



The Economic Club of New York

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Moderator: Becky Quick  
"Squawk Box" Co-Anchor, CNBC

## Introduction

Chairman Marie-Josée Kravis

Good afternoon. I'm Marie-Josée Kravis, Chairman of the Club and I welcome all of our members and also the members of The Economic Clubs of Chicago and Washington who were invited to join the call today. I wish all of you well – you and your families – and hope that you'll continue to be prudent and vigilant. And it's the role of The Economic Club of New York, which considers itself one of the leading nonpartisan forums for discussions of economic, social and political issues, to convey to our members as many solid facts as possible on critical issues. And so I think it's very important at this time that we distinguish between fact and fear and have the opportunity of leaning on specialists such as Dr. Scott Gottlieb to inform us and to give us a sense of how this whole issue of the coronavirus is evolving.

Dr. Scott Gottlieb is a Resident Fellow at the American Enterprise Institute. He's a physician, medical policy expert, public health advocate, who previously served as the FDA's Deputy Commissioner for Medical and Scientific Affairs and before that a Senior Advisor to the FDA Commissioner. He was himself the Chairman of the FDA. He completed a residency in internal medicine at the Mount Sinai Medical Center in New York. He's a graduate of Mount Sinai School of Medicine. And he has been, as you know, a regular commentator on the coronavirus issue and its evolution almost daily

and he will be today in a conversation with Economic Club member, board member, and CNBC Squawk Box Co-Anchor Becky Quick as our moderator.

Any questions that were sent to the Club from members in advance of this call have been shared with Becky. I'm reminding you that this call will end promptly at 1 p.m. And as a reminder this conversation is on the record and we do have additional media on the line. So Scott and Becky, if you're both ready, I'm happy to pass over the mike to the two of you. And I thank you both profusely because I know how busy you've been, not only commenting on this issue, but also doing the research and following the progress of this crisis. So, over to you.

Conversation with Dr. Scott Gottlieb

BECKY QUICK: Marie-Josée, thank you very much. Welcome everybody. I'm very pleased to be (Inaudible) with you all metaphorically today. And I'm especially pleased to be here with Dr. Gottlieb. He has been joining us just about every morning on Squawk Box to give an update. (Inaudible)...about the...Thank you for joining us today. You can walk us around the globe and tell us where we are in the cycle for this pandemic.

DR. SCOTT GOTTLIEB: Well, right now I think that we're entering a period of time

where we're going to see accelerating spread here in the United States. You saw it in New York City. New York State announced about, I believe, 1,700 new cases today, about 1,500 new cases today. And they're now getting testing in place. They've tested a total of about 22,000 people, 7,000 in the last day. So we're both hitting this steep part of the curve in terms of the epidemic here in the United States as well as getting broad testing in places now can allow us to turn over the card on more of those cases. So we're going to start to identify them.

I would expect by Friday we'll probably be pushing 15,000 cases in the United States and probably next week, a week from this Friday, we'll probably be looking at 30,000 to 40,000 cases here in the U.S. Just to give you some basis of comparison, at the peak of the outbreak in China, at the very peak they reported 3,500 cases in a single day. New York reported about half of that in one day, New York State. And that doesn't account for the fact that we have probably major hot spots in San Francisco, Seattle, it looks like New Orleans right now.

We appear to have outbreaks in Washington, DC, Boston, and Chicago. Those are the cities we know about. Without broad screening in place, it's hard to tell just how pervasive the spread is, but we're going to have a much larger epidemic here in the U.S. than certainly China had. And we'll see if we start to push the numbers that Italy is having on a per capita basis. I mean Italy is a country of 60 million people with, I

believe, hitting about 37,000 cases today.

But around the world, it looks like South Korea has gotten control of their epidemic. Singapore, Taiwan, Hong Kong have been able to get control as well. It's now coursing through Europe. Italy maybe is peaking out in the number of new cases, but hospitalizations will continue to rise as well as deaths because of the time lag between the time of diagnosis and the time of hospitalization and time of death. Spain appears to be on a very steep slope of the trajectory as do the other European nations. And so this is still, you know, coursing through Europe and they're not fully through it. Italy probably was the first to be hit and is probably the furthest along the epidemic curve.

Here in the United States – and I'll pause here – you know, we're likely to see continued growth in cases through April. Maybe towards the end of April, early May we're likely to hit a peak and then start to come down that peak through May into June and hopefully have a real break in transmission in July and August. And then come back in the fall and hopefully have better tools for dealing with this so we don't have another epidemic in the fall.

BECKY QUICK: When you say that we're...(Inaudible)

DR. SCOTT GOTTLIEB: Becky, I'm having trouble hearing you. I can call back...

BECKY QUICK: Scott, can you hear me?

DR. SCOTT GOTTLIEB: Now, I can. Yes, now I can.

BECKY QUICK: Okay. When you say that we're looking at a much larger epidemic here than in China, that's because China took extreme steps right now, or...

DR. SCOTT GOTTLIEB: A number of reasons. You know the outbreak in China was largely, the epidemic in China was largely confined to the Hubei Province. They had outbreaks in other cities but they were able to contain those outbreaks so they never really had the epidemic spread out of the Hubei province. It did become epidemic there in Wuhan and in sort of the outlying areas, but they were able to contain it there.

I think the challenge with us, you know, if we had epidemic spread in New York and we were able to contain New York, we might have a similar situation to what China experienced. The challenge with us is that we're likely to have multiple cities that have epidemic spread either near simultaneously or in somewhat of a linear fashion. I mean Seattle, San Francisco, and New York seem to be on the same trajectory. And a few cities maybe seem to be a week or two behind. But I don't know that we can sustain multiple cities with epidemics of a proportion of what they experienced in China and

that's the real risk that we face right now, that that's exactly what's going to happen.

I'm not saying that that's a foregone conclusion, but that's really the, you know, the outlier case is that we have four, five, six cities where you have epidemic spread and that would, I think that would over, that would exhaust the entire infrastructure of the United States.

BECKY QUICK: (Inaudible)...

DR. SCOTT GOTTLIEB: Becky, I'm losing you. I can call back in if it's my phone.

BECKY QUICK: Let me try this. Is this a better one?

DR. SCOTT GOTTLIEB: It's sounding a little bit better, but do you think it's my phone? I apologize.

CHAIRMAN MARIE-JOSÉE KRAVIS: No. I think it's Becky's phone. We can hear Scott very clearly.

BECKY QUICK: Okay, sorry, I'm rotating through phones here at the house.

DR. SCOTT GOTTLIEB: I'm still losing you.

BECKY QUICK: Scott, is this better?

DR. SCOTT GOTTLIEB: This is better, yes.

BECKY QUICK: Okay. I saw some modeling today that suggested we would hit capacity at our hospitals in early April and that's just in terms of what they'd be able to get through. Does that match up with what you're modeling?

DR. SCOTT GOTTLIEB: I haven't looked across the whole country. I've been looking at New York. New York has about 53,000 hospital beds, 20,000 of them are in the city, and they have about 3,000 ICU beds. I mean the governor was out with some estimates that were sort of the outer bounds of the range that put the number of beds that they would need upwards of 100,000 hospital beds and number of ICU beds between 18,000 and 30,000, if I'm remembering off the top of my head.

I think that those were sort of the outer, the range on the outer boundary of what's possible. And the governor is obviously wanting to get federal resources in so, you know, he wants to present the full spectrum as well as the worst-case scenario. We did some modeling off of, with the experience in Wuhan. And what we modeled was that if

you had sort of a Wuhan-style outbreak in New York City and you kind of have comparable populations and you corrected for the age of New Yorkers and the background morbidity; you would get to a number of needing around 5,000 ICU beds.

That's just in New York City. New York State has 3,000 ICU beds total. So you get into numbers where you exhaust, you vastly exhaust the resources of the state if you have a Wuhan-style outbreak of that magnitude on a per capita basis in New York City. And we may get beyond that in New York City in terms of the number of cases that they had in Wuhan. So you start to, you press the resources very quickly. And that's why you see the governor out talking about trying to build field hospitals and quickly build capacity. It's not just a question of capacity, you also have to increase churn and throughput in the hospitals.

And so you need to, one, clear out the hospitals and give people who are there some place to go and also create a vehicle for discharge of COVID-19 patients. And one of the challenges with Italy is that the length of stay, and China, was like three weeks, the average length of stay in the hospital. So once people got into the hospitals they stayed there. We could right now, as we're working on trying to build out hospital capacity, we need to have an equal focus on trying to build out skilled nursing facilities, nursing homes, rehab facilities, maybe repurposing some hotels with home health agencies that go in there for moderately sick patients who just maybe need oxygen by nasal cannula.

Building other kinds of facilities to take these patients so you can move them through the hospital after they get through an acute phase. And you're going to want to confine COVID patients together because you're not going to want to put them in a skilled nursing facility or nursing home where there's other patients that can become infected. And so we need to start thinking about that too.

There's a lot of emphasis on the hospital portion of this and building out that capacity, but an equal emphasis should be placed on trying to build out those secondary facilities because if you can create more throughput in the hospitals, that's another way to free up beds. And one of the things we can be doing at a federal level right now – from a policy standpoint – is creating payment mechanisms that effectively over-pay to take care of a COVID-19 patient.

I mean if you set a reimbursement rate that's 200% or 300% of Medicare to take care of a COVID patient, you're going to see private industry step up to build out facilities to capture those patients. It's costly because you're going to have transition costs on the front end. On the back end, you're going to need to prepare your facilities to take only COVID-19 patients. Then you're going to need to transfer your facility back into what it was doing before. But if you're paying a lot for it, I'm willing to bet that you're going to see companies step up, you know for the public health reasons and because they're

public health-minded, but also that there will be a strong financial inducement to do it.

BECKY QUICK: We saw some headlines today that New York is looking to potentially take over some hotels for this. That's the type of thing you're talking about.

DR. SCOTT GOTTLIEB: That's right. I mean what you would do probably – I don't know what they're thinking of using the hotels for – you probably wouldn't want to put acute care into a hotel. But you can use the hotel as sort of a, almost like a step-down facility for people who have transitioned off of, you know, off of oxygen or are no longer unstable where they just need nursing care and they need isolation. You can move them into other kinds of facilities. You know, you can repurpose hotels. You can also take nursing homes and skilled nursing facilities, which actually don't operate at full capacity right now and, you know, dedicate them to COVID-19 patients. But you'd have to move patients around. So you need to start doing that now. You need to start thinking about that at the same time you're thinking about how do we build out hospital beds and critical care beds inside the hospitals.

BECKY QUICK: You know, what you're talking about, there are a lot of us who are staying at home, working from home, trying to socially distance ourselves, keep our kids home from school, but what you're talking about on that sort of level I don't think is something that's been a reality a lot of people have talked about. How soon do you think

it becomes painfully obvious?

DR. SCOTT GOTTLIEB: You know we're probably two weeks away. You and I have talked about this on the air once. I think we're about two weeks away from really seeing the hospitals in New York taxed if we continue to build cases at the trajectory that we are right now. There's a lot of patients under investigation also on the hospital wards that are currently being tested that are believed to be coronavirus patients.

I think the governor said yesterday that there were over 500 COVID-19 patients on the hospital wards of New York City. That's a lot. I mean it's not at the point where the system is overwhelmed, but that's just the ones who have been diagnosed. There's probably an equal number, if not more, behind that who are under investigation and they're currently awaiting a test result. You know, they're probably building cases by hundreds a day, if not more. The overall number of cases that New York City is reporting today, 1,700, they said 19% of the cases that are being diagnosed in New York State require hospitalization. So you can start to do the math on that. If you're diagnosing, if you're reporting 2,000 cases a day, maybe moving to 3,000, you know, a week from now, and 20% are requiring hospitalization, you start to press the hospitals in New York City pretty soon. Maybe in two weeks they're really at capacity and starting to show signs of strain.

BECKY QUICK: Scott, what does that mean for the people who are staying home, social distancing, working at home? Does that mean this is something that we're going to be looking at through June or beyond?

DR. SCOTT GOTTLIEB: It's hard to see, unless we just make a decision to do something similar to what the UK was contemplating where we're just going to allow the virus to course its way through the population that's less vulnerable to it, it's hard to see how we take our foot off the brake until we turn the corner. And, you know, maybe we'll turn the corner sometime in mid-April.

One of the more optimistic scenarios that was circulating in the modeling showed sort of mid-April. Then there was a base case, think it was the end of April in terms of when you hit the peak. And then you have to come down from the peak. So seven weeks, six, seven weeks to the peak – six, seven weeks coming down from the peak. It's hard to envision how you take your foot off the brake at any point along that continuum because you're going to be worried that you're just going to see a resurgence in cases. And you've paid such a heavy price to get to that point, the last thing you want is to extend the length of the epidemic.

And I also think that the pictures that unfortunately are likely to come out over the next two weeks are really going to shock the conscious of people in a way that, you know,

they're going to want to get over this. They're going to want to get this behind the country, but they're going to want to make sure that we preserve life. So I think schools are closed for the remainder of the year. I don't really see how you restart schools and restart, you know, sort of businesses where there's a lot of social mixing until we can get around the corner. And that's what happened in China. I mean China slowly lifted their restrictions as their epidemic was coming down. I mean they actually did a pretty good job of doing that, of re-introducing economic activity in a stepwise fashion as they were coming down from the epidemic.

And a lot of the restrictions are still in place. I mean a lot of the social distancing are still in place in terms of, you know, they put lines outside elevators so you can't group up, you have to line up. They limited the number of people that can go in elevators. A lot of those things are still in place. And I think that some things are likely to stay in place here in terms of stepped-up efforts to control hygiene and just create a little bit more distance in sort of everyday life even as we go back and live our normal lives.

BECKY QUICK: The market is seeing a lot of volatility and that's an understatement.

The President was just speaking over the last, oh, half hour or so. As he was speaking, the Dow picked up speed, gained about 500 points. As you've been talking, it gave back all those gains. What do you think the administration, do they have the same outlook that you have right now, just in terms of how serious this is, how long it's going to last,

and how severe the economic restrictions are going to be?

DR. SCOTT GOTTLIEB: Well, I won't take that personally. I don't think anyone is trading while they're on the phone here, I hope. But, look, I think there's a realization in the administration of how serious this is now. You know, Deborah Birx, who is sort of leading the policy out of the White House, is deadly serious about this and about trying to keep our foot on the brake and try to suppress this epidemic. You know, we will get through this. I think that there is a definable period of time here. This is an epidemic. We've modeled epidemics many, many times. We know what happens when the epidemic just runs its course. It's actually shorter. I mean if we don't do anything, this epidemic will be shorter, but there'll be more death and disease as a result. If we implement these measures, the epidemic is going to actually be lengthened but the peak number of cases at any one time is going to be less. But we can put a time frame on that.

And, you know, the outer bounds of the time frame I really do believe is at some point in June we're really coming down, starting to see cases really trail off and life start to return to normal, and July and August, I think, could be months that we start to restart activity. And hopefully by September we have a different toolbox that makes this a much different risk. We talked about this. I have a paper out today with Mark McClellan. But it's quite possible we'll have a direct-acting antiviral drug that could be used as a

therapeutic by the fall.

This is not a difficult virus. It doesn't replicate through means that we don't understand. It's not like HIV. We've targeted elements of viruses just like this very successfully. And there's a lot of drugs, or there's a number of drugs on the shelf that show activity against this virus. The drug by Fuji, Remdesivir by Gilead shows activity. There's a number of others. And I think that we could potentially have a direct-acting antiviral therapeutic that we use when, you know, patients at risk get this virus and show up at the hospital. You introduce it early just like we introduce Tamiflu, oseltamivir, when you get an elderly patient with flu in the hospital. You give it right in the emergency room and it can alter the course.

We need a massive, what we call a sentinel surveillance system, a system to basically detect outbreaks early. That's what we lacked in January and February. We didn't have any surveillance. Now that we've built out tremendous diagnostic capacity for coronavirus that we're using right now to diagnose patients, when that's no longer needed in July and August, we can repurpose that to a sentinel surveillance system. And what that looks like is every week CDC collects samples in flu season, in the fall and winter, of patients who present with influenza-like illness but don't have the flu. So they present with flu-like symptoms but they test negative for the flu. And CDC takes those samples and they test it for other things to figure out what else is circulating in the

population, including looking for pandemic strains of flu.

Because we are very geared towards the risk of pandemic flu, we always orient it towards that. You can do that at a massive scale. Instead of looking at thousands or tens of thousands of samples, you look at literally maybe hundreds of thousands of samples all over the United States. We'll have the capacity to do that and you look specifically for coronavirus. So if five cases pop up in San Francisco, you're going to find it and you can go in and do case containment to actually find patients, isolate them, and prevent another outbreak. So that's another tool.

The third tool is a point of care diagnostic. And I think you're going to see these coming on to the market where you can have a diagnostic that sits in the doctor's office just like you have a flu swab where, you know, the doctor can swab you and get a readable result right in the doctor's office.

Cepheid makes a platform called GeneXpert that does the same thing.

And then the fourth leg of the stool – if you will – is a prophylaxis, something like what Regeneron is working on where you have an antibody, you develop an antibody that targets a feature of the virus and it can basically be given to people to prevent them from getting infected. Now this isn't a vaccine. It's not one shot and you're protected for the whole year or protected in perpetuity. You'd need to re-dose someone probably

every month.

But for your front-line healthcare workers, for your nursing home patients, for patients going through chemotherapy, for patients with severe lung and heart disease who are at significant risk from coronavirus, you can prophylax them on a monthly basis and you basically take off the table the people who are most vulnerable to the virus. If you put together that toolbox, this becomes something we can live with.

There's a lot of pathogens that circulate every day that are deadly and people die from them, but we have tools to mitigate them and nobody worries about them. You don't worry about Strep pneumonia. Strep pneumonia still kills people but we know we have antibiotics for it and we all believe and hope. And most of are the ones who, if we get it, are going to have a good response to the drugs that are available. The same thing here.

If you had that toolbox, I think this becomes something people can accept the risk, the daily risk of this, and live a largely normal life and not worry about it. And I say largely normal because I do think that like after 9/11 – I'm not comparing this to 9/11, but like after 9/11 where we put in place security measures right after 9/11 and some of them never went away, I think some of the measures that we're putting in place to improve hygiene and, you know, increase vigilance about infectious disease spread are probably going to stay here. Airlines are still going to have to do deeper cleanings and advertise

that. Cars are still probably going to have to clean.

BECKY QUICK: Yes, good. We'd like to see that.

DR. SCOTT GOTTLIEB: But I'll just say one last thing. Unlike the security measures where we don't really get a return for that investment, if we put in place better hygiene, we get a return on the investment in the form of a shorter flu season. So we can actually get an economic benefit for that kind of activity.

BECKY QUICK: Yes, that's the good news. Generations of people being scared into washing their hands and the subways deciding that they're actually going to clean them once in a while. Scott, you mentioned pneumonia. I did have a couple of members who had written in asking if a pneumonia vaccine would help alleviate the coronavirus, if a patient is diagnosed with coronavirus?

DR. SCOTT GOTTLIEB: No, but what we've seen with a lot of the patients that have gotten into trouble is that they've gotten secondarily infected. And the ones who have gotten very sick or died developed bacterial pneumonia. A number of them had flu at the same time. And so being up to date on those vaccinations and being vigilant about common infections is very important. And so that's why you've seen, when patients present sometimes they'll get dosed with Tamiflu at the time of presentation because

you want to make sure that they're not super-infected with flu at the same time that they have coronavirus and that's going to worsen their course and accelerate their decline. So getting a pneumonia vaccine, getting a flu vaccine, I think are very important especially for vulnerable populations who those vaccines are already indicated for.

BECKY QUICK: Other members wrote in asking about what you think as a doctor in terms of taking autoimmune medications in light of the coronavirus. There have been some stories out there suggesting that it's the autoimmune overreaction that is particularly fatal.

DR. SCOTT GOTTLIEB: Yes, so there's some studies going on looking at like IL-6, a drug called IL-6 and whether or not that could be beneficial. And what the drug does is – so to back up for a minute – one of the beliefs is that for some of the patients that are getting into trouble, getting very sick, getting what we call acute respiratory distress syndrome, it's not the direct activity of the virus on the lungs that's destroying their lungs or damaging their lungs and causing all the inflammation, it's actually the immune response to the virus. And this is very Spanish flu-like. If you look at the history of Spanish flu, the people who died from Spanish flu, the 30-year olds and 40-year olds and 20-year olds, because what they were dying of was an overwhelming immune response to a virus that was very novel, that the body saw as, you know, really new and the body overreacted to it. And it was that overreaction, that inflammatory response that

ended up damaging their lungs and that they died of.

And so for some of the patients that are getting coronavirus and having a really rapid decline, it's probably what we call a cytokine storm. It's probably a cytokine release in the immune system, the body is overreacting. They're healthy, young people. They have an intact immune system. The body is overreacting and that overreaction is causing damage to their lungs. And so the belief is that the drugs that can interrupt that process like IL-6, which blocks cytokine release could potentially be effective. And so they're being studied.

There's a study in China right now with that drug. It's tricky because it could also make it worse because if you block those immune responses, you can also accelerate the activity of the virus itself and prevent the body from being able to clear the virus. And so it's not completely certain that it would work and it's not completely certain that we will be very good at selecting which patients are right for that, you know, which patients are declining because of the immune response and which patients are declining because of the direct activity of the virus.

But I'll just pause here. The data on this virus now – we have data in the United States – and young people are being hospitalized and young people are dying of it. There was a study out in MMWR, the Morbidity and Mortality Weekly Report from the CDC yesterday

looking at about 2,500 patients, the first 2,500 in the United States that were admitted to the hospital. The case fatality rate for 45 to 54-year olds was anywhere between .5 to .8. That's exceptionally high. The overall case fatality rate for the flu is .1 and it's only .1 because it's being driven by a high case fatality rate in the elderly of like .8, .9. But for a 45-year old with the flu, the case fatality rate is like .02. Not .5 or .8. So this is very deadly in the elderly population but it's also much more deadly than the flu even in a 45-year old or even a 30-year old. The case fatality rate in 20 to 44 in this series was .1 to .2. Again exceptionally high for that age cohort. With the flu, the case fatality rate would be probably .01, so ten times more deadly than the flu in that age range.

BECKY QUICK: That's counter to what we've heard a lot about in the early reporting of what happens with this. We've also heard that kids are basically immune or that they get very low responses. Is that true?

DR. SCOTT GOTTLIEB: That's true with kids. So it was 0 to 19 in this report – there were 123 people between the ages of newborn to 19, not zero. And the hospitalization rate was 1.6 to 2.5, but none were admitted to the ICU and none passed away. So under 20 seems to be spared. And the numbers go up as you get older for sure. But even at, you know, 20 to 40, 20 to 50, you're still looking at something that significantly has more morbidity and mortality than the seasonal flu in those age ranges. And that's in part driven by the fact that seasonal flu, you know, really doesn't hit a 30-year old or a

40-year old hard. You hear reports every year of a 20-year old who died or a 30-year old who died but the mortality of the seasonal flu, which is .1 overall is really driven by above the age of 70 where it's .83. It's very high. It skews, it actually skews high and it skews old. You see deaths from seasonal flu among the very young and the very old, but not as much in the middle. This is still hitting 30 and 40 and 50-year olds pretty hard. So I don't think we should have this cavalier view that this is, you know, you can just let all the 40-year olds out and they'll be fine. Some of them are going to get into trouble.

BECKY QUICK: Let me ask you on that point about some other severe situations that have been suggested to deal with this. You tell me if it's a good idea or a bad idea. First of all, what about the lockdown in New York City, which has not yet taken place but which has been discussed?

DR. SCOTT GOTTLIEB: Well, they might get there. I don't like government measures that deny populations of their liberty and a lockdown gets close to that although, you know, I think it would allow limited circumstances where people can go out. I've been talking to some public health officials about maybe we should be requiring people to wear masks in public. There's data that shows that the transmission, if you're infected and you're wearing a mask – even a procedure mask, not an N95 mask, we wouldn't want to tell people to wear N95 masks because the healthcare workers need them – but procedure masks which are Level 1, Level 2, Level 3 procedure masks – it's what you

saw a lot of people in China wearing – there's a study that shows that wearing a mask if you're infected can cut transmission of flu by 50%. And there's every reason to believe it would have the same effect here. It would cut your ability to transmit the virus. It would protect you but more importantly it would limit your ability to transmit the virus.

So I think before we get to a position where we require everyone to stay in their apartment, I would want to require people who go out to have to wear a mask. Now the concern among public health officials would be that if you tell people they have to wear a mask, they're going to be more likely to go out. So you'd have to message this very carefully and not say that this is an invitation to, you know, no longer engage in social distancing. But I think we're at the point where we need to contemplate that. It might have been a mistake, all the early mask-shaming that we did. I certainly think that people don't need and shouldn't be wearing N95 masks, but the idea of, in a setting where there is epidemic spread, wearing a mask when you go out in public could make sense relative to a lockdown.

BECKY QUICK: Does a mask work because it keeps you from breathing in the virus? Or does the mask work because it keeps you from touching your face so much?

DR. SCOTT GOTTLIEB: Well, all of those things. The mask is mostly going to work, most people who are going to wear a mask, it's going to get moist and its ability to

protect you is going to decline. Where it becomes helpful is if you have the coronavirus and you have a mask on, you're far less likely to transmit it because your respiratory droplets are now contained inside the mask and so that's the value of the mask. And so if everyone is wearing a mask and someone is sick, they're going to be, it's going to be harder for them to get other people sick. So you're protecting yourself but even more importantly you're protecting everyone else from you. So we could put it on the millennials who want to go out.

BECKY QUICK: It doesn't help when you are drinking out of the same bottle when you're out though.

DR. SCOTT GOTTLIEB: That's true.

BECKY QUICK: What about stopping travelers from Europe? Is that the right move?

DR. SCOTT GOTTLIEB: Well, I think we're passed the point of travel restrictions and we're seeing all these reciprocal travel restrictions now. I mean pretty soon Americans are going to be banned from traveling to China. You saw the announcement from the State Department this morning that they're basically giving advice for all Americans to come back to the United States and if they don't come back, they should have plans to shelter in place. I mean that's sort of a, it's a Level 4 travel advisory and it's sort of a

prelude to saying you're not going to be welcome back for the duration of this epidemic.

I mean I don't think they would go that far but they're clearly discouraging Americans from staying abroad if they plan to get back into the country in a week or a month's time. You know the reality is that New York, Seattle, New Orleans, San Francisco are seating more cities in the United States than Italy is right now, or even is capable of doing, especially since all economic activity is largely shut down in these regions where you have epidemic spread. No one is really traveling. We've got enough virus here that we've created on our own at this point that travel restrictions are not going to do anything. I mean the initial travel restriction on China did probably limit the entry. It did limit the entry of cases, but some cases got through.

If you looked at the data out of Imperial College, they were projecting that we were only stopping about 40% of the cases. And so cases were still coming through. Some were sparks that got snuffed out because not every case leads to a downstream chain of transmission, but some were sparks that lit a fire. And they lit a fire in Seattle and in San Francisco and in New York and in New Orleans. And those fires continued to burn all through January into February and now we're seeing the consequences of that. So we didn't use that time effectively to put in place the kind of aggressive screening like what South Korea and Singapore did to turn over the card on those cases early enough that we could avoid an epidemic.

BECKY QUICK: Should we be discouraging or even stopping domestic travel?

DR. SCOTT GOTTLIEB: You know I think that that's certainly been discussed in the public domain. You've heard people contemplate that. I think again, you know, I see the ability to travel as a form of liberty in this country and I cringe at the idea of shutting off people's ability to have mobility when they need it. I think we've largely achieved it. I think you can, you know, airlines have cancelled flights. The airlines are running empty. No one is really traveling unless they absolutely have to. So I think we've largely achieved a dramatic reduction in travel in this country just through the measures that we've taken and sort of the economic pressures that have forced those activities.

You could do more to take volume out of the system. You can curtail government travel – state government travel and federal government travel. You can take that volume out of the system. That would even further, you know, dampen routes. You can have federal workers tele-work on a more wider scale. You know, more states should probably be implementing tough measures at this point. You look at the states where there's a lot of spread. Florida is right up there and I don't think that state has taken aggressive enough action relative to what they're doing in New York and Ohio and Illinois and California where you're seeing the governors be far more aggressive. And that's one of the problems, that we leave a lot of this decision-making to local authorities

and they don't all do a uniform thing. Some states are going to lag others and they're going to be the ones that probably get into more trouble in the long run.

BECKY QUICK: Well, especially the states that rely on tourism. You think of the mayor of Amityville from Jaws – the beaches are open.

DR. SCOTT GOTTLIEB: Well, that's Florida, right? They had spring break down there and New Orleans had Mardi Gras.

BECKY QUICK: Scott, what are the measures that you think are most effective? You mentioned states like Illinois and New York at this point and some of the others that are taking things. What are the best practices at this point, if you were able to wave a magic wand and say this is what has to happen nationally?

DR. SCOTT GOTTLIEB: Closing places where people congregate indoors socially – bars, restaurants, movie theaters. Closing the schools. You can be reactive. You don't have to be proactive. You can wait for the infection to be in the community before you close the schools, but we've pretty much hit that point in most states at this point. You know most states have sustained community transmission of coronavirus and so things like that that close venues where people congregate in groups indoors are the most effective measures.

And you basically, you know, people start to self-isolate because they have nowhere to go. You know if you're tele-working and the theater is closed and the bars and restaurants are closed, you're going to start to shrink your life down to a point where you're not interacting with as many people. But even a dinner party is risky. I'm in Westport, Connecticut. We have 20 cases here in Westport that have been identified – there's probably many more cases – small town, that all emanated from a single dinner party. Which also suggests that the spread here, you know, one of my theories is that the spread here is as much – if not perhaps more – from fomites, from touching contaminated surfaces than from respiratory droplets because it's hard to explain an experience like what Biogen had in Boston where they had 70 cases coming out of a single meeting unless you can contemplate that there was a contaminated surface that everyone touched.

There was someone who was sick who contaminated a surface and a lot of people touched that surface. Because I've been to a lot of meetings, you have, I don't know that I interact with 70 people at a meeting close enough to infect 70 people. And so you start to think that there was some contaminated surface there. Which is a little different than the flu, I mean the flu is from, the spread of the flu is from contaminated surfaces and from respiratory droplets but probably more from respiratory droplets.

BECKY QUICK: Scott, when you talk about closing bars and restaurants and places where people congregate, malls, movie theaters, you think that those places are all going to have to be closed until June potentially?

DR. SCOTT GOTTLIEB: Potentially. I mean I don't know; I think it's again hard to contemplate while you're still reporting new cases or even coming down the epidemic curve and reporting a lot of cases how you take your foot off the brake. You can re-introduce certain things with some restrictions. So, if you remember in China, they reopened the Apple stores in Beijing early while the epidemic was still coming down in Hubei Province, but they limited the number of people who could be in the store. Everyone had a mask. They Purell-ed people on the way in and on the way out. They cleaned the surfaces. So you can re-introduce these things but you have to do it under greater vigilance. And I think that that's what you're likely to see, sort of a staged re-introduction. Now harder to accomplish in the United States where you don't have a top-down government dictating these actions. But the governors have been strong in certain states and I think that they're going to think through these things and take these kinds of measures where they sort of re-introduce economic activity and behaviors in a staged fashion with proper precautions.

BECKY QUICK: As recently as probably about a week and a half ago, when you and I were on set together, I was teasing you because you brought in Purell. You had it in

your pocket. You wiped your hands before you sat down. You wiped them again with Purell when you got up to walk out. I just wonder, what are you doing right now? What is your family doing right now?

DR. SCOTT GOTTLIEB: My family is home. You know, schools are closed. They've been closed for a week. They're staying in with no real plans to go out, other than around the house. I'm largely working from home, except for trips to Washington where I'm meeting with officials down in Washington. So I'm still going to do that. I feel that that's important. But otherwise, you know, most of my business activities are now Zoomed in, so I have nowhere to go. And so that's what we're doing.

You know we were worried about this, as you've identified, for a while. I've been worried about this since January. I was going back looking at my first tweet on this. It was January 2. And, you know, so we were, we anticipated some of this. I mean we, I kind of shut down my family's life a little bit about a week before the schools here shut down. I stopped sending my kids to the after-school activities and the basketball games and things like that. And it turned out that in one of those venues where my child would have gone there was an infected person. Now the people who were in that venue were quarantined. So we stopped about a week early, but not before then.

BECKY QUICK: Have you been hoarding toilet paper?

DR. SCOTT GOTTLIEB: I haven't been hoarding anything in particular. I have ample Purell so I will not run out of hand sanitizer. But that was a function of my behavior before the coronavirus.

BECKY QUICK: One of the online shopping grocery stores that I use, I noticed, said that they had an infection that was reported and tested positive in their warehouse. Are you concerned about ordering out? Are you concerned about having people pick up groceries and deliver them to you? How far should we carry this?

DR. SCOTT GOTTLIEB: Well, we're still having deliveries made to the house. You know, I'm not too concerned about the food products. I'm not concerned at all about the food products, let me say that. I wipe things down. You know when we get packages and bottles and things like that, I will use a little Clorox wipe and wipe them down. That might be overkill but that's what I'm doing. I'm not worried about contaminated food.

That's sort of an order of magnitude of worry that's so downstream that I think the risk is pretty low. You know, remember also, this is a deadly pathogen. We all should avoid getting it and spreading it, but there's not millions of cases right now. There's tens of thousands. I don't think we're at hundreds of thousands. I think we're at tens of thousands. There's tens of thousands of cases distributed over a big country. Your

absolute risk of catching it is still relatively low.

You know even in New York City, even if New York City had 50,000, 60,000 cases which would be the really high end of any kind of projection right now in terms of what's circulating there, it's a city of 9 million people. But the challenge is that we know if we don't do anything, the doubling time is every four days. And once you're at 50,000 cases and you double it in four days, and you double it again, and you double it again, then you get into some scary numbers. And that's why we're doing what we're doing now.

BECKY QUICK: When I had you on air today you sounded a little more optimistic than you have in terms of where you think we are headed and how we're addressing this. What gave you more optimism today?

DR. SCOTT GOTTLIEB: Well, I think we're going to get the technology to deal with this. I mean, you know, I think we're going to get a much better toolbox in a reasonable period of time. I'm hopeful one of these antivirals that's being tested is going to show activity. I have confidence that Regeneron can develop an antibody drug – they did it against Ebola, they did it against MERS – that could be used as a prophylaxis.

I know we can develop a point of care diagnostic and will. And I know that we can

deploy a massive sentinel surveillance system to detect early spread after this current epidemic abates. And so I think on the back end of this, we can get a toolbox in place that makes this a manageable pathogen. We just need to get through this period of time. It's going to be a very hard period of time, but it's a definable period of time. We know when it started. We can estimate when it's going to end with some precision. And we can kind of estimate how bad it's going to look and we're going to get through it. And so, you know, on the back end of this I think that there's reason to believe that we won't have to deal with this again at this magnitude.

BECKY QUICK: The President was just making some comments as we were getting on this call. He'd been talking about reducing regulation at the FDA to try and speed vaccine development, some of the clinical trials that are underway and scaling them up, compassionate use for patients and reviewing drugs already approved for other uses. What, to you, is significant in that? What, to you, changes the scenario at all?

DR. SCOTT GOTTLIEB: Well, I have a paper out today that I co-wrote with Mark McClellan who you had on this morning. Yes, former commissioner of the FDA who I worked for who made my career. I worked for him when I was 32 years old or 30 years old. He was the commissioner; I was a senior advisor.

And what we called for is some element of what I think the President was announcing

today, which is essentially what we call a master protocol. And what that is, it's a large study where you study simultaneously, let's say, five different drugs. And so you enroll everyone who is hospitalized with coronavirus and has risk factors that could predict that they're going to have a bad course. You enroll them in the study. You put them on one of the drugs. You don't randomize them to placebo. You randomize them to one of these drugs if they consent obviously, if they're willing to enter the study.

And so they're all getting treatment and then you figure out which drug is working best by comparing the outcomes, again to each other, against historical controls. It's not an ideal way to study a drug. The ideal way to study a drug is to randomize to placebo, but in this setting where you have drugs that have shown activity and maybe benefit in earlier trials, and you have a deadly pathogen, and you have no available therapy, and you have a patient who you know is at high risk of a bad outcome, this is a way you can study drugs. And this is the way we've done it in the past.

And so what it enables is the FDA and doctors and public health authorities to continue to collect information to figure out what's working best and maybe what's not working while you enable broad access. So people who present to a hospital who don't have an option and are going to have a bad outcome or be at risk for a bad outcome, have the ability to get on one of these experimental therapies. And so that seems to be what they announced today. I didn't get all the details because we hopped on this call, but that

seems to be what they announced. And I sort of fleshed it out in a paper that I put out today so you can get more details about how it works.

BECKY QUICK: The GM CEO, Mary Barra, made comments yesterday suggesting that GM would be willing to start manufacturing ventilators at some of these auto facilities that they've shut down for production at this point. Tesla's CEO, Elon Musk, jumped on and said he'd be willing to do it too. Is that a good idea?

DR. SCOTT GOTTLIEB: Well, I don't know a lot about how you can repurpose a facility to do hospital-grade manufacturing of a device that has much different components and parts than what those facilities are currently tooled to do. You know there's currently plants that manufacture these, some that are domestic. And you can dramatically ramp up production in those plants.

I know that there's a lot of ventilators on order right now, both hospitals as well as into the stockpile. And so there's going to be more supply on the market. Not enough to handle what could potentially be required in some of the worst-case scenarios and not enough to handle if we have sort of simultaneous Wuhan-style outbreaks in multiple cities. That's what's going to tax the system. If we can get through this where we keep the number of cases down and the large epidemics in U.S. cities are done sort of in a linear fashion rather than all at once, you know, we'll be on the brink of exhausting the

system but hopefully not get over the line.

To give you sort of a ventilator breakdown, there's about 100,000 ventilators in the country, between full-featured mechanical ventilators, between what's in hospitals right now and what's in the strategic stockpile. And the problem is most of those are being used so you have to try to increase capacity by getting people off of them as well as getting new devices.

BECKY QUICK: I asked the head of the CMS yesterday, the administrator there, what they were doing with the ones they were stockpiling. She told me that was classified. Do you know what they're doing with them?

DR. SCOTT GOTTLIEB: Well, I know how many there are. You know they're forward-deploying them to hospitals that have made requests. There's been hospitals that requested them in Seattle and California. But there's still a good number in the stockpile and more on delivery.

So, you know, they're going to end up deploying all those I would imagine. You know the other thing is you have ventilators, so the 100,000 are either what's in the stockpile or acute care facilities, but there's facilities like, you know, surgical sites that are pretty much closed now, outpatient surgery sites that have ventilators in them that are pretty

much closed. And so you can start to repurpose some of those institutions to take patients and take critical patients and use the equipment. And so people need to think about all of the ancillary institutions that have the capacity to deliver a high level of care that can now be repurposed and used because they're effectively mothballed because people aren't going and having an elective knee arthroplasty right now.

BECKY QUICK: You know when I last checked as recently as yesterday, you can't get tested for coronavirus if you're a normal person unless you've visited one of these high risk other countries where they've had big outbreaks, like China or Italy or something, or you have been in close contact with somebody who has been confirmed positive and you have symptoms. If you've been exposed to somebody who has tested positive but you don't have symptoms yet, they won't test you. And yet I hear all the time about how asymptomatic spread is probably a pretty big deal. Is that just because we don't have enough tests right now? Is that going to change, that policy, very soon?

DR. SCOTT GOTTLIEB: Pretty much. I mean the policy; the CDC recommendation is that anyone who a doctor thinks should be tested can be tested. States are putting in place some limitations of who...

BECKY QUICK: Not really though.

DR. SCOTT GOTTLIEB: Exactly, not in a practical way. And so there are some limitations being put on, on a state by state basis. So some states are being a little bit looser with testing than others depending on what their local capacity is. And we have a lot of capacity, it's just not distributed to all the places that it needs to be. But we are capacity-constrained and it's not the testing platforms that are constrained, it's the components.

So there's a potential shortage of the reagents that are used to extract the viral RNA. There's a potential shortage of the swabs that are used to swab your nose. There's actually a shortage of the tips on the pipettes that are used and the cartridge, the plastic wells that are used to put the sample in to put into the machine to test it. So it's always, one of the things I learned at FDA is that if you have a complicated supply chain, it's always the lowest margin product that is the weak link in your supply chain. And so it's the cotton swab.

There'll never be a shortage of the million-dollar scanner. You're always going to be able to buy that, but it's the swab that's going to go into shortage. So, whereas you might be able to do two million tests a month, we only have enough pipette tips to do one million tests a month. And it's not that the plants are down, it's that the plants are operating at full capacity producing all they can and it's all getting used. And so, you know, you need to bring on more manufacturing capacity which can't be done overnight,

or you have to move things out of other supply chains into the healthcare setting.

So academic labs have a lot of these tools. Drug companies do in their research labs.

And if you could figure out a way to move those products into the healthcare setting and then you restock them later since a lot of that stuff isn't going on now anyway.

BECKY QUICK: Is that stuff being manufactured in China or is it here in the United States?

DR. SCOTT GOTTLIEB: All over. The swabs are manufactured both in the U.S. and actually Italy. There's a plant in Northern Italy which is still operating actually. And there's a plant in Maine that manufactures them. But with the swabs, what they're going to do is they're going to validate the use of other kinds of swabs so they're going to get more into the market. But it's some of the other plastic parts and components that are limiting them right now as well as the reagents. Some of this is going to be alleviated.

Like so, for example, the N95 mask shortage by next week should start to...healthcare facilities should start to feel a little more relieved once we move all of the industrial masks into the market. So like 30 million of the N95 masks in this country are used for industrial purposes and now that Congress has passed the legislation providing legal protection for the use of those products in the healthcare setting, those are now going to

move into the healthcare setting. And so that's going to dramatically increase the supply of N95 masks. So some of these things are going to be worked out. You know the criticism should be they should have been worked out a month ago. But they're being worked out now.

BECKY QUICK: Could I ask you, I understand and appreciate HIPAA, making sure that you're protecting patients' privacy in general, but it's been frustrating in a time of a pandemic when you hear about a case that maybe you came into contact with at work, maybe a neighboring town, maybe a case in your town, a case in the school, where they will tell you there was a confirmed positive test but they won't give you any more information.

So you can't figure out whether you've come in contact with that person. Is there any, I understand again privacy regulations, but it seems that potentially in times of an epidemic or a pandemic, maybe some of that should be suspended to a certain extent. Not naming names but giving you a little more information.

DR. SCOTT GOTTLIEB: I mean, look, and South Korea to your point, that's exactly what they did. They would text people with exquisite details of, you know, if there was a case in proximity to them so that they can take measures, self-quarantine and obviously that's not going on here. I don't know what the laws are to waive HIPAA.

You know, under FEMA, if you declare a national disaster, you might have the ability to waive some of those rules under some of the authorities under FEMA, but I'm not really sure about that. But I agree with you. It would be helpful to find out more information about people who are infected. And just in my own community here where I said there were 20 cases, you know, we're finding out through the social networks who they were and we're determining...

BECKY QUICK: Right, through the gossip chain.

DR. SCOTT GOTTLIEB: Yes. And some of the people who were infected, you know, there were other people that I know who definitely were in contact with them but had to find out through social networks rather than being notified by public health officials. So it's not an efficient system right now. I think part of it is that we're beyond the point of containment. The public health apparatus is exhausted and they can't do containment and isolation around individual cases anymore so you have to do the social distancing at a sort of macro level. But the information can certainly be made more readily available if the laws allowed it.

BECKY QUICK: Scott, I want to thank you for your time today. We really appreciate your time.

DR. SCOTT GOTTLIEB: The market's up, by the way, almost 300 points.

BECKY QUICK: Yeah, you talked it back up. Well done.

DR. SCOTT GOTTLIEB: We keep talking, it's going up. It's continuing to go up.

CHAIRMAN MARIE-JOSÉE KRAVIS: I want to thank both of you. I want to thank Scott. I mean you've gone from Commissioner of the FDA to our Coronavirus Czar. And this has been really informative and we could have gone on, and hopefully the market could have continued going up. And Becky, thank you for your yeoman effort trying to inform the public on this. And I hope you'll both stay well and everyone on the call will stay and be well. And just to inform our members, going forward we're making decisions about scheduled Club events on a month-by-month basis and just keep connected to our website to know how things unfold. And we'll try to do more of these online conversations if at all possible. So, for everyone again, thank you for joining and be prudent, be vigilant, and be well. Bye bye.