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Rapid COVID Tests: A Cure for Lockdowns, a Complement to Vaccines

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KEY TAKEAWAYS

Many Americans could resume normal activities if they could know regularly their COVID-19 infection status. Rapid self-testing on a wide scale could do this.

Enabling Americans to get frequently tested and make informed decisions would likely transform our response and be more successful than mandates like lockdowns.

The FDA should approve rapid self-tests that are fast, cheap, and easy to use at home and don't require a prescription or a lab technician to provide results.

Marie Fishpaw: Thank you for joining us on Heritage Events Live to discuss "Rapid COVID Tests: A Cure for Lockdowns, a Complement to Vaccines."

Our panel: Dr. Paul Romer, Nobel prize winner, entrepreneur, and professor at New York University; Dr. Michael Mina, an epidemiologist and immunologist who teaches and practices medicine at Harvard; and Doug Badger, a scholar at Heritage with over three decades of developing health care policy at the highest levels of our nation's government.

For months, our nation's response to COVID has largely followed an approach of "avoid people, wear a mask if you can't avoid people, and wait for a vaccine." A vaccine remains months away from being accessible to everyone.

Meanwhile, cases, hospitalizations, and deaths continue to rise. Many jurisdictions are reimposing

lockdowns and mandates seen at the start of the outbreak. And they're facing protests from people who resist the disruptions to their lives and livelihoods.

So, we're here today to discuss:

- Is the current approach to COVID working adequately to protect lives and livelihoods?
- Or do we need to adjust our strategy?
- And if we need to adjust our strategy, is there a way to improve the response to the pandemic using tools that Americans will accept?

Michael, you have a way to improve and actually transform our response to the virus. Talk to us a bit about what you see is missing and what could change things if it was used instead.

Dr. Michael Mina: Sure. All of our efforts have so far been mostly directed toward the vaccine in terms of where most of the money has gone so far and then toward extraordinarily expensive lockdowns, which are sometimes essential, particularly early on, when we didn't have tools to fight this.

But since, we have a lot of tools. One of the most important tools that we have that could actually stop the spread of this virus, or at least greatly limit the spread, are our rapid tests. These are tests that can be done. I have some right here. These are simple, little tests. Inside here is a little piece of paper. You can build these in the tens of millions every single day. And we can put these in people's hands in their homes so that people brush their teeth and take a COVID test.

It's private information. It's just the way that we've told people since they were babies that they should keep their health information close. We have essentially trained the U.S. public to be individualistic and to want to hold onto their information and not necessarily have other people in their business. And people take to that. And rightly so.

This is a way to give people tools to know if they're infectious so that they can make the right decisions on a daily basis. They can see a negative today and know: "I'm negative today. Now I'm positive and I can stay inside for the next three or four days until I turned negative again."

This is a way that we very rapidly stop transmission, not just here and there, and not give people seven-day, 10-day delays before they get a result back, which ultimately become, frankly, useless. This is a tool that gives

people immediate feedback so that they can do a lot of what they would normally do safely without being part of a bigger problem of transmission without even knowing it.

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These tests exist today. We just have failed to produce them in sufficient numbers and put them into the hands of people. Essentially, what we've found is we haven't trusted the public with their data, with their own information. We have a tool that can actually give people information about themselves that frankly, they're yearning for. We have a lot of people standing in lines for hours and hours and hours waiting for a test that is ultimately useless to give them any information about what they need to know today.

If we build these tests and, in particular, if Congress passes a billion dollars to build these tests specifically for this purpose, then we can actually get these out into the hands of all Americans very quickly.

Fishpaw: Set our expectations. How would it work? Would we take a test and stop wearing masks? Are there other things we'd have to keep doing?

Mina: The nice thing about this is this takes 30 seconds twice a week. That's it. It takes 30 seconds twice a week. You have it, you brush your teeth on a Monday and a Friday and take a test.

If we do that, just that much, we can actually stop population transmission. We can get this value of R down below one.[1]

But this doesn't mean stop everything else. Whatever you're already doing, keep doing it. We know that there's a lot of people in parts of the country that choose not to physical distance at all, choose not to wear masks. These tests will still help those people. There's a lot of people who do wear masks. These tests will still help those people. It's a no-brainer to get these out.

1. "R" (also referred to commonly as "R number" and more precisely as "R_0") is a way of indicating a disease's ability to spread. It "tells you the average number of people who will contract a contagious disease from one person with that disease." When R is below 1, the virus infects fewer people on each subsequent generation. So instead of, for example, 100 people spreading to 130 people (R = 1.3), 100 people might spread to 80 people (R = 0.8). See Vanessa Bates Ramirez, "What Is R_0? Gauging Contagious Infections," Healthline, https://www.healthline.com/health/r-nought-reproduction-number#meaning (accessed December 21, 2020).

One of the big concerns about these is that people will use them and then go party, that everyone's going to go party. Well, not everyone parties all the time. This isn't going to be a license for everyone to just go and party.

The same thing was said about HIV. They said if you give people their knowledge of their HIV status, everyone was going to go have sex. Same thing was said about seatbelts. "If you put seatbelt in a car, everyone's going to drive recklessly." This is an age-old argument that just never holds up.

The population benefits always outweigh those concerns of the fringe effects, where you might have more cases. The point is they're really effective.

There's been huge concern that they're not accurate, but that was from early on when people didn't understand how to evaluate these. They were comparing them just to PCR.[2] I don't need to go into the technicalities, but these rapid tests are highly accurate in finding people when they're infectious.

They are extremely powerful tools, and they work as very powerful adjuncts to everything else that people are already doing, including vaccines. We're building vaccines, but we can't wait six months or eight months in reality, across the U.S. and the world, to get everyone vaccinated. We can have these rapid tests tomorrow if we want to.

Dr. Paul Romer: I think it's useful to think of setting a target rate of spread of the virus. So set a target for this reproduction number R, or its rate of growth. Then ask, if we do more testing and then we reduce other things that are restricting R to keep R the same, what's the net effect?

> If you knew who was infected, you could put in restrictions only on the people who were infected. And then you don't have to suffer the enormous costs that we're bearing when everybody has to be restricted.

And what the calculations show is that each dollar you spend on test and isolate would let you remove restrictions that are costing us at least $10, maybe as much as $100, in wasted output.

2. PCR, or Polymerase Chain Reaction, tests are capable of detecting very small amounts of the SARS-CoV-2 virus. They are intended to identify if someone *has* COVID-19. Rapid antigen tests, such as those Dr. Mina encourages in this discussion, detect viral antigens, a substance given off by the virus, rather than the virus itself. They are intended to identify if someone is *contagious* to others. Panelists elaborate on the implications later in the discussion.

So, the way to think about, well, what else would change? Just pick whatever R you want, probably one that's well below one, so we're going on a declining path for the virus. But then as you scale up more testing, you can remove all of these extremely costly restrictions on everybody.

I think the other thing to keep in mind is that the strategy so far has been "Let's restrict the activities of everybody because we don't know who's infected," even though we know that the fraction of the population that's infected is in low-single-digit percentages, at best.

Now, if you knew who was infected, you could put in restrictions only on the people who were infected. And then you don't have to suffer the enormous costs that we're bearing when everybody has to be restricted.

And then, that tells you why you want tests. If you just know who's infected, you can focus your efforts on them and get them to stop spreading the virus. You don't have to interfere with the activities of anybody else.

Back to Normal?

Fishpaw: You've looked at what this could actually do to stop the spread. You've made some projections about how quickly we might, were we to adopt something like this, stop the spread and collapse the virus, the spread of the virus. Talk to us about that.

Romer: I think it's a social choice how quickly we want to stop the virus. I think Michael's done some calculations. And if we went all out to just stop it within four weeks, we could do that. Another way would be to accept that it's going to taper off over the next several months. But under that approach, you could more quickly open up activities that are currently restricted.

But you pick how quickly you want this thing to go away, then you scale up the tests as fast as you can. And you release the other restrictions to keep yourself on your target path.

Mina: To your question about how long it would take, essentially our projections are: If you start with a raging epidemic, kind of like where we are right now, and just get 50 percent of people to use this—assume you have a whole half of the population who just flat out refuses. They choose not to listen to their results. They still go out and do everything. They don't isolate.

But you have 50 percent of people that do choose to follow the results. And if they're positive, they stay in just for a few days, even. The nice thing is because people have tests, they can just test until they're negative. And that might just be three or four days.

If we do that alone, we would see an almost immediate drop in the effective R, meaning that we'll go from exponential growth, where we are right now on the outbreak, to exponential decline. So within a month, we would start to see enormous gains. Instead of going from 100 people to 400 people in a month, we'd go from 100 people to 20.

So we have to look at the difference, not just from where we are today, but what would be the counterfactual. Where would we be if we didn't do it? Or in this case, unfortunately, the counterfactual is: Where would we be if we did do it? And we could be in an entirely different position had we started this in June when we first started really talking about it. And there's no time like the present. Every day that goes by that we're not doing it, we're losing ground.

Romer: Sorry, Mike. I mean, we were talking about this in March, not just in June. There were people like me and Alan Garber who identified way back then that we could do this.[3]

Another way to make this clear to people is: Imagine we could test everybody in the United States today, find out who's infectious and who's not, quarantine everybody who's infectious for a week, five days. We could stop this virus in its tracks within basically a week. Now, in practice, you can't test everybody on the same day. And there'll still be some people in circulation. So then you're choosing these paths of decline.

But it's important to understand that once you know who is infected, it's really not that hard to address this problem. Then you've got to have some surveillance to watch for people bringing it in from other parts of the world where it's still going to be spreading, but that's really an easy problem to manage, too.

The Policy Perspective

Fishpaw: This sounds like a great idea. And you've been talking about it for a while. What is getting in the way of this idea becoming a reality?

Doug Badger: I think what's happened is that policymakers have locked themselves into a losing strategy and are having a difficulty seeing that there are alternative approaches.

When you think about what we're seeing right now, we're seeing a surge in cases and deaths. And we're in the midst of the holiday season.

3. See, for example, Paul Romer and Alan M. Garber (a physician, economist and provost of Harvard), "Will Our Economy Die from Coronavirus? It Will If We Keep Up Our Current Strategy." *The New York Times*, March 23, 2020, https://www.nytimes.com/2020/03/23/opinion/coronavirus-depression.html (accessed January 6, 2021).

So just at the time when you most want people to restrict social interactions, people are most inclined to engage in those social interactions.

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What do we see? We see political leaders telling us, "Don't get together with family and friends for the holidays." Then we read stories about governors and mayors, and so forth violating their own orders. We also see—and this, to me, is a very troubling trend—it's more or less a subtext. But Mr. Biden said something the other day that really points this out. He said we're likely to lose another 250,000 people, dead, between now and January, because people aren't paying attention.

We're on a failed policy course on the one side, and on the other side some leaders are beginning to tell people, "Well, it's your fault this is happening."

We're really at a juncture where it's absolutely essential that we change strategies. So it's really necessary for political leaders, as well as public health officials, to begin to acknowledge, "Okay, guys, this is not working. Are there alternatives?" And until we begin to open that mindset, it's going to be very difficult to get people to change course.

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Romer: There's been some political resistance to more testing because there was a concern that more confirmed cases would make things look worse. In addition to that, I think we've had a problem from the academic policy side. Whereas, as Michael was pointing out, there was a strong tendency to harken back to our experience with AIDS, for example. We can't have home testing, and there's all these risks having more testing. And we thought back to AIDS. We thought back to other pandemics. And we thought back to a time when we didn't have available these low-cost tests.

So I think the academic and policy communities have been too slow to take on board that this is a different virus with a lot more asymptomatic transmission.

This also is a time in the United States where people are much less willing to provide contact tracing information. And we've got much cheaper tests.

And what we should have done on the policy side is, okay, with all those changes, what would be the optimal strategy to propose today? But in fact, what we got was just this kind of rote dogmatic reiteration of things we had done in the past.

Mina: That's exactly what we've seen. There's also been this conservatism in approach to testing that we don't see in vaccines. The FDA [Food and Drug Administration] can say, "If vaccines are 50 percent effective, we'll take them." But there's something different about tests for some reason that we have to get past. And that's where people say, "If they're not 100 percent effective, they're not worth doing."

We keep looking at this in this strange way that is harking back both to our previous attempts to control viruses—when, like Paul said, this is a very, very different virus. Contact tracing and slow PCRs for a virus that moves across multiple people within a week—this isn't HIV. We can't have a slow response. We have to have very, very fast turnaround time of tests.

What we've also seen is that we have got to get it out of our mind that this is not a medical problem. This is a population problem, a public health problem. But we only have in this country one lens to look at a test. And this is as a clinical medical device given by a doctor or other medical professional.

As far as I know most people in this country who want to get a COVID test don't need to see a doctor. They just want to know if they're transmitting to their family and friends and loved ones. But we only have one myopic lens to authorize these tests. So it's getting bogged down and it's causing people to say, "Wait, if it's not 100 percent accurate, then it's not effective." But instead, we're using extraordinarily accurate tests that are completely ineffective.

Romer: The strange thing here is that, weirdly, people like the CDC [Centers for Disease Control and Prevention] and the standard voices in public health, they're perfectly happy to recommend temperature scans, which are a kind of test, which are much worse than anything we've been talking about. So there's almost this theater of some kind of tests which are okay that don't work, but yet we're not willing to recommend tests that do work.

It's easy for me outside of public health to complain about them. Michael's really been courageous, as somebody who's got to operate in this environment, for saying we're not doing this right. So he deserves credit for really pushing on this.

We can't just let go now because the viruses are on the horizon, because, one, it may take a long time to get the vaccines in the scale we need and to get people to use them. Two, we need to understand what went so badly wrong.

Johns Hopkins did this study saying which countries are best prepared to handle a pandemic in 2019. And they said U.S. was number one and the U.K. was number two. These two countries have not been in the forefront of experimenting, being adaptive, trying things that would actually work. We need to understand what went wrong and how do we avoid making this mistake in the future.

Badger: That's a good follow-up seminar. We've heard a good deal about that, particularly the CDC's failure to adopt real-time data standards that Congress has been mandating since 2006,[4] the testing debacle at the outset. And unfortunately, I think, as Michael and Paul point out, a real error that I believe the FDA is making right now precisely in being unable to distinguish between a test that's done for clinical diagnostic purposes and a test that's done for screening and surveillance purposes. They're, again, locked into a very narrow mindset. We approve this test for a doctor to make a clinical diagnosis. That's not the question. The question is whether we approve the test.

Romer: The challenge here is there are really three different use cases for testing. One is surveillance. That's relatively well understood. And the FDA isn't really impeding that. Then there's clinical diagnostics. A bunch of us have been trying to come up with a name for this third case. And I think Michael actually has proposed the best name that I know of, which is *public health testing*. This is testing where you're protecting the public health. It's not with a view just toward seeing what clinical treatment decisions you make for this patient. But it's also more active than pure surveillance, where you're only collecting research data.

So, I was pushing the term *screening* for a while. Others have used *mass testing*. Atul Gawande proposed *assurance testing*. But we need to settle on some term. I think *public health testing* is best. And then once we can name it, we can talk about it and recognize that it's different. And we can, I hope, get the FDA to think about it in a more clear-headed way and make different trade-offs, the appropriate trade-offs when you're protecting public health, which are just different from the trade-offs you make when you're looking at clinical diagnostics.

4. For further information on the public health consequences of the CDC's failure to follow multiple congressional mandates to modernize its data, see Joel White and Doug Badger, "In Order to Defeat COVID-19, the Federal Government Must Modernize Its Public Health Data," Heritage Foundation *Backgrounder* No. 3527, September 3, 2020, https://www.heritage.org/sites/default/files/2020-09/BG3527_0.pdf.

How Many Tests?

Fishpaw: The Trump Administration took what I would consider a positive but baby step in the right direction. They've bought 150 million rapid tests that sell for $5. Why is that not enough?

Mina: That was a great move. Assistant Secretary for Health Admiral Brett Giroir, MD, has been really pushing to use those in the most appropriate way. He wants to set up pilot studies on a big scale and things like that. It's not enough to achieve what is needed but I think that was a good step. The maker, Abbott, sells them for $5, which is a good price point. I'm sure it could come lower still.

But 150 million tests isn't enough. What we need is to scale that up to have around 10–20 or 30 million every single day. Moreover, we saw a lot of pushback from a lot of experts in medicine. I don't want to put my colleagues down, but there's conservativeness in medicine, a sense that: "If it's not perfect, it's not worth doing." It really stopped the utility of these tests.

Frankly, the CDC and others should have given better guidance about how to use these tests. We can't have a rapid test like this be confirmed with a five-day turnaround time PCR. We need to do it quicker. We need to have this test confirmed with another rapid test and simple algorithms that we could have put together through the CDC and the NIH [National Institutes of Health] and the FDA, but we haven't done that.

And so essentially what's happened is Admiral Giroir has gotten a lot of flak for the tests not being utilized when it needed some direction (I would say from the CDC) to say exactly how they need to be utilized. Instead of having just professional pushback, we should have had the professionals say, "This is a great new tool," embrace it, and figure out how to use it the best way possible. Instead, it's just been more or less pushed to the side. Meanwhile, it's like a goldmine of testing, especially that particular test is an amazing test. It's almost 100 percent accurate for infectious people, exactly what we're talking about here, and it hasn't been well utilized at this point.

Romer: There are two places where Michael and I disagree. One of them, he was right about it, and I was wrong. I argued in the beginning we needed 20 million tests a day. He did some modeling with some others that suggest we actually may need twice that—40 million a day—to really get to once-a-week testing. And that's the way this process should work. Everybody else just kind of made fun of me because they thought it was silly to do 20 million tests a day. But Michael was one of the few people who actually thought about it and said, "Actually, no, it's not enough."

The other place where we disagree is that I think it's worth pushing on every single kind of test we can get. So there are PCR tests, which are not

available as quickly, but right now we're not facing as much resistance from the FDA to scaling out the PCR tests. So if you look at the University of Illinois, the reason they're open is because they're testing people once a week with a PCR test. And it takes a while to get the sample, get it to the central lab, get the results, notify the student.

But the real bottleneck right now is that the FDA is forcing these tests, like the Abbott tests, to have a number of restrictions. It's legal to use this test only if a physician prescribes it for somebody who's got symptoms. So you've already lost most of the potential from the test. In addition, the test has got to be administered by a CLIA-waived lab. CLIA [Clinical Laboratory Improvement Amendments] is a clinical licensure or regulatory approval that you have to have as a lab to get these tests. So we had tests that were sent to nursing homes that people in nursing homes felt they couldn't use. Their lawyers told them, "You're going to be at huge legal risk if you do something which is basically violating the FDA rules about how to use these." So we can get Abbott or other people to radically scale-up the production of those tests, but we need the FDA to agree that for public health testing, you don't need a doctor's prescription, and the result doesn't have to be administered by a CLIA-waived lab.

Mina: I do not disagree with you, Paul. The PCR tests—I helped to start up and now help to lead, I think, the highest throughput PCR lab in the country at the Broad Institute. It's what's kept all of these New England schools safe. It absolutely has an advantage when the turnaround time can be fast, and I fully embrace all of the forms of testing, but speed is number one. The moment you go to a test that has a three-day turnaround time, which is frankly average now, if not on the fast side for this country, it's a useless test.

> We've got companies making $100 a test doing test results that are available five days later that are worth nothing.

Romer: That three-day turnaround, that's because we just haven't created the right incentives. There's nothing about the technology that forces that three-day turnaround. But basically, we've got companies making $100 a test doing test results that are available five days later that are worth nothing. And they're just going to the bank on this end. And this is another failure, I think, on our part, was to spend so much money on tests that are useless. If you just said, "If we don't get the results within 24 hours, you don't get paid," we would have gotten the results within 24 hours.

Fishpaw: For those of us who are getting up to speed on this issue, a PCR test versus a screening test, what is it from your perspective? And then what does it look like to the person taking that test?

Romer: To be pedantic about the terminology, you ought to think of use cases versus technology. There's the PCR technology, or there's the antigen technology. The antigen tests are inherently much faster that you can get the results in your hand; you can do them at home. So there's the technological differences, but then there's also the question of what are we using them for. And there could be surveillance, just getting data; [it] could be deciding what you should do, what your doctor should tell you to do to protect your health. But we need to use either the PCR tests or the antigen tests to do public health testing, where the point of the public health testing is to get people out of circulation when they're infectious.

Mina: So the user case—both types of tests can use a swab or saliva. That's just the way to get the virus out of the person or the sample out.

There's been a lot of confusion because the media and others say, "Oh, now you can get a test at home." That's not an at-home test. That's an at-home sample collection, that then you have to order it. It has to get to your house. You have to mail it back, and then it's still another three days.

As far as I'm concerned, it's a useless public health tool. Might be a good medical tool if you really want to say, "Look, I'm isolating or I'm quarantining anyway. I just want to know if my symptoms are because of COVID so that I know for the future that I already had it." Then it's a fine medical tool. You can do it on your own, potentially. You can do it with a medical prescriber.

But these rapid antigen tests I have here today[5]—which can be used in the U.S. if the FDA approves—I just pulled the plastic off. This is what they look like. It's just this little piece of paper. We could easily make 20, 40 million of these a day, no problem. The thing that will be different is if you're doing one of these tests, then you'll know it because you're using a swab on yourself or somebody right next to you. You mix the nasal swab into some buffer and then put a couple drops of buffer on this piece of plastic or on the piece of paper. You get a result in two minutes. From the user case, it opens up so many doorways to make things—to allow life to start to get some semblance of back to normal.

This test is 99, 98 percent sensitive to detect infectious cases. Let's say everyone was walking into a restaurant. Maybe you could actually open up a restaurant safely—or schools. Schools are probably more important right now.

5. To see visuals of what these tests look like, see www.rapidtests.org (accessed December 21, 2020).

If we could actually give students these tests, everyone shows up, they have it on their desk in homeroom. You'd know in five minutes if there's anyone infectious, and you can pull them out of school before they have infected other people that day, or at least before they've infected many other people that day.

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This is how we have to think about public health, and these really rapid tests, they open up a new set of pathways that we could take to get the economy going again and, frankly, ultimately to stop people from dying. This is what we need to be focusing on.

Better Than Mandates

Romer: If I could just pick up on the political dimensions of this. We live in a democracy. The academics have to remember that. So voters have a say about these things. Voters don't like mandates—stop doing this, stop doing that, do what we tell you—especially when they're broadly directed. And in some sense, we know that it's probably poorly targeted. There was the case of an Orthodox Jewish community, one in New Jersey, one in New York, where they started to get an outbreak. And there was an interesting distinction. New York tried to use the standard restrictions—you can't go to religious services, you can't meet in groups—mandates about what people could do. In New Jersey, they made testing available so that people could find out whether or not they were infected.[6]

As Michael's been suggesting, if you just let people know without even forcing any mandates on them, they'll tend to do the right thing, which is to go isolate and avoid infecting people they care about.

6. For further discussion of the different approaches, see Sam Sutton, "A Tale of 2 States' Battles Against Covid Spikes in Orthodox Communities," *Politico*, October 30, 2020, https://www.politico.com/states/new-york/albany/story/2020/10/30/a-tale-of-2-states-battles-against-covid-spikes-in-orthodox-communities-1332265 (accessed January 6, 2021).

> If you just let people know without even forcing any mandates on them, they'll tend to do the right thing, which is to go isolate and avoid infecting people they care about.

If you test somebody, are they going to go wild if they get a negative test? If they're not infectious, it doesn't really matter what they do. But the evidence on college campuses actually shows that the net effect of testing is to make everybody more conservative, because it isn't just that I get, say, a negative test, but I hear about the other people in my class who did test positive. This is what we saw in New Jersey. When people started to see how common the infections were, even if they tested negative, they compensated not by going wild but by being more careful about social distance.

We should be scaling up, as Michael says, testing as fast as we can—get the information to individuals. And don't worry about this idea of how are we going to compel people to do something based on test results. If we have to add some incentives to, for example, isolate, we can do that later, but just start by getting information into the hands of the people who need to make a decision.

Badger: This is critical: When I spoke earlier about how our policy is running into a dead end, there are two things about rapid testing that are important.

One is that, unlike other things—mask wearing and lockdowns and so forth—they don't seem to be politically and culturally divisive. We at Heritage have been writing about this for months. We've been appearing on conservative media broadcasts and so forth. And I can say 100 percent of the time, the response is: "Yeah, of course. That's what we should be doing."

Second, our policy approach so far has been to confine people, limit them, and, to some extent, blame them if the number of cases rises: "You people aren't doing what we instructed you to do." What we're talking about here (and I will call them public health testing)—what we're doing with public health testing is informing people and empowering them. And to the point about a democracy, this is even something beyond democracy, because Congress could pass laws that the majority of people don't like, or certainly a substantial minority. Here, you need people's cooperation, not just at the ballot box and their endorsement, but as they go about their daily lives.

When you think about how you want to structure a policy that's going to get the behavioral effects that you need in order to suppress the pandemic, the idea of informing and empowering people is so much more compelling and so much more likely to be successful than trying to limit, confine, and blame.

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Romer: If I can just push that one step further: If we find with purely voluntary measures we're not getting as much as we'd like, there are other ways to go. For example, you could let someone establish that they've tested positive and then have them qualify for wage replacement while they're in quarantine. So the government—we, the taxpayers—basically offered to pay the wages of anybody who goes into isolation. Then again, it isn't like a stick that you hit people with, but it's a carrot to induce people to do the right thing.

Cost Considerations

Fishpaw: Paul, you've come up with estimates of what it would take to achieve the vision that Michael has been talking about. Share that with us, because we are in the middle of Congress considering a so-called release bill for COVID. It doesn't include anything like this. What money would it take to achieve this, and how quickly should it be provided?

Romer: Michael may have a better update on this. I was thinking, months ago, basically a cost per test of about $10. These antigen tests, in terms of the actual unit that you've got to give somebody to do the test, these may have a cost that's well below that. What would you guess, Michael, now? A couple dollars per?

Mina: The actual cost of producing this, plus the swab that has to come with it, I would put it under a dollar true cost and then maybe $1.50 total.

Romer: When I had talked before about $100 billion over about a year to scale up to 20 million tests a day at $10 a test, we can cut that by about a factor of 10 now, because we've got these tests that are so much cheaper.

A lot of the cost of the test is the time for the person to do it. I was just corresponding yesterday with Michael about a program in Austria, where they're making the PCR testing available for free to everybody, but you've got to go to a central location to get a sample collected. And they're finding that they're not getting as many people going to voluntarily get tested, because it's a nuisance to go make a special trip someplace.

We can get these low-cost tests available at home for people. We don't have to spend a lot of money to distribute the tests, and we don't have to take up a lot of people's time to do the test. So I think the $100 million a year would have been well worth it at the numbers I was looking at back then. I think a tenth

of that—$10 billion, maybe $20 billion—if we're going to add some subsidies to cover the replacement of wages while people go into isolation.

This is the scale we're looking at to do something dramatically better here. And it just breaks my heart to have the government get into Santa Claus mode, where it thinks its job is to collect taxes and then send checks to people at the scale of hundreds of billions of dollars. Why are we doing that instead of spending $20 billion or 30 billion on something that would just end this pandemic?

Fishpaw: If that money were available, would we be able to get those tests out?

Mina: Actually, we need a lot less. We don't need these for a full year. We need this right now for six or seven months. This could be the whole program, say $10 billion. What we need right now is Congress to appropriate specifically $1 billion in this next release bill this week, or next week, whenever they try to get it passed, specifically for the manufacturing capacity. The idea is to give each of the companies able to make this $100 million, which, for the average person, these numbers sound like a lot. A billion dollars is a minuscule amount of what we've spent already on this virus, or what it's cost us. It's one-one-thousandth of what they're about to pass. So this is nothing. And this is a tool that if we get $1 billion into the manufacturing companies so that each of them get $150 million to scale up, then they can build these at the scale we need within a couple of months. And they can do it on the U.S. government's terms.

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This is absolutely doable. [NIH director Dr. Anthony] Fauci yesterday—was giving a talk at Harvard—and he said, "We've done things infinitely more difficult than this." This is so simple. And it's $1 billion today plus another $10 billion to $20 billion for the whole program. We keep mopping up the mess when we just need to go turn off the faucet. It's insane that we're not doing this.

Romer: What Michael was just saying: There may be even more room here than we think. There was $25 billion that was allocated for testing in April, and at least $9 billion of that has been held back and not spent. The reason: The Republicans in the Senate proposed $25 billion in testing back in August and September in the negotiations. The White House said, "No, you don't have to propose $25 billion. We've already got this

$9 billion we didn't spend because it was"—I don't know why, but—"it was allocated in April. We didn't spend it."

So there may be $9 billion available for testing that has already been allocated and just hasn't been spent. We should nail that down. Further, Secretary of the Treasury [Steven] Mnuchin is proposing this new thing where the government is Santa Claus, and he's saying it's partly going to cover the cost of that by using funds that were allocated but not spent. If he actually cannibalizes the money that was allocated for testing that hasn't been spent and then uses that to just mail out checks, this would just be beyond the pale in terms of bad policy.

Fishpaw: We have a regulatory roadblock. We have a cultural roadblock, with some physicians and others who have resisted these tests, that we need to overcome. Doug, anything else that you would put on the table for policymakers as they're thinking about how to achieve the vision that's been outlined today?

Badger: It's first of all recognizing that we're in a losing game right now, and we continue to double down on it. We have not gotten good results. And when I say that, I would speak of Europe as well. It's not as though the U.K. or Italy or Belgium or anybody else has exactly found this strategy to have worked. The first thing we need to get beyond: We need to get a recognition that it's failing, that we need to move in a new direction.

Secondly, as has been pointed out—we need to think less about what resources we have to spend in order to mitigate the damage we've done with a policy that hasn't succeeded. And we need to put some of those resources into a strategy that will succeed, will reduce suffering and death. That should be goal one of any public policy.

The third thing is a real change in mindset at the FDA and the public health community. Michael points out that some of Dr. Fauci's comments recently have been very, very helpful, and we hope that some of his colleagues at the CDC and the FDA would take them to heart and allow these things to go forward. Dr. Fauci is in a position of great moral leadership and intellectual leadership, but he doesn't hold the regulatory power to allow these tests to move into the marketplace, and that really has to happen. So it's the regulators, it's Congress, and it's political leadership [that] must recognize that doing the same thing over and over again is going to produce the same results. We have to try something new.

Romer: If I can just make a point about the FDA regulation, too: I think it would be very important to distinguish what it does with vaccines from what it does with tests. There's an issue here that there's a lot of suspicion about vaccinations and a lot of hesitancy, growing hesitancy, about our traditionally very effective method of requiring the kids get vaccinated before they go to school.

So if we have a vaccine that then develops a large number of very harmful side effects—and large could be a small percentage if you're vaccinating hundreds of millions of people—there's good reasons to be very careful about safety on the vaccination side. I'm very worried that we're going to get to March and we're not going to have enough vaccines. We're going to have used up basically the vaccinations for 100 million people that the government's already purchased. There's not going to be any more that are yet approved. There's going to be pressure to then just undermine the FDA oversight about safety.

So we've got to be careful on the vaccination side. But on the test side, these tests do not threaten anybody. There's no harm associated with them. So it's just absurd to be so tight and so careful in the regulation of these. So when we kind of push the FDA to make sense, we don't want to just beat up on them and say, "Stop regulating." But we want to say, "Think about the costs and the benefits." On vaccines, it's one set of costs and benefits. On tests, it's completely different.

Conclusion

Fishpaw: We have a lot of eggs, if you will, as a nation right now in the vaccine basket. What I've heard from you today is that that basket is far from being widely available to anybody, and we have an alternative approach that could really broaden out what we're doing and immediately save lives. Dr. Mina, do you want to close us out with one last comment?

Mina: I was just going to pick up on the vaccine discussion. It's something that people are generally really not wanting to talk about. But one thing about these tests is they are kind of mutation-proof, if you will. There is nothing saying—we've never bottlenecked a virus ecologically like we're about to do. And almost all the vaccines that we're producing are essentially identical to each other in terms of the immune response. It takes one virus somewhere out in the world to mutate appropriately around our immune response. I even feel like I'm going to get pushback from my colleagues for even bringing it up. But it's a real concern, that the virus—these things are tricky and they know how to—they can figure out evolutionarily how to escape the vaccine response.

We don't want to find ourselves in June finding a whole new clade of virus—we know how quickly it can spread—with a virus that the vaccines don't protect from. These tests, at the very least, we should be doing as a contingency plan. I've never seen a country go to battle without a contingency plan. I've never seen anything won without a contingency plan for the most part, at least nothing important. There's just so many reasons to do this.

I do want to reemphasize one thing about these tests—their benefit. It's not just the speed; it's the frequency. And this is why I've been moving more and more away from the PCR tests. Because to realistically do this twice a week, it's just going to be hard for a laboratory-based test. These tests must be fast. They must be frequent. And to do both of those, they must be accessible. And that's why we need them at home. And if you don't have all three of those, the testing is going to be what we're doing already, which is frankly pointless from a public health perspective.

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Fishpaw: Thank you all to our panelists. Quite a conversation. You've made the case: A policy pivot is needed to end COVID and cure lockdowns. We have a better path. The path forward is known, and urgent action is needed very quickly.

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