THE WUHAN CORONAVIRUS: ASSESSING THE OUTBREAK, THE RESPONSE, AND REGIONAL IMPLICATIONS

HEARING

BEFORE THE

SUBCOMMITTEE ON ASIA, THE PACIFIC AND NONPROLIFERATION

OF THE

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THE WUHAN CORONAVIRUS: ASSESSING THE OUTBREAK, THE RESPONSE, AND REGIONAL IMPLICATIONS

Wednesday, February 5, 2020
House of Representatives
Subcommittee on Asia, the Pacific and Nonproliferation
Committee on Foreign Affairs

Washington, DC

The subcommittee met, pursuant to notice, at 2:02 p.m., in room 2172 Rayburn House Office Building, Hon. Ami Bera (chairman of the subcommittee) presiding.

Mr. BERA. The subcommittee will come to order.

We meet today for Congress' first hearing on the 2019 novel coronavirus. Without objection, all members will have 5 days to submit statements, questions, extraneous materials for the record, subject to the length limitations in the rules.

I will now make my opening statement and then turn it over to the ranking member for his opening statement.

First-off, I want to thank the witnesses for joining us today. This is the first hearing on coronavirus, and for many Americans as well as Members of Congress, this is on our mind right now. Before kind of diving into things, I do want to make note that we did ask the Administration to come up and brief us. And, unfortunately, they did not send folks.

This is not a partisan issue, this is an issue of how we work together as Democrats and Republicans, Congress along with the Administration, to get ahead of a public health emergency.

I would note that they did give Members of Congress a bipartisan unclassified hearing earlier today with Acting Chief of Staff Mick Mulvaney, Secretary of HHS Alex Azar, Deputy Secretary of State Steve Biegun, Acting Deputy Secretary of Homeland Security Ken Cucinelli, the Director of the CDC Robert Redfield, the Director of National Institutes of Allergy and Infectious Disease Dr. Tony Fauci, and Assistant Secretary for Preparedness and Response, Dr. Robert Kadlec.

That was not televised. That was not open to the public but it was unclassified. And I would make the request of the Administration to provide their opening statements to this committee so we can add that to the public record because we do believe the public's concerns here. The more the Administration can speak directly to the public and answer those questions, the better off we would all be.

Again, the Administration has an open door to come before this committee or the full committee to show what they are learning in

the rapidly fluid situation. We look to work with the Administration to support the response.

You know, I look at this as a physician and someone who has worked in public health, was Chief Medical Officer for Sacramento County, and who has worked overseas internationally. This is quite concerning right now. We have many questions. When I think about the three objectives of this hearing, but also of how we respond as a nation but also a globe, how is the U.S. Government coordinating the response both domestically and internationally?

Do we have the right tools and resources in place to help get ahead of this outbreak?

And what I mean by that is if we think about one of the most urgent things we could do, CDC has the best epidemiologists in the world. We have some of the best personnel. I know we have been getting conflicting reports. We have had some folks in country that now would be a time for us to collaborate with the Chinese to get our best epidemiologists to the epicenter so we could actually answer some of the health questions that are there.

How easily is this transmitted human to human?

How are people infectious when they are asymptomatic?

Are people infectious when they do not exhibit symptoms, or is it only when they are symptomatic?

We have had conflicting reports of what the incubation period is. At times we are told it is up to 14 days. Then we were told it was 5 to 7 days. Then we were told it is 3 to 5 days. All of these are incredibly important questions for our staff. So, we cannot just help the Chinese as well as the rest of the world internationally, but we can also plan our response here.

A second important point that we learned post-Ebola and post-other pandemics is the importance of having an individual or small group of individuals who can coordinate across the interagency process. To date we do not have that single individual that has sole responsibility of that coordination.

We have Secretary Azar, extremely capable individual, but he runs Health and Human Services. If this broadens here locally, Health and Human Services are going to have their hands full responding and supporting our public health efforts here.

We have a great CDC director, but they have a specific role.

The DoD can do logistics, and they have a specific role.

Homeland Security, you know, has a specific role.

One of the recommendations was at the national security level we really do need to have a single individual who can coordinate the whole interagency process. Mr. Klain, I know you were instrumental in that role, and certainly look forward to hearing your thoughts about why that is such an important role.

No. 3, in the era that we live in the misinformation that is out there is going to be really important as the public, you know, should this spread in the United States. What is the right information that should get out to the public? And how do we combat disinformation? That is a very difficult scenario, but it is incredibly important, not just here but also, you know, internationally.

I look forward to hearing from the witnesses on their thoughts and ideas.

Out of an abundance of caution, we did see the Administration institute a travel ban and increase screening of folks that are returning from China and the region.

You know, there are discussions taking place backward and forwards as to whether that actually will help us get a handle on this or if the travel ban will actually potentially make things worse. And, again, I would be curious for the perspective of some of the witnesses on how that is being implemented and the impact of that.

Lastly, part of the reason why I really did want the Administration here is we do not see this as an adversarial role. A lot of things in Washington, DC. are partisan. This is not partisan. We, as Congress, understand how rapidly this is moving. We also understand that we want to make sure the Administration has all the tools and resources that they need.

Right now, we are guessing at what they might need in the emergency supplemental. I would invite the Administration to work with us. Tell us what you need and then we will work to try to get that available to you as quickly as possible. We are on the same team here. This, you know, novel coronavirus does not see Republicans or Democrats, it sees human beings. And let's get ahead of this. Let's learn from this.

And then let's also plan so we are not constantly responding to the latest outbreak but we are actually thinking about how to prevent the next pandemic.

Those are a few things that I have on my mind. And, again, I want to thank the witnesses for being here. And we really do have great personnel at CDC, HHS, State Department. And they are working overtime. And, again, I commend those men and women that are spending quite a bit of time working on this just to keep us safe. We look forward to working with them.

This is an open door if they ever want to come to this subcommittee. And I think any of the members here, we are here to help support the Administration.

With that, let me turn it over to the ranking member for his opening statement.

Mr. YOHO. Well, thank you, Mr. Chairman, and good morning. I would like to thank Chairman Bera for holding this hearing on global spread of novel coronavirus from China.

And I want to comment on what you said, the hysteria and misinformation. We saw that when Zika happened. And it was—it turned into a political fight, it was politicized. And we do not want to do this. And I commend everybody that is working on this to this point; it hasn't happened. And I hope we go forward.

And then you have an M.D. and a veterinarian, and so we are both used to having quarantines and dealing with outbreaks.

I would like to welcome Dr. Jennifer Nuzzo from the Johns Hopkins University, Dr. Jennifer Bouey from RAND, and Mr. Ron Klain. I look forward to hearing from each of you about recent developments and paths forward to coronavirus and related global diseases.

As of today, 20,630 people in 24 countries around the world have been infected with coronavirus that we know of. The virus has killed 425 people so far, as we know, or that is all we know of, the

vast majority of which have occurred within China. I extend my sympathies to the people in China who have lost family members or remain quarantined by the Chinese authorities in an unprecedented look-down of millions of people. I do not think we have ever seen this before.

However, despite the severity and infectiousness of this virus, the Chinese Government has so far refused to fully cooperate with the global community. And, again, this is something we hope does not become politicized. Viruses know no borders and they do not really care what your politics are.

Although Chinese scientists were able to share the sequence of the strain with international partners, they were only able to do so after bypassing government censors. So far, China has spurned the help of CDC and refused to provide biological samples to the United States. And to date, if we look back, whether it was the MERS or SARS epidemic, that was a worldwide collaboration. And other countries, even Taiwan, needs to be involved in this because they were the ones that helped solve the SARS epidemic.

The slow-walking of information and assessments not only hurts the credibility of China, but also hinders our ability as an international community to prevent the further loss of life and spread of the disease. Further, in the middle of the unprecedented crisis the CCP continues to endanger people through Asia by using the World Health Organization to advance its political agenda through the exclusion of Taiwan.

Taiwan has also forbidden the evacuation of Taiwanese citizens from the mainland, directly threatening the safety and sovereignty of their citizens. This cannot stand. And, again, viruses really do not care what your politics are.

The United States should be better prepared to face future threats as well, which is why I supported multiple efforts in Congress to promote the One Health framework which we are going to talk a little it about, because this coordinates departments, activities, and programs that will prepare to protect the U.S. food and feed supplies in the event of a zoonotic disease outbreak. So, this is a cooperation between USDA and HHS.

As we know, six to seven out of ten diseases that we get originate in the animal world. And the coronavirus is a perfect example.

The recent outbreak of coronavirus stemming from Wuhan, China, is a perfect example why managing the spread of the animal-to-person spread to prevent person-to-person spread is so important. Thankfully, the CDC has repeatedly assured the American people that the risk to our residents remains low. This, thanks in large part to the actions taken by the Administration in organizing targeted quarantines, travel advisories, research into treatments and vaccines, in addition to the daily calls our staffs get and Members of Congress get on this issue.

However, questions remain regarding potential paths forward. What can we do in the future to prevent not just China, but China, any country from hiding the spread of a deadly virus, of which they are repeat offenders?

How can we balance long-term pandemic preparedness with the billions of dollars our government spends in short-term responses to emerging threats?

Congress must continue to enable our agencies to respond effectively to infectious diseases and encourage our Government to collaborate with all of our international partners in global health.

I look forward to hearing from the panel on response to the spread of the coronavirus in the U.S., and what we can do better to prepare ourselves for the arrival of not just this one but future pandemics from foreign countries.

Thank you, and I yield back.

Mr. BERA. Thank you to the ranking member.

And my staff was just updating numbers. It is now 492 deaths. So, obviously, rapidly flowing and constantly being updated.

I should have noted that it is my pleasure to have had the gavel passed over toward me from the former chair of this committee. And I would like to recognize you for a 1-minute opening statement, Mr. Sherman.

Mr. SHERMAN. Thank you, Mr. Chairman. You are to be commended for having the first public hearing on this disease outbreak of either house of Congress.

We did get a private briefing from the Administration. And let me say that I was impressed by the team that made that presentation to us. That is, I hope, particularly noteworthy because I am not a leader when it comes to complimenting the Trump administration. I am also not a leader in complimenting the government in Beijing.

But, I think the entire world is impressed when they build a new hospital and put it in service in 8 days. Which is why I am surprised that the Chinese Government has taken offense that we have chosen to limit travel, because the Chinese Government has limited travel internally in China. And, of course, Hong Kong has limited travel from the Chinese mainland. What we do to protect our own citizens should not be regarded by the Chinese as an insult but, rather, as part of a collective effort to control this disease.

We need Chinese cooperation to start clinical trials. There are a variety of possible medicines that might be helpful, but we will not know. One of the good things about this disease is that it looks like the mortality rate is 1 to 2 percent. That is much lower than other outbreaks. I realize some people may have slightly different definitions, but it is a lower mortality rate than, say, Ebola, that Mr. Klain is familiar with.

And so it means that without a clinical trial you do not know whether a particular medicine is successful. Because if you take 20 people with Ebola and you try something out and they all live, that is a good treatment. If you take 20 people with this disease and give them a treatment and they all live, that may have proved nothing at all.

So, we need double-blind clinical trials, we need cooperation with China. And I look forward to getting there.

I yield back.

Mr. BERA. Thank you, Mr. Sherman.

Now I am very pleased to welcome our witnesses to today's hearing. We are joined by Dr. Jennifer Nuzzo, a Senior Scholar at the Johns Hopkins Center for Health Security.

She will be followed by Dr. Jennifer Bouey, the Tang Chair in China Policy Studies at the RAND Corporation. Both are trained epidemiologists.

And, finally, we are joined by Mr. Ron Klain, who coordinated the response to West African Ebola epidemic in 2014 and 2015.

Please summarize your written statements to 5 minutes. And without objection, your prepared written statements will be made a part of the record.

Dr. Nuzzo, if you could begin.

STATEMENT OF DR. JENNIFER NUZZO, ASSOCIATE PROFESSOR AND SENIOR SCHOLAR, CENTER FOR HEALTH SECURITY, JOHNS HOPKINS UNIVERSITY

Dr. NUZZO. Good afternoon. Chairman Bera, Ranking Member Yoho, and members of the committee, thank you for allowing me to appear before you today to discuss the emerging global spread of the 2019 novel coronavirus.

In the last 2 months since this virus was first identified we have learned several important things, such as its potential to spread between people, and its capacity to cause a spectrum of disease ranging from mild to severe. These discoveries have changed our perceptions of the global risks the virus poses, but there are still critical unknowns for which we urgently need more information.

Though more and more cases are reported each day, we do not yet know the true size and geographic scope of this epidemic. And many countries are not capable of actively searching for cases. And most countries that have implemented surveillance are likely missing cases, perhaps large numbers of them.

Severity of this disease is another key unknown. Because of biases in the way we look for cases, it is difficult for us to estimate from the case numbers how much severe illness and death we may expect to see as this epidemic grows. That said, even though we cannot get a precise estimate, there are some emerging signs that this virus may be less severe than we initially feared. If these trends continue we will ultimately—we may ultimately downgrade our concerns about this virus. But, for now these uncertainties leave important gaps in our response planning.

Though the ultimate trajectory of this epidemic is hard to predict with certainty, evidence is mounting each day that it may not be possible to contain this virus. What this means is that if it is not possible to completely stop disease transmission, we must plan for how we will mitigate the impact of the virus as it spreads.

To do this, I recommend three priority actions:

First, we need to seriously reexamine the current policy of banning travel from China and quarantining returning travelers. All of the evidence we have indicates that travel restrictions and quarantines directed at individual countries are unlikely to keep the virus out of our borders. These measures may exacerbate the epidemic's social and economic tolls and can make us less safe.

Simply put, this virus is spreading too quickly and too silently, and our surveillance is too limited for us to truly know which countries have active transmission and which do not. The virus could enter the U.S. from other parts of the world not on our restricted list, and it may already be circulating here.

The U.S. was a target of travel bans and quarantines during the 2009 flu pandemic. It did not work to stop the spread and it hurt our country. I am concerned that by our singling out China for travel bans we are effectively penalizing it for reporting cases. This may diminish its willingness to further share data and chill other countries' willingness to be transparent about their own outbreaks.

Travel bans and quarantines will make us less safe if they divert attention and resources from higher-priority disease mitigation approaches that we know are needed to respond to cases within the United States. Caring for and monitoring even a small number of quarantined individuals will be highly challenging for health departments and may siphon attention from other more important response work.

And we are already hearing stories about chaos in the States as they are trying to implement these recent policies.

Second, rather than penalize China, we should try to assist it in responding to the epidemic. Helping China is in our best interests. It is a risk of the drastic actions that China is taking to control the epidemic could lead to disruptions in U.S. supplies of essential medical resources such as personal protective equipment and critical medicines. We need to examine this possibility and identify ways to ensure that the epidemic or the U.S. response to it does not interrupt medical supply chains.

Third, we should focus on health response efforts that we know will help to lessen the impacts of the virus within U.S. communities. We need to ensure that Federal, State, and local health agencies, and hospitals and health clinics have the resources they need to diagnose, isolate, and safely treat cases, and to promote feasible approaches to disease mitigation that are most likely to reduce disease spread, minimize disruption, and protect those most likely to experience severe illness and death.

For this, we need leadership and additional investment, possibly in the form of emergency funding such as was appropriated during the 2009 pandemic.

Government leadership is also needed to facilitate the development of medical countermeasures, including infectious disease diagnostics.

The points I have raised today hopefully paint a picture of a epidemic that is in many ways complex and evolving, but for which we are increasingly gaining clarity. One thing is certain, international collaboration will be essential for us to monitor, for continued monitoring and learning about the virus and to inform our own response plans. That we know anything about this virus is due in large part to information contributed by China, Thailand, Vietnam, the other countries that have worked hard to improve their surveillance, in part with U.S. help. And we will likely need their help going forward.

We should recognize these successes as they demonstrate the value of our investments and the need for continued international engagement. Though our instincts may be to isolate ourselves to try to keep the virus out of our borders, this approach may only weaken our preparedness.

Thank you.

[The prepared statement of Dr. Nuzzo follows:]

United States House of Representatives
Committee on Foreign Affairs
Subcommitee on Asia, The Pacific, and Nonproliferation

The Wuhan Coronavirus: Assessing the Outbreak, the Response, and Regional Implications

Testimony of Jennifer B. Nuzzo, DrPH,
Senior Scholar, Center for Health Security
Johns Hopkins Bloomberg School of Public Health

February 5, 2020

Good afternoon, Chairman Bera, Ranking Member Yoho, and Members of the Committee. Thank you for giving me the chance to appear before you today to discuss the emergence and global spread of the 2019 novel coronavirus (2019 nCoV).

I am an Associate Professor in the Departments of Environmental Health and Engineering and Epidemiology at Johns Hopkins Bloomberg School of Public Health. I am also a Senior Scholar at the Johns Hopkins Center for Health Security. *The opinions expressed herein are my own and do not necessarily reflect the views of The Johns Hopkins University.* Our Center for Health Security's mission is to protect people's health from major epidemics and disasters and build resilience. We study the organizations, systems, and tools needed to prepare and respond. At the Center, I direct the Outbreak Observatory, which conducts operational research to improve outbreak response. My testimony is also influenced by my previous experiences as a public health practitioner. I have also served as a public health epidemiologist for New York City, where I conducted surveillance for infectious diseases.

My colleagues and I at the Johns Hopkins Center for Health Security have spent close to twenty years analyzing infectious disease outbreaks, including epidemics and pandemics, in attempt to better understand the resources, practices and policies that are need to prevent, mitigate and contain them. Like many others, we've been closely following novel coronavirus outbreak since it was first announced in China at the end of December. We've been trying to analyze and understand the risk the virus poses to the United States (US) and other countries around the world and to make recommendations to policy-makers, legislators and practitioners about what should be done to respond to this epidemic.

I have two caveats regarding my testimony today. First, I have not been involved in the on-the-ground public health response to 2019 nCoV. My knowledge and assessment of this epidemic comes from my analysis of publicly shared information and conversations I have had with

individuals and organizations that are closely involved in the response. Second, as you have likely heard, this is an evolving situation. Our knowledge of the virus is growing and changing as more data become available. What I offer you today is my best interpretation and judgment given the facts known at the time this testimony was prepared.

What Do We Know About 2019 nCoV?

The ongoing epidemic of 2019 nCoV was first recognized in the Wuhan city, Hubei Province, China. On December 31, 2019, health officials in Wuhan announced that they were investigating an outbreak of viral pneumonia involving 27 hospitalized cases in the city. Though the finding of viral pneumonia patients in any hospital during flu season is not by itself cause for alarm, health authorities were alerted to these cases by clinicians who noted the shared a common occupational exposure to the Huanan Seafood Wholesale Market. Wuhan health officials launched epidemiologic and environmental investigations. An official statement provided by the Wuhan Municipal Health Commission noted that all patients were treated in isolation and that there was no clear evidence of person-to-person transmission. Health officials closed the Huanan seafood market on January 1. One week later, health authorities in China announced that a novel coronavirus had been isolated from the viral pneumonia patients and the viral sequence was shared publicly.

Since the identification of 2019 nCoV as the likely cause of the viral pneumonia outbreak in Wuhan, we have learned several important things about the virus. First, the virus appears to be capable of sustained human-to-human transmission. Though it was initially thought that 2019 nCoV infection was limited to individuals with a history of exposure to the Huanan seafood market, cases have been found in individuals who reported never having visited markets in Wuhan. The appearance in other countries of multiple generations of 2019 nCoV cases who have not traveled to China provides additional evidence of sustained human to human transmission. This finding differentiates the virus from the Middle East Respiratory Syndrome coronavirus (MERS-CoV), for which only limited human-to-human transmission has been reported.

Second, though severe illness and deaths have been reported, virus appears to be capable of causing a spectrum of disease. The emergence 2019 nCoV was first recognized among patients who were hospitalized with viral pneumonia. Since then 2019 nCoV cases with milder disease presentations have since been reported. Hospitalized patients also have a varied clinical picture—ranging from relatively mild symptoms to critical illness.

There is evidence that the virus jumped from animals and may have caused human infections earlier than initially recognized. A study published in the *Lancet* has shown some evidence the initial outbreak of 2019 nCoV may have started at the beginning of December or earlier--weeks before the outbreak was first recognized. It is not known when the virus became adapted to humans and capable to being spread via person-to person transmission.

Since the first report of human 2019 nCoV cases, more than 17,000 cases and 300 deaths (as of February 3, 2020) have been recorded in 23 countries. China accounts for the vast majority of cases. Cases have spread well beyond Wuhan—every province in China has since reported cases. From public reports and limited scientific studies published to-date, it appears as though the

majority of reported deaths have occurred among elderly individuals and individuals with underlying medical conditions—patient groups known to be at risk for severe illness and death from other respiratory infections.

All deaths have occurred in China, with the exception of a death in the Philippines. The WHO has said that the deceased, who tested positive for nCoV, had also been infected with influenza and pneumococcus, a bacterium that causes pneumonia, bloodstream infections and meningitis. Outside of China, reported cases have so far been described as having mild disease presentations.

What is Unknown?

Size and scope of the epidemic

What is not yet known is the true size and geographic scope of this epidemic. Though countries are quickly ramping up surveillance for this virus, it is likely that many lack the capacity to actively search for cases. Even countries that have mobilized surveillance programs are likely missing cases. Surveillance in China seem to be heavily focused on cases that show up at hospitals or clinics. Though this makes sense given limited testing capabilities, what it means is that individuals who don't seek medical attention for their infections are likely not being captured by existing surveillance in China. Outside of China, countries have, for the most part, only been testing people who have travelled to Wuhan or, in some cases, broader China. Countries are not, as a matter of routine, looking for local cases that may resulted from infected individuals who entered the country before travel screening began.

Another complicating factor for surveillance is the occurrence of mild cases. Though there have been a concerning number of deaths and severe illnesses reported, the continued finding of mild cases raises the possibility that many more cases have occurred than have been detected. Mild cases are difficult to spot because their non-specific symptoms make them difficult to differentiate from other common respiratory illnesses. If individuals with mild symptoms don't seek medical attention, which is likely, and aren't tested, their infections will not be detected by most surveillance systems.

Hospitalization statistics are not reliable indicators of the burden of severe illness. China and other countries have been hospitalizing infected patients regardless of the severity of their symptoms. Infected patients are also remaining in hospitals until they are free of the virus, which may be well after patients' symptoms disappear.

Current US guidelines for testing for 2019 nCoV among individuals who are not contacts of confirmed cases are contingent on patients' symptoms and to travel to China. According to current guidelines from the US Centers for Disease Control and Prevention (CDC), individuals would likely not be tested for 2019 nCoV infection unless they are a symptomatic contact of a known case; traveled to Wuhan and experience fever and lower respiratory illness; or, traveled to broader China and are hospitalized for a lower respiratory infection. It is not clear whether and how these testing criteria will change now that all provinces in China and more than 20 countries are reporting cases.

Severity

We don't yet have a clear understanding regarding the severity of illnesses caused by 2019 nCoV. The reasons for the observed discrepancies in severe illness and deaths inside and outside of China is not yet known. Though a concerning number of severe and critically ill patients and deaths have been reported, the frequency with which infected people get critically ill and die is not yet understood. But the apparent discrepancy in between the severity of symptoms and number of deaths among cases in China versus other countries raises the possibility that outbreaks in other countries may be less severe and/or comparable to other respiratory viruses, such as influenza.

The way most countries are conducting surveillance for nCoV will not allow us to directly estimate the percentage of infected individuals that develops severe illness and die. A key reason is that we are likely missing many cases, and, in particular mild cases. An outbreak caused by a new pathogen, like 2019 nCoV, is often not recognized until an unusual cluster of severely ill patients turn up in hospitals or an increase in deaths is noted and people launch an investigation to figure out why. As we stand up surveillance for novel viruses, such as 2019 nCoV, and begin to look for cases more broadly, we may identify milder cases in individuals who either didn't seek medical attention or whose symptoms were misdiagnosed. We may be vastly underestimating the total number of infected individuals, which means it is not accurate to estimate severity from the total number of reported cases and deaths. Nonetheless, people have been attempting to determine the severity by doing crude estimates with the limited information available. These crude estimates show that the percentage of deaths among total reported cases may be falling, which, if true, would be consistent with what we've observed in previous emerging infectious disease outbreaks.

Asymptomatic spread

There have been a few case reports that have raised the possibility that individuals who experience no symptoms (asymptomatic) or have not yet developed symptoms (presymptomatic) may be capable of transmitting their infection to others. In addition, virus has been detected in patients after their symptoms went away, which raises the possibility of post-symptomatic spread. The extent to asymptomatic or presymptomatic cases are contributing to the larger epidemic is not known and the evidence supporting this is weak. If significant level of asymptomatic or presymptomatic transmission is occurring, this will make it harder to interrupt disease spread. However, the World Health Organization has said that asymptomatic patients are not likely to be the main driver of disease spread.

International Response

On January 30, the WHO declared the epidemic to be a Public Health Emergency of International Concern (PHEIC). This is the sixth time the WHO has designated an infectious disease event a PHEIC since the 2005 International Health Regulations (IHRs) gave the organization this power. This most recent declaration means that WHO is currently involved in

the response to three simultaneous PHEICs— 2019 nCoV, Ebola in the Democratic Republic of Congo, and international spread of poliovirus.

In announcing that the global spread of 2019 nCoV constituted a PHEIC, the WHO Director General Tedros Ghebreyesus made clear that countries should respond with "facts, not fear." The WHO has said that it does not recommend that countries implement travel or trade restrictions to prevent the importation of the virus. WHO has cautioned that countries that do take these measures could accelerate the spread of the virus by hindering the ability of responders and supplies to travel to where they are needed and by diverting public health resources from local disease control efforts. Nonetheless, many countries are implementing measures that the WHO has specifically advised against. Many countries, including the United States, have announced suspension of travelers from China, and an intention to quarantine travelers returning from China for up to 14 days. The IHRs were created to define the maximum measures countries could take to prevent the importation of disease; countries that take measures that are above what the WHO recommends do so in contravention of the IHRs.

But despite these unfortunate developments, I see in countries' initial response to this nCoV epidemic some important signs for optimism. First, I must commend the astute clinicians in Wuhan, China who first recognized this unusual event. Front-line clinicians are our first defense against infectious disease outbreaks. That they recognized that their patients shared an unusual commonality—a link to the seafood market—is possibly the only reason why this outbreak was detected when it was and not later. This points to the importance of having well-trained clinicians who can recognize and rapidly report unusual events.

Second, I am greatly encouraged by the speed with which health authorities are expanding laboratory testing for a never-before-detected virus. This includes China, which isolated, identified and published the sequence of the novel coronavirus quickly, enabling other countries to develop their own laboratory tests. This also includes other countries, who immediately began screening and testing symptomatic travelers from China for a completely new virus. It is important to point out this rapid surveillance work reflects advanced laboratory capabilities that require investment, training and sustainment.

In addition, epidemiological investigations conducted in and shared by other countries have improved our understanding of the virus and its transmission. Thailand identified a 2019 nCoV case in a traveler from Wuhan who reported not having exposure to the initially implicated seafood market. This epidemiological finding first raised the possibility of infection among those without a connection to the Huanan market. The first evidence that this virus was capable of human-to-human transmission was provided by health officials in Vietnam, who identified and investigated a 2019 nCoV case in a 27-year old man who had not visited China, but had been caring for his sick father who had recently travelled from Wuhan.

Each of the above examples illustrates why it is so essential that countries have the public health capacities to prevent, detect and respond to infectious disease emergencies. The sharing of detailed surveillance and case reports from Vietnam, Thailand, and other countries that are now reporting cases is indispensable for global efforts to control the spread of this disease. It is also how, in the face of scientific uncertainties about the virus, WHO makes a determination of the

global risk posed by the virus and how countries like the US gather the information they need to make decisions about how to protect their own citizens.

We should not take for granted the response successes that have occurred to date. The astute clinicians and the capacities to screen, diagnose and isolate patients with a novel virus and identify and monitor their contacts represent important global health security capacities—laboratory-based surveillance, trained epidemiologic workforce, infection prevention and control practices—that needed to be developed and maintained so that they could function in this epidemic. The speed with which countries have gathered and shared key epidemiological data has enabled others to better gauge risks posed by this virus and enhance response plans.

Comparing the 2019 nCoV epidemic to prior novel coronavirus outbreaks illustrates some of the progress that has been made in strengthening countries' global health security. In 2003, it took months before a novel coronavirus was identified as the cause of Severe Acute Respiratory Syndrome (SARS) as compared with weeks in the current epidemic. In 2015, the Republic of Korea experienced a large outbreak of Middle East Respiratory Syndrome coronavirus (MERS-CoV), in part due to delayed recognition and nosocomial spread of the virus. However, in 2019 Korea quickly detected and isolated an imported case with mild symptoms and became the third country outside of China to report cases. Korea and other countries that have experienced infectious disease challenges have done the hard work of improving their public health capacities deserve our recognition and gratitude.

The fact that countries are able to conduct surveillance for and epidemiological investigations of 2019 nCoV cases is the result of hard work and sustained investment, both by the countries themselves and by international donors. US technical and financial support has been critical to the development of surveillance systems and trained workforce in a number of countries now reporting 2019 nCoV cases. In the case of Thailand, US support spanned decades. Thailand now has a world class epidemiologic workforce and is a leader in global health security. In Vietnam, sustained US support and assistance have enabled the development an early warning surveillance system, which includes a network of emergency operations centers and enhancement of field epidemiology workforce training. These resources were used to support Vietnam's detection and response to Zika virus and are likely a supporting the country's on-going response to 2019 nCoV.

Worrisome Trends in Global Readiness for Epidemics and Pandemics

Much of the world is not fully prepared to respond to serious infectious disease epidemics or pandemics. Though there are positive examples of countries like Thailand and Vietnam rapidly responding to infectious disease threats, there are critical gaps in worldwide capacities that can inhibit the responses of many countries to this epidemic and others.

In October, my colleagues and I at the Johns Hopkins Center for Health Security and the Nuclear Threat Initiative, together with the research power of the Economist Intelligence Unit, released the Global Health Security Index (GHS Index), a first-ever assessment of 195 countries' global health security. The first GHS Index was the result of a sustained effort to define a framework to

comprehensively and reproducibly understand and compare global health security at the national level and to collect and measure the extent to which countries' show evidence of having the capacities and capabilities required to respond to an epidemic or pandemic. The GHS Index builds on peer evaluations conducted by the WHO but covers all un members, including China, and is regularly repeatable to measure progress. What we found is that no country, including the US, is fully prepared for significant infectious disease outbreaks. There is even less evidence that countries have demonstrated the ability to exercise these capacities or use them in an actual emergency. How unprepared is the globe as a whole? Out of a possible score of 100 points, we found that the average GHS Index score across 195 countries was just 40.2. Even countries with more resources are not ready, as the majority of high- and middle-income countries do not score above 50. What these results tell us is that action is urgently needed to improve countries' readiness for high-consequence infectious disease outbreaks.

In declaring the 2019 nCoV epidemic a PHEIC, WHO Director General Tedros Ghebreyesus said that a key reason for the declaration was a concern about the weakness of health systems in much of the globe. I share his worries. Among each of the 6 categories measured in our GHS Index, countries' scores were lowest (the average score was 26.4 out of 100) in the category that examined the readiness of national health systems to treat the sick and protect health workers.

This finding tracks with observed challenges in recent epidemics, such as the on-going epidemic of Ebola in Democratic Republic of Congo (DRC), which represents one of the three on-going PHEICs to which the WHO is currently responding. Though DRC has prior experience and success in containing Ebola outbreaks, disease transmission occurring in unprepared health facilities has played an important role in exacerbating the spread of disease. Transmission in healthcare facilities also occurred during the 2003 SARS epidemic and during outbreaks of MERS in 2015.

What this tells us is that there may be critical gaps in hospitals and other health facilities that will likely be the on the front-lines of responding to the 2019 nCoV epidemic. Many countries—including well-resourced ones like the US, may experience difficulties in responding to a surge of patients infected with 2019 nCoV. If the virus produces more severe illnesses than have been seen outside of China to-date, then the challenges of safely treating these patients will be even greater. The recent report of a healthcare worker in France who became infected with nCoV is a concerning development that speaks to the challenges that even well-resourced countries are likely to face in responding to this disease.

My worries about these identified weaknesses in national capacities to respond to epidemics and pandemics is increased by the lack of resources allocated to address them. The GHS Index showed that only 5% of countries—fewer than 10 countries overall—scored above 66.7 out of 100 points for financing health security. Prioritizing health security, especially in the strengthening of foundational health systems, will be critical in helping to control this epidemic, but also in addressing future infectious disease emergencies.

Recommendations to Improve US Readiness for Continued Spread of 2019 nCoV

The ultimate trajectory of the 2019 nCoV epidemic is hard to predict with certainty, but there are increasing signs that it may not be possible to contain the disease. We must plan for the possibility that 2019 nCoV will result in a global pandemic. My recommended priority actions to improve preparedness for global spread of 2019 nCoV are divided between international engagement and domestic readiness.

International engagement recommendations:

1. Halt the current US policy of denying visas to travelers from China and quarantining Americans returning from China.
2. Engage in a productive, collaborative dialogue with China to in order to ensure continued access to data and critical medical supplies

Domestic response recommendations:

1. Ensure health departments have the resources they need to conduct surveillance to promote proven mitigation measures, such as case isolation outside a hospital to the extent possible.
2. Ensure hospitals and other health facilities have the resources needed to safely treat a surge of patients.
3. Facilitate the development of medical countermeasures, such as diagnostics, vaccines, therapeutics.

The current US policy to deny visas to travelers from China and to quarantine returning Americans is not the right approach to controlling the spread of 2019 nCoV and may make us less safe. These measures are unlikely to keep the virus out of our country. The virus is spreading too quickly and too quietly for us to possibly know where all cases are. We do not have a complete picture of where in the world the virus is spreading to be able to stop infected people from coming to the US. It is also possible that unrecognized infections are occurring in US. In the weeks before the US began to screen travelers and airlines began reducing flights, thousands of people traveled to the US from China each day. And just because we are only looking for cases among people with a connection to China doesn't mean that those are the only individuals who are infected. As global case counts continue to grow and as more and more countries report cases, it will raise the question as to whether we should continue to focus on travel to Wuhan or broader China as criteria for testing. It is unlikely that we would be able to maintain our current approach to quarantine returning Americans and screen travelers if we needed to include additional countries or regions of the world.

I am deeply concerned that these measures will make us less safe by diverting public health resources from higher priority disease mitigation approaches that I describe below. It is not yet clear which agencies will have the responsibility of caring for and monitoring returning travelers who have been placed into quarantine. It is possible that local health authorities would play a lead role, as they did in monitoring travelers returning from West Africa during the Ebola epidemic of 2014, which required considerable resources that had to be diverted from other

public health activities. Caring for and monitoring even small numbers of quarantined individuals would likely be a challenge for many health departments and would require a large investment of resources.

By singling out China for travel bans, we are, effectively penalizing it for openly reporting and sharing data about the epidemic. Our ability to respond to epidemics depends on having access to epidemiological information generated by other countries. Geographically-targeted measures may exacerbate the social and economic tolls of this epidemic and send a signal to countries that it may not be in their best interests to be forthcoming about disease outbreaks. This could diminish countries' willingness to be transparent about outbreaks and allow diseases to spread before outbreaks are uncovered, which would make everyone less safe. We should reward countries that report cases through offers of help and assistance.

It is in our best interest to maintain a productive and collaborative relationship with China and to help it better respond to the spread of 2019 nCoV disease. To appropriately gauge how the US should respond to this evolving health threat, it will be critical to continue to have access to data from China. Just prior to the US's announcement of travel bans, China indicated that it would allow US scientists in to participate in the epidemic response. This was an important development and may have led to an improved understanding of the current epidemic. But it is now questionable whether this offer is still viable, given the on-going travel restrictions.

It is essential that we maintain positive relationships with China to ensure the continued availability of essential goods. China is a major producer of the medical resources which the US will need to respond to this epidemic, such as surgical masks and other personal protective equipment. Our dependence on medical supplies from China is not just restricted to products needed for responding to this epidemic. For example, China is a major global producer of raw materials for commonly-used medicines, such as the blood thinner heparin. The US recently experienced shortages in its supplies of heparin, which is derived from pigs, due to China's efforts to cull pigs in order to control the spread of African Swine Fever. What this example should indicate to us that should help China respond to 2019 nCoV to ensure that the actions it takes do not interrupt the production and distribution of essential goods. There are already reports suggesting that China's massive efforts to restrict the movements of tens of millions of individuals may interrupt the production of goods. China needs our help and it is in our best interest to provide it.

We must now contemplate the possibility of pandemic spread of 2019 nCoV and must plan for how we will mitigate the impacts of the virus. In my view, it is highly likely that the United States will continue to see cases of 2019 nCoV, despite the recently implemented travel bans and quarantines. Though there are still important unknowns, this epidemic bears a number of similarities to the 2009 influenza A/H1N1 pandemic. It is essential that we plan for the possibility that the 2019 nCoV virus will follow a similar pattern to the 2009 pandemic. If the virus continues to circulate and cases keep climbing, the probability of community-wide transmission will increase. Responding to a novel virus for which no specific therapy or vaccine yet exists leaves only the possibility of mitigating the disease spread. What measures we take to find cases and mitigate disease spread will be determined by the observed severity and the availability of resources. If there continue to be concerns about the severity of the virus, our

priority should be to rapidly detect and isolate of cases and identify and monitor their close contacts for signs of illness. Communities will likely consider other mitigation strategies, such as limiting public gatherings and closing schools, but the operational feasibility of these measures must be examined, and potential adverse consequences (e.g., reduced availability of healthcare personnel due to childcare obligations) should be considered. If the disease continues to demonstrate mild tendencies in cases outside of China, we may consider focusing efforts on protecting those most likely to become ill and preventing deaths.

We must ensure that responding agencies have the resources necessary to respond to 2019 nCoV cases across the country. Each of the above scenarios requires that health departments and hospitals have the resources they need to conduct surveillance to promote proven mitigation measures, such as case isolation. Unless patients require medical attention, they should be isolated outside of a hospital to reduce the possibility that they infect healthcare workers and other patients. Hospitals and other health facilities will need resources to safely treat a surge of patients.

If the number of 2019 nCoV cases in the US continues to grow, the US Congress will likely be called to appropriate emergency funds to enable states to respond to the virus. During the 2009 pandemic, the Ebola epidemic of 2014, and the response to the Zika pandemic, the US Congress approved emergency supplemental funding that went to support state and local response efforts. The current fiscal outlook in states is such that they will be unable to fully respond without additional federal funding. Federal agencies such as HHS and CDC, which have been responding to multiple on-going disease emergencies, such as Ebola in DRC, have already indicated that they may need additional emergency response funds to support the 2019 nCoV response.

Government leadership is needed to facilitate the development of medical countermeasures, including diagnostics. Though a number of efforts to develop a vaccine have been announced, it is likely that a usable vaccine will not be available for some time. Research is also being conducted to develop therapeutic medicines, which may help those with severe illness and prevent deaths. Enhanced diagnostic tools are essential to the use of both vaccine and therapeutics, yet comparatively less attention has been given to the need to accelerate the development of new diagnostic tools. CDC is currently conducting all of the testing for 2019 nCoV in the US, but has plans to roll out testing capabilities to state public health labs. This will be important to reduce current lag times in getting test results for persons under investigation for 2019 nCoV and to meet a likely increase in the demand for testing as case counts rise. However, there is also a need for diagnostics in clinical settings. If more patients seek care at healthcare facilities, there will be an increased need for diagnostic tools to help clinicians rule out infection with nCoV, make decisions about cohorting or isolating patients, and to determine course of therapy.

Conclusion

The points I have raised today hopefully paint a picture of an epidemic that is in many ways complex and evolving, but for which we are increasingly gaining clarity. International collaboration will be essential for continuing to monitor and learn about the virus and the

epidemic it is causing. Even amid uncertainty, we should root our response in evidence. Without evidence to guide our actions, we may inadvertently exacerbate the toll of this epidemic. In evaluating how we should respond to this public health emergency, we must consider not only whether the measures will work, but also whether the ends justify the means. While we want to do the utmost to protect health, we don't want to pursue measures that will extract a greater toll on societies and our economy than the virus would alone. We must continually assess whether our response strategies are matched to the level of threat that the virus poses and adapt our approach as new information becomes available. With evidence mounting of continued global spread despite aggressive actions being taken by countries, it is becoming clear that a change of course may be needed. Instead of trying to implement measures that likely will not work to prevent the virus from entering out country, we should focus on efforts that we know will help to lessen its impacts, such as ensuring that federal, state and local health agencies, and hospitals and health clinics have the resources they need to diagnose, isolate and safely treat cases, and to promote feasible approaches to community mitigation that are most likely to mitigate disease spread. For this we will need government leadership and additional investments.

Mr. BERA. Thank you, Dr. Nuzzo.
Dr. BOUEY.

STATEMENT OF DR. JENNIFER BOUEY, SENIOR POLICY RESEARCHER AND TANG CHAIR IN CHINA POLICY STUDIES, RAND CORPORATION

Dr. BOUEY. Thank you. Chairman Bera, Ranking Member Yoho, and members of subcommittee, thank you for inviting me to testify for this coronavirus outbreak. My testimony will start with laying out the context of this outbreak by looking at China's public health development after SARS. Then I will examine China's current response to this outbreak. And I will end with some recommendations.

Seventeen years ago SARS emerged from southern China and caused a global outbreak and infecting over 8,000 people, and killing more than 700. SARS prompted China to radically rethink its public health system. The country invested heavily in the Centers for Disease Control, surveillance networks, and a National Influenza Center. SARS also spurred China to strengthen its relationship with United States and the wider international community around public health concerns.

The U.S. helped China in both public health infrastructure and capacity building. Public health professionals from both countries collaborated on HIV/AIDS, avian flu, swine flu, H7N9, and Ebola. In the last couple years, however, this relationship has faltered due to tensions between the U.S.-China relationship.

Compared to SARS, the time taken for the Chinese Government and global health communities to respond to the first cases of coronavirus are much shorter. So, there were about 4 weeks from the first noticed case to the public announcement of the outbreak, and then 12 days to the time when virus was identified, and then 9 more days until the national case report system was triggered.

The credit for this progress can be tied to the availability of the latest genomic sequencing technology and the global data networks. Because of the rapid identification of the virus, many countries, including U.S. and China, can now quickly develop a testing kit, monitor the genetic mutation, and have better understanding of the transmission. All countries can link their cases to the current outbreaks now.

Further, the wide use of social media and China's progress on globalization has pushed the government to be more transparent. However, there are remaining similarities to the SARS response. Given the Chinese Government values stability most, an outbreak by its nature is disruptive. The government's hesitation to announce the public health threat was reflected in the long review process and the regulations that prohibited local officials and the members of the public to discuss the outbreak before the approval from the central government.

The downplay of the severity of the outbreak also has happened again. From January 3d to the 20th, the expert investigation team assured the public that there was limited person-to-person transmission. And after closing the animal markets associated with the first group of cases, the epidemic was under control.

It was not until cases outside China appeared and the second team was sent and they confirmed the communal transmission, then the government announced a public health emergency and triggered the national case reporting system.

Finally, as with SARS, the government uses mass quarantine as the primary intervention. Resources have been mobilized nationally to support a health care system in the crisis areas, and even new hospitals were built for the outbreak. The quarantine and the health care system strengthening are important strategies, but we do not know, do not know yet if such intervention can contain this epidemic, nor do we know about the social, cultural, economic, and the political implication and impacts.

I will highlight three recommendations here:

First, USG should consider having a concerted and comprehensive plan to contain the domestic outbreak. In addition to the social distancing action we just mentioned, we should consider the strategies to reduce the spread of rumors and the stigma associated with the outbreak.

Second, public health and humanitarian assistance should be sent at a time when China is bearing the principal burden of the outbreak. Currently, 99 percent of the cases are in China, and 97 percent of the deaths in Hubei province. Public health expertise, medical supplies, and even supporting language can help the people who are suffering there.

And, last, given the continued spread of the outbreak, USG should consider working with WHO and China CDC to provide strategic and capacity building for other countries that are in danger of the epidemic.

Thank you.

[The prepared statement of Dr. Bouey follows:]

From SARS to 2019-Coronavirus (nCoV): U.S.-China Collaborations on Pandemic Response

Jennifer Bouey

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From SARS to 2019-Coronavirus (cNoV): U.S.-China Collaborations on Pandemic Response

Testimony of Jennifer Bouey[1]
The RAND Corporation[2]

Before the Committee on Foreign Affairs
Subcommittee on Asia, the Pacific, and Nonproliferation
United States House of Representatives

February 5, 2020

Chairman Bera, Ranking Member Yoho, and members of the subcommittee, thank you for inviting me to testify about U.S.-China collaboration on pandemic response, especially in light of the recent novel coronavirus outbreak. First, I will describe the 2002–2003 outbreak of severe acute respiratory syndrome (SARS) and the global response. Next, I will discuss U.S.-China collaboration from 2003–2012, followed by developments in the years prior to the current coronavirus outbreak. Lastly, I will analyze the characteristics of 2019-nCoV and China's early responses, and offer policy recommendations.

2002–2003: SARS

Almost 17 years ago, a novel coronavirus was silently causing deadly pneumonia outbreaks—which later became known as SARS—in China. The index case of the SARS outbreak occurred in the city of Foshan in Guangdong Province, China, on November 16, 2002. Neither this case nor a few other cases in December attracted any notice from the public. A public health expert team from the province, which included a few representatives from the national Ministry of Health, went to one of the cities in Guangdong province in January 2003 to investigate. The team concluded that the atypical pneumonia diagnoses were probably caused by a virus. The team then suggested in a "top-secret" report that the provincial health bureau should establish a case-reporting system. This reasonable—although rather feeble—suggestion was expressed in a news bulletin for local health care professionals but fell on deaf ears during the Chinese New Year. The world did not find out for another two months that this was severe acute

[1] The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of the RAND Corporation or any of the sponsors of its research.

[2] The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

respiratory syndrome (SARS), a viral pneumonia that would infect more than 8,000 people globally and lead to 774 deaths.

At that time, China lacked a national center for disease control, which would have been responsible for maintaining a robust surveillance system for detecting emerging diseases. It also lacked a national case-reporting system. In addition, according to the *Implementing Regulations of the Law of the People's Republic of China on Guarding State Secrets* regarding the handling of public health-related information, any occurrence of infectious disease should be classified as a state secret before it is "announced by the Ministry of Health."[3] No physician or journalist can alert the public without breaking the law. With no information from government or media, the Chinese public was unaware of the outbreak until cell phone messages about a "deadly flu" started to circulate in early February 2003 in Guangzhou. A widespread panic caused residents to clear out antibiotics and flu medicines in pharmacies. Prompted by the public panic, the Guangdong health officials finally held a press conference on February 11 to announce the 305 atypical pneumonia cases in the province. China submitted the case report to the World Health Organization (WHO) as *atypical pneumonia*, probably caused by chlamydia or a virus around the same time. Afterward, information about the disease was reported on the news media, but the flow of information stopped on February 23. The news blackout from February 23 continued during the run-up to the National People's Congress in March, and the government shared little with the public until early April.[4]

Meanwhile, a "super-spreading" chain of transmission emerged at the end of the January and lasted until March, causing international attention on the outbreak: A patient with pneumonia in Guangdong was transferred between three different hospitals, ultimately infecting 200 people, including a doctor from Zhongshan Hospital. The doctor traveled to Hong Kong and infected 12 people in a hotel, and these 12 people then carried the virus to Singapore, Vietnam, Canada, Ireland, and the United States.[5]

By mid-March 2003, SARS clusters started to appear in Vietnam, Hong Kong, Singapore, and Canada. The WHO subsequently picked up the alerts from the Global Outbreak Alert and Response Network (GOARN) and issued a global alert about a new infectious disease of unknown origin. Between March 16 and March 21, the WHO started to suspect that the more than 300 cases from February—which China had labeled "atypical pneumonia" in its report—were actually SARS cases. At China's request, the WHO sent a team to China on March 23. On March 27, the WHO team concluded that the "atypical pneumonia" cases were same as SARS, and China announced 792 cases and 31 deaths.[6] Under intense international pressure to mobilize against the pandemic threat, the Chinese government publicly acknowledged the SARS outbreak

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[3] Yanzhong Huang, "The SARS Epidemic and Its Aftermath in China: A Political Perspective," in Stacey Knobler, Adel Mahmoud, Stanley Lemon, Alison Mack, Laura Sivitz, and Katherine Oberholtzer, eds., *Learning from SARS: Preparing for the Next Disease Outbreak: Workshop Summary*, Washington, D.C.: The National Academies Press, 2004

[4] Huang, 2004 ibid

[5] Institute of Medicine, "Summary and Assessment," in Stacey Knobler, Adel Mahmoud, Stanley Lemon, Alison Mack, Laura Sivitz, and Katherine Oberholtzer, eds., *Learning from SARS: Preparing for the Next Disease Outbreak: Workshop Summary*, Washington, D.C.: The National Academies Press, 2004.

[6] World Health Organization, "Severe Acute Respiratory Syndrome (SARS) Multi-Country Outbreak – Update 10: Disease Outbreak Reported," news alert, March 26, 2003. As of February 3, 2020: https://www.who.int/csr/don/2003_03_26/en/

at the end of March and undertook a series of responsive actions in the following weeks, including

- establishment of new rules requiring all local health officials to report the number of cases daily, with severe penalties for noncompliance
- streamlining of interdepartmental communication and cooperation on the crisis
- creation of national and provincial interdepartmental SARS task forces
- dedication of over $1 billion to treating the patients and controlling the epidemic.[7]

In late April 2003, China's health minister and Beijing's mayor were fired one day after the Chinese Premier announced severe consequences for local officials who failed to report SARS cases in a timely and accurate manner. (That same day, the number of cases in Beijing jumped from 37 to 407.) By the end of May, more than 1,000 officials were fired or penalized for their "slack" responses to SARS.[8] The remaining officials, driven by political zeal, began to seal off villages, apartment complexes, and university campuses; quarantined tens of thousands of people; and set up checkpoints to take temperatures. A new hospital was built within 20 days in Beijing to accommodate and quarantine SARS patients. The epidemic started to subside in late May. By June 27, the WHO announced that China was "SARS-free." On August 16, the last two SARS patients were discharged from a Beijing hospital.

SARS revealed the state of China's unprepared public health system. It led the country to significantly rethink its approach to both domestic and global health. The government soon invested 6.8 billion renminbi (RMB) (850 million U.S. dollars [USD]) for the construction of a three-tiered network of disease control and prevention. The outbreak also spurred China to strengthen its relationships with the United States and the wider international community around issues of public health concerns. The change in China was welcomed and enthusiastically supported by governments and scientists around the world.

2003–2013: U.S.-China Collaborations and China's Public Health Restructuring and Capacity-Building

Increased U.S.-China collaboration on global health was an important result of the SARS response. In October 2003, three months after the conclusion of the SARS pandemic, U.S. Secretary of Health and Human Services Tommy Thompson visited China and signed a multiyear partnership with the Chinese Ministry of Health to develop a more robust public health infrastructure in China. Thompson also established an HHS health attaché at the U.S. embassy in Beijing. The following month, U.S. Secretary of State Colin Powell noted that

> It is upon such concrete forms of cooperation on issues of regional and global importance that a 21st century U.S.-China relationship will be built, issue by issue, experience by experience, challenge by challenge, initiative by initiative, program by program.[9]

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[7] Yanzhong Huang, "The SARS Epidemic and Its Aftermath in China: A Political Perspective," in Stacey Knobler, Adel Mahmoud, Stanley Lemon, Alison Mack, Laura Sivitz, and Katherine Oberholtzer, eds., *Learning from SARS: Preparing for the Next Disease Outbreak: Workshop Summary*, Washington, D.C.: The National Academies Press, 2004.

[8] Huang, 2004.

[9] Colin L. Powell, "Remarks at Conference on China-U.S. Relations," College Station, Tex., November 5, 2003.

H5N1: 2003–2009

Not long after the SARS pandemic, China and the international community confronted another complex challenge with the H5N1 influenza virus—commonly known as "avian flu" or "bird flu" because it infects and spreads largely through birds. Cases of bird-to-human transmission were discovered in Fujian Province in 2003. In 2004, the Chinese National Influenza Center and the U.S. Centers for Disease Control and Prevention (CDC) initiated cooperative agreements to build Chinese capacity in influenza surveillance. The two agencies collaborated on 1) developing technical expertise in virology and epidemiology in China; 2) developing a comprehensive influenza surveillance system by enhancing influenza-like illness reporting; 3) strengthening analysis, utilization, and dissemination of surveillance data; and 4) improving early response to influenza viruses with pandemic potential. In 2005, both governments inaugurated the Collaborative Program on Emerging and Re-emerging Infectious Diseases, which turned into the CDC's China Center. That same year, both countries established the U.S.-China Health Care Forum to address bilateral commercial, trade, and policy issues relating to health. Additionally, U.S. President George W. Bush announced the International Partnership on Avian and Pandemic Influenza—an ongoing framework for U.S.-China cooperation around the issue—in an address to the United Nations (UN).[10] In 2006, the U.S. Department of Health and Human Services (HHS) and China's Ministry of Health (MOH) further expanded their collaboration on biomedical research with a memorandum of understanding on research, technology, training, and personnel exchange.

H1N1: 2009

The capacity-building and infrastructure put into place to monitor the continuing threat from avian flu served China and the United States well when another novel influenza strain—H1N1, commonly known as "swine flu"—emerged in 2009. The epicenter was in the United States and Mexico, but the flu soon spread across the globe. American and Chinese health authorities shared information and technology to facilitate national monitoring of H1N1's spread and to develop a vaccine; China subsequently became the first country to mass-produce an H1N1 vaccine. During the summer lull in the 2009 pandemic, the two countries strengthened their bilateral health communications through the U.S.-China Strategic Economic Dialogue. As then–U.S. President Barack Obama visited China in November 2009 in the midst of the H1N1 outbreak, the two countries addressed global public health in a joint statement, pledging to "deepen cooperation on global public health issues, including Influenza A (H1N1) prevention, surveillance, reporting and control, and on avian influenza, HIV/AIDS, tuberculosis, and malaria."[11]

China's National Influenza Center Expansion: 2010–2014

From 2010 to 2014, China expanded the Chinese National Influenza Center (CNIC) to include 408 laboratories and 554 sentinel hospitals, and it trained 2,500 public health staff. CNIC became the fifth WHO Collaborating Centre for Reference and Research on Influenza. CNIC

[10] George W. Bush, statement delivered to the 2005 World Summit of the United Nations, High Level Plenary Meeting, New York, September 14, 2005. As of February 3, 2020: http://www.un.org/webcast/summit2005/statements/usa050914.pdf

[11] The White House, Office of the Press Secretary, "U.S.-China Joint Statement," statement by U.S. President Barack Obama and Chinese President Hu Jintao, November 17, 2009. As of February 3, 2020: https://obamawhitehouse.archives.gov/realitycheck/the-press-office/us-china-joint-statement

established viral drug resistance surveillance and platforms for gene sequencing, reverse genetics, serological detection, and development of vaccine strains. CNIC also built a bioinformatics platform to strengthen data analysis, publishing weekly online influenza surveillance reports in English and Chinese. The surveillance system now collects between 200,000 and 400,000 specimens and tests more than 20,000 influenza viruses annually, which provide valuable information for WHO influenza vaccine strain recommendations. CNIC now provides training for other countries to improve global capacity for influenza control.[12]

H7N9: 2013

CNIC was fully functional when another novel strain of avian influenza, H7N9, emerged in eastern China in 2013. This form of avian influenza has a high fatality rate, of 30 percent (similar to Middle East Respiratory System [MERS]), but human-to-human transmission proved extremely rare, allowing the outbreak to remain in check with effective public health measures. This time, China quickly reported the new viral strain to the WHO after only three cases were detected, and it also posted the full viral genome sequences of these cases in a public international database to facilitate research around the world. The outbreak plateaued in June at around 130 confirmed cases with more than 40 confirmed deaths, but, as expected, the virus reemerged the following winter, with more than 100 confirmed cases and 20 deaths in China in January 2014 alone.

China's domestic response to the H7N9 outbreak prevented the virus from spreading beyond mainland China, save for a handful of cases in Hong Kong, Taiwan, and Malaysia. Chinese scientific cooperation with the international community also allowed other countries to prepare for further spread of the virus. Chinese scientists developed a vaccine in October 2013—the first influenza vaccine developed entirely in China—and shared their method with the world, facilitating vaccine development efforts by the U.S. CDC and private pharmaceutical companies. The Chinese and American CDCs collaborated throughout the H7N9 outbreak by sharing epidemiological data and engaging in joint research on the virus. The Chinese efforts to manage the outbreak of H7N9 were widely praised by governments and scientists around the world.[13] In the United States, the CDC partially activated its Emergency Operations Center to conduct epidemiological and vaccine research, provide assistance to the Chinese, and develop and distribute test kits capable of detecting the virus worldwide.[14]

HIV/AIDS: 2003–2014

Besides preparing for and responding to influenza epidemics, the United States also helped China in its campaign against HIV/AIDs. In 2002, the U.S. National Institutes of Health (NIH) gave the Chinese CDC a five-year, $14.8 million grant to develop infrastructure to improve

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[12] Yuelong Shu, Ying Song, Dayan Wang, Carolyn M. Greene, Ann Moen, C. K. Lee, Yongkun Chen, Xiyan Xu, Jeffrey McFarland, Li Xin, Joseph Bresee, Suizan Zhou, Tao Chen, Ran Zhang, and Nancy Cox, "A Ten-Year China-US Laboratory Collaboration: Improving Response to Influenza Threats in China and the World, 2004–2014," BMC Public Health, Vol. 19, No. 520, 2019.

[13] Carina Perkins, "OIE Meeting Congratulates China on Bird Flu Response," GlobalMeatNews, June 4, 2013; Mara Hvistendahl, "A Decade After SARS, China's Flu Response Wins Cautious Praise," *Science*, Vol. 340, No. 6129, April 12, 2013, p. 130; Dobri Genchev, "H7N9 Response Discussed During World Health Assembly," news release, World Health Organization, November 9, 2018.

[14] Centers for Disease Control and Prevention, "Asian Lineage Asian Influenza A(H7N9) Virus" December 7, 2018. As of February 3, 2020: https://www.cdc.gov/flu/avianflu/h7n9-virus.htm

research and better monitor the spread of the disease in the country. Beijing also partnered with the U.S. CDC to establish the CDC's Global AIDS Program (GAP) in China in early 2003. GAP quickly developed and implemented a comprehensive HIV prevention and mitigation plan across 15 Chinese provinces to promote increased surveillance of high-risk populations. The CDC, in partnership with China's National Center for AIDS/STD Control and Prevention, has assisted with capacity-building, including the improvement of the quality and geographical reach of laboratory testing capabilities, the development of an epidemiological surveillance system, and the expansion of treatment options. The U.S. CDC has assisted Chinese health authorities with the establishment of three HIV/AIDS clinical training centers in rural areas, which have educated more than 300 graduates who are now providing antiretroviral therapy for 50,000 patients in 16 provinces.[15]

2013–2019: The Years Leading Up to the 2019 Coronavirus

Ebola

In 2014, the Chinese government launched an unprecedented response to the Ebola epidemic in West Africa in 2014.[16] China's State Council dispatched one of its largest medical teams of about 1,200 clinicians, public health experts, and military medical officers after the WHO declared a Public Health Emergency of International Concern (PHEIC). The Chinese team opened a 100-bed treatment unit and established three field demonstration sites in Sierra Leone while providing free treatment. Within six months, China also built a biosafety level 3 laboratory, transporting all construction materials into the laboratory in only 87 days.[17]

The United States took similar actions but on a larger scale, with aid exceeding $1 billion. In some cases, U.S. and Chinese teams collaborated on the ground in Africa. On the international stage, the United States and China worked together at the UN Security Council, jointly declaring the Ebola outbreak a "threat to international peace and security," and called on governments around the world to respond to the crisis.[18] In June 2015, at the U.S.-China Symposium on Ebola, Research, and Global Health Security hosted by the NIH, both countries renewed their commitment to building systems to detect, prevent, and respond to global health threats.

Indeed, these collaborations between U.S. and Chinese public health agencies are the ones that the 2016 U.S.-China Strategic and Economic Dialogue highlighted as venues for deeper cooperation moving forward: "The United States and China are committed to strengthening cooperation to improve global health security," both sides agreed. They pledged to further "strengthen their partnership to build capacity to prevent, detect and respond to infectious disease

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[15] Bulterys M. (2020) The US CDC Global AIDS Program in China. In: Wu Z., Wang Y., Detels R., Bulterys M., McGoogan J. (eds) HIV/AIDS in China. Springer, Singapore

[16] Yanzhong Huang, "China's Response to the 2014 Ebola Outbreak in West Africa," *Global Challenges*, Vol. 1, No. 2, February 27, 2017.

[17] Kun Tang, Zhihui Li, Wenkai Li, and Lincoln Chen, "China's Silk Road and Global Health," *The Lancet*, Vol. 390, No. 10112, December 2017, pp. 2595–2601.

[18] "Ebola 'Threat to World Security'-UN Security Council," BBC News, September 19, 2014. As of February 3, 2020:
http://www.bbc.com/news/world-africa-29262968

threats including but not limited to influenza, malaria, laboratory capacity, and antimicrobial resistance."[19]

However, a big change in the U.S.-China relationship was on the way. Afraid of western influences, China enacted new legislative restrictions on foreign nongovernmental organization (NGO) activity on January 1, 2017; the law requires foreign-based researchers in China to have a government partner who will report their activities to central and local security agencies. Then, in 2018, due to a U.S.-China trade war, such diplomacy dialogues as the strategic and Economic Dialogue and bilateral diplomatic and security dialogues halted. Subsequently, the United States closed the National Science Foundation office in Beijing in 2018 (along with its offices in Tokyo and Brussels) and the GAP program. Currently NIH and the CDC both reduced their staff in the Beijing office.

In summary, in the 18 years since SARS, with help from the international community and through the commitment of the Chinese government, China has invested in a nationwide network of its own centers for disease control at the national, provincial, prefecture, and county levels; they are connected by a real-time, web-based reporting system for emerging public health events. The workforce for China's CDCs is large, relative to the 15,000 employees at the U.S. CDC, consisting of 3,481 units and 877,000 public health professional positions at all levels of government. China also has a world-class National Influenza Center. However, the question on the minds of global health organizations around the world is, is China truly ready for the next pandemic?

A report in late 2018 from China's CDC casts some doubts.[20] The challenges, as the authors highlighted, are multifaceted. First, the growing public health needs (and the voids after the departure of international funders) have stretched still-limited investments in China's public health and its preparedness and response. In the past decade, many Chinese agencies have prioritized innovation in technology, including biomedical research. They have also invested in restructuring the health system for the population of 1.4 billion. Public health, in comparison, was relatively underfunded due to these competing priorities. At the local level, local CDCs are supported by provincial governments. In places where the local government's resources are less robust or declining, local public health resources, including personnel, can also suffer from insufficient funding. Low salaries are a significant barrier to the recruitment and retention of high-quality professionals, and local Chinese CDC staffing has declined at all levels. Secondly, suboptimal multisector coordination, such as inadequate communication and inconsistent data sharing between health and veterinarian sectors, between clinicians and public health professionals, can delay early detection of emerging diseases. Insufficient health care surge capacity was also identified as a potential barrier for providing sufficient response to pandemics, as well as the lack of an official technical framework to communicate an epidemic's intensity, severity, and risks to public.

These underlying issues with the Chinese CDC—especially its dwindling funding and lack of effective communication with public and other sectors—may explain the different fate of the two main surveillance systems in China for detecting and monitoring emerging pathogens. One is China's national sentinel surveillance system for influenza-like illness (ILI), as mentioned

[19] U.S. Department of State, Office of the Spokesperson, "U.S.-China Strategic & Economic Dialogue Outcomes of the Strategic Track," Washington, D.C.: June 7, 2016. As of February 3, 2020: https://2009-2017.state.gov/r/pa/prs/ps/2016/06/258146.htm

[20] One hundred years of Influenza since the 1918 Pandemic -Is China prepared today? CCDC weekly; 2018:1 (4) 56-61.

earlier, anchored by more than 500 sentinel hospitals in 31 provinces.[21] The other is the national pneumonia surveillance system, which was built and has been maintained by China's CDC since 2004. The latter is designed to monitor pneumonia of unknown etiology (PUE) and facilitate timely detection of novel respiratory pathogens, such as SARS or the 2019 coronavirus. The ILI system is able to use the hospital information system for case recording and outpatient monitoring since the network is hospital-based. The PUE surveillance system, on the other hand, belongs to the CDC system, and has not been used consistently. One study found that 29 percent of community-acquired pneumonia cases that met the PUE criteria were not reported to the PUE system in 2009.[22] Only 1,016 PUE cases in all of China were reported during a nine-year period. A study showed that the number of cases surged when an outbreak occurred, either during the SARS outbreak or during A(H5N1) outbreaks. This surge may reflect enhanced administrative requirements from health authorities or enhanced clinician awareness of respiratory viruses.[23] This illustrated that the hospital system (a system paralleled to the CDC system) is in better fiscal condition to maintain a surveillance system compared with the CDC system, which is underused and not sensitive unless it is triggered by an established outbreak.

But a more fundamental question is, what role will China's CDC take in an outbreak response? From what I have witnessed in SARS and 2019-nCoV, the CDC's role is mostly that of consultation rather than decisionmaking.

2019–2020: Is 2019-nCoV Another SARS?

As millions of Chinese prepared to celebrate the 2020 Chinese New Year, the country was seized by anxiety over the emergence of a rapidly evolving epidemic of pneumonia associated with a new coronavirus, 2019-nCoV. At the time of this writing, more than 17,000 confirmed cases and more than 20,000 probable cases have spread throughout China and 23 other countries, causing more than 360 deaths. After person-to-person transmission was reported in four of the 23 countries known to be experiencing cases of the virus, the WHO declared a Public Health Emergency for International Concerns (PHEIC) on January 29, signaling global consensus on deeming the 2019-nCoV outbreak as an extraordinary public health risk. Therefore, to address the question, "Is this another SARS?" I will provide my thoughts from two angles: (1) Will the 2019-nCoV epidemic be similar to that of SARS? (2) What can we learn from comparing China's current response with that of SARS 18 years ago?

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[21] Dennis KM Ip, Qiaohong Liao, Peng Wu, Zhancheng Gao, Bin Cao, Luzhao Feng, Xiaoling Xu, Hui Jiang, Ming Li, Jing Bao, Jiandong Zheng, Qian Zhang, Zhaorui Chang, Yu Li, Jianxing Yu, Fengfeng Liu, Michael Y. Ni, Joseph T. Wu, Benjamin J. Cowling, Weizhong Yang, Gabriel M. Leung, and Honjie Yu, "Detection of Mild to Moderate Influenza A/H7N9 Infection by China's National Sentinel Surveillance System for Influenza-Like Illness: Case Series," *The BMJ*, Vol. 346, June 24, 2013.

[22] Nijuan Xiang, Fiona Havers, Tao Chen, Ying Song, Wenxiao Tu, Leilei Li, Yang Cao, Bo Liu, Lei Zhou, Ling Meng, Zhiheng Hong, Rui Wang, Yan Niu, Jianyi Yao, Kaiju Liao, Lianmei Jin, Yanping Zhang, Qun Li, Marc-Alain Widdowson, and Zijian Feng, "Use of National Pneumonia Surveillance to Describe Influenza A(H7N9) Virus Epidemiology, China, 2004-2013," *Emerging Infectious Diseases*, Vol. 19, No. 11, 2013, pp. 1784–1790.

[23] Xiaorong Guo, Dong Yang, Ruchun Liu, Yaman Li, Qingqing Hu, Xinrui Ma, Yelan Li, Heng Zhang, Xixing Zhang, Benhua Zhao, and Tianmu Chen, "Detecting Influenza and Emerging Avian Influenza Virus by Influenza and Pneumonia Surveillance Systems in a Large City in China, 2005 to 2016," *BMC Infectious Diseases*, Vol. 19, No. 825, September 18, 2019.

Agent, Host, Environment, and Transmission

2019-nCoV is the latest member of the coronavirus family. This type of virus is commonly found in humans and other mammals, such as bats, civet cats, and camels. In humans, coronavirus has four strains that cause mild clinical symptoms, usually referred as the common cold. Two other strains are more lethal: SARS and MERS. Currently, I do not know whether the new virus will cause clinical symptoms similar to the strains that cause the common cold or to the two strains of coronavirus that caused large-scale epidemics and fatalities. We do know that it shares a high degree of genomic similarity to coronavirus in bats, and to SARS-CoV in humans.[24] It is as contagious as SARS, but so far, the reported statistics indicate a lower proportion of case fatalities (around 2–3 percent) compared with SARS (10–14 percent) and MERS (35 percent).[25] The severe symptoms and fatalities seem to be associated with individuals with medical complications. These estimates can change if the virus continues to mutate or the data are, in reality, different from what we know. For now, the moderately high infectivity, mild clinical symptoms, and wide-ranging incubation period may mean that the novel virus is less harmful to individuals but may coexist with humans and become endemic. In this sense, 2019-nCoV has the potential to cause a pandemic.

The physical and social environments of 2020 are also very different from those in 2002. China is wealthier and more globalized today. Today, there are 739 international air travel routes originating from China—three times the number of routes (233) available in 2002. On average, 51 million people travel between China and another country per year, a number many times higher than the 3 million back in 2002. The epicenter of the outbreak, Wuhan, is a major transportation hub in central China, sometimes known as "Chicago of China." On an average day, 30,000 people fly out of the city, and many more use the bullet trains from three railway stations in the city. The outbreak began right before the Chinese New Year, a time during which more than three billion trips typically occur under normal circumstances. January is also the time when students from overseas colleges to return to school after the winter break and students from Chinese universities start the winter break. The environmental difference between the 2019-nCoV epidemic and SARS is the scale of mobility, which makes the global spreading of the disease much easier than that for SARS.

Prevention and treatment methods are similar between SARS and 2019-nCoV. In both cases, vaccine development takes months to a year and can hardly be helpful in stopping the outbreak. Quarantines, travel bans, and case-tracing can slow down the disease transmission and buy precious time for countries to plan their responses, but they are not perfect prevention methods.[26] Quarantine will only be effective if it can guarantee stopping people's mobility, which is hard to do for a city of 11 million people. Early detection is conducted using proper reverse transcription

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[24] Peng Zhou, Xing-Lou Yang, Xian-Guang Wang, Ben Hu, Lei Zhang, Wei Zhang, Hao-Rui Si, Yan Zhu, Bei Li, Chao-Lin Huang, Hui-Dong Chen, Jing Chen, Yun Luo, Hua Guo, Ren-Di Jiang, Mei-Qin Liu, Ying Chen, Zu-Rui Shen, Xi Wang, Xiao-Shuang Zheng, Kai Zhao, Quan-Jiao Chen, Fei Deng, Lin-Lin Liu, Bing Yan, Fa-Xian Zhan, Yan-Yi Wang, Gengfu Xiao, and Zheng-Li Shi, "Discovery of a Novel Coronavirus Associated with the Recent Pneumonia Outbreak in Humans and Its Potential Bat Origin," bioRxiv, January 23, 2020.

[25] Chen Wang, Peter W. Horby, Frederick G. Hayden, and George F. Gao, "A Novel Coronavirus Outbreak of Global Health Concern," *The Lancet*, January 24, 2020.

[26] Jennifer B. Nuzzo, "Past Epidemics Prove Fighting Coronavirus with Travel Bans Is a Mistake," *Washington Post*, February 2, 2020.

polymerase chain reaction (RT-PCR) testing kits, thanks to the Chinese scientists who have isolated the novel virus, conducted genomic sequencing, and shared the data with the world in an astonishingly short amount of time. This has helped to identify the virus and has enabled China and other countries to develop effective testing kits for early detection. The treatment of 2019-nCoV mostly focuses on supportive therapy, but a few antiviral medicines are being used experimentally.

The Chinese Government's Response to 2019-nCoV

The Chinese government's response to 2019-nCoV has followed a similar pattern to that of the SARS outbreak and is characterized by three common features: (1) delaying public acknowledgement of a public threat, (2) downplaying the severity of the outbreak in its early days, and (3) relying on quarantine, social control, and large-scale health care system mobilization to stop the outbreak. The current response also has a few major differences, including the use of social media, better research, and technology, which have helped mitigate some of the negative effects.

The first common feature response of SARS and 2019-nCoV is the delay in acknowledging the initial case cluster to be a public health threat. If we recognize that stability is what the Chinese political system values most, and an acute public health threat, such as an epidemic, is precisely the "black swan" that can threaten such stability, then it is not too difficult to understand the Chinese government's reluctance toward acknowledging an epidemic. China's law prohibits anyone from talking about a public health threat before an official government announcement. For the government to make an announcement on an epidemic, a full process of upward reporting and verifying at every political level has to be accomplished. Once the verified report reaches the Ministry level, a special expert group is often sent to investigate. Following such a process, a timely acknowledgement of an epidemic to the public is almost impossible. The exception has been when social stability itself is being threatened. For example, we saw Guangdong government officials breaking the silence three months after the first SARS case only when the public panicked after seeing phone messages regarding a deadly flu in February 2003. We also saw Wuhan health officials announcing the 27 cases of 2019-nCoV on December 31, 2019 after a few doctors in Wuhan sent WeChat messages warning their acquaintances about a "SARS-like" pneumonia. (The informants were later publicly reprimanded by the government.) In this case, wide use of social media, no matter how closely monitored, helped the local officials significantly shorten the waiting period that is usually required for an official announcement.

The second characteristic of the government's response is the downplaying of the severity of the threat at the beginning of an epidemic. For SARS, the results from the first investigation did not alarm the Ministry—and therefore, there was no public announcement—in January 2003. For the next two months, the government continued downplaying the severity of SARS to the public until the Minister of Health was fired in April. In this recent response to 2019-nCoV, the first expert team went to Wuhan in January 2020 and concluded that there was no person-to-person transmission and the outbreak was well controlled after the closing of the seafood market where many cases (not all) were identified. For days, the local health officials assured the public that there were no new cases in Wuhan and no cases outside Wuhan. This inaccurate portrayal of the disease may have allowed sufficient time for the virus to be spread widely in Wuhan, to other cities in China, and to the world. It was not until the 2019-nCoV cases were confirmed in Thailand and Japan in patients who had had no exposure to the seafood market that the MOH

sent a second expert group to Wuhan on January 19. This time, person-to-person transmission was immediately confirmed, and the national case reporting system was triggered on January 20. Although the downplaying of the severity of the epidemic did occur, this time it only lasted 20 days, compared with the 2.5 months during the SARS outbreak. This was due to better biomedical and research capacity of the Chinese researchers in 2019. Chinese scientists were able to quickly culture the virus and share the genomic sequencing data with international researchers by January 11. The genetic sequencing data helped many countries quickly develop testing kits for early detection of the disease. When cases showed up in Thailand and Japan, international genomic researchers were able to quickly identify the matching genomic patterns and confirm the presence of 2019-nCoV. This success helped provide the evidence for understanding the greater geographic spread of the epidemic and the role of person-to-person transmission. During the SARS epidemic, however, because of the lack of virus identification, China's pneumonia outbreaks were not linked to those in Hong Kong and Vietnam until four months after the index case happened.

Finally, during SARS, once the government finally geared up to stop the outbreak, they swiftly initiated a quarantine policy. With 2019-nCoV, the decision on quarantine was made three days after the government accepted the fact that the outbreak was fueled by person-to-person transmission. This time, the scale of the quarantine was unprecedented. The mayor of Wuhan announced that the government would shut down all public transportation, including airports and railways, in Wuhan—a city of 11 million people—on January 23, two days before the Chinese New Year. The national government also employed social policing to enforce self-quarantine, canceled public events, and prohibited crowd gatherings across the country.

Without a vaccine, a quarantine is one of the few effective ways to prevent disease transmission. China's decision on a city lockdown has been praised by the WHO and probably buys precious time for many other countries to activate their public health responses. However, there are debates on the effectiveness of the lockdown over such a large area. First, some would argue that by issuing a lockdown only two days before the Chinese New Year, the government missed many people who had left earlier, since new year travel usually starts a week before the new year. The lockdown also took effect a day after the announcement, and many people from Wuhan rushed to get out of Wuhan before it started. As the mayor of Wuhan mentioned in a news conference on January 27, about five million people had left Wuhan by then.[27] Second, the lockdown of a city of 11 million people made it harder to implement the typical door-to-door or community-by-community screening, assessment, and provision of supportive care that usually happens after a quarantine is established. Quarantine may also bring heightened fear and stigma among the affected population, accelerate the shortage of medical supplies and health care resources, and provide a false picture that the epidemic is under control. In addition, the economic impact of the quarantine can be large.

SARS cost the world 40 billion USD and China 1 percent of its GDP in 2003. China may suffer more economic loss this year due to the 2019-nCoV, given that quarantine was initiated before the Chinese new year and at a relatively early stage of the epidemic. (Quarantine may last longer than two months.) In 2003, the industries hurt most were tourism, retail, and entertainment, which was 43 percent of China's GDP. Today, these industries account for

[27] Gerry Shih, "Coronavirus Prompts CDC to Expand Travel Warning to All of China; Top U.S. Health Official Urges Beijing to Admit Disease Experts," *Washington Post*, January 27, 2020.

54 percent of the GDP.[28] China now contributes 17 percent of world's economy, compared with 4.3 percent in 2003, when the SARS epidemic was unfolding. China's current stature in the world economy means that the impact of 2019-nCoV outbreak is likely to substantially exceed that of SARS.

Currently, the national case report system is in use, and the case numbers have surged in the last weeks. However, given that many hospitals in China are overwhelmed by the large volume of people with cold-like symptoms coming for testing and treatment because of the fear of the epidemic, patients are often being turned away, and delayed diagnosis and deaths that are not counted (when infected people die before the diagnosis or at home) are both possible. The two new 1,000-bed hospitals that China built in two weeks may help relieve the severe shortage of hospital beds and improve health care for many infected people. It may also help improve the accuracy of the epidemic's statistics.

In summary, the 2019-nCoV is the third of its type, after SARS and MERS, to cause a global outbreak. The Chinese government's response to 2019-nCoV has been similar to that of SARS; however, the initial delay and the "downplay" time were much shorter this time due to the widespread use of social media and the much-improved local research capacity. The unfolding battle against this new pandemic, meanwhile, highlights the importance of transparency and open collaboration among scientists globally. It is a reminder that all nations should prioritize and protect global health research, capacity building, and cooperation.

Recommendations

Given that my fellow panelists both have more experience on leading pandemic preparedness programs in the United States, I will focus my recommendations on the China-related issues. I have short-term, medium-term, and long-term suggestions.

Short Term

First, China is on the front line of a full-fledged battle with the new coronavirus. Health care workers are exhausted, and testing kits and personal protection, such as face masks, goggles, and gloves, are all in short supply and have been rationed.[29] At this time when many Chinese people are suffering from illness, anxiety, and uncertainty, it is important and opportune for U.S. public health and health care professionals to reach out to China and provide humanitarian and technical aid. Such support will boost the morale of their Chinese colleagues, serve as an international witness to the health care professionals' work at the front line of the epidemic, and help provide technical support on trials of the latest antiviral medicines. I am quite encouraged to hear that the U.S. CDC office in Beijing will be hosting a medical team in the near term.

Secondly, any efforts by the U.S. government to reduce stigma and unfriendly gestures toward people from China and Wuhan at this tense and sensitive moment will increase the soft

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[28] Bloomberg News, "Coronavirus Is More Dangerous for the Global Economy than SARS," January 31, 2020. As of February 3, 2020:
https://www.bloomberg.com/news/articles/2020-01-31/the-coronavirus-is-more-dangerous-for-the-economy-than-sars

[29] Rosie Perper, "As the Wuhan Virus Spreads, Doctors in the City Say They Face a 'Flooding' of Patients and Not Enough Protective Gear," Business Insider, January 24, 2020. As of February 3, 2020:
https://www.businessinsider.com/wuhan-coronavirus-doctors-wuhan-patients-protective-gear-2020-1

power of the United States and bring more goodwill from Chinese people toward the United States. Conversely, stigma, prejudice, and any punitive remarks will preclude any sense of goodwill and will also more likely undermine the level of transparency the Chinese government is willing to allow now.

Finally, given that the WHO has declared 2019-nCoV a PHEIC, there are concerns regarding developing countries that do not have a health care system capable of stopping the spread of the virus. In the worst-case scenario, the epidemic may affect more people in these countries when the epidemic subsides in China and the United States. The U.S. CDC may consider working with China's CDC and the China International Development Cooperation Agency (CIDCA) to map out potential collaborations to help these countries in distress.

Medium Term

Once the epidemic is under control, studies on the country response systems and global pandemic management will begin. It might be valuable for the United States to help lead the evaluations with government officials and scholars from China and other countries. There will be several questions for China to contemplate: What can China do in the future to improve communication about new public health threats? What can be done to increase the transparency about the occurrences and the severity of the outbreak? To what extent are quarantines effective, and how should they be implemented? How can China make its CDC more sustainable and improve multi-sector communications? The lessons learned will benefit not only China, but also other countries that encounter similar issues.

To take such a leadership role, I hope the U.S. government can build a realistic and consistent policy about future U.S.-China collaboration on global health and seek consensus with China on what data to share and what rules to follow.

Long Term

As I mentioned earlier in my testimony, during most of the years between SARS and 2019-nCoV, the United States and China were working side by side to confront the challenges of epidemics. In doing so, both countries have benefited from capacity building for their current and future public health workforces. In our current situation, as the first phase of the trade war is resolved, this could be an opportune time to restart the U.S.-China dialogues on economy, diplomacy, and security. I hope U.S.-China collaboration on global health and pandemic preparedness will benefit from these future talks between the two countries.

Mr. BERA. Thank you, Dr. Bouey.
Mr. KLAIN.

STATEMENT OF MR. RON KLAIN, FORMER WHITE HOUSE EBOLA RESPONSE COORDINATOR, 2014–2015

Mr. KLAIN. Chairman Bera, Ranking Member Yoho, other members of the subcommittee, thanks for having me. I move you—I commend you for moving quickly to hold this hearing.

At the outset I want to make two preliminary points:

First, while scientists are working at unprecedented speed to learn more about this virus, we still know less about the coronavirus today than we did about Ebola in 2014. There are many important gaps to be filled in.

Second, I want to say a word about partisanship. I am a political partisan, that is well known, but I testify today the same way I approached serving as Ebola Response Coordinator, putting politics aside. Epidemic response should not be a partisan issue. The coronavirus will certainly not ask anyone's political affiliation before infecting them.

With that introduction, I want to turn to the lessons from the Ebola response. That response was not without problems, and particularly early on. But, ultimately, President Obama launched a whole-of-government effort, he appointed me to lead a team at the White House to coordinate it. The president ordered the first ever deployment of U.S. troops to combat an epidemic. He implemented innovative policies and travel screening and monitoring, and worked with this body to pass a $5.4 billion bipartisan emergency response package.

This response improved preparedness at home, and put over 10,000 people, civilians and soldiers, government employees, contractors, and NGO members on the ground in Africa to help; a gargantuan effort. The epidemic was tragic, a loss of 11,000 lives or more, but experts had forecast a death toll of more than 1 million. Thus, as part of a global response, with Africans playing the largest part, America helped save hundreds of thousand of lives.

Here at home, after some initial missteps in Dallas, no one contracted Ebola on U.S. soil. And the evacuation of Americans from Africa with Ebola saved lives and resulted in no spread of the disease here.

And the benefits of this response continues to this day. With Congress' support we stood up a national network of medical facilities that remain prepared now to respond to cases of dangerous infectious disease. Nothing like that existed before. The response helped develop an effective Ebola vaccine being used now in Central Africa. And new therapeutics have dramatically reduced the mortality rate of Ebola.

Tom Friedman recently wrote that the Ebola response was "President Obama's most significant foreign policy achievement for which he got little credit precisely because it worked, demonstrating that without America as quarterback, important things that save lives and advance freedom often do not happen."

Now, the challenges we face now from the novel coronavirus have many differences from those that Ebola posed, but also some key

similarities. And I want to try to quickly run through seven lessons from the Ebola response that should be applied today.

First, in a scenario like this one there is no substitute for White House leadership. There should be a single high-level official inside the National Security Counsel overseeing the response. At the end of my tenure as Ebola Response Coordinator, President Obama accepted my recommendation to create a permanent pandemic preparedness and response directorate inside the NSC.

President Trump initially continued this structure. But, unfortunately, in July 2018 he disbanded this unit. The gap that created for this response is significant.

Now, last week's decision to create a task force to oversee the coronavirus response is a valuable step, but I think it is insufficient. That is not a criticism of its chair, Secretary Azar, for whom I have a great respect, but reflects the fundamentals of bureaucratic behavior, the realities of the competing demands on a cabinet secretary's time, and the need to ensure foreign engagement at a high level. This response should be lead by a full-time senior appointee at the White House.

Second, the U.S. must lean forward to fight this epidemic overseas. Unlike West Africa in 2014, China said they would not accept thousands of U.S. responders on the ground. But that does not mean our focus is limited to the homeland. Nations poorer than China may see outbreaks and need direct help. Our diplomats should be engaged around the globe.

The best way to keep Americans safe is to eschew isolationism and help other nations combat the virus.

Third, this Administration must ensure that science and expertise guide our actions. There are going to be many hard decisions in the days ahead. The American people are fortunate to have the world's leading experts on infectious disease working in this government, experts who have served Democratic and Republican presidents alike. This expertise should be paramount in decision-making.

Fourth, the Administration should quickly transmit to Congress an emergency funding package to respond to the coronavirus challenge. Federal agencies, State and local governments, hospitals testing and treating patients will need assistance. Research and deployment of new therapeutics and vaccine need government support.

While the response has benefited from the new emergency fund that Congress created on a bipartisan basis last year, that probably will not suffice. The Trump administration should send an appropriate funding request to this body.

Fifth, the Congress must do its job in dealing with the coronavirus. It needs to act on any such request quickly and should, perhaps, work now to be ready for it.

In addition, hearings like today's are very important. The emergency fund needs to be increased and paired with a fund to support the development of therapeutics and vaccines on public/private partnerships.

And, finally, Congress must renew funding for the full network of Ebola and special pathogen hospitals created in 2014 that is set to expire in May.

Six, this should be a wake-up call to finish the work we need on pandemic preparedness. Recently we marked the 100th anniversary of the single largest mortality event in American history, the Spanish flu epidemic. At present it seems very unlikely that the coronavirus poses a similar threat. But even if this epidemic is not the big one, as Representative Yoho said, it is a reminder that the danger lurks and it will come.

The global health security agenda, bipartisan commissions and reports, and my own writing have set forth detailed agendas of what we need to do to prepare for this event that have largely been ignored. The time to act is now.

And seventh, finally, all of us need to be on the watch for discrimination against Chinese Americans and speak out strongly against it. The coronavirus strikes humans, not people of any particular race or ethnicity. Chinese Americans and Chinese immigrants in America are no more likely to get this disease or transmit it than anyone else. It is critical to speak out against discrimination. Americans need to pull together to fight the disease, not pull apart to fight one another.

Thank you again for having. And I am ready to answer your questions.

[The prepared statement of Mr. Klain follows:]

"Lessons from the West African Ebola Response:
How to Save Lives and Protect our Nation
During the Novel Coronavirus Epidemic of 2020"

Testimony before the
Asia, Pacific and Non-Proliferation Subcommittee
of the
House Committee on Foreign Affairs
February 5, 2020

By
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White House Ebola Response Coordinator, 2014-15

Submitted on: February 3, 2020

Chairman Bera, Ranking Member Yoho, other members of the Subcommittee:

Thank you for inviting me to participate in this hearing today. I want to commend the Subcommittee for moving quickly to gather information and educate the public about the novel coronavirus epidemic that originated in Wuhan, China, and has now spread to countries around the world, including our own. It is a privilege to be able to present my perspective on this, and to answer your questions about the emerging US response.

Before I begin my substantive presentation, I want to make two preliminary points.

First, as frustrating as it may be, it is important to understand that what we know about this epidemic and the virus that causes it remains uncertain and preliminary. We know much less about coronavirus today than we did about Ebola in 2014. Scientists in the US and around the world are working at unprecedented speed to improve our understanding about the virus and its spread; new papers are being published every day, literally. Nonetheless, there are critical questions about the virus, how quickly it spreads, how infectious it might be, how lethal it will be – and others –for which we still do not know the answers, and that (once learned) will have huge impacts on our response. Part of this is due to a lack of full transparency and cooperation by the Chinese government, which hopefully will improve. But part of this is simply due to the fact that it takes time for science to learn key facts about a novel virus. As someone who has coordinated the policymaking and implementation of a response to an epidemic, I know that these information gaps are vexing: many decisions cannot wait, and have to be made on the best information available. But it is important that we understand this limitation, understand that policy choices will have to change as our fact base changes, and that we be careful not to make definitive or declarative pronouncements when the science does not justify such statements.

Simply put, at present, we do not know how serious this epidemic will become, how many people – in China, in the US, and elsewhere – will contract the virus, how many will die, and how grave the threat is to our own country. Such a lack of knowledge does not counsel a lack of action, indeed, perhaps it counsels just the opposite. But it does advise modesty in the forcefulness of our conclusions, and awareness of the need to make changes in policy choices as we gain more information.

Second, a point about partisanship and the response. I am an outspoken political partisan – that is well known. But I come here today in the same way that I approached my tenure as White House Ebola Response Coordinator: putting partisanship and politics aside. The coronavirus will not ask any person's partisan affiliation before infecting them. There is no Democratic or Republican approach to fighting infectious disease; only sound and unsound measures.

To reinforce this point: what we did during the Obama administration's Ebola response relied heavily on lessons learned and expertise acquired during the Bush administration's efforts to fight AIDS and malaria in Africa. Key players in the Ebola response were veterans of both

Democratic and Republican administrations. President Obama's emergency funding package passed this House with strong, bipartisan support; our implementation of it domestically involved work with state and local officials from both parties, and the input of Members of Congress of all political and ideological camps. Saving lives, abroad and at home, turns on putting politics aside and allowing science, expertise, and sound decision making to govern our actions.

With these two preliminary points made, I want to move on to the subject of my testimony today: how the lessons we learned during the Ebola response in 2014-15 should shape how our government – in the Executive and Legislative branches – approaches the threat now posed by the novel coronavirus.

To be clear, the Ebola response was not without its own problems and mistakes. Particularly early on, the danger to Africa and the world was underestimated; early signs of progress in containing the disease in the Spring of 2014 led to a false sense of security. The fact that no Ebola outbreak prior to 2014 had ever involved more than 500 cases of the disease also led to a false confidence that a large-scale epidemic was unlikely. Early initiatives in West Africa lacked a full understanding of the complexities of implementation there and cultural and religious barriers to some aspects of the response. And confusion and a lack of preparation led to missteps when the first case of Ebola arrived in Dallas, Texas, in late September, 2014.

But ultimately, the US got the response organized; quickly adapted and improved its approach; and made adjustments to what responders were doing in Africa and here at home. President Obama mustered an all-of-government response to the challenge, authorized the first-ever deployment of US troops to combat an epidemic ("Operation United Assistance"), appointed me to lead a team of dedicated and talented professionals at the White House to coordinate this effort, implemented novel and innovative policies on travel screening and monitoring, and worked with Congress to enact a $5.4 billion emergency package to fight the disease abroad and improve our preparedness at home and around the world for future such epidemic threats.

In the end, the epidemic in West Africa was tragic: an official death toll of over 11,000, with the real count likely higher. But the backdrop for this loss of life must be considered. In September of 2014, experts forecast that the death toll could be over 1 million people; thus, the response succeeded in helping to reduce the projected loss of life by as much as 98%. America's actions – as part of a global response, with Africans playing the largest part, deserving the greatest credit, and suffering the harshest losses to its health care workers – saved hundreds of thousands of lives. It was a great humanitarian achievement.

Here at home, after the initial missteps in Dallas, no one contracted Ebola on US soil, and Americans evacuated for medical care in the US were successfully treated and released, with only a lone fatality. Once implemented, our monitoring system successfully insured no domestic transmission of the disease, routed suspected cases to prepared medical facilities

before those patients could be infectious, and enabled ample time for successful testing and response.

The ongoing legacy of this response is likewise enormous. With Congress' support, we implemented a national four-tiered network of hospitals and medical facilities that remain prepared to this day to identify and isolate cases of dangerous infectious disease, and to provide treatment to those who are infected – nothing like this existed in 2014 when the Ebola epidemic began, as many earlier investments made after the anthrax attacks in 2001 had been allowed to dissipate. The capacity to test for and promptly identify diseases like Ebola grew from three laboratories in the US in September 2014 to almost 100 by the end of that year. We developed rapid diagnostics that ended the risky practice of having patients wait days to learn if they were sick and/or infectious. Vaccines against Ebola were tested and developed, and as a result of that work, an effective vaccine now exists and is being used in the field. New therapeutics were developed that helped reduce the mortality rate of Ebola dramatically.

It is no wonder that this effort – without in any way minimizing the devastation in West Africa – is seen today as a huge success. Tom Friedman wrote last year that that West African Ebola response was:

> "[President Obama's] most significant foreign policy achievement, for which he got little credit precisely because it worked — demonstrat[ing] that without America as quarterback, important things that save lives and advance freedom at reasonable costs often don't happen."

From mid-October 2014 to mid-February 2015, I was proud to lead the team at the White House that coordinated this response. We saw the weekly new case count in West Africa drop from about 1,000 a week to fewer than five a week, at which point the President announced the end of Operation United Assistance and began the withdrawal of US troops serving in that mission.

This was a truly global response, with tremendous contributions by government officials, NGOs, and volunteers from around the world, with a particularly close partnership with our allies in the United Kingdom and France. With regard to the US part of this global effort, special thanks should go to the men and women on the frontlines. This includes members of the 101st Airborne (who constituted the bulk of Operation United Assistance), and also, civilian responders -- via US AID DART teams and CDC employees deployed to the region, and contractors who supported them. It includes the men and women of the US Public Health Service who staffed the Monrovia Medical Unit in Liberia. It includes career Ambassadors and other diplomats who served in all three effected countries with skill and played such a large role in the response. It includes the doctors, nurses and other health care workers – many of them volunteers -- who served in Ebola treatment units, hospitals, and other facilities – treating the sick under extreme conditions. It includes the scientists of the NIH and the CDC who pioneered new diagnostics, therapeutics, and vaccines. The US response put over 10,000

people – soldiers and civilians, government workers and NGO teams, contractors and volunteers – on the ground in West Africa in 2014-2015. It was a gargantuan undertaking, and a story in which all Americans should take pride.

To make that effort effective, and to match it with preparation and protection here at home, it took talented teams in Washington, in Atlanta at the CDC, and in government agencies and private health care facilities around the country. Public servants of all ranks and all levels worked around the clock. And as I mentioned before, Congress acted swiftly and on a bipartisan basis to approve most of the Obama administration's request for $6 billion in aid, less than five weeks after it was sent to Capitol Hill.

I would be remiss if I did not say that, of course, President Obama, too, deserves credit for this success. He weathered sharp criticism for his actions during the Ebola response, and had to ignore pressures to put aside the advice he was getting from top scientists and medical experts. He made difficult decisions about the actions we took abroad and at home. He communicated openly and directly with the American people, and chaired repeated meetings of the National Security Council as the response took shape. He used every tool at his disposal – from his bully-pulpit (to destigmatize survivors by publicly hugging Ebola patient Nina Pham in the Oval Office after her discharge from the hospital), to authorizing the massive deployment to West Africa, to personally engaging numerous world leaders to activate their resources and support for the response, to urging Congressional leaders to approve his emergency spending package, and much more: he did so much to achieve these results.

The challenge we face from the novel coronavirus that began in China late last year contains many similarities, but also, many differences from the challenge posed by the Ebola epidemic in West Africa in 2014-15. It would be a mistake to simply repeat what we did at that time, given those many differences. But likewise, it would also be a mistake to ignore the lessons that can be learned from that response, given the similarities. And hence, I am grateful for the opportunity to talk about the lessons I think are most applicable from this experience, to be applied in the current circumstance.

Among the many possible lessons that should be employed now, there are seven in particular that I would like to call out today. I will do so briefly, but I am happy to go into more depth on any of them in response to your questions or any subsequent follow-up from the Subcommittee.

First, in a complex, rapidly evolving scenario like the one we are seeing, there is no substitute for White House coordination and leadership. There should be a single official inside the National Security Council at the White House, supported by an appropriate team, working on this full-time, overseeing our response.

This does NOT mean that we need a "Coronavirus Czar" to serve the same role that I played during the Ebola epidemic. At the end of my tenure as Ebola Response Coordinator, I said, in fact, there should never be another specific "Disease Czar" at the White House. Instead, I

recommended to President Obama that he create a permanent "Pandemic Preparedness and Response Directorate" inside the NSC, led by a Deputy National Security Adviser-level appointee with direct access to the President as needed, to oversee ongoing work to prepare for future infectious disease threats, and to coordinate a response when such threats arrive.

President Obama accepted this recommendation, and set up such a unit in 2015. President Trump continued with the structure, and named Admiral Tim Ziemer – a respected long-time public servant – to fill this post. If Admiral Ziemer were still in place, I believe that America would be much better positioned to respond to the coronavirus threat today.

But unfortunately, in July of 2018, when John Bolton took over as head of the NSC, he disbanded this unit, and Admiral Ziemer was reassigned to US AID. As a result, there has been no special unit at the NSC to oversee preparedness for epidemics, or the current response. In addition, the Trump administration has dismantled the Homeland Security Advisor structure that Presidents Bush and Obama used to deal with complex transnational threats, further undermining our preparedness for events like these.

The administration's recent decision to create a "Task Force" to oversee the response, led by Secretary Alex Azar, is a valuable step, but an insufficient one. This is not a criticism of Sec. Azar, who I believe is playing a critical role in the response, and brings great experience and judgment to this effort. But a response to a challenge like this one requires action from a number of federal agencies outside of Sec. Azar's authority: Homeland Security, State, US AID, Transportation, DOD – and probably also Labor, Commerce and Justice. Given the nature of Cabinet government, the fundamentals of bureaucratic behavior, and the realities of competing demands on a Cabinet secretary's time, no single Cabinet agency head can lead such a response. There are global implications as well: in dealing with other nations as the world shapes and implements the response, a single point of coordination inside the White House both emphasizes the response's importance to the President, and facilitates high-level government-to-government cooperation.

For these reasons, and many more, an effective response to a challenge like coronavirus should be led by a full-time, high-level appointee at the White House. Ideally that decision would be made by the Executive Branch, but another avenue to achieve this structure would be for Congress to move ahead on the Global Health Security Act (HR 2166), introduced by Reps. Connolly and Chabot, as that bill would create much of this apparatus by statute.

Second, the US must "lean forward" to fight this epidemic overseas, using all of the tools and leverage that it can commit to the effort. Unlike West Africa in 2014, China in 2020 probably does not need, and would not accept, thousands of US responders on the ground treating patients, testing new approaches, conducting research, providing infrastructure, and helping bring the disease under control. This is a huge difference.

But that should not get us off our toes, or have us sitting back and believing that our only sphere of action is the homeland. Dr. Tony Fauci of NIH has publicly urged the deployment of

medical researchers and investigators to China, and key administration leaders – at State and the White House – should apply pressure to encourage the most open access possible. Nations less advanced or well-resourced than China may experience significant coronavirus outbreaks and require more direct forms of US assistance, akin to what we provided during the 2014 Ebola epidemic, albeit on a smaller scale. We should send CDC experts wherever they would be helpful, and task US AID to determine where DART teams and other assistance could be usefully deployed. Likewise, we should bolster preparedness in low-income countries now – before the disease spreads further – to avoid spread in places where local containment efforts might fail. Our diplomats should be empowered and engaged around the globe, and our government must press WHO – with stronger leadership today under Dr. Tedros Adhanom Ghebreyesu than it had during the 2014 Ebola epidemic – to do the right thing.

This is a global challenge, and America must provide global leadership. There is no room for isolationism or withdrawal. The best way to keep Americans safe is to contain and combat the virus overseas. We should do this not only because it is generous or humanitarian – though it would be generous and humanitarian, both great American traits – but because it will make America safer and reduce the risk of a larger outbreak here.

Third, the administration must ensure that science and expertise guide our actions, not fear or politics. One of the first casualties in an epidemic is rational thinking, replaced by fear, bias and poor decision-making. We saw this in 2014 with calls for needless travel bans and baseless quarantine restrictions; President Obama was right to reject these misguided calls, and to implement travel and monitoring policies based on the scientific advice he got from the nation's leading experts.

Travel warnings and advisories make sense in the face of the coronavirus; telling people not to take trips to China right now, except in special or compelling cases, is wise. That is quite different from banning people – including, for example, Americans in China, or family members of Americans – from coming back home, or going for essential purposes. Congress should press the administration for the science behind recently announced quarantines and exclusions of non-US persons from travel to the US; also, it should inquire as to the effectiveness of the measures being implemented. Banning travel to or from China altogether would impede the flow of medical assistance, expert investigation, or other key response functions; in addition, key supplies – including supplies critical to our own health care system – come from China.

More generally, there will be many policy decisions to be made in the days and weeks ahead. Science, medicine and expertise should guide them. The American people are lucky to have the world's leading experts on infectious disease working in their government, led by men and women like Tony Fauci at NIH and Anne Schuchat at CDC. They have served Democratic and Republican administrations, and helped Presidents with a wide variety of political perspectives save lives and protect our nation. This expertise should be paramount in decision making at all levels of government.

Fourth, the administration should quickly assemble, and transmit to Congress, an emergency funding package to ensure that there are no delays in responding to the coronavirus challenge. Fighting the coronavirus overseas and at home will cost money. HHS (and its units like ASPR, BARDA, NIH and CDC), US AID, DHS, and other agencies will have costs. State and local governments will feel a pinch from monitoring contacts of those who have the virus, and tracking and monitoring individuals who have been in effected countries. Hospitals treating patients with the virus may need assistance. Research and deployment of new therapeutics and vaccines needs government support, and funding for private-public partnerships. The list of needs goes on.

While Congress responded quickly to a funding request from the Obama administration for Ebola, even that short delay had some impact on our response. The delay of months in approving funding for the Zika response was quite consequential. Most importantly, Congress is unlikely to even begin considering these funding needs until the administration makes a request.

The Trump Administration has tools that we lacked in 2014, most importantly – and to the Congress' credit – it has a new Emergency Fund on which the Administration can (and has) drawn. But I expect that this will not be adequate, and it would be wise for the administration to begin putting together a Supplemental Funding request immediately.

Fifth, Congress must do its own work in dealing with the novel coronavirus. The burden of action does not rest entirely with the Executive Branch; Congress too must do its part.

This starts with the point I made above: once the administration makes an emergency funding request, Congress should act on it without delay. Of course, Congress should not rubberstamp the request: any proposal to use public funds should get scrutiny and review. But prompt action must drive this process, and divisions between parties or chambers should not result in delay. Indeed, Congress might want to begin now – given the expertise of many in this body – preparing for such a request even before it is made, and contemplating the likely funding needs.

But Congress' role does not end with acting on the emergency funding question; there are a number of other elements of the response that demand Congressional attention. Hearings like today's are important, to help ascertain how the response is going and where it needs to be improved. Congress wisely funded the Public Health Emergency Fund last year – but did so only on a limited basis. Adding to that funding, and funding an additional emergency fund specific to the development of therapeutics and vaccines via public-private partnerships, should be considered.

Additionally, as I wrote in the Post with Dr. Syra Madad in December – before the coronavirus hit -- Congress is overdue to renew the funding for the network of "Ebola and Special Pathogens Hospitals." This network was created during the Ebola epidemic in 2014, and funding for it expires in May of 2020. Pending legislation would fund only the 10 most advanced such

facilities, and would end federal funding for the 60 other hospitals that screen, test, and provide initial treatment for these cases. Allowing this funding to expire in May would be a huge mistake; funding for these specialized facilities should be renewed, and the network should be strengthened with greater help for frontline facilities, EMS responders, and other touch points in our medical system that are least prepared and most exposed. .

Sixth, both the Executive Branch and the Congress should take this as a wake-up call to finish the work we need to do on pandemic preparedness and readiness. Recently, America marked the 100th anniversary of the single largest mortality event in our history: the Spanish Flu epidemic of 1918-19. More Americans died from this epidemic than from World War I, World War II, the Korean War, and the Vietnam War - -combined. While, on the one hand, science has made great strides since 1918, on the other hand, increased global travel, human incursion on animal habitats, and the stresses of climate change have raised the risk that we will face such a "great pandemic" once again.

At present, it seems very unlikely that the coronavirus poses such a threat to the United States – but we cannot know for certain. Moreover, even if this current epidemic is not "the big one" that is coming, it is a reminder that this danger lurks, and our preparedness for it is lacking. As Dr. Ashish Jha of the Harvard Global Health Institute often says, "Of all the things that can kill millions of Americans quickly and unexpectedly, an epidemic is probably the most likely … and the one in which we invest the least to prevent."

The Global Health Security Agenda, legislation such as HR 2166, Blue Ribbon Commission reports, table top exercises, proposals from members of this Subcommittee – and my own extensive writing over the past five years – have set forth detailed agendas of what we need to do to prepared for this event. These bipartisan calls for action have largely been ignored. The current public focus on infectious disease generated by the coronavirus should spur us into action. The time to act on this agenda is now. If we wait until the catastrophic pandemic arrives, it will be too late.

Seventh, we need to be on the watch for discrimination against people in our country of Chinese origin and ancestry, and speak out strongly against any such fear-driven racism. The coronavirus strikes humans – not people of any particular ethnicity or race. Chinese-Americans or Chinese people in America are no more likely to get the disease, carry the disease, or transmit the disease, than any other group of people.

Yet we have already seen signs that such people are the targets of discriminatory fear – with some already being hassled, threatened with expulsion from schools and other mistreatment. As fears of the coronavirus accelerate, so too will these incidents. This kind of discrimination not only is wrong, but also makes it harder to combat the disease. If some members of the Chinese-American community feel that they are likely to face hostility, they are less likely to work closely with authorities, and less likely to heed advice of public health experts.

It is incumbent on every person in authority in this nation to speak out against such racism, and to ensure that this does not become part of our civic life during the coronavirus epidemic. Americans need to pull together to fight a disease, not pull apart to fight one another.

In closing, I want to thank, again, the Subcommittee for holding this hearing, and for inviting me to participate. I stand ready to answer your questions about any of these points, or any other aspects of the response.

America has the tools, the talent, and the expertise to combat the coronavirus, both abroad and at home. The question now is whether our leaders, in the Executive Branch and the Congress, will deploy them effectively; act promptly and wisely; rely on expertise – not bias and fear; organize and implement our response appropriately; and allow science and medicine to be our touchstone. For the sake of people around the world, and for the sake of the American people, let us work to see that it is so.

Mr. BERA. Thank you, Mr. Klain. And thank you to all the witnesses.

I will now recognize myself for opening questions, and then I will recognize the ranking member and other members for 5 minutes for the purpose of questioning our witnesses.

Let's touch on a couple areas that I think each of you touched on in your opening statement. I understand the initial reaction to say, you know, let's try to contain this virus at the epicenter in China. That, you know, just given the worldwide spread of these cases how little we know about the transmission at this juncture.

It seems as though, you know, we are beyond the point of, you know, trying to contain this at the epicenter.

Maybe starting with you, Dr. Nuzzo, and, you know, just going down the line, how effective is this travel ban? And you touched on it that it actually may worsen, worsen things right now in concentrate.

Dr. NUZZO. Thank you, Chairman Bera.

I, as I mentioned, am worried about the implications of the travel ban. We often see when we have emerging disease outbreaks out first instinct is to try to lock down travel to prevent the introduction of virus to our country. And that is a completely understandable instinct.

I have never seen instances in which that has worked when we are talking about a virus at this scale. Respiratory viruses like this one, and like others, they just move quickly. They are hard to spot because they look like many other diseases. It is very difficult to interrupt them at borders. You would need to have complete surveillance in order to do that, and we simply do not have that.

In China we are looking for largely sick people. I mean, other countries we are only looking for people from China. So, we are going to miss transmission elsewhere.

So, for that and other reasons I do not believe that it will be able to keep the virus out of our border.

I am, though, very worried about the potential diversion of resources because this was apparently, it was a decision that caught many public health folks off guard. And they are now trying to figure out what to do. And so, I talked to one health department who has 31 staff working around the clock supporting two quarantined individuals. And I just think, as this epidemic grows that is not likely to scale.

So, I am worried about that. And then I am also worried about the chilling effect that attends the potential to erode, well, our relationship with China that we are critically dependent on right now for the supplies of the things that we need to be able to manage our own cases. But, also, we just need more information.

And as you mentioned in your opening remarks, China will be the source for that information in large part.

Mr. BERA. Right.

You know, maybe, Mr. Klain, Dr. Nuzzo touched on the supply chains and the interconnectedness of it. How concerned should we be about those supply chains? And, you know, obviously they are global supply chains as well, and the medical supply potentially needed here but also in China?

Mr. KLAIN. Yes, Congressman. We do not have a travel ban, we have a travel band-aid right now.

First, before it was imposed, 300,000 people came here from China in the previous month. So, that horse is out of the barn.

Second, what we have restricted is not travel to or from China but passports to and from China. There is no restriction on Americans going back and forth. There are warnings. People should abide by those warnings. But today 30 planes will land in Los Angeles that either originated in Beijing or came here on one stops. Thirty in San Francisco, 25 in New York City. OK?

So, unless we think that the color of the passport someone carries is a meaningful public health restriction we have not placed a meaningful public health restriction.

And then to get to your question, exempt from the President's travel restriction, of course, is the import of goods from China and, of course, the people who fly the planes and drive the boats that bring those goods from China. We couldn't ban that activity. We vitally need that. 90 percent of the antibiotics in this country come from China. All kinds of vital medical supplies. Dr. Nuzzo mentioned the PPP—PPE we will use to treat people.

So, travel bans, even putting aside Dr. Nuzzo's concerns, that is not what we are imposing, that is not what exists. What we should be focused on is monitoring the people who are here who have been in China in the past 14 days. That is complicated. That is hard. We built a path-breaking system to do that in the Ebola response. This is much larger and more complicated.

And I do not think we have heard answers—I hope Congress will get them—but what the Administration is doing on that, which really should be our public health priority.

Mr. BERA. And maybe in the limited time I have left, Dr. Bouey, you have a unique perspective having trained in China. And, you know, from your perspective, how best can we assist the Chinese? And, again, from the congressional perspective we are not looking at this as adversarially, we are looking at this as collaboratively.

Dr. BOUEY. Thank you. I agree wholeheartedly with Dr. Nuzzo and Mr. Klain that the travel ban does not cause—does not help that much in this, the current situation.

I want everyone to understand that China, Chinese scientists look up to the American scientists highly. The United States has helped China to build a public health system, and has helped with capacity building after SARS.

So, they are always looking at the U.S. as a leader in this field and for U.S. to make this decision. So, I think that is why China is a little bit surprised and also feel hurt.

And I also, my own feeling is that with the travel ban that should come with other policies. It should not be the only policy that U.S. announced to China. Humanitarian aid, the public health assistance should, and the other support should be in place at the same time as the travel ban.

Mr. BERA. Great. I am out of time.

Let me go and recognize Ranking Member Mr. Yoho from Florida.

Mr. YOHO. Thank you, Mr. Chairman.

Great testimony. I really, really appreciate it. I have a ton of questions let me go through.

Dr. Nuzzo, you said we should look to help China versus blocking them out. What kind of help would you recommend other than what we have done?

Keep in mind if China will not accept our offer to help with the CDC, what else can we do? I would like to hear from you.

Dr. NUZZO. Yes, thank you, Ranking Member Yoho, for that question.

First of all, I want to make clear that I think one of the concerns that I have about our——

Mr. BERA. Dr. Nuzzo, could you speak into the microphone, please.

Dr. NUZZO. Excuse me. Sorry.

I want to make clear one of the concerns that I have pertains to not just our response to this virus but also how China is responding. And the disruptions that I spoke to earlier I believe will be exacerbated by the lock-downs that China is taking in an attempt to control the virus.

Since those lock-downs have been announced, every single province in China is reporting cases. So, I am increasingly not convinced that those measures are helping. And I am really worried that they are going to cause disruptions.

And so, I think it is essential that we encourage China, pressure China, whatever the negotiations that we do, to pursue strategies for controlling the virus that are not going to be disruptive, that will not suspend the production of critical medical supplies because people cannot get to their jobs.

Mr. YOHO. Let me interrupt you right there because that is something I want to talk about.

Dr. NUZZO. Right.

Mr. YOHO. You know, does the fact that China did a massive quarantine—our reports are 50 to 58 million people have been quarantined—does that concern you in addition to the rapid construction of the 1,000-bed hospital, which was a monumental feat, and they have another 1,500 going in—so China is putting a stellar effort into this—that alone would be a concern for all of us if they are that concerned about it, yet the information coming out is, well, we have it kind of under control. And then the furloughing of workers, I have heard up to some, they are told not to come back till sometime in March.

I think this is a big concern that we need to look at. And I am all for quarantine if it is done properly but, as Dr. Bouey said, it cannot be the only thing. You have to have a systematic way of doing it. I mean, we do that with equines with influenza outbreaks in shows.

And it is not—somebody asked me, well, do you care more about horses than people, or do you want to treat people like horses? I am, like, no. But do we put more emphasis on our animals than we do our people?

This is a national security thing and we cannot afford it. And if the economic impact that China is going to feel I think that is something that we need to look at very seriously that this has the potential.

And I want to bring up, does anybody know the duplication rate of this virus compared to the influenza or SARS?

Dr. NUZZO. I completely agree with your concerns about the internal response. I do not believe that the massive lock-downs in China will lead to a cessation of transmission of the virus. I think that it is already causing a tremendous amount of disruption.

When you hear stories about people having to walk to the hospital, sick people having to walk to the hospital because transportation has been shut down, that is really what raises warning flags in terms of the public health benefits of these measures.

Mr. YOHO. But does not that also show you the severe threat that the Chinese see themselves?

Dr. NUZZO. I think that everybody is viewing this severely. I will tell you that many of these tendencies we saw during SARS as well, and we often see when there is an emerging infectious disease outbreak like this.

Mr. YOHO. All right. I want to go to Mr. Klain because he is jumping over there.

Mr. KLAIN. Yes. Thank you. I appreciate that, Congressman.

Look, I think that there are two points, or three. One, I agree that there are a lot of signs that this has been more severe in China than has been reported. And I have no doubt that the actionable cases is significantly higher.

Mr. YOHO. Well, let me tell you what I heard yesterday from reliable sources. It is over 100,000 people have been exposed.

Mr. KLAIN. Yes. Yes, I——

Mr. YOHO. What we have heard. And the duplication rate with influenza was about 1.3 percent. That means one person can affect about 1.3 people. And that was the same with SARS, a little bit higher for SARS.

This one they are estimating right now between 2.5 to 3. So, that means one person is affecting 2.5 to 3 people. And that is not being reported. And if that is true and the Chinese know that, they need to let that—us know because that shows you the virulence of that and the rapid spread.

Mr. KLAIN. Yes, I agree. We do not really know what the R-nought is, we do not know a lot of these facts. We need to get this information, I agree.

The last thing I want to say is about this Chinese internal quarantine. Just to put a finer point on what Dr. Nuzzo said, I am highly skeptical that this is effective.

You know, I think we all saw that picture of all the bridges out of Wuhan with no one leaving. But if you look at that picture, on the other side were literally thousands of trucks on their way into Wuhan.

Who drove those trucks? And what happened after they unloaded them?

Think about trying to quarantine a city the size of New York City in the United States, and imagine that no one would come in and no one would go out. How would you feed those people? Who would run the power plants and all these things.

Mr. YOHO. That is going to be found out in the future.

Mr. KLAIN. Yes. And so what I am willing to bet right now is that people are coming and going from Wuhan every day. And it

is just a practical reality of the size and the scope of what we are talking about.

Mr. YOHO. I am out of time. Thank you.

Mr. BERA. Thank you, Mr. Yoho.

Mr. Sherman from California.

Mr. SHERMAN. First, this outbreak shows the wrongheadedness, almost immorality of the Chinese Government excluding Taiwan from the World Health Organization. We have to be on Team Human, not on Team Disease.

You know, whenever something new like this happens we react. Almost always it is an overreaction until there is that one case where the reaction is not an overreaction. We are in a race to develop vaccines and cures. And that can happen only with cooperation between the United States and China.

We look back at November 2002 when it took months for the scale of Chinese SARS crisis to be exposed. This time, as the New York Times reported, at critical moments in the first 7 weeks between the appearance of the first symptoms in early December and today, the government's decision—between when the first appearance and the government's decision to lock down the city officials chose to put secrecy and order ahead of openly confronting the growing crisis.

So, I will ask each of our witnesses, are the Chinese being honest as to the extent of the epidemic?

Does the World Health organization have sufficient access to facilities and to patients? Doctor?

Dr. NUZZO. I cannot speak to intention. I think there have been critical information gaps.

Mr. SHERMAN. Uh-huh.

Dr. NUZZO. The one that I am particularly interested in learning more about and think we should have more information about is about the severity of cases.

You know, to the point about how—is the situation more severe than they are letting us know? Are there more deaths or dying that we are not hearing about?

Mr. SHERMAN. OK.

Dr. NUZZO. One puzzling feature so far is that the cases that we have seen outside of China have been far more mild than what is going on in China. So, we need to understand why that is. And for that we need access to more data.

I have been encouraged that there have been a number of scientific publications that have come out already about this with Chinese and others, scientists from elsewhere on those publications. But I, as an academic, cannot even justify waiting for a publication to learn about these things.

So, I absolutely believe that more information is critical.

Mr. SHERMAN. OK. I do have limited time.

The Chinese have reported 24,000 cases and 490 deaths. Dr. Bouey, what——

Dr. BOUEY. My observations——

Mr. SHERMAN [continuing]. What do you think the number is?

Dr. BOUEY. Right. My observation is that there was delay of case reporting for sure before January 19th. After January 19th, the

government triggered a public health emergency. And that triggers the national case reporting system.

That case system was implemented after SARS. And as we know SARS better, well, then you know that at the end of the SARS when they set up this system they said, they put in a law that if anyone cannot report accurate numbers then they will be punished.

Mr. SHERMAN. I have to go to the other——

Dr. BOUEY. I think that is very well. But the problem is——

Mr. SHERMAN. Excuse me. I have limited time.

The Chinese have not involved the United States' experts to the degree they should. Are they, do we have sufficient numbers of people from Europe, Japan, and the World Health Organization on the ground to get us the information and to see that we are doing all we can to look for cures and vaccines? Mr. Klain.

Mr. KLAIN. I do not think so, Congressman. And, again, this is one reason why I think we need a high-level coordinator at the White House who can be in touch with foreign governments at other high levels. Again, Secretary Azar is competent and skilled, but this is an active diplomacy, not just health diplomacy but high-level diplomacy.

Our President should be on the phone with President Xi. You know, we should be engaging these other countries at a very high level. That is what we did during the Ebola response, very high level from the White House. And I think we need to do that here to get more American eyes on the ground there.

Mr. SHERMAN. And, again, I was asking not just about the U.S. Do any of our witnesses know the level of WHO, European, and Japanese experts on the ground in China? And is that sufficient?

Is China cooperating with any of the other advanced health organizations in the world?

Dr. BOUEY. My source is the news. And I know that the WHO has announced that they will—they have a team on ground. And I thought——

Mr. SHERMAN. They have a what?

Dr. BOUEY. They have an emergency team in Beijing.

Mr. SHERMAN. Uh-huh.

Dr. BOUEY. And I think the Director of the WHO was in Beijing I think since January 27th.

Mr. SHERMAN. My time has expired.

Mr. BERA. I recognize Mr. Perry for 5 minutes.

Mr. PERRY. I thank the Chairman, thank the witnesses.

We have ample evidence that China has undue influence over many U.N. organizations, including the WHO. The WHO continues to exclude Taiwan, that is an important player in this and many other things.

Do you, do all of you think that we can just unilaterally trust the World Health Organization to give an impartial assessment of China's response to the coronavirus?

Mr. KLAIN. I will start. I certainly do not think so, Congressman Perry. I think the WHO is performing better now than it was during the Ebola response 5 years ago. I think new leadership has helped.

But I think the delay in declaring a public health emergency international concern reflected Chinese influence there.

And think that, you know, the WHO is just one aspect of this response. They aren't going to treat people. They aren't doing research. They are important. The U.S. should support the WHO. But we need to be involved directly on our own in China and with our allies.

Mr. PERRY. OK, so that is fair. They have been complimentary of China's response but critical of other nations. I mean, do you take pause when you hear that?

Or, Mr. Klain, just for example, you are I guess a self-described expert having your involvement with Ebola, have you been critical of China's response?

Mr. KLAIN. Yes, I have, sir. I have published. And everything I have written about this so far that the Chinese have failed the test of transparency and cooperation, and that they, they definitely need to do better.

We should be very concerned about that. And we should be, as I just said a moment ago, engaging the Chinese Government at the highest levels to press the issue.

Mr. PERRY. Do you know——

Mr. KLAIN. This should be at the top of our agenda——

Mr. PERRY. Mr. Klain.

Mr. PERRY [continuing]. In our relations with China, sir.

Mr. PERRY. I understand.

Do you know if President Trump has or has not talked to the President of China about this?

Mr. KLAIN. I do not, sir.

Mr. PERRY. You do not know?

Mr. KLAIN. I do not.

Mr. PERRY. I mean, you would admit it is a little unfair to criticize it here when you just said you do not know if he—maybe he has, maybe he hasn't, I do not know. But you are making the claim here that he should have done it or should be doing it.

Mr. KLAIN. My claim is that he should have done it or should be doing it. I will say he hasn't said that he has done it. And the officials reiterate that the Chinese aren't cooperating yet.

Mr. PERRY. Mr. Klain, you worked on the Ebola virus outbreak in Sierra Leone, Guinea, and Liberia, is that, West Africa; is that about right?

Mr. KLAIN. Yes, sir.

Mr. PERRY. Yes. Are any of those nations communist nations?

Mr. KLAIN. Not to the best of my knowledge, sir.

Mr. PERRY. No. Right.

Are any of those nations seeking worldwide dominance over the United States of America, stealing somewhere between $300 and $600 billion in intellectual property annually, including medical technology?

Mr. KLAIN. No, sir. As I said, I am not here to defend China or its response to this virus. In fact, I have been critical of China and its response to this virus in virtually every answer I have given to the subcommittee today.

Mr. PERRY. So, in your view, what is the first responsibility of the U.S. Government regarding a pandemic, the coronavirus, Ebola? What is the first responsibility of the United States Government?

Mr. KLAIN. The first responsibility of this government is to keep the American people safe. And the best way——

Mr. PERRY. To keep the American people safe. That is right.

Mr. KLAIN. Yes, sir. And the best way to do that, as we did with Ebola, as we do with other things, is be engaged globally in helping nations fight these diseases overseas so they do not come here, sir.

Mr. PERRY. So, are you, are you advocating for a travel ban outright to China or from China? I am trying to get that from your initial testimony and I couldn't tell where you were. You were critical of the current situation but you did not offer your solution set as an expert, so to speak.

Mr. KLAIN. Sir, I did offer my solution set. It was that we monitor carefully everyone who has come to this country from China recently.

Mr. PERRY. How many people travel from China to the United States every single day, sir?

Mr. KLAIN. Well, before this outbreak it was about 8,000 a day.

Mr. PERRY. Eight thousand a day?

Mr. KLAIN. Yes, sir.

Mr. PERRY. And it is your studied opinion that we should let that happen unencumbered, unimpeded, under all circumstances and monitor those 8,000 people a day's whereabouts should this continue to progress and we found an outbreak in the United States of America?

Mr. KLAIN. Congressman, it is my studied opinion that we will never reduce that to zero due to trade and due to travel of Americans and Americans' family members. In fact, the President's order exempts 11 different categories of people from going back and forth to China, as well as hundreds of people a day bringing goods here.

Mr. PERRY. So, it is——

Mr. KLAIN. And so given that hundreds——

Mr. PERRY [continuing]. Zero or all?

Mr. KLAIN. No, sir. Given that hundreds of people, thousands of people will come here every day, I take it, sir, it is not your position that American citizens in China should be stranded there and unable to come back. And, given that, then the only practical thing we can do is to monitor those who are coming here to this country, who are bringing medicines to this country, who are bringing goods.

Mr. PERRY. May I close with the time I have, Mr. Chairman.

Mr. KLAIN. That seems like the only practical solution.

Mr. PERRY. Mr. Klain, we appreciate your experience, we do, and your expertise because you have done this to a certain extent, but I do not think that you have operated in the same realm with the Chinese Communist Government and their actions toward the United States. So, things are a little different.

And the other thing is, is that while you had a certain experience, it might not be the only way of doing things. And so while it is great to throw partisan shots, I mean, when you talk about bringing—I read your piece in The Atlantic, sir—I mean, you are talking about bringing countries and the United States together and not being paranoid. All you did was offer criticism and really no help. And that is not helpful at all.

And I yield back.

Mr. KLAIN. Well, Congressman, that piece included praise for Secretary Azar for the other aspects of the response, praise for the Administration's response, to a limited extent, in Congo to Ebola we have seen there.

I opened by saying this isn't a partisan issue, and I reiterate that this is not a partisan issue. What I do believe, though, is that if we do not engage globally—and, again, I have been very critical of the Chinese—we cannot keep America safe, sir.

Mr. PERRY. And I would agree with you. But instead of blaming America, you ought to look more toward the Chinese.

And I yield.

Mr. BERA. Great. And, again, the goal here is we want to be supportive of the Administration. Congress wants to be on the same page with the Administration. And we want to work with the Chinese to get ahead of this because this is a global issue.

With that, let me recognize Ms. Houlahan.

Ms. HOULAHAN. Thank you, Mr. Chair. Thank you all for coming today.

I am actually really intrigued by, Dr. Nuzzo and Dr. Bouey, your initial conversations about the fact that the travel bans and quarantines weren't necessarily the solution. I guess I am really struggling trying to understand, based on my limited understanding of biology, and I am a mere engineer, why is quarantining not appropriate? Why is it something that is not useful to this case?

How do we know what cases it is useful?

And because my limited understanding of biology is quarantining works, is there ever a situation where that would be something that would be useful? And when do we know when it is before it is too late?

Dr. NUZZO. Thank you so much. I will start with answering that question.

The challenge here is that we are talking about a respiratory virus that potentially has—and I take the earlier points, there are still some uncertainties about the incubation period—but potentially can spread between people quite quickly. So, it is very difficult to know where the disease is spreading because we just simply cannot get a hold of it, ahead of it in terms of your surveillance.

So, those sorts of circumstances makes quarantine challenging because we do not know who we should be quarantining fully. We may decide just based on the numbers of cases in China that we should quarantine travelers from China. But we do not actually know if travelers from other countries have the virus.

We also do not know if it is already here because we are only testing people who have a connection to China. So that makes it challenging.

Quarantine is actually not something that we routinely use in public health. Despite what you may have heard, it is actually something that we only use in very rare circumstances. We, in public health, when we talk about quarantine we mean restricting the movement of people that are not yet sick. We very frequently isolate people that we know are sick. It is a very routine and well-studied process. But quarantine is not something we routinely do. It is usually reserved for circumstances in which you have a small

group of people, perhaps in a measles outbreak in a vaccine-hesitant community.

Ms. HOULAHAN. So, is this a situation where you will know it when you see it? You will know that this is a quarantine situation and an effective one, and this just does not happen to be one? Or we are just speculating?

Dr. NUZZO. In this situation this definitely does not happen to be one.

Ms. HOULAHAN. And, Dr. Bouey?

Dr. BOUEY. My sense of a quarantine it is a primary prevention. So it is basically separating those who are sick versus those who are not sick.

So, without the vaccine, without the treatment usually we have to rely on quarantine on paper, on paperwork. But in reality, it often only slows the transmission, not prevents.

Ms. HOULAHAN. So, I am sorry to interrupt, because I do have very limited time I just want to talk about the vaccine or treatment.

Is there anything that we can do in the short-term with this particular situation with vaccinations or treatment from a congressional standpoint? Is there anything that we should be able to do for the forward-looking perspective because this may not be as bad as it seems to have been, at least initially. But at some point it will be, something will be.

I guess this is probably for Mr. Klain. Can you talk to anything, you mentioned maybe emergency supplemental funding?

Can you identify what programs specifically or what accounts would be useful, not just for this particular situation but for future situations as well?

Mr. KLAIN. Yes, Congresswoman. I think it is very—I think Congress last year expanded the public health emergency fund, considered but did not adopt a proposal to create a special fund to help seed public/private partnerships to accelerate the development of vaccines and therapeutics. And I think while that would probably be too late to really help with this epidemic, it might not be. And certainly it will be very helpful going forward.

I think, you know, that means putting more money also into BARDA, which plays an important part in turning this research and bringing it to the marketplace. We are always underfunded and always a little bit behind. But I think, you know, whatever Congress can do to supplement public/private partnerhips in this regard would be very useful for keeping the American people safe.

Ms. HOULAHAN. Thank you. And with the last minute of my time, Dr. Bouey, I was wondering, you did comment on the fact that there would be potential social, cultural, political, and economic implications to our current strategy. But you kind of left it at that.

Can you elaborate on what those—I know you said we do not know what they are—but could you speculate?

Dr. BOUEY. I was referring to the quarantine measures in China. Certainly economic concern is huge. And I think even China's government probably is considering, you know, how long this quarantine can actuate without harming the economy too much.

And of course it has social and cultural issues. People who are being quarantined are worried. They are nervous. And especially for the hospitals within Wuhan, they are overwhelmed. Certainly the new hospital will help a little bit, and the mobilization of resources help a little bit. But for people under quarantine it is a tremendous stress.

Politically, of course, there are lots of distrust, a lot of questions within China now. And, again, quarantine to lock down a whole city usually is not the best practice.

Ms. HOULAHAN. Thank you. I have run out of time.

I yield back.

Mr. BERA. Great. Thank you.

Let me recognize Mr. Mast from Florida for 5 minutes.

Mr. MAST. Thank you, Mr. Chairman.

I want to take a step back and ask that we all recall we have districts back home. And while we deal with national policy, the questions that we ask on this matter to individuals, individuals with children, individuals that go to work, individuals that are exposed to people that travel. We will all travel presumably Friday or Saturday back to our home districts. We are in a very international city here.

And I think, I feel as though the sense that I am getting from you all about quarantine not being the right path does not pass the test of common sense. But I do not want to dwell on that right at this moment.

What I want to ask first, No. 1, in the aim of speaking about people that we represent back home, if you were in Wuhan right now, any one of you, you all have experience with this, what would be your first or second or third line of defense?

How would you protect your family? How would you protect yourself? Would you wear a mask? Would you wash your hands? Does that not work? Would you not touch your eyes or your nose? Would you prevent your kids from going to school? What would you do?

Dr. BOUEY. Can I start with I think there are many other primary prevention methods. Health education is one. I think if people understand what is going on, and they understand the severity of the issue, and you let them know that how can they protect themselves and their families and their children——

Mr. MAST. That is the question I asked. If you could answer that for me it would be fantastic.

Mr. KLAIN. That would be through social media, through any channel we can have.

Mr. MAST. Social media is not protecting anybody in Wuhan.

Dr. BOUEY. The knowledge. The knowledge they can.

Mr. MAST. What do they do to protect themselves?

So, if there are people that come to our country because there is no quarantine on them because of this academic approach instead of common sense approach, what do people do to protect themselves when they are exposed to others?

Dr. NUZZO. I think what confused me about your question initially is the if you were in Wuhan. And I cannot speculate. I do not know what the situation is happening in Wuhan.

As I mentioned before, one of the great unknowns about this virus is the apparent discrepancy in what we are hearing about in

terms of severity and illness in China versus the more close to 150 cases that have been reported outside of China. The majority of the cases that have been reported outside of China have largely been mild disease, like other respiratory illnesses——

Mr. MAST. I apologize for cutting you off. But none of you are answering a very straightforward question.

Mr. Klain, you are presumably the expert on this panel. If you were there at ground zero, maybe you are not in a full-on TAP suit, but what would you do if your family was going to be in an area that was exposed to it? How would you protect your family from this? What is defense one?

Mr. KLAIN. Yes. So, Congressman, I think this goes back to your initial point, which is defense one would be get out. And the problem I think for this issue of travel bans and quarantines is that probably hundreds of thousands or millions of people have.

Mr. MAST. OK. No. 1, get out.

Mr. KLAIN. Right.

Mr. MAST. No. 2?

Mr. KLAIN. No. 2 would be, would be——

Mr. MAST. If you cannot get out of there, No. 2, what would you do?

Mr. KLAIN. Would be social distancing. Would be trying to have fewer interactions with people, yes.

But keeping your children home from school? We found in the past is when that happens, people's children leave the house and go to shopping malls and other places where they have contact with people.

So, you know, it is a tricky thing.

Mr. MAST. How would you physically protect yourself?

Mr. KLAIN. The only real way I think to physically protect yourself is to try to stay away from other people. I think if you are going to have exposure to other people, as we all do, you know, washing your hands, doing things to minimize the spread of the virus is good.

But, you know, get out of where the virus is, stay away from other people, and then engage in standard, you know, public health kind of practices, wash your hands, whatever.

Mr. MAST. I mean, we do not say whatever, this is a serious question.

Mr. KLAIN. Yes.

Mr. MAST. I mean, washing your hands might be a simple act, but it is a very serious thing when you are looking at a pandemic like this.

Dr. Bouey, one of your last comments that you made was about quarantine perhaps only slowing the transmission. Is there at this point a vaccine?

Dr. BOUEY. No.

Mr. MAST. So, would slowing the transmission be a victory?

Dr. BOUEY. Well, it is a victory for other cities, other countries.

Mr. MAST. Is it a victory for the United States of America?

Dr. BOUEY. It is a victory for human beings.

Mr. MAST. So, it is a victory to slow that. That being something that comes from——

Dr. BOUEY. I think so.

Mr. MAST [continuing]. Some point.

Dr. BOUEY. I am not all against the quarantine. I am just saying the quarantine policy should be evaluated very often. Now, every 7 days, every month, you know, it should be evaluated.

Mr. KLAIN. Congressman, my concerns about the travel policy is not an academic concern, it is that as a practical matter people are coming here from China every day. Every day. And we couldn't stop that unless your district does not want antibiotics and protection, and all the things that come from China every single day.

And so, we need to be honest about the American people, with the American people about the fact that we cannot keep people coming here from China. We are not going to keep Americans from coming home, for goodness' sakes, and there is no reason to think that a foreign national or an American anymore is likely to transmit the disease. In fact, we think they aren't.

So, I think reducing the number of amount of travel from China here is a, is a good thing. But I also think we need to be honest with people about the fact that we will always be at risk for this disease coming here because we will never turn off the supply of people, and planes, and ships altogether coming here from China given the interconnectedness of our world, interconnectedness of vital traffic back and forth.

Dr. NUZZO. Can I——

Mr. MAST. My time has expired.

Dr. NUZZO. I would just like to add that this has been worked out in a number of circumstances, including the lead-up prior to the 2009 influenza pandemic. And, essentially, the best evidence suggests that a lock-down of travel will at most prevent an introduction for perhaps weeks.

That is not meaningful in the context of developing a vaccine. A vaccine could take a year or more. It is not like flu where we have an exiting platform that we can use toe create a new version of a flu vaccine for the use in a pandemic.

So, I do not disagree that slowing is a good idea if it a meaningful amount of time that it can be slowed, and if the consequences do not, do not—aren't worse than the disease itself.

Mr. MAST. Right.

Mr. BERA. I appreciate the point that my colleague from Florida is making. I just want to emphasize one piece that, you know, we certainly have emphasized to the Administration is the best thing we can do right now is get the smartest people, our smartest epidemiologists and everyone working side-by-side with the Chinese and the global community to figure out as much as we can about infectiousness, incubation, transmission, et cetera.

And, again, the best thing we can do is get those folks into China. And the President may be working on this every day with phone calls, et cetera. But, again, we are here to help. And I do think we can then better answer a lot of those questions if we can get our folks into China to help answer some of those questions.

I am going to go to the chairman of the full committee, Mr. Engel. Mr. Engel, you are recognized for 5 minutes.

The CHAIRMAN. Thank you, Mr. Chairman. Thank you for calling this important hearing on the coronavirus outbreak. It is one of the

reasons why I love this committee, we are really right in the center of things, and quickly as well.

So, I want to start by expressing my sympathy and condolences to everyone who has been impacted by the outbreak, including the people of China, other affected countries, and those here in the United States. It is hard to imagine how painful and scary these past weeks have been for these families.

Here on the Foreign Affairs Committee we know that global health is critical to our national security. We held a hearing on women's health this morning. The rapid spread of the coronavirus over the past month shows this all too clearly. Our country needs substantial resources to strengthen our ability to prepare for and respond to public health crises like this. But instead of building up that capacity, the Trump administration has scaled down some of our most critical public health institutions.

Over the past 3 years, the Administration has slashed the budget for the Centers for Disease Control and Prevention, known as CDC, National Center for Emerging and Zoonotic Infections Diseases, and the CDC's Global Health Security Agenda, making it much harder for the agency to respond to outbreaks overseas.

And here in the U.S., our own response capabilities are diminished. State and local health departments, our first line of defense in public health emergencies, are short staffed, down tens of thousands of health workers compared to where we were just in 2008. This Fiscal Year President Trump is proposing a nearly 20 percent cut to the CDC's budget—and you heard that right. Just as we are confronting the coronavirus, the President wants to cut the very agency on the front lines of fighting the disease.

I think Americans from all corners of the Nation will find that extremely unwise, if not crazy. And I hope all my colleagues will join me in opposing this dangerous plan and committing to support the CDC's important work.

Rather, building up our institutions is critical. So is working hand-in-hand with other countries and investing in international bodies like the World Health Organization, WHO. In order for us to effectively fight this virus, we need to respond with evidence-based practices, transparency, collaboration, and communication.

To that end, I am glad that the Chinese authorities have been more cooperative partners with the United States and others in the international community in handling the coronavirus than they were during 2003 SARS outbreak. Maybe we learned something from that.

But the way the Chinese Communist Party has treated its citizens in response to this outbreak is horrifying: crackdowns on transparency and information, brave doctors and ordinary citizens facing draconian punishments merely for speaking about the outbreak. It is unacceptable and must come to an end.

And in our own country we need to approach this outbreak with a scientific, fact-based approach. The United States and other countries around the world have put in place unprecedented travel restrictions in response to the virus. These measures are not proven to improve public health outcomes, rather, they tend to cause economic harm and to stoke racist and discriminatory responses to this epidemic.

Now I will turn to ask questions of all witnesses. I must note I am profoundly disappointed that the Trump Administration would not agree to send any government officials to testify today. I understand that there was some kind of briefing today, but this hearing was set for a long time and we did not get any cooperation from the Administration. I personally asked the Administration to send a witness to the hearing. The American people deserve to hear firsthand what the Government is doing to protect them in this situation.

Nonetheless, I am pleased that we have such a distinguished panel of experts before us today.

So, thank you, Mr. Chairman, for holding this important hearing. And with that, I will move to my questions.

Over the past 3 years we have seen reductions in funding for epidemic prevention efforts abroad, attempted cuts to foreign assistance, including global health security funding, as well as the elimination of the NSC Global Health Security and Biothreats Directorate. How would you assess our Nation's current capacity to address epidemics, both here in our own country and in terms of offering our expertise to help other countries around the world?

Anyone who would care to answer that I would be happy.

Dr. NUZZO. Thank you. I would like to point out that this is not the only emergency that our scientists at the Centers for Disease Control are managing. They are also still trying to end an Ebola epidemic in the DRC. There are other important transmissions of polio in the world. This past year has been unprecedented in terms of measles cases.

So, I think what this points to is the need for continued support and increased support for the CDC and for their other health partners.

The CHAIRMAN. Anybody else?

Dr. BOUEY. Can I add?

The CHAIRMAN. Yes.

Dr. BOUEY. In the last 17 years, U.S. CDC has been working with China CDC hand-in-hand in every single pandemic or epidemic in China. And the current difficulty I feel as relates to your comments is the reduction of collaborations in the last 2, you know, 2 to 3 years.

The NSF, National Science Foundation office was closed in Beijing last—in 2018. The GAP program, the Global AIDS Program was closed last year. The NIH and CDC programs all reduced in size in Beijing.

So, when we talk about the influence, U.S. had a huge influence on Chinese public health a few years ago. But the problem is the interruption in the last few years.

Mr. KLAIN. Congressman, I would just reiterate what I said before you arrived. The best way to keep the American people safe is to engage globally and to help fight diseases overseas. President Obama made a big point of creating a, helping to create a CDC in Africa so that we could help fight disease there.

Global health security is American security, and we need to continue to support and invest in that.

The CHAIRMAN. Let me—thank you very much—let me ask one final question. And if it was asked and answered, please let me

know. And that is how would you rate the response to this epidemic by the Chinese Government and by WHO and other U.N. specialized agencies so far?

What has been the impact of Taiwan's exclusion from the WHO and other U.N. specialized agencies given its proximity to the Chinese mainland, its status as a transit and trade hub, and the handful of cases reported there as well?

Dr. NUZZO. I study outbreaks, and epidemics, and pandemics in various different settings. And in every situation that we have looked at there have always been challenges, there have always been missteps, and there have always been mistakes.

I have not personally seen yet a mistake that I haven't also seen in other places. And so, while I think that there is an important gap in our knowledge and for which I think it is incredibly urgent that we gain additional data in order to answer some of these questions that we still have, I also have to imagine that any country dealing with tens of thousands, or essentially tens of thousands of cases now would be hard pressed to handle all that it needs to do, including managing the patients, standing up enhanced laboratory surveillance, rolling it out to all of the hospital clinics, making sure the hospitals have all the personal protective equipment that they need.

So, I am very reluctant to criticize anybody at this point.

In terms of the World Health Organization, they are limited by their member States. The international health regulations were established to define the maximum efforts that countries should take in the name of disease control. They are inherently looking at international issues and not what individual countries do within their own borders so long as it does not spill across their borders.

What we have seen from the WHO is that they have been very reluctant to call out countries, all countries, not just China. And there was questions earlier about whether they were unduly influenced by China.

Just looking at the Ebola outbreak in the DRC, there was a long period for which many individuals thought that they should have declared a public health emergency of international concern, and they did not want to. And I believe, and the director-general said, and I believe him at his word, that one of his deep concerns was that in doing so it would encourage countries to take non-evidence based actions like banning travel and trade, et cetera. Very much mindful of what happened in Ebola in 2014.

This was, again, reiterated as a concern about declaring a public health emergency of international concerns with this current outbreak. And what we saw was that countries even before the declaration, but certainly after the declaration did just that.

So, I believe that WHO is in a very difficult position of, one, not having enough resources itself. It is still very much on the ground in essentially a war zone in the DRC, trying to stop the spread of Ebola, and now also managing this and many other outbreaks in insecure settings in the world.

Mr. BERA. I want to be conscious of each of the member's times. If you have anything to add to that otherwise, go ahead.

The CHAIRMAN. Thank you.

Mr. BERA. With that, let me recognize Ms. Wagner from Missouri.

Mrs. WAGNER. I thank the Chair very much, certainly for organizing this timely hearing. I want to thank all of our witnesses for being here today.

I represent the St. Louis area and greater metropolitan region, and many, many of my constituents do business, they study, and travel in China. And I appreciate the opportunity to learn more about the rapidly changing coronavirus outbreak so I can share best practices and up-to-date information with other St. Louisians in Missouri's 2d congressional District specifically.

And I would like to just say this, contrary to some of the things that are being represented here today, I have had a number of briefings. I probably attended at least three myself. My staff has had daily briefings from the NIH, CDA—or CDC, Health and Human Services, the Administration. So, I want to applaud the Trump administration for an amazing amount of information, transparency, and trying to keep us up to date on things that are really very frightening I think globally, and certainly here at home.

I also would like to thank Representatives Connolly and Chabot for introducing the bipartisan Global Health Security Act to establish a permanent official responsible for epidemic and pandemic preparedness. I am proud to be an original co-sponsor of the bill. And I urge my colleague to support it.

Health systems across the developing world lack the capacity to control the spread of the novel coronavirus. Mr. Klain, how is—I will ask the question and then I want to put a context on it—I want to know how the U.S., and it sounds broad, but how is the U.S. helping these partners to prepare?

I know for a fact that the CDC and the NIH here in the United States of America have been begging in very early January China to come in, help, be there on the ground. And it took them 3 weeks, it wasn't until about the 28th or 29th of January before they finally said, oh, please, rush on over. We could use the help and the assistance.

And we are there on the ground in a very big presence and way.

So, what else are we doing to help, help these partners prepare? What more needs to be done?

Mr. KLAIN. Well, thank you, Congresswoman. And I was waiting for either Mr. Connolly or Mr. Chabot to show up here to praise their bill that you are the co-sponsor of.

Mrs. WAGNER. Yes.

Mr. KLAIN. I THINK H.R. 2166——

Mrs. WAGNER. Yes.

Mr. KLAIN [continuing]. Is vital legislation. I hope this committee and the Congress will act on it, bipartisan as well, as it should be.

What I would say is, and this is why I have been a little perhaps more critical of the Chinese than Dr. Nuzzo, I think this delay of a month of getting our people on the ground there in China is hard to explain and hard to justify. And I think it is good that we have some people there. We should have more experts there.

We have the best experts in the world here working for our government. Having them on the ground I think would be of use.

Mrs. WAGNER. And we were trying for over a month to get——

Mr. KLAIN. Yes. Yes, ma'am.

Mrs. WAGNER [continuing]. Get there. And we will come up with a cure and the vaccine. Now, sadly, it will take months and months to probably do that, but.

Mr. KLAIN. Yes, ma'am.

The other thing I would say is we also needed to work with the nations around China; right? We are going to see spread of this virus certainly through the region, probably globally, but certainly first and foremost through the region. Other nations in the neighborhood have less advanced health care systems than China, less resources, less ability to manage this than even the Chinese do. So, we ought to be reaching out to them to see what we can do to help them. They may need more direct assistance from us in terms of the response.

And, of course, we need to be beefing up our own preparedness for cases here.

Mrs. WAGNER. Well, I think we are doing that. I think we are very much on top of that. That is certainly what the briefings have been telling, telling me.

Dr. Nuzzo, what challenges does the U.S. face in deploying testing services?

Dr. NUZZO. Thank you. That is an area that I am particularly concerned about. There seems to be a testing lag right now for individuals here in the United States. That is in part because the CDC has been doing all of the testing. And I know that they plan to roll test kits out to the State laboratories, which I think will be essentially important. And it is essential that States think about how they are going to be doing the testing and what the plan is for that.

But we do not just need it at public health labs, we also need it at hospitals and health clinics so that doctors can use it to guide treatment and isolate patients.

Mrs. WAGNER. Well, and in addition, given that respirators and other medical equipment are largely produced and shipped from China, how can we best address supply chain issues—I keep hearing this over and over again—supply chain issues that could become critical if the coronavirus were to spread more widely in the U.S.?

I mean, I talked about some of the medical equipment and respirators that are mainly sourced, being produced in China. But it is also masks, it is so many things. So, can you speak to that, please?

Dr. NUZZO. Yes. So, we need to assessing the medical supply chain and see where there are potential vulnerabilities. That is, I know, work that has been ongoing. And I have been encouraged to hear that the agencies have been working on that. But it also needs to be addressed at the political strategy level in China because the decisions that they are making internally could impact that beyond just our own assessment of what country is producing where, and can we get it from somewhere else.

This summer, the U.S. experienced critical shortages in the drug Heparin, which is a blood thinner.

Mrs. WAGNER. Right.

Dr. NUZZO. This shortage was in part due to China's efforts to control the spread of African swine fever, which is not a human

disease, it is a pig disease. They were culling pigs. You need the pigs to make the Heparin.

So, we have already seen the impact of how decisions made in the name of controlling a disease can affect health and health care here in the U.S.

Mrs. WAGNER. I have a lot of other questions. I will go ahead and submit them.

I appreciate the chair's indulgence. And I will yield back. Thank you, all, for being here.

Mr. BERA. Great. Thank you. I appreciate my colleagues. And, again, a compliment to the Administration that the briefings that they have been giving us, their experts, et cetera, on a regular basis, as well as to our staff. That said, we would love for those experts to come before our committee in a public setting to answer those questions.

And what we are really asking for is how can we be of assistance? You know, what do they need from Congress in terms of appropriations, et cetera? And, again, these experts ought to be talking to the public and not just Members of Congress.

With that, let me recognize Ms. Spanberger from Virginia.

Ms. SPANBERGER. Thank you very much, Mr. Chairman. And to our witnesses today, thank you very much for what has been a very interesting conversation focused on the epidemiology of this disease and how it is spreading, and also a policy discussion related to what we can do as Members of Congress.

And, Mr. Klain, I would also like to thank you for your very specific 7-point plan and recommendations of things that we should see from a Federal perspective out of Washington to help with this and future, future viruses and future outbreaks.

And you have talked about the need for high-level diplomacy to address threats on the ground. And so, I would like to briefly just talk about that from this committee's perspective. Looking long-term, I have deep concerns about the fact that we have vacancies at State Department and other agencies, we have individuals who continue to work in acting positions not fully confirmed.

And reflecting back on your experiences working with other outbreaks, looking forward toward what we are dealing with now, could you just tell me briefly what your day to day experiences were, how much you were interacting with diplomats and with civil servants, and how some of these staffing challenges might be impacting our ability to react currently?

Mr. KLAIN. Yes, thank you, Congresswoman.

My job in coordinating the Ebola response was really to oversee the all-of-government response that President Obama summoned. And that means daily interactions with key people at the agencies at all levels, some at the cabinet level, some below that.

I think the good news is many really high-quality people remain in key posts. Tony Fauci is a national icon and hero. Dr. Schuchat at the CDC, others throughout the government. We have great people, Ambassador Green at USAID for example.

But I do worry about some of the gaps, particularly at DHS. You know, Congressman Perry was saying how could you possibly screen all these people coming here, and so on and so forth? That

is a DHS function. It will require great skill and organization to do that. I worry about the vacancies there.

I worry about the loss of institutional capacity for highest levels of the State Department, which has to manage so much of the logistics of an international response.

So, there are gaps. We have some great people in our government. We have some gaps in our government. And we are going to need to manage all that.

And last, as I said, I think someone at the White House really needs to be running this every day to help fill those gaps, but also to be interacting with other countries. I had daily calls with people in Liberia, Sierra Leone, Guinea, weekly calls with my counterparts in the U.K. and France. These are high-level interactions that really are needed to make a global response like this effective.

Ms. SPANBERGER. Thank you very much.

And, Dr. Nuzzo, as we are looking at contagious outbreaks, and in this case there is a contagious outbreak that is happening on the other side of the world. And all of us represent districts here in the United States. My question for you is how could or how should the Federal Government work in ensuring that medical providers across the United States can deal with some of the concerns, have the information they need, have the resources that they need? And that is one part of it.

And then the other part of it would be how can we help as Members of Congress to ensure that the information is getting out there and that these physicians and hospitals have what they need?

And do you anticipate that there are specific resources that will need to be mobilized to support clinicians across the country if we do see increased spread here at home?

Dr. NUZZO. Yes, thank you.

I had said earlier that although we have a perception of this as an epidemic that is happening across the world, we actually do not have enough information to say for sure where it is happening. We are only testing around people's connections with China.

Ms. SPANBERGER. Does that mean that are you asserting that it could be elsewhere and we are not yet attuned to that?

Dr. NUZZO. Yes.

Ms. SPANBERGER. OK. Thank you.

Dr. NUZZO. And that is what other countries are doing as well. I mean, it could very well already be here.

And I think an important thing for us to all consider in thinking about this is it is not just about how many cases we have in the world but our level of concern should be tiered to what our perception of the severity is. And I continue to be encouraged by the fact that we are seeing many, many more mild cases than we initially thought were possible, particularly outside of China.

As I said earlier, we need to understand what is going on in China about those severe cases and deaths to know if they are in the people that we would expect to have severe illness and death regardless of what pathogen, what respiratory virus they have.

It seems like some of the death reports that that is the case, the elderly and people with underlying medical conditions.

Ms. SPANBERGER. Uh-huh.

Dr. NUZZO. And if you walk into any hospital in the United States and just look for people suffering from respiratory viruses you would see disturbing things.

I think the critical thing that we need here in the United States is enhanced diagnostic capabilities. We are moving test kits to the State labs, which will be important for supplementing our understanding of the virus and where it is, and potentially to think about expanding the categories of people that we test. But we also need this in health care clinics so that they do not have to wait a day or more to get a test result for a patient to make a decision about whether or not to isolate somebody, how they should treat them, et cetera.

And although we have heard a lot attention on medicines and vaccines, there is less attention to diagnostics. And so, I think that is where a funding opportunity as well as funding for State health departments and hospitals who are going to be on the front lines of this.

Ms. SPANBERGER. And just a followup point quickly on that. So, in the absence of those diagnostic tools in clinics and with health providers across the country, the alternative then is what?

Dr. NUZZO. The alternative is you do not get tested for coronavirus. I mean, we are only at this point testing absent the people who are traveling. But in the United States you have to have a lower respiratory infection and have traveled to Wuhan specifically.

Ms. SPANBERGER. Uh-huh.

Dr. NUZZO. Or, if you have traveled to China, broader China you have to be hospitalized for your infection.

So, we are only looking at a very small number of people. And so your earlier point about people's level of concern, et cetera, I think having diagnostic tools to help know what people's illnesses are will be useful.

Ms. SPANBERGER. And in the absence of that testing, from your perspective and your role, how does that contribute to the spread of disease at a faster, slower?

Dr. NUZZO. It absolutely contributes to the spread oft he disease because we do not know where it is. We do not know who to stop from coming, and we do not know who to isolate.

But I continue to be encouraged by the appearance of mild symptoms because it is important to recognize that we live with a whole lot of respiratory viruses that do not, we do not have hearings about.

Ms. SPANBERGER. Thank you. I have gone well over time. Thank you very much, Mr. Chairman. I yield back.

Mr. BERA. Thank you.

I recognize Ms. Titus from Nevada for 5 minutes.

Ms. TITUS. Thank you, Mr. Chairman.

Dr. Bouey, do you need to finish that conversation?

Dr. BOUEY. If I could. I would, because Dr. Nuzzo mentioned several times that the cases outside China are milder, I, you know, no one—I agree with her question, but some hypotheses or, you know, potential answers are in China, especially in Wuhan, within China there are different, we see different percentage of fatality. Wuhan is the highest.

So, I wonder if Wuhan they, only hospitals have noticed people who have the most symptoms. So there is a, it is a reflection of a lack of resources medically.

Ms. TITUS. Well, thank you.

Ms. Spanberger, you got that? OK, thank you.

Well, now I would like to ask you something. In your remarks you said that in 2003 the industries hurt most by SARS were tourism, retail, and entertainment. And at that point those industries made up 43 percent of China's GDP. They now account for 54 percent. And China contributes a much larger share to the world's economy.

I serve as the co-chair of the Travel and Tourism Caucus, and I recognize the huge impact of tourism on local economies. Also, China has expressed concern about travel restrictions that have been announced by the White House and noted correctly that the World Health Organization advises against the application of restrictions of international traffic, based on the information that is currently available.

Could you address how we might balance U.S. security precautions with the negative impact that these restrictions on travel have had on travel and tourism here in the U.S., and on international commercial activities? And then either one of you could also weigh in.

Dr. BOUEY. So, if I can say quickly, that I think both quarantines and travel bans, all of these social distancing measures can harm the economy. So, it is always a—so, often I tell people, I am a public health researcher, a public health worker, then I am all for social distancing. But usually it is not just me talking, it is the economy is also talking.

So, as you mentioned that in my report I provided some statistics that it is going to harm China's GDP. And how much, it depends how long the quarantine will be on, how long the travel ban will be on. So, I urge all the policymakers to think about these measures as temporary measures and certainly balance the economic loss versus health care concerns.

Ms. TITUS. Mr. Klain?

Mr. KLAIN. Congresswoman, I would just add we live in a global economy, interconnected economy. It is impossible, impossible to cutoff the flow of people from China to the United States. They are needed to bring vital goods to the United States by boat and by plane.

We have Americans coming back, to and from, back from China, family members, so on and so forth.

So, my point about travel bans is beyond the effectiveness issue that Dr. Nuzzo has raised, as a practical matter we do not have one, we will never have one. And, therefore, what we need to do is to monitor the people who have been in China recently who are here in the U.S. and pose public health measures on a very large scale. This is a complicated, it is a hard problem to detect if those people get sick, to isolate them, and to treat them.

This isn't about academics, it is the only practical solution on the facts we face here.

Ms. TITUS. Dr. Nuzzo?

Dr. NUZZO. I was just reacting to the notion of monitoring. And I agree that it is a preferable approach than the restriction of travel and the quarantine. I am less optimistic about the impact of those measures. And just reflecting on Ebola, that we monitored 30,000 individuals and found not a single case of Ebola. And, yet, those programs that were essentially necessarily set up overnight, in many respects diverted resources from, I think, more important work.

So, I, I used to be a public health practitioner, so I am thinking from the field and what it means for them. You know, these measures are only as effective as people believe in their utility. There was an important paper where a bunch of clinicians were monitored for their symptoms for Ebola upon returning. And a large, surprisingly large percentage of them reported that they lied about their temperatures because they did not believe that they should be monitored.

So, nothing is perfect. And if that is where we need to go I, truthfully, from an epidemiological perspective think that those approaches are more about politics than public health. But if that is what is needed to be done to provide assurances and to make people feel better, then I, in my view it is potentially less resource intensive than some of what I have also heard proposed.

Ms. TITUS. Well, not only does a travel ban, or restrictions, or monitoring impact the economy, does not it also make it more difficult to share information so that we can address the outbreaks quickly or get international cooperation from others addressing the problem?

Dr. NUZZO. So, I am deeply concerned about penalizing countries that report cases. And when you implement travel bans and trade restrictions, that is a penalty.

China may be able to handle it, but other countries around the world are watching who haven't yet reported any cases. And I can imagine they are seeing what is playing out and thinking is it in their best interest to tell, to even look for cases first of all. So, that is something that I am particularly concerned about.

I also agree with all the statements that have been made about the importance of gaining access to data in China. I particularly think China understands that severity is a matter of priority. And I do not truthfully understand what the rate-limiting step is. I am not sure that they do not have the right epidemiologists or scientists. I think China is actually quite capable, the fact that they have pumped out many Lancet and New England Journal of Medicine papers does not signal to me a lack of expertise.

I wouldn't be surprised if we see a paper next week that tells us more than we already know. But I think that this is critically important, and we should do everything in our power to make sure we continue to incentivize the flow of information.

Ms. TITUS. So, it affects, negatively affects the economy, travel and tourism; negatively affects our ability to get information; negatively affects our ability to cooperate with other countries. And, finally, we have in the past sent health care workers to other countries where these outbreaks occur, like Ebola. But now with this new approach of bringing people home, that cuts off that assistance as well, does not it?

Dr. NUZZO. And just to add to that, what happened in Ebola, even with threats of quarantine for health care workers, actually put a chilling effect on the number of doctors and nurses who were willing to go volunteer, essentially put their lives on the line to fight a deadly virus. Just the prospect of coming back and having to, in addition to the time away from their families and their jobs, then we put into quarantine, that is another concern that I have.

Mr. KLAIN. If I could just very quickly. I think it is important that public health and scientific analysis drive these decisions, not politics. So, the same day that we quarantined a charter plane of Americans coming from Wuhan, that same day planes landed at airports all over this country bringing people from China to airports all over this country. OK?

And so, you know, I just think that these policies on travel restrictions and quarantines, which I understand why they are politically compelling, I understand why one of the members earlier said it kind of, like, passes the common sense test. But policies that are kind of filled with Swiss cheese and exceptions and unevenly applied do not keep us safe, and raise the kinds of concerns about cooperation and effectiveness that Dr. Nuzzo raised.

So, whatever we do, I think we need to be candid about what we are doing and what we are not doing, and let science drive those decisions.

Mr. BERA. Great. Let me take the chair's liberty here and give each of the witnesses a minute or two, if there is anything we did not ask that we should have been asking or thinking about, or that would be in the public's interest of asking. Maybe we will start with you, Mr. Klain. Again, a minute or two just.

Mr. KLAIN. Yes. What I would say just very briefly is Congressman Sherman said before he left that we have a tendency to overreact to these things. And what I would say is it is actually more complicated than that.

We have a tendency to overreact in the short term and then underreact in the long term. After the 2001 anthrax attacks this body appropriated billions of dollars to prepare for a potential pandemic. And most of those investments were frittered away because they weren't followed up. Most of that was gone when I took over the Ebola response in 2014.

This body then put billions of dollars into responding to Ebola very effectively. And, yet, before the coronavirus outbreak we were set to see the national hospital network that protects us from these infectious diseases expire in May without being renewed.

So, what I would say is we should address this crisis or this challenge immediately, but also make the consistent long-term investments in pandemic preparedness and response that are vital to keep this Nation safe over the long run. Again, I think the Connolly Chabot bill is a good start on that. There are many other proposals. But I think it is consistent focus that really keeps this country safe.

Mr. BERA. Great.

Dr. Bouey, if there is anything that you would like to add or we should have asked?

Dr. BOUEY. I will focus, I will emphasize that it is a battle between human and the virus. It is not between persons to person,

and it is not between party to party, it is not between country to country.

I really hope that global health should be a area for research for health care collaborations that is beyond all the conflict. It think it needs a long-term investment, not only in the infrastructure but also in collaboration, in capacity building.

And I hope, no matter what happens between the two countries, between the two parties, that this area can be protected because this is critical for every country, for all the human beings. So, this should be more than just pointing fingers. But this is a time for collaboration.

Mr. BERA. Thank you, Dr. Bouey.

Dr. NUZZO.

Dr. NUZZO. As I mentioned in my remarks, I am increasingly of the belief that this virus is not something that we can stop at borders, that we cannot contain it, that we should be probably shifting our focus to one more of trying to mitigate its spread and mitigate the impacts. And as I look at th situation it is, of course, evolving and complex, but it is increasing to me—increasingly to me looking like what we saw in 2009 with the influenza pandemic.

And we have a number of things that we learned during 2009. So, we learned that the travel restrictions and the quarantines did not stop the spread. Within months the virus was everywhere. And that is because we had more capability to do surveillance for flu than we have for novel coronavirus right now. So, I wouldn't be surprised if we had those capabilities if we saw a very similar map to what we saw in 2009.

So, I really think we should be thinking about it in the context of that and asking, if this were flu would we be doing these things?

Obviously, there are still questions about severity. But increasingly, and my, my perspective is that we will find more cases and our perception of severity will decline.

The other thing I want to point out is that I actually see some optimism here. Just looking at what we have learned in the amount of time that we have learned from countries who have previously had difficulties, like for instance South Korea, in 2015 it had a very bad MERS outbreak that caught it off guard, they really struggled with, and their information and their ability to do surveillance. And an epi investigation of the case, the novel coronavirus cases to me is the symbol of what our goals are when we make investments and we work with countries to improve their capacities. And we are the direct benefits of that.

So, I just want to stress that it is we need more information from other countries. The fact that they are able to get this information is likely because of our help and assistance in many places. We should continue those efforts, not just as I mentioned in China, but in other countries that we expect to struggle. And I think that we should continue to assess our plans based on the information that we have coming in and, crucially, in my mind not so much the number of cases but the severity.

Mr. BERA. Great. Thank you.

Let me allow the ranking member to make a closing statement and I will make one myself.

Mr. YOHO. Well, I appreciate everybody being here. And, Mr. Klain, I have this article here and you are saying we need to keep politics out of it and need to be factual based. But just the title of this, "Coronavirus Is Coming and Trump Isn't Ready." And I read it, and there is a lot of politics in that article. That is all I am going to say.

Dr. Nuzzo and Dr. Bouey, you are both epidemiologists. We know that the epicenter is supposedly the Wuhan area, the fish market and the wet market. Correct?

Dr. BOUEY. Yes.

Mr. YOHO. Do you feel it was sufficiently studied to get the possible original outbreak of where it came from? Do you feel that? Do you have any indication?

Dr. NUZZO. The answer is no. One of the concerns——

Mr. YOHO. You said no, you do not think it was?

Dr. NUZZO. No, I do not think it was sufficiently studied.

Mr. YOHO. OK.

Dr. NUZZO. And I know that I have heard not just WHO, but also some of the major philanthropies are putting money toward enhancing the study of that, trying——

Mr. YOHO. Yet the Chinese Government destroyed it completely, the way I understand it. Is that correct?

Dr. NUZZO. I do not, I do not have any information about that.

Mr. YOHO. Dr. Bouey, do you know?

Dr. BOUEY. I know they, after they announced the outbreak they closed the animal, the wet market the next day. They thought it was the sources. We do not know.

We do not know whether there is a person working there had the first case and transmitted to other people or the animal source was there. We do not know that.

Mr. YOHO. But that supposedly was where it was reported where it came from. But then we have heard it was completely demolished and destroyed. And that, there again that creates a cloud of confusion. You know, what is their intent.

And if we are going to work on this collaboratively together between countries, politics needs to go away and it needs to be based on science because this is something that we are all in threat of. And I think you brought up over and over again how it does not seem to be as virulent in other countries. And let's hope it maintains that way.

But I worry about countries like in Africa where there is large Chinese population in the Belt Road Initiative, and their inability to check with diagnostic equipment.

So, this is something that is going to be fluid, we are going to watch, and we want to make——

Dr. BOUEY. I think it is to everyone's advantage to know where it comes from.

Mr. YOHO. Right.

Dr. BOUEY. So, I do not think it is Americans or Chinese, it is everyone wants to know that.

Mr. YOHO. Sure. We are all here together.

Thank you all. Appreciate it. Mr. Chairman, thank you.

Mr. BERA. Great. Thank you.

And just in close, first-off I want to thank each of you for taking the time to come here as well as your service to both science as well as to our country and the global community.

You know, again, the message to the Administration here is we are here to work as Congress. We are all on the same page here. And to the global community and to the Chinese, you know, let's get ahead of this. And it will take all of our resources to learn as much as we can.

You know, I think I cannot speak for the CDC, but in my conversations with the CDC, with Dr. Fauci and others, we want to get there and work with you side by side. And if there is one thing that we can do it is that second thing is really put someone in control of this.

This isn't the last time we are going to see a pandemic. This isn't the last time we are going to be dealing with a viral outbreak. And as we get ahead of this let's not—Mr. Klain, you talked about this as let's stop just responding to crisis after crisis, let's actually make this part of our national security agenda.

And I had the privilege of being a commission member for CSIS. They just came out with a recommendation on what we could be doing with regards to global health security. And in a bipartisan way it was a great commission, great Members of Congress on there, but also, you know, working closely with the Administration and others to come up with recommendations.

And I would say let's deal with the situation that we have in front of us right now, but then let's take some of those recommendations and act on them.

So, you know, again I thank the witnesses and all the members for being here today. And with that, the committee is adjourned.

[Whereupon, at 3:54 p.m., the subcommittee was adjourned.]

APPENDIX

SUBCOMMITTEE HEARING NOTICE
COMMITTEE ON FOREIGN AFFAIRS
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, DC 20515-6128

Subcommittee on Asia, the Pacific, and Nonproliferation

Ami Bera (D-CA), Chairman

February 5, 2020

TO: MEMBERS OF THE COMMITTEE ON FOREIGN AFFAIRS

You are respectfully requested to attend an OPEN hearing of the Committee on Foreign Affairs, to be held by the Subcommittee on Asia, the Pacific, and Nonproliferation in Room 2172 of the Rayburn House Office Building (and available live on the Committee website at https://foreignaffairs.house.gov/):

DATE: Wednesday, February 5, 2020

TIME: 2:00 p.m.

SUBJECT: The Wuhan Coronavirus: Assessing the Outbreak, the Response, and Regional Implications

WITNESSES: Dr. Jennifer Nuzzo
Associate Professor & Senior Scholar
Center for Health Security
Johns Hopkins University

Dr. Jennifer Bouey
Senior Policy Researcher & Tang Chair in China Policy Studies
RAND Corporation

Ron Klain
Former White House Ebola Response Coordinator, 2014-2015

By Direction of the Chairman

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Note: Red boxes with red type will NOT print.

MINUTES OF SUBCOMMITTEE ON Asia, the Pacific, and Nonproliferation HEARING

Day Wednesday Date 2-5-2020 Room 2172

Starting Time 2:02 PM Ending Time 3:54 PM

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Presiding Member(s)

Chairman Ami Bera

Check all of the following that apply:

Open Session ☐
Executive (closed) Session ☐
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TITLE OF HEARING:

"The Wuhan Coronavirus: Assessing the Outbreak, the Response, and Regional Implications"

SUBCOMMITTEE MEMBERS PRESENT:

See attached.

NON-SUBCOMMITTEE MEMBERS PRESENT: *(Mark with an * if they are not members of full committee.)*

HEARING WITNESSES: Same as meeting notice attached? Yes ☐ No ☐
(If "no", please list below and include title, agency, department, or organization.)

STATEMENTS FOR THE RECORD: *(List any statements submitted for the record.)*

TIME SCHEDULED TO RECONVENE
or
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Note: If listing additional witnesses not included on hearing notice, be sure to include title, agency, etc.

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WHEN COMPLETED: Please print for subcommittee staff director's signature and make at least one copy of the signed form. A signed copy is to be included with the hearing/markup transcript when ready for printing along with a copy of the final meeting notice (both will go into the appendix). The signed original, with a copy of the final meeting notice attached, goes to full committee. An electronic copy of this PDF file may be saved to your hearing folder, if desired.

OPENING STATEMENT FROM CHAIRMAN BERA

Opening Statement
The Honorable Ami Bera
Chairman, Subcommittee on Asia, the Pacific, and Nonproliferation
House Committee on Foreign Affairs

The Wuhan Coronavirus: Assessing the Outbreak, the Response, and Regional Implications
Wednesday, February 5, 2020
2:00pm, 2172 Rayburn House Office Building

I want to thank the Ranking Member Yoho, the members of this subcommittee, our witnesses, and members of the public for joining us for today's hearing. This is the first congressional hearing on the coronavirus, a growing global health threat on the minds of every American, no matter their political views. Within weeks the world has seen a cluster of alleged pneumonia cases appear in China become a global virus concerning us all. Just last week, the U.S. Department of Health and Human Services declared the virus a public health emergency. While the threat of the virus is relatively low in the United States at this time, we must be vigilant and prepared, especially as the confirmed cases of the virus continue to spread across the Asian continent.

I've spent the past few weeks talking to leading health professionals trying to tackle this pandemic. As a doctor, I understand all too well the nature of the challenge those confronting this virus face. As a Congressman representing Sacramento County, I am hearing from many concerned constituents who want answers. How did a virus that began in an animal and seafood market in Wuhan, China end up in the United States? When did we know about this virus, and could we have done anything better to have stopped it from spreading? Do we have the right people in the right places with the right tools to address this challenge?

These questions and many more are why I've called for this hearing today. Our first objective is to determine how effectively the U.S. government is coordinating the response - internally and with the international community - and if they have the right tools and resources in place to help end the outbreak. Second, we need to determine how the Chinese are combatting the virus and working with the United States and the international community. Our final goals is to look to the future - how will this virus impact our partners, the U.S. and international economy, and what can we do to get ahead of it?

Congress has worked with both the Obama and Trump administrations to increase our readiness for diseases like the novel coronavirus. The Obama administration established the Global Health Security Agenda (GHSA) to ensure countries had the ability to prevent, detect, and respond to new viruses like the one that originated in Wuhan. I've long supported additional funding for these programs at both USAID and CDC, and reversed the administration's proposed cuts to Department of Defense Cooperative Biological Engagement programs that support the Global Health Security Agenda in last year's appropriations process.

I am proud to be a Commission Member of the CSIS Commission on Strengthening America's Health Security, which made a series of recommendations to stop this cycle of panic and neglect, of crisis and complacency. That Commission issued its report two months ago, and

many of their recommendations are more important than ever, including restoring leadership at the National Security Council to oversee pandemic preparedness and response, fully funding the Global Health Security Agenda, and making sure we have the right medical technology, including diagnostics and vaccines to respond to new epidemics.

First, what's the interagency infrastructure and who's in charge of that infrastructure? I've criticized this administration for lack of interagency coordination in the past. By all accounts, Dr. Fauci, Dr. Redfield, Mr. Kadlec, and Secretary Azar are working great together. But we need to synchronize the domestic and international response. If CDC needs to tap the Defense Department's stockpile of masks, who makes that decision? We need someone in charge.

It's critical we know who is in charge and leading the response. But we need to know what's required of the response. We should also consider how we're tackling the outbreak. It is Congress' duty to ensure our public health professionals and diplomats have the right tools, including funding, to address the novel coronavirus.

As the Asia Subcommittee, it's our job to examine the Chinese response and its cooperation with the United States. They are the epicenter of this outbreak. If we're not cooperating and coordinating, this outbreak will not be solved, so it is critical to understand that dynamics in China and between the United States and China to get this right.

Finally, we ought to look ahead. This outbreak is getting bigger every day, but it has largely been limited to China. What if it spreads further? What is the impact to our international economy? How is the response affecting China's neighbors? How are our supply chains, which center in China, getting impacted?

Our CDC, HHS, and Department of State personnel are outstanding. They are working overtime. I commend the men and women who are working night and day to help keep us all safe.

The outbreak is a reminder of how interconnected humanity remains. This is not and cannot only be China's problem. Our supply chains, our economies, and our people are too intertwined. We are not going to eliminate this if we retreat behind our own borders. Every disease we've tackled- from smallpox to polio- has required international coordination, cooperation, courage, and *understanding*. This is one of the reasons why I look forward to hearing from Dr. Nuzzo about her thoughts on the extraordinary measures the administration took on Friday to ban foreign nationals coming from China.

I look forward to hearing from the witnesses for their thoughts on how we go forward - both to contain this novel coronavirus and to protect the international community from the threat of other new emerging infectious disease.

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