocols
to guide institutions in using these types of tests. What we have done is partnered with the Duke Margolis Center and its great leadership there to produce those types of protocols. And we've put them out there together with the Rockefeller Foundation. But ultimately, no group of institutions in America, no matter how storied and how important, is a substitute for our Centers for Disease Control. So that's something that has to happen.

A second is, we are all waiting with bated breath for Congress to pass a stimulus bill and fund testing, especially for this type of screening test, because this is where American capitalism kind of fails on a public health basis. Right now to get one of these types, rapid antigen tests, it can cost anywhere from $100 to $300. And so the people who are getting it are billionaires in Palo Alto that are throwing dinner parties and want everyone to be able to dine inside. And they all have a quick test in the yard, over cocktails before dinner.

That's one way to think about public health. But that's a sad way to think about public health. We should be focusing on vulnerable African American communities. Black Americans are five times more likely to be hospitalized. They should be the priority for getting access to these kinds of tests. We should be focusing on schools. We know that there are tremendous mental health and learning loss issues when schools are not open, particularly public schools that serve lower and middle income communities. They should be getting the test and, frankly, they should be getting it free. So we don't yet have a structure for the federal government to pay for these tests.

We've estimated this would cost about $45 billion to do. That is the best $45 billion America can spend right now. It would allow kids to go to school. It would allow elderly people in nursing homes to be safer, and allow those taking care of them to be safe. And frankly, it would be an expression of our values, that we’re not just providing technology and innovations that make life a little more enjoyable for those who already have tremendous enjoyment and wealth, but we're actually focused on a public health response that lifts up every American as best we can.

SAFIAN: A lot of the folks listening to this podcast are businesspeople, entrepreneurs running their own businesses. And I'm curious what you think an employer's responsibility is in testing right now?

SHAH: To be honest, it's very hard as the CEO of a private institution, in my case, the Rockefeller Foundation, to tell other CEOs, you should not be protecting your own workforces, and you should somehow turn yourself into a government that looks after the public health needs of the nation overall. That's just not something that I think is a scalable solution. What I do think companies can do is first and foremost, put in place the right kind of physical safeguards, what you called prevention earlier. And I do think companies that are unable to do that should put in place appropriate testing protocols so that they can use these new types of tests to keep their workforce relatively safe. But
there is a line between that and the dinner parties. And we have to prioritize schools and vulnerable communities as a country, which is why concerted federal action is so important.

**SAFIAN:** There are a lot of folks who feel frustrated by the uneven actions or disparate actions of different leaders. People don't necessarily know who to trust or who to follow. You are interacting with, as you say, a lot of governors, a lot of mayors. Are there certain folks who you would say are worth emulating? Certain companies, certain governors, or mayors. Who's doing this right?

**SHAH:** Well, I think there are so many that are trying to do it right. Larry Hogan was the head of the National Governors Association, the Republican Governor of Maryland, I think he's very much trying to do this right. Eric Garcetti, a Democratic mayor of Los Angeles, very forward-thinking in trying to get this right. There are probably 15 other mayors and governors I could mention, both including Gina Raimondo in Rhode Island and Mayor Suarez in Miami. I think the challenge is they're not necessarily able, on their own, to move the market.

I mean, Maryland's a great state, but it's also a small state. So, putting the governors together and saying, "Let's buy together," that can move the market. Working with the Rockefeller Coalition can help say, "Okay, what kind of technology? What's the product profile we need six months out? We need something with a five-minute turnaround, a $5 cost, an easy to use construct, and something that's entirely point of care. Now let's go after that together."

**SAFIAN:** You mentioned technology, early on there was a lot of discussion about contact tracing apps, and that these were going to solve some problem in this. That doesn't really seem to materialize. Was that an execution problem? Was that a conception problem?

**SHAH:** I think all of the above. I think the reality is that someone with a telephone and a clipboard is probably initially pretty effective, and then once you get the telephone clipboard system working, then you can go to really great automated apps.

We are seeing in universities that we work with – including Yale, University of Illinois, Stanford, and some other places – we're seeing the integration of software and hardware come together so that you can have an automated system in a community like that, that says, "Okay, there's a positive here." Therefore it feeds into the system. The head of the university gets to see a dashboard and understand their real-time case load and prevalence and incidents. And the public health officials in that context can then react very quickly and efficiently.

So we are starting to see those things, but you're right that there was a lot of hype early on. But you can't get to that point if you don't have the testing regime down. This is why we focused on this. Those systems are sort of useless if the way you get a test is you
drive someplace, you pay a couple hundred bucks, you get a test result in seven days. And then you're supposed to go into a software tool and answer a bunch of questions about who you might’ve had contact with last week. That's not contact tracing. That's just –

SAFIAN: And it's just too late.

SHAH: – it's crazy.

SAFIAN: Even if it works perfectly, it's too late.

SHAH: Human recall doesn't work that well in that setting, trust issues become intensified the farther out you get from the moment you know you're positive. There's all kinds of reasons why that doesn't work. But at the end of the day, Covid-19 has not just been a health crisis. It has illustrated the deep inequities in America – and around the world, by the way. And I think often in our darkest moments, we reach for the stars, and I think we can actually do that here and emerge from Covid in a way that we've just built a much more equitable and much more effective economy.

SAFIAN: Yeah. Are there silver lining opportunities here with Covid? I know when you were at USAID and you helped respond to the Haiti earthquake, you pointed out despite the losses that there were some opportunities that you were able to uncover. Are there silver linings you see out of this difficult moment?

SHAH: Well, there are. I mean, domestically, I see a tremendous opportunity to say that we have a very high unemployment, we have a broken infrastructure, we know that we're now going to have to continue to put trillions of dollars of fiscal stimulus into the economy. We can use that fiscal stimulus to do everything from create green jobs, to build green infrastructure, to rebuild a public health infrastructure that prevents this from ever happening again, and ensures that we protect those that are most vulnerable.

I think on a biotechnology side, the areas of science and testing in vaccine development, and frankly, in therapeutics, I think that's going to unlock a whole new area of therapeutics that will have relevance to a lot of diseases over time. And this will have re-invigorated biotechnology in the United States for sure.

When I look globally, one of the most damaging things that most people don't realize is Covid-19 is estimated to push 425 million people back into extreme poverty. Over the last two decades, more than a billion people have moved out of subsistence poverty.

This is going to cut that almost in half, and we're going to unwind a lot of progress. So on that, I think we need a new global Marshall Plan to come together as a world and say, "Let's make sure as we rebuild, we rebuild in a way where everyone is included and everyone has access to the opportunity to lift themselves up." And I'm even optimistic on
that front because of the confluence of new energy technologies and new strategies for providing electrification and mobility and connectivity to some of the poorest communities in the world. So we can be very successful if we stay optimistic and if we're bold and if we're creative in this moment.

SAFIAN: And those that drop off in rising out of subsistence, it's not directly a healthcare issue? It's a second order like economic impact from the dislocation from Covid?

SHAH: It's both. I mean, right now, you could look at some places, say the State of Maharashtra in India which has 120 million people and a 20 to 30% testing positivity rate, that is incredibly consequential. Or you could look at African economies. Seven, eight years ago, six of them were amongst the 10 fastest growing economies in the world, attracting global investment, and with a very bright outlook from a growth perspective, growing regularly at seven, 8% per annum. Now living through a commodity price collapse and an economic collapse that has just stopped progress in its tracks and moved things backward.

There are still about a billion people in the world who get up every day and don't have access to electricity. There are no lights in their homes. There's no ability to plug something in. There's no benefit of using power tools when doing everything from farming to small localized labor work. So we have to solve that.

The Rockefeller Foundation is actually invested in a billion dollar collaboration with Tata Power in India, for example, to bring renewable solar energy connected to artificial intelligence, remote management, connected to smart meters, into the poorest parts of India. And we've proven we can provide electrification on an almost commercial basis to those customers. And those types of innovations will, I think, help transform the face of poverty around the world, if we're bold today and if we treat this crisis as an opportunity to lift people up who are being pushed down.

SAFIAN: I know you're also expert in the food supply. You've worked at the Department of Agriculture. The pandemic initially sparked food safety fears here in the U.S. Some things were hard to find. What things were exposed this year about our food supply or our supply chain? Or is the U.S. version of this really just emotional, and the real food issues are globally?

SHAH: Oh, no. The real food issues are definitely in the United States. I mean, one thing I find amazing – I've learned this over the last few years, that even though I went to medical school and theoretically I was taught nutrition – when you look at the biggest chronic disease causing problems in the United States – diabetes, cardiovascular disease – how much of that is caused by our deeply unhealthy diets. And the reality is Covid has exposed that people with diabetes and cardiovascular disease are far more, far more likely to have a negative outcome from an episode of Covid-19.
We've also seen frankly, big changes in how Americans eat. The shift from restaurant-based eating to home-based eating has reduced the amount of animal protein, meats, dairy, milk that's consumed in the average American family's diet. And that's probably a good thing in the long run from the perspective of long-term health. But we've also seen some really disastrous short-term things. I mean, 30 million American kids depend on school lunch for a non-trivial part of their nutrition. And that's been very, very difficult to make sure that those kids are getting those school lunches. We supported communities around the country with all these great partners on school feeding to make sure that schools could still be distribution points for food packages that could go to kids' homes, and often include a little extra for their families.

Early on in the crisis, we saw huge lines at food pantries around America, and that coincided with a big drop-off in donated food, which mostly came from restaurants, as the restaurants were closed. And you got a sense for just how many people in America, unbelievable in America, are on the edge of hunger, are on the edge of not getting enough food on a regular basis.

So we have some real issues in the United States that require leadership and persistence to solve. And of course, any time you see a big spike in poverty and a drop-off in economic activity globally, hunger is one of the top consequences. Violence against girls and hunger are like the two consequences I have seen whenever something bad happens, whether it's an earthquake in Haiti, a typhoon in the Philippines, a drought in East Africa, or a war in Afghanistan. It's something that I think as political leaders and just as a human community, we should come together and say, "No one should have to go hungry, and no one should have to fear for their health and safety in this era, in this age."

SAFIAN: You mentioned violence against girls and women, are you seeing rising numbers in that in this Covid time?

SHAH: The United Nations has issued an estimate that for every six months that the world is in some form of scattered lockdown, there are 31 million cases of gender-based violence, domestic abuse and otherwise, that are additional to the baseline around the world. So it is a tremendous issue. It gets much, much worse at times of crises. I saw it firsthand, you mentioned the Haiti earthquake, people lose their homes and the people who are most vulnerable right away were young women and girls. And we just did everything we could to protect their safety, but it was extremely hard, and something I carry with me today because I know when there's a crisis, they are often the first to suffer. And frankly, the global community usually gets to that issue way too late.

SAFIAN: There's so many things that we've talked about here, Raj, and it can feel a little overwhelming. What do you feel like is at stake in this moment?
SHAH: If you look at the recovery from the 2008 financial crisis, we had a steady but slow recovery in the United States. But at the end of the day, so many people felt that they were excluded from that recovery, on the right and the left of American politics, that I think it has torn our country apart. I think it led to a sort of populist anger on the right and an Occupy Wall Street type of anger on the left. And I think that has been bad for our nation in terms of our ability to bring people together, look clearly at the future, and build a more inclusive economy.

And I think the same is true globally. So I think a lot is at stake in this moment. I think this is a much, much more devastating crisis than the financial crisis of 2008. I think it's very likely that if we don't step up and lead in this moment, if we don't say, "We've got to knock it off and make sure that every vulnerable community in America is prioritized for both testing, contact tracing, and the vaccine. Period." If we don't step in and say, "We need a big global collaboration to protect emerging markets and emerging countries from Covid-19 as it starts to explode in parts of the developing world." And frankly, if we don't come together and say, "We should spend a non-trivial part of our GDP in a massive global recovery effort, that is inclusive for everybody and protective of our climate." If we do not do those things now, I think we wake up 10 years from now in a world that is staggeringly more unequal, that is on the precipice of climate disaster, and at that point, we're looking at addressing a set of challenges that are just too hard to overcome.

And it just doesn't have to be that way. It does not have to be that way. And one of the things I love about getting to be at the Rockefeller Foundation is we get to be on the cusp of innovation, science, and technology, and see the inventions that are making a different future possible. If you told me 20 years ago, could you electrify the whole world and make sure a billion people who live in the dark have electricity and the chance to pull themselves out of poverty? The answer would have been, no. You couldn't do it. You just couldn't do it. You had to depend on too many governments and utilities and coal fired power plants. Today, it is cheaper and more effective to just provide everybody distributed solar energy.

Similarly, it's possible today to build a system where as soon as you're positive of Covid-19 anywhere in the world, it goes into a central repository, and everybody can see that positive case in real time. So we're tracking data and driving a response that's data-driven. The tools exist to do that. The science exists to do that. We need the leadership to come together and take advantage of this moment so we have a much brighter future.

SAFIAN: Your energy is still so good, even though all of this is hard. When you get to those moments, and I'm sure you do, when things are like, ugh. Where do you go to sort of rejuvenate yourself?

SHAH: That's a great question. I mean, I will say in these last six months, I've had a number of those moments where you're just like looking at what's happening and
thinking, "How could this be happening in our own country? Or why is this effort we put in place 10 years ago being dismantled in a moment when it's most needed?" And I guess my personal answer to that question is I go to friends and mentors who have inspired me for decades.

I feel very fortunate that in my career, I've gotten to work with some super amazing scientists that are just always looking out at the frontier and are really optimistic. And they every now and then share with me their worldview and it is really uplifting. Or I talk to people who've been there before and who remind us that Microsoft was created during a recession; that we think it's dark moments now, but LBJ took office right after Kennedy was assassinated in one of the darkest moments in our history, and had a fierce determination to pass serious civil rights and voting rights legislation to make America more inclusive.

I know from my own experience that I've seen the courage of young girls in Afghanistan that somehow had the will and the capacity to go to school when their life was threatened to do so. And I saw the United States partner with the Afghan government and put 8 million girls in school. So I've seen it happen. And I feel like if we can do it in Afghanistan, if we can do it in Haiti, if LBJ can do it after such a tragic moment in our history, we can use this moment to reassess our ambitions and try to make the world more equitable, more fair, and more inclusive.

SAFIAN: Well, Raj, thank you. Thank you so much for sharing so much and for sharing so many of your ideas and your insights. I really appreciate it.

SHAH: Thank you, Bob, for having me. This is great to be with you.