



WTH is the Wuhan coronavirus? Dr. Scott Gottlieb on the virus's spread and severity

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Danielle Pletka: Hi, I'm Danielle Pletka.

Marc Thiessen: And I'm Marc Thiessen.

Danielle Pletka: Welcome to our podcast, What the Hell Is Going On. So, Marc, what the hell is going on?

Marc Thiessen: First, what the hell is going on is that you are finally back here in the studio with me, sitting next to me, so I can tell you to your face how wrong you are about everything.

Danielle Pletka: Thank you so much. It was so much better when you told me over the phone, and I could walk back out into the sunshine of Melbourne, Australia.

Marc Thiessen: Exactly.

Danielle Pletka: But yeah, I'm here.

Marc Thiessen: And the second thing that's going on is that you left the Asian hemisphere at exactly the right time because you beat it here before the Wuhan coronavirus struck.

Danielle Pletka: Marc, in Australia, we prefer to refer to Australia as its own continent, and part of Australasia, but you're right. I came back right in time. So, we are being inundated with news about this Wuhan virus, some of it particularly graphic and terrible. But it looks like there are potentially tens of thousands of people inside China who have come down with this virus, and that plenty of people who were either in Wuhan or in one of the cities in China, got on planes and went off to the United States, Canada, Australia, and various other countries and brought it with them.

Marc Thiessen: I shouldn't sit so close to you.

Danielle Pletka: No, you probably shouldn't. I've been trying to push you away for ages. But I think the real question in my mind is, how can we understand this better? Is the response to this

completely hysterical? Anytime there's a new disease, Ebola, particularly evocative, but SARS, MERS, all of these acronyms. And now, this new virus coming out of Wuhan, it's hard for us to understand what it's all about. And so, everybody reverts to the thing that we all know best and most easily, which is fear.

- Marc Thiessen: Yes. Well, but there's good reason to be afraid. In the 20th century, there were three major influenza pandemics—one third of the US population in 1918 was infected. Life expectancy in our country was reduced by 13 years-
- Danielle Pletka: It's unbelievable.
- Marc Thiessen: ... by the pandemic in 1918, it's followed by pandemics in 1957 and 1968, that killed tens of thousands of Americans and millions of people across the world. And then, you had the SARS outbreak in 2002-
- Danielle Pletka: How many people died in the SARS outbreak?
- Marc Thiessen: There were 8,000 people infected and 774 killed, but that was contained. You had MERS as well, these are, they're-
- Danielle Pletka: There was avian flu, don't forget that one.
- Marc Thiessen: Exactly. All of these things remind us that it's entirely possible that at some point, it hasn't happened yet, but that there's some new strain of a virus that we don't have a cure for, that we don't have a vaccine for, that we don't have a treatment for, could spread like wildfire. Come into the United States and have really fast human to human transmission and kill a lot of people because it's happened before.
- Danielle Pletka: I want to make a case to you that one of the things that will make it most easy for that to happen, in the modern era, when we have genome sequencing, when we have instantaneous communication, when we know when and where disease carriers are. One of the things that is going to make that happen is the continued existence of totalitarian regimes that fail to share information, that lie, first and foremost to their own people, but then to the rest of the world.
- Danielle Pletka: The dribble out information in the way that the Chinese government has done that are despicable in their willingness to see not only their own people die but their own people transmit diseases to others that could cause the kind of pandemic you're talking about.
- Marc Thiessen: No, I think the existence of communist China is a public health emergency. Seriously. It really is. I mean, the way these viruses make the jump from animals to humans is what they call these

wet markets. And I had to tell you, I've been to one of these. I was in Guangzhou, and which is where SARS started actually many years ago. This was in the 1990s.

- Danielle Pletka: Folks, we finally have the common denominator.
- Marc Thiessen: Exactly.
- Danielle Pletka: Patient zero.
- Marc Thiessen: Patient zero.
- Danielle Pletka: Get away from me.
- Marc Thiessen: Excuse me. I have this terrible cough, Dany.
- Danielle Pletka: Go on.
- Marc Thiessen: Anyway, I've walked through one of these markets, and I mean, there're cages filled with puppies. There're cages filled with wild animals and fish, and rats and all sorts of things. But these are breeding grounds for viruses. And China seems to be ground zero for the... SARS came out of China, avian flu. These-
- Danielle Pletka: Hong Kong. It came out of Hong Kong, I think. Yeah.
- Marc Thiessen: Yeah, but Guangzhou market is literally you can walk from... you could go to Macau and you walk across the Chinese border, and there it is, you walk right into it. So, this is very close to Hong Kong. And so, you have a combination of this breeding ground of viruses with a totalitarian regime where nobody's going to want-
- Danielle Pletka: That is indifferent to human life.
- Marc Thiessen: That is indifferent to human life, but also that there's no incentive for anybody to say, "Hey, we got a problem here and let's tell the world, let's have transparency." Transparency and communism don't go together, right? So, we have an untransparent, unaccountable regime ruling over a country that is where a lot of these viruses are being formed and making the jump from animals to humans.
- Danielle Pletka: No, I mean, and this is... none of this is a slam on the Chinese people or their cultural preferences. This is really... or their eating preferences, although yes, no, thank you to the wet market.
- Marc Thiessen: Well it's not coming from Taiwan.

- Danielle Pletka: Well, that's true. At the same time, it is really that circumstance that exacerbates it. It is the fact that we see these... to put it very simply, bad people, who are unwilling to share information. I also do think that there remains an awful lot of ignorance about the nature of disease and the nature of illness. Even in the United States where people have access to lots and lots of information. I mean when any of us... when something's wrong and you pick up Google and ask it a question, you can pretty much find any answer you want to find. And I think that also exacerbates the spread of fear that makes these developments so dangerous. And of course, when we see it and it hits the stock market. Part of that is sure, travel stocks, people aren't going to travel to China, supply chain concerns about Chinese manufacturing, but part of it is just ignorance and fear as well.
- Marc Thiessen: So, you're absolutely right Dany. I mean the SARS outbreak in 2002 - 2003 like you said, it killed 774 people. I mean the flu kills more people than that every year, but it had a major impact. It cost \$40 billion to the economies of the Asia Pacific, airline industry was hit very, very hard, lots of people lost their jobs, air travel to Asia dropped 45% the year after the outbreak, and that was by a limited outbreak of a small virus that was actually fairly well contained.
- Marc Thiessen: If you can imagine the global economic impact of a mass pandemic virus of some kind that we don't have the ability to control and we don't have the ability to create a fast vaccine to treat, the economic dislocation could be enormous, not to mention the cost of the loss of life.
- Danielle Pletka: Right. So, the question here for us really is, is the United States positioning itself preemptively as well to learn the lessons that we learn from these kind of outbreaks? And we can say 800 people, in terms of the numbers that the way that compares to the flu is, I mean, it's insignificant when you compare it to deaths from flu, for example, every single year. But are we learning those lessons, are we learning the medical lessons, are we learning the service lessons, are we learning the technological lessons?
- Danielle Pletka: And I mean I think there are real improvements. But you do want to get the sense that we're ready. Remember the anthrax attack, we didn't have anything that was prepared in order to help deal with the anthrax attack. I can tell you in years past, we've run out of flu shots. I'm sure that you've been told by doctors, right? "Oh, I'm sorry, we're out."
- Danielle Pletka: I was at the doctor last week. He said, "Oh, there's a great new vaccine that you need to take because you're old, for shingles, but I don't have it. And you're on my waiting list but you're around number 200." So, these kinds of things, I worry

that in the case of a real medical national emergency, global emergency, these kinds of problems would really beset us.

Marc Thiessen:

And also, the other thing that's fascinating with flu is that they're basically guessing every year which strain of the flu it's going to be. So, they can miscalculate and immunize you against the flu that's not going around. And then, the other thing I don't think people realize is that we're still using 1950s technology to create these vaccines. That most of vaccines are still produced by using a chicken egg that's infected with the influenza virus. But it's true. I mean, literally.

Danielle Pletka:

It just sounds like something you did in fifth grade science.

Marc Thiessen:

I know, but I mean, we've got this high tech, where all the... we've got immunotherapy for cancer and we've got all these things like that. We're literally using chicken eggs the same way they did it in the 1950s to produce vaccines. And so, if you get some new pandemic and new disease, how quickly can we get a vaccine online? You've got to have to get a sample of the virus, you have to take it and test it, test it for safety, get it into enough chicken eggs to incubate and produce to inoculate the population.

Marc Thiessen:

We don't know yet how virulent this Wuhan virus is, we don't know yet how quickly it's spreading from person to person, and how deadly it is. But if something that is incredibly contagious and incredibly deadly comes along, are we ready as a country to deal with that?

Danielle Pletka:

So that's why we have our guests on to find out the answer to that question. So, Scott Gottlieb is joining us. He is a resident fellow at the American Enterprise Institute where he is a repeat offender because he used to be a fellow at the American Enterprise Institute before he went into the Trump administration as the commissioner of the FDA, the Food and Drug Administration. He had been previously at the FDA during the Bush administration.

Danielle Pletka:

He has a degree in medicine from Mount Sinai School of Medicine. He's a prolific writer, a prolific speaker. And the thing I like-

Marc Thiessen:

A physician and a public intellectual.

Danielle Pletka:

He really is. And the thing I like best about Scott is that he really is able to discuss these things in a way that is accessible to medical ignoramuses like you and me.

Marc Thiessen:

Speak for yourself.

- Danielle Pletka: Okay. I was actually speaking for you but there it is.
- Marc Thiessen: You always are.
- Danielle Pletka: Have a listen. I think you'll all enjoy this.
- Marc Thiessen: Scott, welcome to the podcast.
- Scott Gottlieb: Thanks for having me.
- Marc Thiessen: So, let's start really simple because people don't know a lot about this. What is a coronavirus?
- Scott Gottlieb: Coronavirus is a virus that typically circulates in animals. There are seven strains that are known to infect humans and typically it will cause a mild respiratory illness. When we think of a really bad cold that might be caused by a coronavirus. There are two strains of coronavirus that we know of, MERS and SARS, that are more severe.
- Scott Gottlieb: SARS circulated in 2003 and there was an outbreak in Toronto as well. MERS is another more severe form of coronavirus that circulates in the Middle East. Still infects people from time to time. Typically, the origin is from animals to humans. This is another strain of coronavirus. So, this would be an eighth known strain of a coronavirus to circulate in humans.
- Danielle Pletka: So, I want to ask a question staying in this really basic vein. You talked about SARS, you've talked about the coronavirus, we have been getting wall-to-wall coverage of this. And the stock market dropped, hundreds of points on news that the Chinese were reporting that it's spread was more widespread than estimated. So, I went and looked at the CDC, the Center for Disease Control, numbers on how many people die just of the flu.
- Danielle Pletka: Of these run-of-the-mill known strains of flu that we talk about that people get every year. And the numbers make SARS and MERS look like nothing. We're talking about, in one year, 2017 - 2018, 61,000 people died in the United States from the flu. 800 people died in the SARS epidemic. Why the hysteria? What is the excitement?
- Scott Gottlieb: Well, flu is a deadly virus as well. And flu causes a lot of hospitalizations every year and in a really bad flu season, we'll see hundreds of thousands of hospitalizations from flu and thousands of deaths from the flu. In a very bad flu season, you might see upwards of 40 million people being infected with the flu. There's no question flu is dangerous, but for flu, we have drugs that can be effective to help treat people who are very sick.

Scott Gottlieb: We have vaccines that are available. Oftentimes people get the flu because they don't get vaccinated, but we do have vaccines that are available. So, we have ways to mitigate the spread of the flu, if there is an unusually bad flu season. We're unprotected from this coronavirus and because it's a novel coronavirus, it may be the case that most people don't have any immunity to it, that they don't have immunity to the common features of this particular virus.

Scott Gottlieb: And so, for people who are old or sick or young, they might get very severe illnesses as a result of this coronavirus. And we don't understand yet what the denominator is. We know the numerator, we know how many people in China are becoming seriously ill and how many people are dying, but what we don't know is how many people are actually infected. And it could be the case, and I think it's probably the case that there's tens of thousands of infections in China and most of them have gone unreported.

Scott Gottlieb: And there might even be more deaths than what's been reported. But even if you look at the picture in China right now where this coronavirus has now reached an epidemic proportion, you assume that there might be 100,000 people who've been infected. When you look at the numbers that China's reporting where they're reporting about 3,000 people who've been diagnosed with it at this point, you figure those are more severe cases, they said 500 are in critical condition, 80 have died.

Scott Gottlieb: I assume those numbers are a little bit low because they weren't doing good screening early on in the course of this. There're five people who died as a result of this infection, who went unreported. And you look at those numbers, relative to the potential for 100,000 infections, which I think would probably be at the high end of what might be possible. And again, there's still a lot we don't know.

Scott Gottlieb: You're looking at something that's probably slightly more virulent, meaning slightly more severe than the flu and probably almost as contagious, if not just as contagious. And so, this can be a very bad flu that we have no protections for.

Marc Thiessen: What is the difference between coronavirus and flu influenza? Just different viruses?

Scott Gottlieb: Different viruses, different origin, from different animals. They infect different parts. They bind to different proteins in the body. They infect different parts of the body. This virus and we still don't understand this virus well, but based on some of the early studies, it appears to infect the lower airways. Most coronavirus is upper respiratory infections, but this appears to be a lower respiratory infection. That's why you're potentially

seeing some people get a very severe pneumonia from it.

Scott Gottlieb: What that also means is that, when you test people for it, typically you would swab the nasal pharynx, you might not get enough virus to actually have a positive test. And so, in some other cases, they've had to go back and test people twice. And get them get samples later in the course of the illness when you have more virus, you have greater viremia. So, then you have enough virus in your upper airway that it's actually showing a positive result. So, if that's the case, we might be even missing some of these cases.

Scott Gottlieb: It's a complicated picture because we don't understand the virus very well and it's not behaving like a normal coronavirus based on what we know right now.

Danielle Pletka: I want to understand more about the virus itself because this is fascinating and I want to understand why it's not behaving like a normal coronavirus. But the people who are going to die from this, for the most part, are the people who die from the flu—the elderly, the infirmed, the very young, people who are immunocompromised, in some way, people who are more vulnerable, this isn't Ebola.

Scott Gottlieb: Well that's always the case with viruses like this, even with the flu, people who are more susceptible to it and develop more severe infection are often people who are immunocompromised in some fashion, or don't have other resistance. And so, the very old, the very young, people who have other diseases. But you start to see circumstances with a very novel virus where it can behave in ways that we don't fully understand.

Scott Gottlieb: So, for example, with H1N1, the swine flu, when it first circulated for the first time a number of years ago, a lot of pregnant women became very ill and I think there were about 100 deaths among pregnant women and that's a very high number. Now again, when you're pregnant, you don't have a normal immune system. Your immune system is altered in certain ways and so you might be more susceptible.

Scott Gottlieb: But for some reason that virus had a certain impact that we don't fully understand on that population. And so, you might see that with a novel virus with certain populations that wouldn't normally, shouldn't normally be adversely affected in a way that's disproportionate to other people are, and we just don't understand why.

Marc Thiessen: What is pandemic flu? Does this have the potential of becoming a pandemic?

- Scott Gottlieb: Well, this certainly has the potential of becoming a pandemic. Pandemic simply means that it's epidemic in multiple regions of the world. So, this is now epidemic in China. Other parts of the world have outbreaks. How you define an outbreak with respect to a circulating virus can be as few as four cases. If it's a virus that shouldn't otherwise be circulating, an outbreak can just simply be a handful of cases. And so, you can argue we've had outbreaks of this. But we haven't seen yet outside of China, however, is sustained human to human spread.
- Scott Gottlieb: So, the cases that have arisen so far that we know about outside of China are all cases that were imported into those countries, including the United States from China. We haven't seen the virus propagate inside other countries. I think we can assume there probably is some spread outside of China and other countries, we're just not detecting it. That doesn't mean that those limited outbreaks are going to become very large outbreaks and it certainly doesn't mean that those outbreaks are going to become epidemics.
- Scott Gottlieb: Epidemics would mean you have sort of uncontrolled spread within another country. But this has the potential for that, it does seem to be highly contagious. And the question is, has it reached that sweet spot between being contagious enough to spread efficiently but virulent enough, severe enough, to actually cause pretty adverse outcomes?
- Scott Gottlieb: And it seems to be that it could be in that continuum, if you will, between being able to be spread efficiently and being pretty severe that it could actually cause bad outcomes if you spread this across a large enough population. Typically, viruses that cause really severe symptoms don't spread very efficiently because they make their hosts too sick to spread it.
- Marc Thiessen: Interesting. So, SARS had a pretty high fatality rate. What kind of fatality rate are we seeing with this Wuhan coronavirus?
- Scott Gottlieb: We don't know right now. The estimates on the fatality rate are being made off of the cases that have been confirmed in China right now. So, they've confirmed almost 3,000 cases, they've had 80 deaths within those 3,000 cases, about 500 people are hospitalized. These numbers are changing daily.
- Marc Thiessen: And we can't necessarily trust them.
- Scott Gottlieb: And we can't necessarily trust them. I think the challenge here is that, first of all, there has probably been under reporting of both infections as well as people who probably died from this infection.
- Scott Gottlieb: And there's certainly under reporting of the number of people

who have this infection. I don't surmise that China's closing major cities and putting more than 50 million people under the equivalent of quarantine and shutting down trade and commerce because they have 2,000 cases, or 3,000 cases in Wuhan. I think that this is now epidemic across China and there's probably tens of thousands of cases.

- Scott Gottlieb: In that scenario, you'd probably assume that the fatality rate is lower than what's being reported right now. Because it's not 80 cases out of 3,000, it might be 200 cases out of 50,000 or out of 100,000. That still a pretty significant illness. If this is causing 0.1% or even a 0.5% fatality rate, that's pretty significant.
- Danielle Pletka: So, let's talk a little bit about the virus itself. And we tend to talk about national security and foreign policy, but there actually is a nexus here. So, a coronavirus is a virus that jumps from animals to people. Is that right, Scott?
- Scott Gottlieb: Coronavirus typically circulates in animals. There's seven and now eight known strains that have made the jump from animals to people.
- Danielle Pletka: So, the fact that they start in China, these open-air markets that they have dietary habits, a lot of—there were a couple of photographs circulating of this woman eating a bat last week that were really rather off putting, if I may say, made me rethink my affinity for Chinese food. But explain how that's sort of on the front lines of disease and why we're seeing these new viruses coming out of this sort of an environment.
- Scott Gottlieb: Yeah. Well these large markets in China, what they call wet markets, which-
- Danielle Pletka: Makes it all the more appetizing.
- Scott Gottlieb: It is the way that the phrase describes it. I mean, there are these large markets where they sell a lot of different slaughtered animals, a lot of different species. And they become mixing grounds for the ability to pass viruses, not just between animals but from animals to humans. And they've long been known to be a risk factor in the propagation of viruses, the flu, different strains of influenza and different strains of coronavirus.
- Scott Gottlieb: The reason is, simply put, when you have a lot of animals mixing with humans, the animals, mammals typically will form an intermediate host and so you might see for example, some strain of a virus that originates in birds make its way into a mammal, either a bat or maybe a pig and undergo some mutation, some adaptation that makes it more amenable to

then propagating into a human.

- Scott Gottlieb: Because it's had that intermediate stage in another mammal that's close enough to a human that the adaptation that it undergoes in that species makes it easier to jump into a person. I think what is concerning here is the speed at which this virus appears based on what we know to have made the jump from animal to human. Now that's getting rethought right now because it was originally thought that this virus originated in late December out of the Wuhan market. But there's some reporting that there were some cases even earlier than that. So, it might not have originated in the market at all. The market may have become something that created some secondary spread, but it might've originated somewhere else. But if you believe the original reporting, the speed at which it made the jump from animals to humans is concerning, and the speed at which it's now adapted itself to be an efficient spreader among humans.
- Danielle Pletka: So, all of this is exacerbated by the kind of... I think we can now call China pretty totalitarian, certainly authoritarian, regime that exists in China, right? We don't believe the information, there isn't transparency, there isn't a clear understanding about origination, there isn't a clear understanding about how many people are infected, how many people have died, where they all are.
- Danielle Pletka: In an ideal world, if the Chinese still had the same dietary habits, but they were a free and open democratic society, would we be better equipped to fight this?
- Scott Gottlieb: Well, I find it striking how much we're bending over backwards to make official statements that are supportive of China's actions in the context of the current epidemic. Because China's actions may have been good by China's standards, but they're not good by public health standards or Western standards. The first reports of an unusual pneumonia circling in China came out in late December only because the Chinese were aware that some strain of a viral pneumonia was circulating that was getting people very sick, and they had sent an advisory to their physicians and that advisory made it onto social media. And so, then they owned up to the fact that there was this cluster of pneumonia circulating. They didn't start to talk about the severity of this until a viral video started to circulate on Twitter of Chinese health officials going onto airplanes and taking people's temperature on-
- Danielle Pletka: In full body regalia, right?
- Scott Gottlieb: Yeah. And it wasn't until last Monday, January 20th or 21st that China reported on the fact that they had 14 healthcare workers that had become infected. And in fact, there was

human to human transmission. Now, we long suspected that there was human to human transmission just because of the rate of diagnoses that was happening in China. But China didn't say that and they certainly knew that there were 14 healthcare workers that at the very least they were monitoring very closely, because they thought they had this virus and those positives didn't all come back on the same day.

Scott Gottlieb:

So, they knew that there were health care workers getting infected. And when you see healthcare workers getting effected, that's very concerning because it's proof to two things. Number one is proof of human to human transmission. And typically, unless something's very contagious, you don't typically see healthcare workers get infected. And so, when you start to see doctors get infected at a high rate, you start to be very concerned about the transmissibility.

Scott Gottlieb:

That's a key piece of information that they disclosed very late. We found that out last week. We were well into this crisis by last week and that would have helped, I think the rest of the world wake up to this threat and maybe take stronger actions earlier, had they known that this was spreading in that way.

Marc Thiessen:

So, to build on Dany's point, I don't know if you saw the HBO series Chernobyl, but it's really a fascinating series. And one of the things that was so striking about it is because of the totalitarian system, the reactor's melting down and the local officials are saying, "You can't... the reactor can't melt down. It's not possible for a reactor to meltdown." And they were calling the Kremlin and saying, "This is small. It's contained. It's no big deal. There's a fire in the reactor, but this is not a big problem."

Marc Thiessen:

And that went on for a significant period of time. So, in a country like China, it's not a career building move to be the local official who calls up the politburo and says, "Tell President Xi that we've got a really bad virus here because we've done a bad job of local public health. So how do we deal with... when you were at the FDA, you have to deal with a lot of countries around the world and coordinate with them. How do you deal with a country like China?"

Scott Gottlieb:

So, the samples that we now have of the virus that we're using to help validate diagnostic tests and maybe help to develop therapeutics, all those samples have come from people who've been infected with the virus and happened to travel outside of China.

Scott Gottlieb:

China could have been sharing, they could have been growing and sharing viral samples much earlier, all they did was put up partial sequences. Now by China standards, that was really new. The fact that they were actually sharing the

sequence fairly early in the setting of this epidemic was a new thing. And so, I think the world greatly appreciated the fact that China was willing to engage in this information sharing.

Scott Gottlieb:

But if this outbreak had occurred in England or Australia or the United States, I think you would have had far more information available, far earlier in the course of the outbreak, and far more sharing of the tools that could help in a development of diagnostics and therapeutics.

Danielle Pletka:

You had a great piece that was I think up on CNBC today and another one in The Washington Post last week explaining some of these issues. Because while I think we rightly are reserving a lot of our criticism for the way that the communist government in China has handled things. At the same time this point of care question here is relevant. I mean, Americans now are used to the fact that you can walk into your urgent care in the strip mall and someone will stick a swab down your throat and tell you if you have strep or tell you if you have the flu.

Danielle Pletka:

But this technology isn't really there for some of these viruses. We haven't advanced on a lot of these questions. What do you blame for that? Is it a regulatory problem? Is it a liability problem? Is it an innovation problem? Is it a medical problem? Where could we be better? Where's the problem?

Scott Gottlieb:

Well, there really wasn't a strong clinical need for a point of care diagnostic to test for coronavirus prior to this coronavirus. Because typically coronaviruses don't cause severe illness and the ones that do, SARS and MERS, don't circulate and so you really didn't need a point of care diagnostic. I think now in the setting of the threat of a global spread of this virus and the potential for large outbreaks, a point of care diagnostic is exactly what we need.

Scott Gottlieb:

We need to be able to test for not just mild potential cases but also asymptomatic cases and we can't just rely on travel history alone if we are facing the prospect of outbreaks, we're going to need to test much more broadly in order to contain the spread of this infection. I don't know that there's necessarily a breakdown. I think that there's never been really a need for a rapid point of care diagnostic for coronavirus.

Scott Gottlieb:

Now there is. The question is how quickly can we come up with one? The technology's certainly there to be able to do it, depending on what kind of samples you can get from a person infected with this virus, whether or not a swab is going to give you a sufficient sample in order to run a test. The technology for developing antibody-based tests or what we call PCR-based tests at the point of care, to test for the elements of the virus's genome, that technology exists.

- Scott Gottlieb: We can develop that fairly rapidly. We might not be able to validate it to the point where regulators would feel comfortable deploying it on the front lines of healthcare and giving what we call a CLIA waiver, meaning it can be performed outside of a reference lab. But there are also new authorities that Congress has passed that make it easier for regulators and the Food and Drug Administration, in particular where I worked, to provide those kinds of waivers and forward deploy these tests in the setting of a public health emergency.
- Scott Gottlieb: Something called an emergency use authorization can allow the FDA to deploy this more rapidly without going through all of the normal validation that we would go through. And then, in those settings where you have a high degree of suspicion or you have a positive sample, you send off a sample also to one of the reference labs so we can run the more definitive tests. But this allows you to do broader screening, which is what we're going to need to be doing.
- Marc Thiessen: I mean we had in the 20th century three influenza pandemics in 1918, 1957, 1968, and it's likely that at some point we'll have another pandemic. In 2005 when I was at the white house, I wrote a speech for president Bush laying out our strategy to prepare for an influenza pandemic. And so here we are 15 years later, and I'd like to ask you this, there are three pillars to it.
- Marc Thiessen: I want to ask you about each of them and see where we are 15 years later in terms of the preparedness for it. So, the first pillar was, detect outbreaks before they spread across the world, improve our detection capabilities. How are our detection capabilities right now?
- Scott Gottlieb: Our detection capabilities are much better than where they were when we set out to create more robust capacity. And I was in the government too at the time working at the Food and Drug Administration when elements of that plan were implemented. But I remember a lot of what we did over that time period was geared towards influenza. And so, some of the capabilities we developed were specific to influenza and aren't necessarily going to be as relevant here.
- Scott Gottlieb: Now we also created general capacity at the time and that capacity I think is going to be very helpful here, but a lot of the kinds of diagnostic platforms that we created and the kind of off-the-shelf vaccines that we created, that could be used in the setting of a novel influenza strain, are going to be specific to influenza strains.
- Marc Thiessen: Okay. The second part of the strategy was stockpiling vaccines and antiviral drugs, and also speeding the

development of new vaccine technology. One of the things I found fascinating back then was that we were still for most of influenza vaccines using 1950s technology, and actually infecting chicken eggs and using that to create virus.

Danielle Pletka: One of the things you cited in that speech, I mean president Bush said it in that speech that you wrote was, that because of litigation that there was at least at that point only one vaccine manufacturer left in the United States. Is that still true?

Scott Gottlieb: There's more vaccine manufacturers and there's more capacity. And so, part of the plan was to build out capacity both for the egg-based production, which we still largely rely on for the production of influenza vaccines. But also, technology to manufacture recombinant vaccines, influenza vaccines, which is technology that we're now using in a greater proportion than we were back when we set out to do this.

Marc Thiessen: But I mean that's amazing to me that we're still using chickens and the eggs. 1950s, back then the big thing was cell culture technology to try to advance the speed of this. How quickly if there was a new virus that came... because the problem is with influenza, as you point out, we know most of the strains or versions of the strains and so you can prepare vaccines for it. If something new comes out, how quickly can we turn around, get a sample of the new virus and develop a vaccine?

Scott Gottlieb: The concern with influenza always was that you'd have a strain of bird flu circulate that would develop the ability to infect humans, but it would be toxic to the chicken eggs. And so, you wouldn't be able to manufacture a vaccine of a very virulent bird flu strain in chicken eggs. And that's why you wanted the recombinant technology also to guard against that possibility.

Scott Gottlieb: In this case, a coronavirus vaccine would be manufactured differently, wouldn't be manufactured in the same way you'd manufacture influenza. We have the capacity to do it. I think that realistically developing a vaccine, putting it in human studies to look for safety is probably a three to six month endeavor and in trying to get into pivotal studies to actually look for safety and efficacy, you're talking at least a year, probably a couple of years.

Marc Thiessen: Is that underway right now for this coronavirus?

Scott Gottlieb: There's multiple parties right now looking and trying to develop a vaccine for this particular strain of virus. I think in the near term and maybe even in the long run, it's going to be more important to get diagnostics than a vaccine. Depending on what we learn about this virus, if this virus is something that

becomes endemic, meaning it comes back every season, it might be something that we want to develop a vaccine strategy too.

Scott Gottlieb: But it's likely to be the case that this virus will burn itself out, that enough of the population will eventually become infected with this virus that it's not something we would necessarily vaccinate for, unless it undergoes some kind of adaptation or mutation where it can come back.

Marc Thiessen: But putting aside this virus, our general capability for dealing with pandemic outbreaks of some kind, do we have the capacity to quickly produce?

Scott Gottlieb: We don't have the capacity to quickly respond with a therapeutic. I mean that's the challenge, certainly with a vaccine. The time to a vaccine, you're talking about a year to years. What we do have the capacity to do in the near term is develop capacity to diagnose, quarantine and isolate, regular public health tools, which can be highly effective. We do have the capacity in the near term to screen off the shelf drugs and see if they're going to have activity against this virus.

Marc Thiessen: And then the final leg of the strategy was having emergency plans in all 50 states and every local community to have pandemic preparedness. What is our pandemic preparedness across the United States right now?

Scott Gottlieb: I think the public health tools and the public health infrastructures is far better today than it was 20 years ago. When the government first set out to build a better capacity, for example, as I mentioned, our capacity to detect unusual spikes in illness is very good. If there are outbreaks of any size of this coronavirus that are causing unusual clusters of pneumonia or viral illness, we're going to detect that even in the setting of a flu season, we're going to be able to pick that up much more effectively today than it would have been 10 or 15 years ago.

Danielle Pletka: So, stock market posted its worst performance in months in response to news from Beijing. Appropriate reaction, is this hysteria, is the world at risk? Should we all be lighting our hair on fire and running around or do you think the reaction has been appropriate?

Scott Gottlieb: I can't gauge the market's reaction. I think that this certainly has the potential to have epidemic spread outside of China. I don't think that that's inevitable. I think that there's certainly the capability and we still have a window of opportunity. China might've missed its window of opportunity to prevent a very widespread outbreak in China. But we have the window of opportunity to prevent outbreaks in other countries. Large

outbreaks and certainly prevent epidemic spread.

Scott Gottlieb: But it's going to require us to deploy a level of oversight and deploy certain tools that aren't that accessible right now, including diagnostics that can be used to do much greater surveillance. So, we're going to have to... CDC is talking about making that test that it's currently running widely available to public health agencies. They'd probably have to think about how to make that available also to hospitals so that they can run more tests in hospitals and not have to send off samples.

Scott Gottlieb: If we take steps like that and develop the capacity to do wider screening, I think we have the ability to prevent large outbreaks and certainly prevent epidemic spread. Also, this is occurring late in the winter, we're going to be bumping up against the spring and summer. The epidemiology of these kinds of epidemics changes in the summer months because people aren't in close quarters or outside. The ability to transfer viral particles through respiratory droplets is different in the summertime than in the winter, where you have different kind of air.

Scott Gottlieb: So, if we're able to prevent outbreaks from occurring or large outbreaks from occurring through March, April, once we get into, May, June, we might be out of the woods at least for this season. But it's possible that this coronavirus is something that's going to come back again in the fall. And that's what happened with the swine flu. The swine flu started to occur very late in the winter. We ran into the summer, it dissipated and it came back in the fall.

Scott Gottlieb: But by then, we were able to develop a vaccine and put it in the seasonal flu vaccine.

Marc Thiessen: Final question. Putting this virus aside, how prepared or how would you rate our preparedness to handle a really serious mass pandemic virus on a scale of A+ to F?

Scott Gottlieb: Well, I don't think we're ever going to be fully prepared to handle really significant pandemics. Something that has true pandemic spread where it's highly contagious but also highly virulent, meaning it causes very severe disease and you have a high fatality rate. I think in those situations we're going to be dependent upon developing a vaccine very quickly and those kinds of situations will quickly overwhelm healthcare systems.

Danielle Pletka: Well that's a worrying place to end, but thank you Scott. We know how busy you've been over the last weeks answering questions about this, so we're really grateful.

- Scott Gottlieb: Thank you.
- Marc Thiessen: First of all, let me just say that I'm glad that Scott Gottlieb was on the job dealing with these issues at the FDA. Someone so knowledgeable on this stuff. I am worried about our preparedness as a country for this. Going up 50,000 feet from the Wuhan issue to the broader issue of our preparedness for a pandemic, I don't know that we're ready. And something like this, you're literally talking existential threat if the wrong kind of virus gets out.
- Marc Thiessen: And it's a combination of medical challenge combined with the challenge of the lack of freedom in the world that could literally wipe out millions of people one day.
- Danielle Pletka: Well, I mean, that's what the Spanish flu does. You'd like to think that we were advanced enough, that we were... and that we were proactive enough that we were ready for this. Listening to Scott, it does... I mean, I am reassured when you talked about that speech that president Bush gave in 2005, we're talking about 15 years later. I'm reassured by the advances that he described. I mean, we did actually... we've moved forward in some cases. What still worries me is that, first of all, there's not a lot of good national leadership on this.
- Danielle Pletka: Have you noticed, nobody's out there saying, "No, don't let your hair on fire, everything's going to be fine. We're really on top of it. Here are the important things we're doing." But I do wish we had some leadership on this and I guess the CDC does its best. But all this does is highlight how much of a risk there is to our population from not just illnesses but from the weaponization of these illnesses as well, and we've talked about this in the past.
- Danielle Pletka: But the one thing that I think we're really not ready for is, yeah, this is sort of an accidental generation of a mutation of a virus that has adopted very quickly and that jumps from person to person with great facility. But what about bad people who are hoping to use this kind of thing to spread disease? Are we ready for that? I certainly haven't gotten the impression from the hysteria at the New York Stock Exchange that we are.
- Marc Thiessen: No. And I want to do an episode about this at some point. But a few years ago, when the Ebola outbreak came out, I wrote a Washington Post column in which I speculated what if al Qaeda were to weaponize Ebola. That they send a terrorist to Africa during an Ebola outbreak and intentionally get yourself infected and then come here to the United States and just spread it far and wide.
- Marc Thiessen: And people just mocked the heck out of me for saying that,

"Oh, they have crazy ideas."

Danielle Pletka: Nothing happens until it happens.

Marc Thiessen: Exactly. And then, I just read this book by Amaryllis Fox, this former CIA operative who wrote a book that didn't go through a pre-publication review unlike John Bolton's book.

Danielle Pletka: But I digress.

Marc Thiessen: But I digress. And one of the things, as I was listening along, she was talking about intelligence that they had about al Qaeda looking at operationalizing Ebola, discussing operationalizing Ebola.

Danielle Pletka: So, you're absolutely right. I'm shocked that we have not seen more efforts at biological weapons attacks by these kinds of groups. And maybe we have and it's classified, but it doesn't fill you with confidence to see how we've responded to this coronavirus, to the Wuhan virus, and think that if somebody was choosing to use this in a different way for terrorist purposes, that we would be really, really well equipped to get on top of it and not have a national panic.

Marc Thiessen: I think you raised the salient issue, which was the Chinese response. Because when I wrote that speech for president Bush in 2005 the first line of defense is early detection for these things. And I mean he used the analogy of a pandemic, that a pandemic is a lot like a forest fire, that if you catch it early you can extinguish it and limit the damage. But once it goes, allowed to be smoldered undetected, it becomes a raging forest fire and you can't control, you just have to let it burn out at some point.

Marc Thiessen: And that's where we are with this. If we can't trust China to give us the information that we need to work together internationally to contain the virus and to deal with it, then you could have a forest fire very quickly. And when these things spread, all it takes is a couple people to go in bunch of planes in different directions and all of a sudden, it's everywhere.

Danielle Pletka: Well on that cheerful note, I hope you all have enjoyed listening to the show.

Marc Thiessen: Absolutely. It's great to have you back in person, Dany.

Danielle Pletka: Thank you. It's great to be back here in person. If you guys have any questions for us or even for Scott or suggestions for how we can do things better or other shows we should have, don't hesitate to reach out and let us know. What is it, Alexa?

Alexa Santry: whatthell@aei.org.

Danielle Pletka: Yes. It trips of the lips, whatthell@aei.org. Email us, we'd love to hear from you.

Marc Thiessen: And if you hear Dany coughing, let me know. I'll call in next episode.

Danielle Pletka: Thanks, Marc.

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