

NATIONAL ACADEMY OF MEDICINE
and
AMERICAN PUBLIC HEALTH ASSOCIATION

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SUMMER OF COVID-19: MITIGATING DIRECT AND
INDIRECT IMPACTS IN THE COMING MONTHS

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WEBINAR

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WEDNESDAY
MAY 27, 2020

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The Webinar convened via video
teleconference, at 5:00 p.m., Nicole Lurie,
Moderator, presiding.

PRESENT

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P-R-O-C-E-E-D-I-N-G-S

5:00 p.m.

DR. BENJAMIN: Hello. I'm Dr. Georges Benjamin. I'm the Executive Director of the American Public Health Association.

I want to welcome you to the 8th Webinar in the COVID-19 Conversation Series brought to you by the National Academy of Medicine and the American Public Health Association.

I'd like to thank my co-sponsor, Dr. Victor Dzau, President of the National Academy of Medicine for his strong support of this important effort.

We're also grateful for the input of our expert advisory group, which is co-chaired by Dr. Carlos del Rio and Dr. Nicki Lurie. You can find of all our advisors listed at covid19conversations.org.

We're also grateful to this series because it is designed to explore the state of the science on COVID-19. To inform policy makers, public health (audio interference) at large.

More information on this series and

recordings of past webinars are available at covid19conversations.org. Now, Today's webinar has been approved for 1.5 continuing education credits for CHES, CME, and CPH.

Now, none of the speakers has any relevant financial relationships to disclose.

I want you to please note that if you want continued education credit you should have registered with first and last name. Everyone who wants credit must have their own registration and watch today's event in its entirety.

All of the participants today will receive an email within a few days from cpd@confex.com. So you can look for that. That's cpd@confex.com. And it will have information on claiming your credits.

All online evaluations must be submitted by June 26th, 2020 to receive continuing education credit.

Of course, if you have any questions or topics that you'd like us to address today, or on future webinars, please enter them in the Q&A box that's on your screen or email us at

apha@apha.org. That is, apha@apha.org.

If you experience technical difficulties during the webinar, please enter your questions in the box. But please pay attention to the chat for announcements about how to troubleshoot. Again, if you have any questions, please pay attention to the chat box for announcements for we continually put information on there about how to troubleshoot.

Now, this webinar will be recorded, and the recording and transcript will be available on covid19conversations.org, on the website.

Now I'd like to introduce our moderator for today's webinar, Dr. Nicki Lurie. Who is also one of the co-chairs of our advisory committee.

Now, Dr. Lurie is a Former Assistant Secretary for Preparedness Response at the Department of Health and Human Services during the Obama Administration. And in that position, Dr. Lurie oversaw the federal public health response to various health crises, including Hurricane Sandy and the Boston Marathon bombing.

Nicki, I'll turn it over to you today

to frame our conversation.

DR. LURIE: Thank you so much, Georges.
And hello to all of you.

Memorial Day marks, for most of us, sort of the notional beginning of summer. This is the summer when none of us really have much of an idea what to expect. But we do we expect warming weather.

With those come all kinds of weather events, tornados, hurricanes and at this time, while we've been hoping that COVID-19 might just burnout over the summer, it's not yet showing signs of doing this. We're looking at loosening restrictions after months of stay-at-home orders.

I think we saw some evidence of some of that behavior over Memorial Day weekend. And there is a lot of pent-up activity on many, many fronts. We're also looking at thinking about how the economic recovery gets stimulated.

So a lot of things kind of come together this summer that are hard to anticipate. But some of which we really need to think about now in advance.

So we thought it would be useful to put together a webinar to explore these issues for a combination of short presentations and then a panel discussion.

So I'd like to just start by introducing our panelist briefly. I think their bios are available to you. But Kent Smetters is the Boettner Chair at the University of Pennsylvania's Wharton School, and a faculty research fellow at the National Bureau of Economic Research, among others.

And he is the faculty director of Penn Wharton Budget Model. He's previously been at CEO, spent time at Stanford and been a Deputy Assistant Secretary at the U.S. Treasury.

Ateev Mehrotra is a long-time colleague of mine. Associate Professor in the Department of Health Care Policy at Harvard Medical School and a Physician at the Beth Israel Deaconess Medical Center.

His research focuses on evaluating of delivery innovation, such as telemedicine, which we've obviously seen a ton of in this pandemic on

costs, quality, and access in the U.S. health care system.

He received his medical degree from the University of California in San Francisco and completed his residency in medicine and pediatrics at Mass General and Boston Children's Hospital.

Craig Fugate was a colleague during the Obama Administration. Was a phenomenal FEMA administrator from May 2009 all the way through 2017.

Prior to that, he served as Florida Governor Jeb Bush's emergency management director.

And also served with Governor Charlie Criss from 2007 to '09.

He led FEMA not only through multiple record-breaking disastrous years, and oversaw the federal government's response to many, many, too many to mention, events, but he was a real voice for innovation and sent a clear and compelling vision, mission, and priorities for FEMA.

Relentlessly really driving the agency to achieve better outcomes for survivors. And he's somebody that I really came to look up to and

admire for all of his innovation.

Craig now serves as the Chief of Emergency Management Officer at One Concern and continues to do consulting. A whole variety of issues related to disaster preparedness and response.

And finally, Linda DeGutis. Past president of APHA and a co-chair of the APHA Intersectional Council on Gun Violence Prevention Workgroup.

She's a lecturer at the School of Public Health at Yale and an adjunct professor at the Rollins School of Public Health at Emory. And also a member of NAM.

She previously served as the director of the National Center for Injury Prevention and Control at CDC. And was in a number of other roles.

She's a native of Chicago, has her degrees from DePaul University, her MSN and DrPH from Yale. And was the Robert Wood Johnson Health Policy fellow in the office of my former senator, Senator Paul Wellstone. And that's where I first met Linda actually.

So, it's a great group of people. And thank you all for being here.

So I'm going to go over to Professor Smetters to get us started. Thanks.

DR. SMETTERS: Right, well, thanks for the invitation, it's great to be here. And if you could go to the next slide.

And the next one. So, certainly at one point every state has imposed some type of lockdown orders, as you know.

And most states have started to relax these orders, including stay-at-home orders. Especially on stay-at-home but also on various non-essential business activities.

And of course, this is going to have an economic benefit. That's the cool bowl of trying to relax some of these orders, but at the same time it has costs.

And we always, as a society, are making these tradeoffs between the various risks that we take and costs in this case. Things like cases, deaths, and infections.

So next slide. So, we don't have a lot

of time to talk about the framework that we use, but just as a high level, we gather a bunch of data.

I usually measure it at the daily level. Typically at the zip code or at the county level. In a couple of cases, at the state level.

And this type of data is not generally available from the government. Some of it is like weather data, but a lot of it is not. So it's a real kudos to a lot of private companies who have really opened up their data.

Everything from cell phone locations that we get to figure out encounters to employee scheduling software firms, so we can see businesses that are opened, closed. Even how many people that they're employing. Even how many hours people are working.

Certainly initial claims. We look at web searches, a lot of financial data and so forth.

And of course, and what we do get from the government is climate data as well as some county level demographics. The age, composition of population matters.

The labor force composition, are we

talking about very dense financial service city or are we talking about Wyoming with more, just kind of natural social distancing. Say maybe more agriculture.

And we put this, these data into an economic framework that does a measurement of social distancing and other key factors associated with all these different things. Density of population, the type of work and so forth.

And that feeds then into the epidemiological model, the standard SEIR framework. And we don't have time to go through all the details, but as you probably know with the background, that the reproduction number, the R , sometimes called the R -naught, is a really key number in particular in terms of cases and the spread.

And it's really the most important number. Even more important than the case fatality rate in these models.

So the next slide. And so what we did with this is that because we're not running just two miles separately, it's the economics that are

determining the things like R-Naught and the epidemiological variables so that they become inputs into epidemiological variables.

What the model does, it basically gets us away from, sometimes called the hammer and the dance. The hammer is of course, we see cases go up at exponential rates and so we put the hammer on, that's the quarantine, stay-at-home orders and so forth. And then there is this dance that as we start to lift them up but we can't do it in a perfectly continuous way so we kind of dance and hope that cases don't start to explode again and so forth.

The point of this framework is to in fact be more prospective rather than just adaptive myopic hammer and dance type approach where you're only using the epidemiological model.

And so, you can play with the model yourself if you like to. This is the similar interface. Just go to the Penn Wharton budget model website. You just Google Penn Wharton budget model. You'll see the link there.

And you can look at your state, you can

do different policy scenarios, behavioral scenarios. I'll summarize how you go get the entire United States that we'll talk about, but you can also drill down into your states and play little movies to see how things are changing over time and so forth.

So next slide. So, the estimation strategy, it looks like this slide got a little squished, but the estimation strategy, we don't have time to go into a lot of detail, but the key about it is that we need to separate out cause and effect.

And in particular, one technique that we use is what's called principle component analysis. This really separates out things.

For example, some models have claimed that there's a big weather effect. And of course, we even pick up a weather effect.

But it's also true that some of the weather effect that was picked up by some epidemiological type models was also because there is also, coming from colder cities that happen to be the northeast and northern part of the country,

those also tend to be more dense.

And so, we really need to separate density from weather. And principal component analysis is kind of the leading way to really do that.

And then we use what's called diff-in-diff across time at treatment. This is fancy language that comments we'll use to try to say, we really do need to figure out, distinguish between cause and effect.

Just because a state clamped down, did they clamp down and have an impact on cases or were they clamping down in response to cases.

There is some heterogeneity. You can think of some states being more blue states, some states being more red states. Some states having different social attitudes towards this.

And that will allow for tiny differences and allow us therefore to identify, actually, a change in the policy.

So what we don't want to do, what the mistake would be, would simply just to look at levels and extrapolate out levels. We really need

to try to figure out the difference from cause and effect. And so that requires all this more data to, at a really manual level to do that.

So next slide. And so how we, again, we don't have a lot of time to spend on this, but how we validate a model like this is we want to see if the model is properly setup and properly calibrated before the period where the policy is changed.

And that's that vertical, I can't control the mouse, but if you see in each one of those boxes that you have this line that's going down the middle of the box, the left-hand side of that is like a, think of that as a pre-policy period and the right-hand side is the post-policy period.

And these are different ways that governors have impacted social distancing. Like emergency declarations, stay-at-home orders, school closures and so forth.

What we want to see is in the pre-policy period that in fact most of the stuff is random around zero. Is there is not specific trend around zero. And then in a post-policy period that's

where we then will see the trends.

And we see it actually at emergency declarations themselves were not terrible effective at reducing social distancing. The reason why is they were just kind of vague. They didn't really, by themselves, do much.

They mainly unleashed various laws around price controls, price gouging, things like that. Freed up some resources. They didn't really do much about social distancing.

Social stay-at-home orders had a big impact. School closures certainly had an impact. Restaurant restrictions did.

Interestingly we even saw, before policy came in, a lot of people were already going to fewer restaurants and so forth. And that's the reason why we need to do all these controls, to make sure that we really are siphoning that out and separating that out.

Hence, when you see restaurant restrictions there, you're seeing the pre-policy period that's still randomly distributed around zero so that we are really capturing the cause

versus effect and not just picking up a trend that otherwise would have happened and other things.

So why don't we go to the next slide.

And this is the SEIR model. The SEIR model is, you know, it's been around for a long time.

It's first swarm was the SIR model, Susceptible, Infected Resistant, and then some years later the Exposed layer has been added. And as you know, everybody, almost everybody is susceptible, not everybody is exposed.

What became really important for COVID-19 is the fact that, as you know, asymptomatic transmission is potentially a big deal. And so the infected part we split out between the symptomatic population and asymptomatic population. And so, this all has to be calibrated and so forth.

There is absolutely no question, I mean, if you look at the U.S. data, there is so much sample selection in it. There has to be a lot cleverness and so forth in how you, even how we measure case fatality rates.

There is still a lot of uncertainty

about what the case fatality rate is and so forth.

But it turns out this R-value is the most important one, so we do a lot of sensitivity analysis around it.

But nonetheless, the United States is not set up in a way that collects data in an unbiased way right now. So we why don't we go to the next slide.

And this R, the R-value, now, I should point out because I'm being this presumptuous here, so everybody understands what R means. R is the replication factor. It's on average how many people does an infected person in turn infect.

So an R-2 or 3 means that an infected person on average is going to infect two or three more other people. And so the goal is to get R below 1.

R above 1 means we're on an explosive path of infections, R below 1 means that we in fact will be on a non-exploding path. And so the whole goal is to eventually get R less than 1.

And we've seen that in a lot of states. Both policy and pre-policy. The R has been coming

down.

Some states are still above 1. Wisconsin, Maryland and so forth are still above 1. So that will be a challenge as they begin to reopen.

Next slide. And here is the bottom line numbers. And this will be my last slide here.

And in particular, so what this experiment does, this is just for the United States. You can go to the website and pull it down for your state.

It looks at two different types of combinations here. One is the policy scenario.

And baseline is -- so newest projection, I forgot to write this on the slide, sorry about this, its newest production is between May 26 and July 30th.

And so we update every Monday.

So what this, the baseline policy means that whatever policy the state had as of May 25th, they keep that policy going up through end of July 30th.

And behavior scenario is that people, whatever people are currently doing in that state

in terms of social distancing. It will vary by state, by culture, by other factors. Whatever they're doing in that state, it's actually at the county level that would aggregate up, they continue to keep on doing.

And we're projecting by end of July there will be about 2.7 million cases, about 153,000 deaths. Unfortunately, our death projections have been accurate so far, and that's unfortunate because they have not been -- I've had many friends say they've disconnected from me on social media because they were depressed by these death projections, but they, so far, they've been tracking what's actually happened.

And so, and we're also forecasting that there will be, of the 33-ish million jobs that have been lost, about 1.6 will be recovered.

And the last column, which actually I can't see on my screen, is the year-over-year GDP.

It's saying that GDP will be about 4.3 percent lower than it was on July 30th of 2019.

But now suppose we consider these policies and we lift stay-at-home orders, which

are the remaining stay-at-home orders, but the personal behavior doesn't change, notice it has very little effect. That's because what happens is that most states have already lifted their stay-at-home orders. There is only a few counties and some states that haven't lifted stay-at-home orders, so it doesn't have a huge impact.

A full reopening will increase deaths by 43,000, will increase 800,000 cases. I shouldn't say will, but that's what we're projecting.

But it also will recover about 8.8 million jobs. And just to be clear, that is jobs over the forecast window so that will, it won't mean that we will go to a pre-pandemic levels with an additional 8.8 million jobs, but it will eat into the 33 some million jobs that we have lost.

So reduce some of that job loss.

But now, and this is the big takeaway, suppose that people now take this policy change as a queue at that things are okay, so they start reducing their own personal social distancing. They're not staying six feet apart, they're not

wearing masks, they're getting together in larger groups, this is what we call the reduced social distancing.

And we're not simulating this as saying this is going to happen instantly, it follows a log scale so a lot of it happens in the first couple of months. But we also recognize that schools are on break during this summer and so forth.

But if in fact we go to reduced social distancing, that has a much bigger impact on cases and deaths. So for example, if states does do a full reopening, we projected deaths go up by 43,000 by end of July.

If they were to do that as of the beginning of this week and continue that until the end of July.

But if in fact people reduce their social distancing, notice deaths go up by 400,000-plus. And so, it's the personal behavior that is actually even more important than policy.

Policy is still relevant, but the personal behavior is super relevant here. So thank you.

DR. LURIE: Okay, thank you. Thank

you so much for that. That is quite a sobering assessment and set of projections that we have.

And I think it really also points to the kinds of education and messaging challenges that we're going to have over the summer in terms of helping people understand the importance of the kinds of personal behaviors to limit spread, but at the same time try to help the economy recover.

And maybe during the panel discussion we can talk about those more dire projections and what might happen to the economy if we have that much uncontrolled spread and excess deaths past your window.

DR. SMETTERS: Yes.

DR. LURIE: But in the meantime, why don't we turn over to Dr. Mehrotra to talk about managing the health debt from a month long pause in access to non-urgent care. You know, we've heard so much about anything from kids missing immunizations to delays in elective procedures. So, eager to hear what he has to say. Ateev.

DR. MEHROTRA: Great, thanks so much. If you can go to the next slide. So I'm going

to be talking about, and a focus not on the economic and health costs of the virus itself, but to be more broad and actually talk a little bit about the non-COVID-related care and how Americans have changed their behaviors during the pandemic in getting that care.

And before I jump in and show you some results, I want to, like, why do we care. The first is, it really helps to quantify the clinical or health impact of the pandemic.

And a really highlighted concern that we have that one of the impacts of this pandemic is that many patients are dying, not because of the virus itself, but rather because they're not getting the health care that they need.

And we're also critically, this matters greatly because it also matters upon the economic impact of the pandemic. And specifically on health care providers and this potential paradox we might face.

Which is that at the same time, so many people are becoming ill in the United States and seeking care for the virus, at the same time, health

care providers are struggling financially and many might go out of business.

So the next slide. So what has been the impact of the pandemic on the number of visits in the United States.

What we're showing here is on the X axis is the number of visits per week, to roughly 50,000 health care providers from across the nation. And what we're showing here is as a percentage change from the baseline, prior to the pandemic, and specifically the week of March 1st.

So, before early March we had the same number of visits, they were around the same. And then starting in the week of March 8th and progressively through the week of March 29th we saw a rapidly, and frankly, dramatic decline in the number of visits, both telemedicine and in-person visits in the United States. A 60 percent almost decline by early April.

Next slide. What we've been doing is following those visit trends through this month.

And as of the week of May 10th, just two weeks ago, we started to see a bit of a rebound in the

number of visits. Now the visits are down, instead of being down 60 percent, are down roughly 30 percent. So substantially down, but a bit of a rebound.

Next slide. One of the things that all of you on the phone, on the webinar, as well as Americans are doing for the first time, as Nicki mentioned, is telemedicine.

And we're getting care in a very different way of actually via video or via the phone. What this graph shows you is that in numbers.

So here we're showing you the percentage of all visits that were prior to the pandemic, how many are now being provided by telemedicine. And at that same time there was that dramatic decline in overall visits, we saw a big rise in the number of visits that were provided via telemedicine rising perfectly by mid-April up to about 14 percent of baseline visits.

To kind of give you a sense of what that means, there are roughly about a billion office visits per year in the United States. And so, if

these were to project out for 12 months that would be about 140 million visits via telemedicine. Obviously a big change prior to the pandemic.

Next slide. I want to clarify that, yes, telemedicine visits did rise but they only partial offset the drop in in-person visits. So this graph goes back.

And this is that blue, or turquoise line that we saw previously, was the drop in all visits.

And in orange I'm showing you the decline in in-person visits.

And that gap between those two lines is the telemedicine. So it only partially offset the drop that we can see.

The next slide. That's overall. What we've seen is very different reactions. Different visit patterns across the clinical specialties.

So in orange I'm showing you here the percentage decline in overall visits through the week of, in the week of April 5th. And you can see for some surgical specialties the decline in visits was much greater. More than 70 percent.

But if you go to areas such as

behavioral health, endocrinology or primary care, you're seeing less of a decline. And I think that's really relevant to the clinical impact as we're seeing more and more patients suffer from anxiety, depression during the pandemic and can they get the care that they need.

Next slide. How visits vary by age group. And if we again focus on the orange lines the week of April 5th, we see the greatest decline among children. Those between the ages of 3 and 17 in particular, our school age children, as well as those adults greater than 75. And obviously that, also in particular for that oldest age group is very concerning given that's where the highest burden of chronic illness is.

So the next slide. What does these visit trends tell us and what should we be worried about in the coming months.

As I indicated before, there is substantial concern that patients are dying, not because of the virus, but because they didn't get the care they need. And folks have talked about a potential second pandemic of patients being

hospitalized because of their heart failure, their asthma, their COPD, or their diabetes was not well managed.

And when we think about the global impact of the pandemic, we need to really consider those issues.

If you go to the next slide. You know, it's interesting on, two days ago the New York Times had a nice piece really describing how patients are scared to go and get health care. Anywhere ranging from patients who are refusing to transplant to other types of care.

And two quotes really jumped out at me.

If you click again.

One doctor would describe, people are saying, "so I'm having a heart attack, I'm going to stay home, I'm not going to die in that hospital."

And that quote is reflected in the data where we're seeing roughly 50 percent declines in the number of patients coming to the hospital with a heart attack.

And let me be very clear, staying at

home with a heart attack is very dangerous and life threatening. It could lead to malignant arrhythmias and sudden cardiac death.

And I'm very concerned, and I think there is some evidence that patients have died at home because they did not get care. And I get it.

I understand why patients are scared to get in.

One person told the Facebook group in this New York Times piece that every time she has to go in for a scan or blood work she has a borderline meltdown because she's scared to get the care that she needs.

So next slide. So we're worried about patients dying because they didn't get the care, we're worried about the second pandemic, a potential second pandemic.

I think the other aspect of this, as I alluded to before, we saw a significant declines in the number of children who are getting, and that means fewer children who aren't getting -- and many of you have heard about pediatricians worried, that children are not getting the immunizations they need. And that's going to have significant impact

as we move forward here in terms of concerns about, say, another measles outbreak.

I alluded to the fact that the pandemic, the stay-at-home orders have led to increase in patients having mental illness. Suffering from mental illness, such as anxiety or depression.

Can they get the care that they need when we're having such a global decline in visits.

And last, but equally importantly, is this, as I indicated, apparent paradox that despite all these patients needing more care for the virus, this huge drop in visits that I'm describing to you has led to substantial financial strain on practices.

We've seen health systems cut salaries, we've seen tremendous amount of furloughs. Much of the increase in unemployment we've seen is actually surprisingly coming from the health care industry.

And lastly, if those in the coming months, if those practices have to go out of business, then that's going to even worsen the strain on the health care system to absorb the care

that they need to provide.

So I'll end there and I look forward to Q&A.

DR. LURIE: Thank you so much. Again, continued sobering assessments, I think, of what is going on here.

Well, you know, as we mentioned, it's summer time and hurricane season. And you know, Craig Fugate is no stranger to managing many concurrent emergencies.

And I'm going to look forward to his reflections on managing concurrent emergencies in the Summer of COVID.

And I know that one of the things that's been really highlighted in the past few days is not only that we are likely to have a worse hurricane season this year, but that many of the people who typically volunteer in emergency response are older people.

And they are at particular risk if they volunteer in settings where COVID transmission is likely.

So, eager to hear your thoughts and

approaches to this, Craig.

MR. FUGATE: Well thanks, Nickie. And good afternoon everyone. Disasters won't start and stop for a pandemic. We know that.

And as we're preparing for hurricane season, we've already seen dam failures, floods, tornados, and a forecast also for an active wildfire season.

And I think a lot of people just throw their hands up in the air and go, you know, how do we do all this? And for emergency managers, it's not an option. We're going to have to address this.

So, why is a pandemic so much different than the other disasters? And I think this is, it helps us understand what we're dealing with.

Pandemics, as well as things like cyber attacks and climate, are not geographically-based.

There's no border.

Most disaster response is in areas impacted. And we'll pull resources from across the nation, and in some cases across the world, to respond to that event.

Well, in a pandemic, particularly with COVID-19, where people are the vector, moving people either to respond, or as Nickie pointed out, volunteers, is a risk that we are bringing more people into an area where either they may be introducing further spread, or they may become exposed and bring it back home.

And so that's our first consideration.

The second consideration is, a lot of our mass care activities to take care of the public, evacuations, mass sheltering, feeding operations, all are also potential amplifiers of spread of this virus.

So, emergency managers have been looking at this and planning for this. And there are some, we think, rather straightforward solutions.

They're not perfect. But they are answers to this question, how do we respond effectively while minimizing the risk of further spread of COVID-19?

And the first will be again, for our responders. Ensuring that they have protective

equipment, that we are deploying them in a way that minimizes their exposures.

Keeping teams that are coming in from the outside separate from other teams, to not commingle teams.

This may mean that we'll have to set up more areas to house workers that are separate instead of one large base camp. This is a consideration being made for the wildland fire community.

The other is the responders themselves, the volunteers. If you think about what we see in many disasters, from Red Cross, Salvation Army, Team Rubicon, you know, a variety of organizations, is people traveling from all over the country to help provide mass care.

That might not be our best option this year. Our best option may be, as we see with World Central Kitchen and other organizations, some of which are using FEMA funding, that instead of bringing the volunteers in to prepare meals for people during a disaster, is we hire the displaced food service industry.

Restaurants and others that are just now starting to open are still way under their capacity. And by putting people to work in a disaster area, particularly those locations and restaurants that are able to get open, we can perform many of our mass care functions by putting people back to work.

We still have very large unemployment numbers. Our hospitality industry has been one of the most adversely affected.

And these are things that are eligible for reimbursement by FEMA in a disaster. So, I think we need to look more at buying our supplies and capabilities locally, and putting people to work.

And not be as dependent upon volunteers, particularly going -- the numbers that we may need in things like hurricanes.

On the other side of that will be the evacuation and mass care. FEMA, the American Red Cross, and the National Voluntary Organizations Active in Disaster have been working on national mass care strategies for some time.

This year they have updated all of their plans to look at incorporating social distancing and other practices as required to manage COVID-19.

And no secret to anybody, we know that shelter operations will be a high risk factor. Two of the key ingredients that will determine the risk of those shelters is how many people for how many days they're in that shelter, could result in explosive numbers of exposures to any -- any people in those shelters if they are exposed to somebody.

And with asymptomatic patients and not adequate enough testing to test everybody going to shelters, it will be of concern.

There is another option. And that is, many areas that are in coastal evacuation zones also are seeing, even with the reopening, significant vacancies in hotels and motels.

And as a first line of shelter operations, particularly as follow disasters, much of the guidance is now suggesting non-congregant care shelters, or non-mass care shelters. And utilizing hotels, motels, residences and other

activities to shelter people in smaller groups while maintaining social distancing.

Where we will end up sheltering, the goal is to run smaller shelters. This will require more staffing, but again, we can hire people in the local communities to help staff these shelters.

And also look at running them for shorter durations. If we see the need that people cannot return home, begin processing those folks to hotels and motels as well.

This will cost a lot more money. And state and local government budgets are under tremendous pressure these days. The goal is with the federal assistance to help offset these costs, and provide the resources that local governments and states will need.

But again, to summarize, if we need to reduce the amount of people traveling into disaster areas, we need to treat the people in the area as a resource and do more hiring and buying of local capabilities.

We still need people to evacuate. We have to be absolutely clear on this, that we cannot

have people so fearful of COVID-19 that they stay in dangerous areas.

And that will be a challenge for hurricane evacuations where historically we have not had high compliance in some areas for evacuation orders. And this year, with COVID-19, I think that message is going to be difficult.

We need people to evacuate to a safer location. We need to maintain the social distancing and other tools we know in these shelters.

And we need to adjust our messages for preparedness. And that is, add protective masks and sanitizer and other items to people's disaster kits, particularly those that have to evacuate.

So, there's a lot of work being done.

We can expect to see disasters over the life span of COVID-19. And we are seeing those adjustments being made.

And the last issue will be impacts on the existing healthcare systems. I'm less concerned about the impacts on patients that maybe generated from the disaster, as much as the

requirement to evacuate healthcare facilities in disasters such as hurricanes.

And in Florida we see high levels of incidents of COVID-19 in assisted living facilities and nursing homes, as well as hospitals that are built in hurricane evacuations.

It's not always the best decision about siting the facilities. And in moving those, the normal plans are to relocate them to sister facilities.

This maybe a very difficult thing to do if we have incidents of spread already in nursing homes or assisted living facilities, and we move them to another location, perhaps introducing another scenario of an uncontained outbreak.

We did a lot of work early in COVID-19 to develop temporary hospitals. They in many cases were not as utilized as there was concern they may need to be.

But those may be better options to plan for and set up in hurricane-prone areas where we may see evacuations of healthcare facilities, that rather than directing them to go to sister

facilities outside of the area of impact, we utilize the temporary healthcare facilities that can be set up, isolate and care for those populations during the evacuations. And hopefully manage not creating further spread of COVID-19 by commingling different populations in these facilities in an evacuation process.

So, there's a lot of work going on. There's a lot of concern out there. But I think there are solutions.

But, it does mean we're going to have to think differently about this and take these lessons and build them into our plans.

With that, thanks Nickie. And I'll turn it back to you.

DR. LURIE: Good. Thanks so much. And I think a really helpful discussion about some, you know, ways to change our thinking and some creative solutions here in the face of what we all know will be enormous challenges.

Our final speaker for today, Linda DeGutis, is somebody else I'm really looking forward to hearing from.

I know at the outset of this, we worried a lot about things we see in almost every disaster, spikes of domestic violence, spikes of child abuse, et cetera, particularly when people are locked down at home and kids are not in school.

Both with that and now letting up on some of the social distancing, Linda is going to talk to us about some of the data, and about what to expect. Over to you.

DR. DeGUTIS: Great. Thanks very much. And thanks very much for the opportunity to talk about this.

I think these are issues that we have not spent as much time talking about during this pandemic as maybe some of the other health-related issues. But, certainly something that we need to think more about. Next slide.

First of all, I just wanted to define violence, because I think we all have different ways of looking at it. But the World Health Organization really looks at this as an intentional use of physical force or power that's threatened or actual.

And it's against oneself or another person or a group or community. And it results in this high likelihood of injury, death, psychological harm, maldevelopment, or deprivation.

And then there's three types that we see, and the first two are the ones that we're seeing right now most commonly during the pandemic.

There's the self-directed violence, which is suicide or other kinds of self harm.

And then interpersonal violence, and as Nickie mentioned, the intimate partner violence that we know increases during other -- that is increased during disasters: assaults, homicide, child abuse, and neglect.

And then something that we haven't looked as much at, but there is the potential for it, elder abuse and neglect. Next slide.

So, violence in natural disasters, we have evidence that people who have been exposed to natural disasters may develop mental health issues such as the post-traumatic stress disorder, and depression/anxiety disorders, and an increased

suicide risk.

In a recent study, a group looked at low-income women in New Orleans, and looked at them at 1, 4, and 12 years after Hurricane Katrina. And they were looking at what they experienced and what kinds of things have impacted them in the long term, because they had a range of traumatic experiences.

And a lot of those are very similar to what we're seeing during the pandemic. Things like bereavement, lack of access to medical care, an inability sometimes to get medications.

And what this study showed was that during those time periods, these exposures that were most strongly associated with the negative outcomes and the negative health outcomes, were those that were most common to what we're seeing in the current pandemic, the psychological distress, post-traumatic stress, general health and, you know, kind of physical inability to go to the doctor, or difficulty getting to a doctor's office. And so we know that we have the potential for seeing more of these in the long term.

And then other contributing factors for mental health and violence risks, you know, the personal threats that someone feels to their own life, but certainly the loss of loved ones. And with this pandemic, the inability to be with them at the time they are dying, or prior to their death.

Property loss, perhaps from inability to pay from the economic impacts. Some of the breakdown of social support systems and some social isolation, which is especially devastating to older adults.

And then a scarcity of basic provisions. We've seen scarcity of various kinds of food, powerlessness and then again, the economic stress. So next slide.

So domestic violence, we know right now that in about 140 American cities and counties, in 48 states, there have been some significant increases in calls to domestic violence hotlines.

And the largest increase in the month of April was 274% in Alabama.

The stay at home orders and lockdowns certainly have an impact on people who are

experiencing intimate partner violence, because it forces them to shelter in place with the perpetrator of the violence and makes it extremely difficult for someone to leave an abusive relationship.

And in this time period, the shelters that someone might go to are also faced with the challenge of providing protection from the violence itself, from the perpetrators, as well as protection from spread of the coronavirus. Next slide.

Assaults are another issue. And we're seeing more and more assaults as this pandemic is going on. In some conversations I've had with the emergency department physicians recently, they've said that they are seeing an increase in the number of assault-related injuries that they're seeing in the emergency department.

And these are often things that are happening when people are getting into an argument over something on the street, or getting into an argument over whether or not somebody's wearing a mask or distancing themselves enough.

Or assaults on workers who are trying to maintain protection at some place of business.

And some of those workers have not been trained in how to deal with workplace violence.

So, we're -- we again see this increase in assaults and the risk of more assaults occurring over time. Next slide.

And some of the risk factors for mental health issues and suicide. Again, the social isolation is a major one.

Fear, certainly, of becoming ill or dying from the virus. The stress that people are under, whether it's stress of job loss, stress of having their children at home with them, stress of being in a situation where they don't have their usual social supports, and the economic losses that were talked about earlier.

Suicide risk, calls to a suicide hotline in LA increased from 20 in the month of March in 2019 to 1,800 in 2020. Certainly depression is another risk factor.

And for people who suffer depression, who may not be able to access their healthcare

provider or their mental health provider, it certainly is a risk factor.

And then we have the issues now that we're seeing with healthcare workers who are exposed to stresses as they take care of patients with COVID-19.

Both, you know, the pre-hospital care workers, emergency medical services, physicians, nurses, respiratory therapists, the range of people who are taking care of patients with COVID-19, and are seeing the death and the outcomes and the difficulties that people are having with this pandemic. Next slide.

Another issue is with firearms. And we know that firearms sales in March increased 85 percent compared with March 2019. And it was the highest firearm sales that were ever recorded in the United States.

We've seen people at state rallies, at government centers outside, rallying with firearms, saying they want things to open up. This has been some of the sort of push to open. Some people have carried guns, open-carried.

And then we know that people who purchased a gun, a handgun, have a 22-fold higher rate of firearm-related suicide within the first year than people who don't have one.

We also know that in men, especially for every 10 percent increase in firearm ownership rate at the state level, there's an increase in suicide of 3.1 per 100 thousand people.

And that the presence of a firearm in a home is associated with a two to ten times greater risk for suicide than in a home without a firearm.

In addition to that, we also know that it poses a risk not just related to suicide, but if a firearm is not stored properly or safely to children who might pick up a firearm that is loaded.

So, we know that there are a lot of risk factors that are now in place because of what we're seeing with the increase in firearm ownership. Next slide.

So firearm violence we also might have thought that we would see significant decreases.

However, we have seen decreases in mass shootings.

Those are the smaller proportions of the shootings

that we see.

This year Chicago had its deadliest Memorial Day weekend since 2015 when 10 people were killed and 39 wounded. And fatalities from gun violence increased 14 percent in the second week of April this year, compared to the same period last year. And this is overall across the country.

Other cities are seeing similar issues to Chicago. Philadelphia is experiencing an increase, Baltimore, and a lot of city leaders are really concerned that once the lockdowns are lifted and the weather improves that we are going to see some additional increases in violence. Next slide.

One of the other issues is alcohol and other drug use. And we know as a baseline, about one in 12 U.S. adults has a substance use disorder.

Only about 7 percent of physicians can effectively treat opioid addiction by providing some of the medications that really help someone who is addicted to medication such as buprenorphine.

And individuals who smoke, vape, use

opiates, or use methamphetamines, are probably more vulnerable to some of the worst outcomes associated with COVID-19 because of their -- the impact on their respiratory system.

But also a lot of these individuals have lost access to their usual support systems. They are also stressed. They may be unable to get to their group support kinds of activities that they normally would.

And so they have risk factors for relapse and self-medication. We know alcohol beverage sales have increased by 55 percent in late March.

And we also are seeing cities and states put in an option for takeout food orders with alcohol. We see people having online happy hours and meetings.

And there are also now some reports of people who are working from home, not finding it unusual to have a drink as they're working from home. There's also difficulty in connecting, again, with the support groups for many people.

And for other drugs, the social

distancing may increase the risk of overdose deaths. And the physical effects of the drug use can increase the risk of complications from COVID-19. Next slide.

So you know, in kind of a summary, we're dealing with multiple public health crises during the pandemic. The violence, the mental health risks, the alcohol and other drug use, and these are not going to go away as we open things up.

In fact, some of them may get worse.

There may be people who have some of the risk factors or symptoms of some of these problems who did not have them before the pandemic.

So, we really need to be thinking about how we are going to consider the risks for the interpersonal and self-directed violence that we're seeing now, and as I said, might increase some of the mental health issues and the increases in alcohol and other drug use.

And this also includes providing people with access to the services that they will need in order to deal with some of these issues.

So, we have multiple public health

issues to deal with along with the pandemic. And I think these are going to be some major challenges for us.

DR. LURIE: Well, thanks so much for that as well. You know, as I'm listening to you and connecting some dots between your talk and Ateev's talk, you know, one of the brighter areas in this otherwise somewhat depressing talk, has been a real increase in the use of telehealth for behavioral health.

And particularly for substance use disorders. And we are now suddenly seeing a lot of innovation or far fewer restrictions in prescribing of buprenorphine, methadone, and other things through telehealth.

And so maybe as we get into the Q and A, it might be interesting to talk about some of the positive innovations that have come from this as well.

So you all have been sending in lots of great questions. And Laura thankfully has been sending them to me. And I might paraphrase a couple of these and combine them as we go forward.

And so maybe the first question, I think is going to be for you, Craig. You know, you are sort of no stranger at all to the politics of emergencies.

And yet most of the kinds of disasters that I think you've been involved in responding to, people are to a large part able to respond a little bit apolitically.

It's the space where we've seen people across the political spectrum come together to help one another out in response in some aspects of the recovery.

This pandemic seems to have gotten really politicized in lots of ways. And so, Carlos del Rio, my co-chair will tell us that whether you wear a mask or not in Atlanta is taken as an indication of which political party you belong to, et cetera.

I'm wondering Craig, if you have thoughts about sort of opportunities to depoliticize this as we think about responding to other kinds of emergencies over this summer and fall?

And any advice that you might have about how to accomplish any of that? And then if others want to jump in, they should feel free.

MR. FUGATE: You know, I don't know how we address the culture war that we're seeing played out with COVID-19, and a long-term war on science.

But, I think it's important that particularly for the healthcare community, speak with clarity. And not just tell people what they need to do, but explain to them why they need to do it.

Ultimately, the public is going to have to make their own decisions. But I prefer they do it with an informed decision and know the why, and hopefully we'll see compliance.

As we go into the potential for hurricanes, this will become a great concern in shelter operations. If we see a high degree of noncompliance as a political statement, at the same time we may literally have hundreds if not thousands of people in congregate care settings in these evacuations and the potential exposure there.

So, again, I think we do a lot of -- yeah, there's a lot of politics here. I also think we do a lot of telling people what to do.

I'm not sure they're always hearing the message why we're asking them to do that. And I think that's going to be our key to helping increase compliance.

And understand that some people, no matter what we say, won't be compliant whatsoever.

And we're going to have to prepare for that and its impacts on potential spread.

DR. LURIE: No, thanks for that. And I think that's an incredibly well-taken point.

And it seems that emergency planners and public health planners both could be working right now, the kinds of messages for why you're going to need to take these kinds of actions should we need to evacuate, get into shelter operations, and other -- maybe it's an opportunity to take away some of the labels. I guess we can see there.

I don't know if anybody else wants to get into this bit of a conversation. I can't see folks for whatever set of reasons.

But, the next question I think I might start proposing to our first two speakers. And that has to do with the fact that we all know that disasters, you know, sort of aren't equal-opportunity destroyers.

And that poor and minority populations are -- are often disproportionately impacted by all kinds of disasters, whether they're natural disasters or whether there's pandemics. And we've seen obviously lots of excess mortality, particularly in African-American communities during this.

I'm wondering, Professor Smetters and then Dr. Mehrotra, whether your modeling is able to either look at sort of not necessarily disproportionate impacts, but how to think about the equity considerations as we think about reopening either slowly or gradually.

I know one of the questioners talked about this being an on/off switch. But, as we open either slowly or gradually, you know, whether there are ways to do this that have more or less implications for equity?

And then maybe Ateev, you could talk a little bit about what we're seeing in the healthcare system with regard to differential use and then the equity considerations.

DR. SMETTERS: Sure. No, I think that's a great question. And right now our model is not specifically reporting out by race, by income.

Now, because we go all the way down to the local county level in most cases, those factors are highly correlated with what we do measure and observe.

But, and so we in fact do have that essentially going on inside the model, but we're not reporting it out separately. And it's something that we want to do at some point.

But, I think the issue, you know, as of course with race is, as is well known, they're often in the front lines in the service industry, more exposed.

They're also on the back side less likely to go to a doctor early on, maybe because they're afraid of out of pocket expenses, even

though the law is the law in terms of hospitals and coverage for COVID-related stuff.

But still, there's a lot less historic attachment. And it's also true that if you look at some of these areas that again, more at the zip code level, this personal social distancing that kicked in, in some zip codes, it happened a lot faster in some zip codes than other zip codes.

And so there's also this issue of are more concentrated areas that maybe are lower income, do they actually trust government? Do they actually trust what they're hearing, and do they actually take personal action in response to that?

And we actually saw from evidence that we haven't reported out yet, but that that is actually true. Even before policy, higher income, even controlling for density, the higher income zip codes tended to see more personal social distancing happening even before the policy, relative to similarly dense zip codes with lower income.

So, there's a lot of nuances, a lot of

factors. We don't get into the, you know, normative language about what the government should or should not do.

And one reason why, you know, so our numbers are tracked by both sides. I mean, our numbers were reported on both Stephen Colbert and Rush Limbaugh.

So, if you think about both sides of the debate here. And the reason why we kind of appeal to both sides is simply because we're just about the numbers.

We never say is this right or wrong, and let the chips fall where they may. And so, at the same time, we are about nuance.

And there are a lot of nuances here, besides the obvious issues about front line workers and insurance status have to be addressed.

And so I think as we showed in the slide, is that personal social distancing is really important. So trust in government messaging therefore also becomes very important as well.

If you don't trust the messages coming from your government, then you are -- and therefore

don't change your personal social distancing in response, that will lead to more disease.

DR. LURIE: Yeah, good. Thank you. Ateev?

DR. MEHROTRA: Yeah. No, I think the question is a really critical one here on this.

The impact of this and how it varies by -- and potential for this to increase disparities in care.

You know, you alluded to, Nickie, you alluded to the fact that one of the silver linings of this pandemic or something that I've been excited about, has been that rise in telemedicine.

And it's been a great way to bridge care. But doing a telemedicine visit, or at least a video visit requires what all of you are using right now on this webinar.

You need to have a computer. You need to have high speed internet. You need to -- or a smartphone with a wireless plan.

And many of the audience is well aware of the digital divide where we see not surprisingly poorer communities, communities of color, as well as our oldest age groups, not having that capacity

to do this video visit.

And so this weird situation we could have, which is that telemedicine has been doing an amazing job at least partially fitting, meeting the access needs of the nation.

But at the same time, those very high risk communities could be actually not able to join in. Therefore, in a strange way, telemedicine might be increasing disparities.

And that raises another thing that we need to be focused on for the coming months and years is that, how do we bridge that digital divide?

And there are many federal programs that are available. But do they have the resources that are necessary, because that has become so critically important in terms of people's health.

DR. LURIE: Great. Thank you. So, the next question is also sort of a positive question, which is, how might the healthcare and public health systems be permanently changed by COVID-19? And other than telehealth, what are some positive innovations?

So, maybe I will ask you to comment

first, Ateev. And then Linda and then Craig, if you have thoughts about that too, feel free to chime in.

DR. MEHROTRA: No, it's been a -- it's a great question. You stole my thunder, because I was going to talk about that a little bit.

But that has been an amazing aspect of this, which is, you know, and I'll just say the point, which is that the changes that we expected to happen over a decade, happened in three weeks.

It was just a remarkable change. But, I do think that as we look throughout the healthcare system, we are starting to see innovations accelerate in -- and the changes that we're making.

So, one of the things that I've been really intrigued about is that because patients are staying at home, we're thinking again about how we can provide care in the home. And maybe giving patients a little bit more ownership of their healthcare problems.

So, to be a little bit concrete, do women need to come in for all of those prenatal appointments? Some OB/GYNs are sending patients

home with fetal heart monitors so they can do that care at home.

That's really helpful for a busy mom who's got a toddler in the house, and she doesn't have to come in.

And we're trying to provide, and we're questioning how much of that care needs to happen, and can we provide that care within the home?

And I think that's a really important aspect of it, because the pandemic has really challenged some of our usual ways of doing things in a way that I think will have a lot of positive benefits as we move forward.

DR. DeGUTIS: I would say that, you know, the question of telehealth, I mean, I think it's a great opportunity to see some development that way.

But, I think some of the issues that are now coming to light because of the pandemic about vulnerable populations and about people who can't access care, or don't have ways to get to care. And don't even have internet available to them at their home, because they don't, you know,

the lower income they're not able to afford it.

Those are some of the things that I think we can now start to think about how do we address them and use this opportunity to figure out how to address some of the vulnerabilities that people in various places have.

You know, we're seeing the vulnerabilities of people who live in food deserts for example, and what they have right now, because they can't even get food.

They -- because there's no place for them to go nearby. They can't get out. They're, you know, they're sheltering in place or locked down.

And I think one of the interesting pieces of all this is, we didn't -- we didn't move to open the libraries quickly yet, there wasn't an advocacy for opening the libraries, which is where, you know, a number of, a lot of people who don't have other kinds of access to internet and to the, you know, everything can't -- it's where they might go to do things.

Not that that would be -- we would have

to implement a number of kinds of safety, you know, ways to keep them safe.

But, I think it's something we need to think about.

DR. MEHROTRA: One other thing I might add, just to build, one of the points that was made was about the use and concerns about substance use that are happening and increasing during the pandemic.

But on the treatment side, you alluded to this Nickie, and I thought we might just emphasize that aspect of it too, that the pandemic has led a lot of providers who treat opioid use disorder to start thinking about different ways of how they manage it.

For those in methadone clinics, do we really need to have patients come in every day?

And when can we have patients go home?

Do we need to do urine tox testing on a certain interval? And again, those kinds of ways, changes to the care patterns can potentially increase access to care for patients, because they'll be able to get that care without all the

inconvenience of going in every day.

So, I just wanted to highlight that, because that was a negative that we raised, which was concerns about substance use, but I do think that there is this potential positive effect of potentially changing the way we provide care for substance use disorders, and therefore, expanding access.

DR. DeGUTIS: Yeah. And I think going along with that too, is the -- if we're talking about making sure that more primary care physicians are able to, you know, prescribe buprenorphine.

People aren't going to a methadone clinic in order to deal with an opioid addiction or something. That would make a big difference as well, because you take away some of the stigma that people might have.

DR. LURIE: Okay, thanks. So the next, the next question is, is one that you know, I think I've heard a lot over the years. And I'm -- which is again for Craig.

Which is, can you comment on opportunities for state and local health

departments to better collaborate with state and federal emergency management?

But I might maybe put an additional twist on this question, which is sort of, what do you, how do you think that we can leverage what's happened in this pandemic to actually improve the collaboration and coordination?

You know, what are the positive changes that have occurred? And how can we accelerate those and make them last?

MR. FUGATE: Well, again I think when you're talking about a pandemic, at least when we were planning for it, we saw this as a team effort that public health would be primarily focused on the epidemiological, the protective measures in dealing with the disease directly.

And emergency management would support that and plan for the consequences of the impacts of the disease. We did a lot of this with H1N1, looking at how various industries would be impacted not so much by social distancing, but just the impact of people being sick and unable to work.

So, I think those lessons we somehow

got away from. And we need to reinforce that a pandemic is not just a public health emergency.

It is a disaster.

And we need all of the various components working together, complementing each other, allowing public health to be the lead on the disease. And using emergency management and those teams to support that process.

But also be prepared to deal with the consequences, and the fact that disasters don't stop for a disease outbreak or a virus. And constantly updating that planning process.

It only works if the organizations trust each other, work as a team, and are less concerned about who's at the podium speaking next to the President, and more about how do we ensure that we work as a team for the well-being of our communities.

DR. LURIE: Well said. And I can think of so much of the pandemic planning we did both during H1N1, incorporating lessons learned. Doing it again during the Ebola situation, et cetera.

And I think you're right. There are just so many opportunities for teamwork to continue to improve planning. But also to use the plans that we have.

So, next question, I think, goes to Professor Smetters and maybe to Ateev. But also maybe to you Linda.

And the question really has to do with, are we seeing the same kinds of trends (audio interference) -- some of the trends in mental health and violence.

So, let's start with Professor Smetters and sort of go down the line here.

DR. SMETTERS: I'm not sure if I'm the only one, I only heard part of the question. I think the screen had frozen.

DR. LURIE: Oh, sorry.

DR. MEHROTRA: I think you froze up there for a moment, Nickie.

DR. LURIE: Okay. So, the question really had to do with whether we're seeing the same kinds of things internationally that we're seeing here in the U.S.

Whether it's on impacts on the economy and economic recovery, which might be particularly interesting since other countries chose to handle their unemployment situation differently than the U.S.

Whether we're seeing it, similar changes internationally in use of the delivery system, and decreases. And then maybe from the mental health and domestic violence perspective as well.

DR. SMETTERS: Right. So, from an economic perspective and transmission perspective, there's a lot of heterogeneity throughout the world.

I mean, of course coming back to the earlier point that was made, if countries are prepared for this, like in Taiwan, they were very prepared ahead of time for this, that is going to mean much fewer cases, infections, in their case they had only eight deaths so far. And also, much less shutting down of the economy.

So, we've seen lots of heterogeneity in terms of South Korea and Japan, how they locked

down was very different than say the United States.

There was actually not as much locking down, but at the same time, they had more testing as well as more contact tracing.

I think contract tracing, despite all the buzz around it, honestly is not very effective when you don't have rapid tests. And, at least that's what the models and the data seems to be suggesting.

So, and then of course the opposite extreme of all this is Sweden, where they didn't shut down very much. At the same time, you know, they've had in terms of cases per 100 thousand, it's actually -- despite a lot of the media comparing Sweden to Finland and Denmark, Sweden also has fewer cases than say other countries that have shut -- that have locked down, including the United Kingdom and others.

And so, there's tremendous heterogeneity. But, I think one of the common factors, it really does come down to personal social distancing.

In Sweden, they can get away with it,

partly there's a very communal factor there. It's a much more homogenous population.

Trust in government is very high. People actually like to pay their taxes there. And because of that trust and, people took on personal actions.

Did they see their economy slow down?

They did. Simply because of personal social distancing meant that despite what you saw on TV with people at restaurants being full, restaurants were actually less full than they usually were.

And so a lot of the slowdown is actually not just legal, it's also personal social distancing.

So I think, you know, for the United States, it's really hard to glean what is the right lessons. Because if we, for example as we remove lock downs, and is this going to be Hong Kong? Is it, where people took it as a signal that things are okay? And so they really reduced their personal social distancing.

Or is it going to be a little bit more like some Scandinavian countries, where people

still understand they have to be very careful here.

And I think that's going to vary a lot across states in the United States. I don't think of the United States as a homogenous, you know, population like other countries.

And so, I think it's going to be a heterogeneous reaction to it. And it's going to be a really state by state, even county by county response.

DR. LURIE: Thanks. Ateev, have you been tracking at all healthcare utilization in other countries? And have similar things been happening?

DR. MEHROTRA: Yes, so there we don't -- I haven't personally been tracking. So, I can only tell you anecdotes.

But certainly the drop in visits that we observed here in the United States was echoed in other countries, as well as their tremendous investments in telemedicine.

I do think that one of your questions was related specifically to mental illness. And there I do think that there is a divide there that

I'm concerned about.

Building onto the divide that I talked about here in the United States in the digital divide, the majority of the visits we see in our data in the behavioral health side are provided by telemedicine right now in the United States.

That means that that's been the way that those visits have been provided. And that's why the number of visits has declined relatively less than in other clinical areas.

That is not the same opportunity as it is in other nations. And so that's going to be a major issue in that particular area in other countries where they may not have that ability to quickly transition to the telehealth side.

DR. LURIE: Thanks. Linda, do you want to comment on this?

DR. DeGUTIS: Sure. I think, you know, I would agree with that. It's the issue of transitioning to the telemedicine.

But, I think the other thing we need to keep in mind, is what goes on in the -- what might go on in a developing country where there

isn't so much access to care to begin with.

And so, we have a -- you know, and then you have places where we have refugee camps. We have other groups, you know, other large sort of settlements of people who don't have access to healthcare, or very much access at all on a regular basis.

So, I think we'll see a lot of differences there that we wouldn't see looking at Europe or, you know, the UK, Hong Kong, those kinds of places.

So, I think we need to keep that in mind as well.

DR. LURIE: Good. Thanks. Let's do one more question, I think. And then I can try to share a couple of thoughts and sum up.

So, this one really is about, how much of the perceived avoidance in non-COVID care is due to fear, and how much is due to closure of healthcare facilities stopping elective surgeries, et cetera?

And the next part of the question is, how can we persuade the public that it's not only

safe, but imperative that they seek care?

DR. MEHROTRA: Yeah, no. That's a -- you know, one of the themes, I think, across all the presentations has been the challenges in communication that we have.

And so, I think that in many ways we were very successful as the healthcare world saying, look, you know, stay home when you need to. But in doing so, there might have been an over -- that message may not have had the nuance or clarity as necessary that if there is something significant in nature, that we want you to come in.

And so I think that message and the rebound that I described to you is illustrative of the fact that we're doing a bit of a better job that, if you have a healthcare problem, it is safe to come into a clinic. There have been numerous precautions that have been made, both in hospitals as well as clinics, to decrease transmission.

I also think that's going to play a role with the telemedicine side. Because it's a nuanced story or a thing that we want to tell

patients.

We want to say look, it's safe. You can come into our clinics and get care. But, you know, if you don't have to come in, the telemedicine is just a little bit more safe.

And so I think that's another nuance that's going to be a very difficult thing for us to tell. And really it's, again, a challenge in communication that we're going to see there from hurricanes and whether you need to evacuate, to whether you, when opening up the economy, what does that really translate into your personal behavior?

So, a very public health message that is always there in terms of public health communication.

DR. LURIE: And so let me see if any of our panelists want to have a last word before I sum up.

Okay. So, you know, I'll just maybe -- a couple of reflections as I have been listening to these terrific presentations and really interesting questions.

And I just want to thank the folks

online for really terrific and interesting questions.

That always makes things much more, much better. And I just wish there were a way to make some of this a little bit more interactive.

But, as I was listening to this, I was thinking a lot about my experience over the last month, serving on the steering committee for the DC Mayor in terms of thinking about reopening.

And, you know, I know Professor Smetters, we used your work, and others, in thinking about that. But, it was a very interesting experience to think about how it is that you might balance projected health impacts.

Particularly increases in transmission, as imperfectly modeled as they might be, from different phases or stages of reopening. And different kinds of behavior.

And how it is that you as a city or a state think about how to balance that with jobs, and with tax revenue for the city.

And then to do it all really through this lens of equity. And I think the presentations

today sort of really, sort of highlighted some of the nuances of some of the challenges that we all faced in making some of those recommendations.

The other thing that we were also very challenged by was thinking through, well how is it that we might make some of those, you know, some of these changes that might have been more positive, permanent in the process?

And some interesting conversations really came out of that. You know, one was to think about a really huge push to expand internet access to poor and low-income areas. And have either free wifi or subsidized wifi, recognizing from an equity perspective that it's a prerequisite to signing up for any kind of benefits.

And we now have tons more people around the country who are uninsured. Recognizing as Ateev, you pointed out that it's a prerequisite for being access -- able to access telemedicine and telehealth. Frankly, recognizing that it's really essential for contact tracing. And recognizing that for as long as schools might be closed or on modified schedules, it's really

essential to learning.

So that was, you know, an example of a really big kind of push that came out of it. You know, a second example of a set of pushes that came out of it was really thinking about how to strengthen and amplify and potentially change the kinds of people who might be working in health departments, or working with health departments.

You know, thinking about contract tracing. And thinking about how to mobilize community violence prevention specialists, HIV educators, others, to think about them being trusted community leaders.

And really working together with, or learning to do contact tracing in communities, for example. Because they may be the ones that know the community best.

Talking about violence prevention through social distancing ambassadors, for example, particularly in areas that are hot spots of transmission.

And so there was actually a lot of

opportunity, I thought, for innovation, just coming out of the experience that very much, I think, reflected some of the conversations that we've had today.

I think another thing that has come out of this, I don't know if we can make it stick. But despite the political divides and how politicized this has been, you know, I think we've seen in many, many communities people, like we do in other disasters, being nice to each other.

Helping one another out. Special efforts to help seniors who are stuck at home. Think about how it is that you're going to get your grocery shopping done, and doing all those other sorts of things. I don't know if we can make them stick. Maybe we can.

Similarly in the healthcare system, the whole crisis in PPE has made us think about how it is that we used healthcare resources. And how to take steps to avoid crisis standards of care.

How is it that we reuse and substitute and recycle. And think about how we use resources so we don't get into a crisis.

And those are the kinds of things that we could do every day to help our healthcare system be more efficient.

Another question or I think comment on, really the unprecedented level of scientific collaboration we've had in some areas.

Whether it's around diagnostics development, or understanding the epidemiology, or vaccines development, and scientific collaboration really from around the world. How do we bottle that and think about making it last?

And you know, finally, I think whenever we're faced with any kind of major crisis like this, we really think about well, is the goal here to rebuild back to where we were?

Or is the goal here to rebuild something better? And to think about areas in great need of redesign. And I think we've touched on that a little bit today in terms of thinking about aspects of the healthcare system.

I think from Professor Smetters' talk and others, there's ways to think about maybe even how it is that we redesign some aspects of our

social safety net to think about how to become more resilient to different kinds of disasters. Whether it's how we think about how to subsidize unemployment, or what is that we're going to do to help people maintain health insurance, or how we're going to continue to strengthen our public health infrastructure going forward.

So those are all challenges, I think, for us ahead. And as we think about our Summer of COVID, you know, I think while you're social distancing at the beach or doing other things, I think that you know, thinking about how to rebuild positively, and how to make those positive aspects of things last, are really just so important.

Let me close by reminding you that our next webinar is June 10 at five o'clock. And it's called The Road to Immunity During COVID-19.

And it's really about developing and distributing a vaccine. And we'll see where we are by then in that adventure as well.

So, let me thank you all again for participating. Let me thank our panelists for terrific presentations. And our staff with -- for

whom, without whom this would just be absolutely impossible to do.

For those of you who are interested, this webinar has been recorded. And a recording and a transcript will be available, as will the slide presentations.

There's been a lot of interest, I think, in getting access to the model. And so I expect that there will be a lot of demand for that.

So, thanks again for joining. Please stay safe. Stay healthy. And until next time, bye-bye.

(Whereupon, the above-entitled matter went off the record at 6:31 p.m.)