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EXAMINING OUR COVID-19 RESPONSE: AN UPDATE FROM THE FRONTLINES

HEARING

OF THE

COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS

UNITED STATES SENATE

ONE HUNDRED SEVENTEENTH CONGRESS

FIRST SESSION

ON

EXAMINING THE COVID-19 RESPONSE, FOCUSING ON AN UPDATE FROM THE FRONTLINES

MARCH 9, 2021

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C O N T E N T S

STATEMENTS

TUESDAY, MARCH 9, 2021

EXAMINING OUR COVID–19 RESPONSE: AN UPDATE FROM THE FRONTLINES

Tuesday, March 9, 2021

U.S. SENATE,
COMMITTEE ON HEALTH, EDUCATION, LABOR, AND PENSIONS,
Washington, DC.

The Committee met, pursuant to notice, at 10 a.m., in Room 106, Dirksen Senate Office Building, Hon. Patty Murray, Chair of the Committee, presiding.

Present: Senators Murray [presiding], Casey, Baldwin, Kaine, Hassan, Rosen, Hickenlooper, Burr, Collins, Cassidy, Murkowski, Marshall, and Tuberville.

OPENING STATEMENT OF SENATOR MURRAY

The CHAIR. Good morning. The Senate Health, Education, Labor, and Pensions Committee will please come to order.

Today we are holding a hearing on the ongoing response to the COVID–19 pandemic with public health experts and those on the frontlines of our fight against this virus.

Ranking Member Burr and I will each have an opening statement, and then I will introduce Dr. Shah, Dr. Jha, and Dr. Abraham; and Senator Burr will introduce Dr. Fuchs.

After the witnesses give their testimony, Senators will each have 5 minutes for a round of questions.

Before we begin, I again want to walk through the COVID–19 safety protocols in place. We will follow the advice of the Attending Physician and the Sergeant at Arms in conducting this hearing. Committee Members are seated at least six feet apart, and some Senators are participating by video conference. While we were unable to have the hearing open to the public or media for in-person attendance, live video is available on our Committee website at *help.senate.gov*.

If you are in need of accommodations, including closed captioning, you can reach out to the Committee or the Office of Congressional Accessibility Services.

We are all very grateful to everyone, including our Committee Clerks, who have worked so hard to set up a hearing like this and help everyone stay safe and healthy during this pandemic.

Life for families across the country has changed a lot over the past year, and while we are familiar with the staggering number of this pandemic, over 29 million infected, over a half-million dead, the full toll of that loss and so much else families have gone through—missed birthdays, weddings, graduations, and even funer-

als—the fear, the loss, the isolation we have gone through individually and as a Nation, and the impact that it is causing on mental health and substance use, among other issues, cannot be measured.

The true cost of this pandemic so far is unthinkable, and it should be just as unthinkable that we would do anything short of everything when it comes to ending this crisis as soon as possible and rebuilding our Nation stronger and fairer.

I'm glad President Biden has put forward a bold, comprehensive vision to see our Country through this pandemic, and we took a critical step toward making that vision a reality by passing in short order the historic American Rescue Plan, which provides funding for testing, contact tracing, and sequencing so we can identify new variants of COVID and slow the spread; funding for vaccines so we can distribute and administer them quickly, widely, and equitably, fight misinformation, promote vaccine confidence, and engage trusted partners in communities we know are hard to reach; funding to recruit and train 100,000 new public health workers for these efforts, and funding to address inequities that have made this pandemic more deadly for communities of color, to address mental health, behavioral health, and substance abuse challenges this pandemic has worsened; to support home and community-based services that help people with disabilities and older Americans; and to support community health centers, which continue to be a lifeline to so many hard-hit and hard-to-reach communities.

This bill represents important progress, as does President Biden's announcement that our Country will have enough vaccines for every adult by the end of May. But we are all well aware that it is not mission accomplished. We have to roll up our sleeves, literally and figuratively, and get vaccines in arms. We have to make sure communities that are often overlooked and underserved are getting vaccines, and getting answers to questions people are asking, like when can I get a vaccine, where do I go for my vaccine, and how do I know the vaccines are safe and effective.

We have some promising tools here, but we will also still have work to do to make them accessible to people with disabilities, people who do not speak English, and people who do not have Internet or smart phones. We have skilled experts promoting vaccine confidence, but we still have to engage trusted community partners as well.

In my home State of Washington, the Pacific Islander community has been hit harder than anyone by this pandemic, and while we still don't have good data on the extent of that problem, it's clear when it comes to vaccinating this community that we're already behind. That's why when Joseph Seia, Executive Director of the Pacific Islander Community Association of Washington State, saw how online booking for vaccines was missing elders in their community, PICA worked to set up the first-in-the-nation pop-up vaccination clinic. Seia told the Seattle Times, "It's an equity thing. People don't have technology. People don't have the time. It's essentially privileged people that are signing up for these appointments, and the most impacted folks are not able to do it."

The clinic PICA set up kept things intentionally low-tech to help prioritize reaching vulnerable seniors. We need to continue seeking out community partners like that to make sure we are under-

standing the challenges they face and working through them together, because this pandemic will not truly be over for anyone until we can vaccinate everyone we can. And even when it ends, we need to make sure nothing like this ever happens again. So I'll be saying more about how we do that later this week when I reintroduce the Public Health Infrastructure Saves Lives Act.

It was hard to imagine when this pandemic began a year ago where we would be today, but the question before us in this moment is how soon will students be back in the classrooms? How soon will those people not already at work be back? How soon will we be able to visit safely our friends and family for special occasions and greet them with smiles and handshakes and hugs?

We all want to get there as soon as possible, but that starts with the work all of our witnesses are here today to discuss, and the steps we take right now to support it. I look forward to hearing from our witnesses about how we end this pandemic and working with them to get all of our communities there.

As Ranking Member Burr and I have been talking about since early in January, COVID–19 has defined this Committee's work over the last year and in many ways will define it over the next 2 years. For all of my Committee Members, hearings like this are just the beginning of our effort to look comprehensively at the impact of the pandemic we are in the middle of. I look forward to working with Ranking Member Burr and every Member of this Committee as we continue those efforts and work to respond to the COVID–19 pandemic and its aftermath.

Keys to this work will also be helping American workers and families recover from all impacts of the virus and the dire economic situation they face, addressing the devastating impacts of learning loss so many children are facing, and the symptoms long-haulers continue to fight, and ensuring this country's response to all the ways this pandemic will stay with us for a long time, as well as all the things we should be doing to prepare for pandemics in the future.

I know every single Member of this Committee, no matter how different our politics or our states, is unified in feeling the deep loss caused by this crisis, deep gratitude to all of those on the front lines who are fighting it, and the importance of responding to this moment by building a stronger, fairer, better Nation for the people we represent.

I look forward to this hearing and working with all of you in the days and months ahead.

With that, I will turn it over to Ranking Member Senator Burr for his opening remarks.

OPENING STATEMENT OF SENATOR BURR

Senator BURR. Thank you, Senator Murray, and good morning to our witnesses. Dr. Abraham, good to see you, and to our other witnesses who are joining us virtually.

One year ago today, March 9th, there were 1,020 COVID cases in the United States and 35 people had died from complications from the disease. This was still at that time not a threat based upon what CDC and other agencies said. Since then, 28 million people have contracted COVID–19 in this country, and more than

514,000 Americans have died from it. Globally, 116 million have contracted COVID and 2.5 million have died from this once-in-a-century pandemic.

The Committee has an awesome responsibility ahead of it. We must take stock of lessons learned from the response to the COVID pandemic and learn together to see what worked, what didn't work, and what needs to be done to be more prepared in the future.

We should be proud of the important laws and programs and policies we have worked on together in this Committee to create and fund, because so much of it worked exactly as we envisioned. FDA used its emergency use authority to get vaccines and therapeutics to Americans in record time, while maintaining the gold standard of safety and efficacy. The Assistant Secretary for Preparedness and Response coordinated with health care providers on the ground to ensure the sharing of critical information and supplies as quickly as possible during the response, and coordinated with the NIH and BARDA to kick our countermeasure development into high gear. Using BARDA's authorities, Operation Warp Speed developed and scaled manufacturing for multiple vaccines in record, life-saving time.

But we should also be humble enough to know that more needs to be done to be prepared for the future. I hope now that the partisan spending bill is over, that only had 5 percent of its funding dedicated to the public health portion of the COVID response and 1 percent of their massive spending bill dedicated to COVID vaccines, we can shift our attention back to working together.

As we start this thorough review process, it's important that we remember that we are still in the midst of our current response. But the tools we have today look very different than where we started over 1 year ago, largely because of the authorities that we have given to the executive branch. In May of last year, some experts were predicting that a vaccine could take years. In partnership with the private sector, we did it in 10 months. Testing is now widely available, with the FDA announcing just last week the emergency authorization of another test that delivers results at home, thanks to the public-private partnership and leadership from the NIH. Our doctors and nurses have found new ways to better treat our sickest COVID patients, improving outcomes with better clinical practice guidelines, and our state and local officials have led the charge in tailoring our response to their communities' needs, as they should.

Alongside our successes, we must acknowledge our failures. At the beginning of the academic year, just 17 percent of our Nation's schools had fully returned to in-person learning, jeopardizing the future and potential of an entire generation of Americans. Businesses are still closed, with the National Restaurant Association estimating that 100,000 restaurants will not ever be back to welcome customers. And the tools we have to solve these urgent problems, a vaccine, should be reaching more Americans faster. The CDC stated that we are averaging 2 million shots in arms per day, but this Administration has not updated its goal to reach 100 million shots in 100 days, which was already the trajectory when the President took office in January. Instead, we should set aspira-

tional goals, like we did with the development of the vaccine, not easily attainable ones.

When we look at where we are in the response today, the data shows a significant decline in COVID cases and hospitalizations. I share this with my colleagues not because we should let up on our response, but because I believe we are at the greatest moment, right now, to learn from our progress and to learn from our failures. The time to capture the lessons we are learning is now, in real time, and not months down the road when case levels are low, attention spans are shortened, and urgency fades.

I remind my colleagues, in the life of BARDA as an institution, it's been on life support three different times because Congress lost interest in funding advanced development.

To our witnesses, welcome. Each of you spent the last year in the thick of the COVID–19 response, 24 hours a day, 7 days a week. Thank you for your tireless efforts. I hope we can learn from each of you today about what was most important during the early days of the pandemic, the strategies that were most effective at the height of cases and deaths over the holidays, and the ways your response is changing as the vaccine is made available to more and more Americans.

Your input is critical as we begin to consider the next phase of the current response, and as we look to the next public health threat that we will face. It is not a matter of if but of when we will need to turn to the tools and policies we are using today for yet another novel or emerging threat to our Nation's health and its security. The questions I will raise with each of you today are what did we get right, what did we get wrong, and what parts of our response were not part of the anticipated plan of action originally.

Throughout this year, the Committee has held many bipartisan hearings and bipartisan briefings, and we spent countless hours on the phone and in meetings with experts from around the country. This was a wise decision despite its logistical difficulties because it allowed us to begin to build the record necessary to move forward.

This is our first hearing on the COVID response this Congress, and I look forward to working with Senator Murray to make these hearings and these conversations a regular practice of the Committee. I know that we are in the process of securing administration witnesses for a hearing in the near future, and I'd like to set the expectation for all of us on this Committee, on both sides of the aisle, that we should expect to hear from administration officials on a regular basis just like we did with the last administration, if not more often. They have an obligation to be open and transparent with Congress and the American people about what they are doing, in real time, and I know all of my colleagues on both sides of the aisle will join us in this request.

Dr. Abraham, to you and the other witnesses today, thank you for being here. Please share with us, if you can, those personal experiences, those personal decisions that you made that may have gone counter to what the Federal guidelines were but they were unique to your community in your area, in your state, in your community health center, and why that decision was so crucial for you to pivot to something you thought would work and, in fact, did work.

With that, Madam Chair, I thank the Chair and I yield the floor.

The CHAIR. Thank you, Ranking Member Burr.

We will now introduce today's witnesses.

I'm very pleased to start by welcoming Dr. Umair Shah from my home State of Washington. Dr. Shah was appointed as Washington Secretary of Health last year and has been on the front lines of our state's efforts to get vaccines into arms and to keep families safe. The progress we've seen is encouraging, especially as new vaccinations per day now outpace new cases, and cases are down 70 percent from the peak this winter. I'm grateful to Dr. Shah for the work he's done to help get us here, the work he continues to do to help us finally end this pandemic for everyone, and for taking the time to join us today to share his insights and expertise.

Before his current role, Dr. Shah served for several years as the Executive Director and Local Health Authority for Harris County Public Health in Texas, the third largest county in the Nation. He served a term as President of the National Association of City and County Health Officials, and he served as an Emergency Medicine Physician at the Houston VA. Dr. Shah received his M.D. from the University of Toledo Health Science Center and completed his residency at the University of Texas Health Science Center while earning his MPH there.

Dr. Shah, welcome. Thank you for joining us today.

Next I will introduce Dr. Ashish Jha. Dr. Jha is the Dean of Brown University School of Public Health, and before that he taught at the Harvard T.H. Chan School of Public Health and led the Harvard Global Health Institute. Dr. Jha is a renowned expert on pandemic preparedness whose work has been published in over 200 research publications. He has led groundbreaking research on Ebola and been a key advisor to policymakers looking for thoughtful analysis as they work to respond to COVID–19.

Dr. Jha received his M.D. from Harvard Medical School, completed his Internal Medicine training at the University of California-San Francisco, and completed his MPH and a Fellowship in General Medicine at Harvard. He was also elected to the National Academy of Medicine in 2013.

Dr. Jha, I'm glad to have you with us today.

Dr. Jerry Abraham is the Director of Kedren Vaccines at Kedren Health, a community health center in South Los Angeles, California, where he also serves as a family medicine physician. Dr. Abraham has publicly championed the importance of vaccine equity and how we achieve it, and has worked to make it a reality in his role leading vaccination efforts in underserved communities that have been hit especially hard by this pandemic.

He's a graduate of the University of Southern California's Keck School of Medicine, where he also completed his family medicine training. Dr. Abraham, community health centers like yours are a lifeline to patients across the country and one that has become all the more important during this pandemic. I look forward to your testimony about the work happening in your community and what we can learn from it, so thank you for joining us.

Now I'll turn it over to Ranking Member Burr to introduce Dr. Fuchs.

Senator BURR. Thank you, Senator Murray, for the opportunity to introduce Dr. Mary Ann Fuchs from Durham, North Carolina. For almost 20 years, Dr. Fuchs has served as Vice President of Patient Care and System Chief Nurse Executive for Duke University Health Systems, where she is responsible for overseeing the nursing practice and ensuring the high-quality care across the health system.

Dr. Fuchs also serves as the Associate Dean of Clinical Affairs for Duke University School of Nursing, and serves on the American Hospital Association COVID–19 Pathways to Recovery Task Force. In her role as the President of the American Organization of Nursing Leadership, Dr. Fuchs advocates for nurses in leadership roles across the country, a position that has been particularly important during the COVID–19 pandemic, highlighting the role nurses have played in caring for patients on the front lines.

Dr. Fuchs earned her doctorate, post-master's certificate, and master's degree from Duke University, her Bachelor of Science degree in Nursing from the State University of New York at Binghamton. Dr. Fuchs is a Fellow in the American Academy of Nursing, a Fellow in the Wharton Fellows Program and Management for Nurse Executives, and a Robert Wood Johnson Executive Nurse Fellow.

Dr. Fuchs, thank you for all the important work you're doing and what you're doing on behalf of North Carolina and the country and nurses across the country during this challenging time. I look forward to hearing your perspective from the front lines of the fight against the COVID pandemic.

Thank you, Madam Chair.

The CHAIR. Thank you.

We will now move on to testimony. Dr. Shah, you may begin your remarks.

STATEMENT OF UMAIR A. SHAH, M.D., MPH, SECRETARY OF HEALTH, STATE OF WASHINGTON, TUMWATER, WA

Dr. SHAH. Good morning, Chair Murray, Senator Burr, Members of the Committee. Thank you for your leadership and for inviting me to testify today to share my observations on the COVID–19 response to date.

Let me start by saying it's far from over, and we need to stay the course in using every tool available to end it. We're all tired of the pandemic, but we cannot forget the more than 500,000 Americans who have lost their lives to date. In our state, in Washington, that means 5,000 Washingtonians whose lives have been lost.

While we still have a long way to go, it is my hope that we're on the right road. Let's hope this pandemic is an inflection point that results in real and sustained change to protect the safety of all Americans.

My name is Dr. Umair Shah. I have responded to countless emergencies over the last 20 years, including hurricanes and tropical storms, infectious disease outbreaks, chemical incidents, and even global earthquakes. My family and I experienced firsthand the massive power outage in Texas just a few weeks back.

I'm a public health professional and medical doctor and emergency department physician at UCVA Medical Center, taking care of our Nation's veterans for over 20 years. In late December, I was honored to be appointed by Governor Jay Inslee as the Secretary of Health for the great State of Washington, honored because Washington has been a leader in responding to this pandemic, and this is a testament to Governor Inslee's leadership, as well as the work of our state health agency and countless partners on the ground.

While I'm new to the state role, I've been on the front lines fighting this pandemic this past year and leading the public health efforts at Harris County Public Health in Texas; and as the previous president of HR, I recognize the absolute importance of what happens in local communities.

That said, I am now a proud member of the Association of State and Territorial Health Officials, ASTHO, representing the state public health agencies across the country who served as a key intersection between the Federal Government and local communities.

Over this past year we have all witnessed the loss of life, the impact on countless patients and their families and communities devastated by COVID–19. Watching this play out, I have been frustrated by seeing the strain on our public health system to ramp up epidemiology, surveillance, laboratory testing, communications, contact tracing, and now getting vaccines into arms.

I'm here today, though, not to just express frustration but to work toward solutions. Please refer to my full written testimony. Today I will touch on two main points.

No. 1, we need the state, of course, using public health tools to help end this pandemic. And No. 2, public health truly matters, and there is a cost to chronic underfunding.

With the first point about staying the course, from our response we remain focused on three things: No. 1, getting Americans to continue everyday precautions; No. 2, distributing and administering COVID–19 vaccines; and No. 3, safely reopening schools and businesses.

Overall, we may see the light at the end of the tunnel due to vaccines, but we must support preventive measures that have gotten us to where we are today. We cannot let our guard down or this pandemic will make us pay yet again. We must emphasize the importance of following public health guidance, including wearing masks, watching distance, getting tested, and avoiding large gatherings.

Secondly, the focus around the country is getting COVID–19 vaccine into the arms of people quickly and equitably. To do this, we are balancing three legs of a three-legged stool: No. 1, vaccine supply; No. 2, logistics and operations; and No. 3, vaccine demand.

Currently, our biggest challenge is limited supply, but we expect this to improve, as you know.

As far as operations go, we are grateful to Congress working to get resources to support our efforts on the front lines and within states. As we ramp up supply and capacity, we must pay attention to the demand as vaccine hesitancy is real, whether due to mistrust or misinformation.

Third, we all want our schools and businesses to reopen for in-person learning and get our economy moving ahead, but we want to do so safely. If communities continue to control the spread of COVID–19, the road ahead is better than the one we have been on.

Public health truly matters, and there's a cost of chronic underfunding. Everyone everywhere, in all communities, should be able to rely on strong public health systems. This pandemic has shown the shortcomings of our current system, including from emergency response. This is due to the fact that we have not adequately invested in it. We must have a public health system ready to protect Americans from all hazards, including pandemics, natural disasters, biological, chemical, nuclear, and terrorism.

This pandemic has been horrific in so many ways, yet it is a transformational event. Now is the time to make smart, strategic, and sustained funding in public health infrastructure. Making these investments will also address longstanding health inequities. COVID has not started these, but it has made them worse. The inequitable distribution of death and disease means we have seen communities with disproportionate impacts from this pandemic. This is simply unacceptable. To reset, reform, and rebuild, Federal investments must prioritize resource equity, and now is the time for Congress to act.

We're making progress against COVID–19. We can see the light at the end of the tunnel, but leaders must stay the course because there are still threats, including the risk from COVID–19 variants and COVID–19 fatigue.

Let me close by saying public health is the offensive line of a football team, and we're not doing enough to invest in that offensive line. We keep focusing on the quarterback. We have had an invisibility crisis in public health for far too long. If nothing changes, we'll get more of the same, systems without the robust capacity and capabilities to respond to the next emergency. We are truly at a crossroads. Either we can act now and invest in public health, or we act later and overspend dearly to undo that which could have been prevented.

On behalf of the State of Washington, thank you, Senator Murray, for your leadership, from ASTHO and my colleagues across the Nation. I appreciate the opportunity to testify today. We look forward to working with all of you, all of us in public health, in building safe, healthy, and protected communities across this great Nation of ours. Thank you.

[The prepared statement of Dr. Shah follows:]

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United States Senate Committee on Health, Education, Labor, and Pensions
"COVID-19 Response: An Update from the Frontlines"
March 9, 2021

Testimony of

Umair A. Shah, MD, MPH
Secretary of Health, State of Washington

Let me start by expressing my gratitude to Chairwoman Patty Murray, Ranking Member Richard Burr, and distinguished members of the Committee, for the opportunity to appear before the Senate Committee on Health, Education, Labor, and Pensions to examine our COVID-19 response and provide an update from the frontlines.

My name is Dr. Umair A. Shah, and I am the new Secretary of Health for the Great State of Washington. I have been in my current position at the Washington Department of Health since late December 2020. Prior to that, I served as the Executive Director and Local Health Authority for Harris County Public Health serving the nation's 3rd largest county. Throughout my public health career, I have responded to countless emergencies of all kinds both domestically and abroad.

Additionally, I have had the true honor of providing clinical care for our nation's veterans as an emergency department physician at Houston's Michael E. DeBakey Veteran's Affairs Medical Center for over 20 years. I am also a Past President of the National Association of County and City Health Officials (NACCHO) as well as its Texas affiliate, and am now a proud member of the Association of State and Territorial Health Officials (ASTHO) which serves as the voice of state public health agencies across the nation.

Given these experiences, I am keenly aware of the critical role that state, territorial, tribal, and local public health agencies play on the front lines implementing vital public health programs and responding to a wide array of public health emergencies. Today, I am here to represent the important voice of this "invisible" public health system that works 24/7 to protect communities across this great nation of ours.

As we all know, the U.S. public health system has worked around the clock to respond to the COVID-19 pandemic since the first identified U.S. case was confirmed in our state of Washington in January 2020. Since that time, public health has implemented a wide range of community mitigation and response strategies including community outreach, nonpharmaceutical interventions, epidemiological surveillance, contact tracing, quarantine and isolation, and COVID-19 testing to name a few. Our department has remarkably been responding for well over 400 days and the work is nowhere near done. The latest – and perhaps most critical lift in the fight against COVID-19 – is the standing up of COVID-19 vaccination efforts with the hope of once and for all ending this horrific pandemic in the United States and beyond.

As you may be aware, I have testified previously in Congress and have stated multiple times that the public health system is often invisible to most Americans as it goes about its behind-the-scenes work. It is when an emergency or an outbreak strikes that the fragility and chronic underfunding of the public health system is laid bare. Public health emergencies strike and funding spikes; however, the funding is temporary and targeted and does not address the sustained, longitudinal needs of our public health system. We are all fatigued in our response to this pandemic, but we cannot forget more than 500,000 Americans, including 5,000 Washingtonians, who have lost their lives to COVID-19. Far too much has been lost, for far too many, during this difficult time.

More than anything else, it is my fervent hope this pandemic is an inflection point that results in real and institutional change to improve the health of all Americans. After testifying at a House subcommittee hearing last month, I believe there is bi-cameral, bi-partisan support for strong public health infrastructure.[1] Everyone, everywhere, in all communities, should be able to rely on a strong public health system that is able to support them when emergencies strike. Indeed, federal legislation like Chairwoman Murray's *Public Health Infrastructure Saves Lives Act*[2] could help make this hope a reality.

Public health activities and services must be delivered efficiently and effectively, making the best use of innovation, technology, science, expertise, and the reliance on a qualified and dedicated public health workforce that is truly valued and supported. While there have been so many uncertainties with the COVID-19 pandemic, one thing that has been for certain: this pandemic would have played out very differently if the capacity of the public health system across this nation was better able to support the needs of communities everywhere and if this capacity was adequately built and in place in advance of the crisis unfolding this past year.

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[1] https://appropriations.house.gov/events/hearings/ready-or-not-us-public-health-infrastructure
[2] https://www.help.senate.gov/ranking/newsroom/press/murray-introduces-legislation-to-build-and-maintain-core-public-health-infrastructure-needed-to-save-lives-fight-threats-like-covid-19-

I. Current COVID-19 Response Efforts

Nonpharmaceutical Responses to Mitigate Spread of COVID-19

Though the focus of the pandemic response has shifted to the hope of vaccines, it is clear that we cannot forget that nonpharmaceutical interventions have been the tried and true basis of response throughout the pandemic not just domestically but across the globe. Unfortunately, the inconsistent communication and political nature of simple actions such as wearing masks has been a major factor in finding ourselves where we are as a nation with respect to this pandemic. This further underscores the importance of leaders needing to champion key actions such as all Americans washing their hands, watching their distance, and wearing their masks to combat COVID-19, especially in light of the new variants that have now been discovered. These time-tested interventions have stopped the spread of disease for centuries and they remain relevant even today.[3,4]

While we have seen significant improvements in where things stand as a nation recently, it must be pointed out that there is a definitive difference between progress and success. As a nation we have seen progress as cases have gone down to approximately 60,000 cases per day and less than 2,000 deaths per day[5] versus approximately 245,000 cases and more than 3,000 deaths per day during the peak surge[6], but these levels are unacceptable in terms of control. Imagine how horrified the public would have been with these numbers in April 2020. If we pull back nonpharmaceutical interventions with an unacceptably high number of cases and the spread of the new COVID-19 variants, we may tragically see yet another surge. Science

[3] https://www.cdc.gov/nonpharmaceutical-interventions/index.html
[4] Stub, S., 2020. *Venice's Black Death and the Dawn of Quarantine*. SAPIENS. Available at: https://www.sapiens.org/archaeology/venice-quarantine-history/ (Accessed 5 March 2021)
[5] https://covid.cdc.gov/covid-data-tracker/#cases_casesper100klast7days
[6] CDC COVID Data Tracker

supports community masking and other nonpharmaceutical interventions to reduce the spread of COVID-19. [7,8,9,10,11,12,13,14,15,16]

When most Americans wash their hands, watch their distance, and wear masks there is an added benefit – we make progress against other respiratory diseases namely influenza (flu).[17] The federal Centers for Disease Control & Prevention (CDC) reported the percentage of respiratory specimens testing positive for influenza at clinical laboratories is 0.1 percent positive this week[18] compared to a normal year where specimens testing positive for influenza would be 20 to 30 percent positive[19]. CDC only reports one pediatric death (remember pediatric deaths are reportable; adults deaths due to flu are estimated) to date for this flu season compared to 195 during the 2019-2020 season.[20] The staggeringly low level of flu this season is multi-casual and likely includes significantly reduced international travel, more virtual engagement for school and work, and the use of nonpharmaceutical interventions. When the annual total

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[7] Guy GP Jr., Lee FC, Sunshine G, et al. Association of State-Issued Mask Mandates and Allowing On-Premises Restaurant Dining with County-Level COVID-19 Case and Death Growth Rates — United States, March 1–December 31, 2020. MMWR Morb Mortal Wkly Rep. ePub: 5 March 2021. Available at: http://dx.doi.org/10.15585/mmwr.mm7010e3.

[8] Joo H, Miller GF, Sunshine G, et al. Decline in COVID-19 Hospitalization Growth Rates Associated with Statewide Mask Mandates — 10 States, March–October 2020. MMWR Morb Mortal Wkly Rep 2021;70:212–216. Available at: http://dx.doi.org/10.15585/mmwr.mm7006e2external icon.

[9] Dasgupta S, Kassem AM, Sunshine G, et al. Differences in rapid increases in county-level COVID-19 incidence by implementation of statewide closures and mask mandates - United States, June 1-September 30, 2020. Ann Epidemiol. 2021 Feb 14:S1047-2797(21)00021-1. doi: 10.1016/j.annepidem.2021.02.006. Available at: https://pubmed.ncbi.nlm.nih.gov/33596446/

[10] CDC. COVID-19. Scientific brief: community use of cloth masks to control the spread of SARS-CoV-2. Atlanta, GA: US Department of Health and Human Services, CDC; 2020. https://www.cdc.gov/coronavirus/2019-ncov/more/masking-science-sars-cov2.html

[11] Lyu W, Wehby GL. Community use of face masks and COVID-19: evidence from a natural experiment of state mandates in the US. Health Aff (Millwood) 2020;39:1419–25. https://doi.org/10.1377/hlthaff.2020.00818

[12] Stutt R, Retkute R, Bradley M, Gilligan CA, Colvin J. A modelling framework to assess the likely effectiveness of facemasks in combination with 'lock-down' in managing the COVID-19 pandemic. Proc Math Phys Eng Sci. 2020;476(2238)

[13] Kanu FA, Smith EE, Offutt-Powell T, Hong R, Delaware Case I, Contact Tracing T. Declines in SARS-CoV-2 Transmission, Hospitalizations, and Mortality After Implementation of Mitigation Measures- Delaware. MMWR. 2020;69(45):1691–1694. March-June 2020

[14] Van Dyke ME, Rogers TM, Pevzner E, Satterwhite CL, Shah HB, Beckman WJ. Trends in County-Level COVID-19 Incidence in Counties With and Without a Mask Mandate - Kansas, June 1-August 23, 2020. MMWR. 2020;69(47):1777–1781

[15] Gallaway MS, Rigler J, Robinson S, Herrick K, Livar E, Komatsu KK. Trends in COVID-19 Incidence After Implementation of Mitigation Measures - Arizona. MMWR. 2020;69(40):1460–1463. January 22-August 7, 2020

[16] CDC. COVID-19. Scientific brief: community use of cloth masks to control the spread of SARS-CoV-2. Atlanta, GA: US Department of Health and Human Services, CDC; 2020. https://www.cdc.gov/coronavirus/2019-ncov/more/masking-science-sars-cov2.html

[17] https://www.cdc.gov/flu/weekly/index.htm

[18] https://www.cdc.gov/flu/weekly/#ClinicalLaboratories

[19] "How COVID-19 Ended Flue Season Before it Started." Fivethirtyeight, February 4, 2021, available at: https://fivethirtyeight.com/features/how-covid-19-ended-flu-season-before-it-started/

[20] https://www.cdc.gov/flu/weekly/#S3

economic burden of influenza to the healthcare system and society is estimated at $11.2 billion[21], we must consider how to incorporate these tools to protect Americans from future flu seasons and other threatening airborne communicable diseases. Truly, public health matters and its interventions work.

Astrue believer in public health, I am proud to join the state of Washington as its Secretary of Health, as it has mounted one of the most effective responses to COVID-19 in the nation to date. This is a testament to the leadership of Governor Jay Inslee, the work of previous Secretary of Health John Wiesman, as well as the dedication of the incredibly resilient staff of the Washington Department of Health (DOH) and so many partners across the state. Thanks to this work, Washington has consistently ranked in the top 5 for least cases across the nation. Our state also has one of the lowest death rates per 100,000 population over the course of the pandemic despite being hit first and hard with the first reported case and nursing home outbreak in the United States.[22,23,24]

While this success has not been without its challenges, it has come as a result of recognizing the importance of being quick and responsive to the ever-evolving nature of this pandemic while also putting science and evidence of what works first. Recently, Washington has seen a steady decrease in case rates such that all regions have now been able to move into the second phase of the Washington *Roadmap to Recovery* Plan.[25] While we do not know what lies ahead, it is clear that Washington's success is one that should be recognized as a positive example of response nationwide.

Distributing and Administering COVID-19 Vaccines

Right now, the focus of Washington and states across the country is not only fighting the pandemic as it has for months on end but in getting the precious COVID-19 vaccine into arms of people quickly and equitably. In Washington, this is being done by incorporating all the places people can eventually get vaccine – local health departments, hospitals, clinics, pharmacies, mass vaccination sites and more – and finding creative and innovative ways to ensure access.

One recent example is the Washington State Vaccine Action Command and Coordination System (VACCS) Center to support the vaccine distribution efforts. The VACCS has brought together partners in a unique manner through a public-private partnership including entities such as Microsoft, Starbucks, Costco, and Kaiser Permanente to name a few. This state's success has been equally due to the strong work of not just public health but also healthcare and partners on the ground in local communities across Washington. In my short tenure in Washington, I have been

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[21] Putri WCWS, Muscatello DJ, Stockwell MS, Newall AT. Economic burden of seasonal influenza in the United States. Vaccine. 2018 Jun 22;36(27):3960-3966. doi: 10.1016/j.vaccine.2018.05.057. Epub 2018 May 22. PMID: 29801998

[22] https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html#states. (Accessed February 20, 2021)

[23] https://www.statista.com/statistics/1109004/coronavirus-covid19-cases-rate-us-americans-by-state/. (Accessed February 20, 2021).

[24] https://covid.cdc.gov/covid-data-tracker/#cases_deathsper100k (Accessed February 21, 2021)

[25] https://www.thenewstribune.com/news/state/washington/article249251665.html (Accessed February 21, 2021)

impressed seeing first-hand how amazingly all partners have come together to protect communities across our state.

Another example is the Vaccine Implementation Collaboratives (VICs) which is a broad external committee created by DOH to inform the vaccine response.[26] The Collaborative is focused on the various aspects of COVID-19 vaccination implementation and will serve as the sustainable engagement and advisory structure for this work through 2021. Across Washington we are achieving cross-sector partnerships with community-based organizations to reach vaccine hesitant communities, whether due to misinformation or mistrust. These communities include a whole host of groups of individuals including migrant workers, Latinx, and African American Washingtonians

In my mind, the biggest challenges to effective COVID-19 vaccine distribution right now are: (1) **limited supply**; (2) **vaccine hesitancy**; (3) **resources** to finish the massive U.S. vaccine campaign; and (4) support for a **global vaccine campaign**. Throughout the distribution process it will require a mix and balance of vaccine supply, logistics of administration, and vaccine demand to be successful. I am hopeful we will eventually get all of these factors appropriately balanced, though supply remains the issue for the immediate term.

As an example of this issue, we have 1,300 vaccination sites enrolled in Washington to receive COVID-19 vaccine and we only have enough supply to allocate about 300 of those vaccination sites per week. The shortage of vaccines has created challenges at the state level to determine how to equitably allocate. Yet the steady increase of the Pfizer and Moderna vaccines, including more than a 70% increase since President Biden's first week in office,[27] offer a hope of an end to this pandemic. This is even more so with the recent introduction of the Johnson & Johnson (J&J) COVID-19 vaccine.

As supply continues to increase, the next challenge will become ensuring enough Americans get vaccinated, so the U.S. develops adequate vaccine coverage. All three of the COVID-19 vaccines that have been granted emergency use authorization by the Food and Drug Administration are safe and effective.[28] I have received questions from people about which COVID-19 vaccine to get and the answer is simple: get whichever one you are offered. It is worth repeating, indeed all three vaccines are effective and all three are safe.[29] These vaccines are a testament to science and ingenuity to ward off morbidity and mortality.

However, public health and healthcare professionals face significant communications challenges with those who are uncertain about vaccinations because of fear, distrust,

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[26] https://www.doh.wa.gov/Emergencies/COVID19/VaccineInformation/Engagement/Collaborative

[27] "Pfizer And Moderna To Dramatically Increase Covid-19 Vaccine Production This Spring." Forbes, February 23, 2021, https://www.forbes.com/sites/alisondurkee/2021/02/23/pfizer-and-moderna-to-dramatically-increase-covid-19-vaccine-production-this-spring/?sh=3d56308176c5 (Accessed March 5, 2021)

[28] https://www.cdc.gov/vaccines/covid-19/info-by-product/index.html

[29] https://www.fda.gov/news-events/press-announcements/fda-issues-emergency-use-authorization-third-covid-19-vaccine (Accessed March 4, 2021)

and/or misinformation. The increasing influence social media has over personal health decisions by promoting false information is alarming. Admittedly, public health officials must also be up to the task in using media of all types to share factual, credible information. We must call on social media companies such as Twitter, Facebook, and Google to use whatever mechanisms they have available to stop promoting "pseudoscience".

States, localities, territories, and tribes need continued federal support to successfully finish this massive vaccination campaign. The Washington DOH would like to thank Congress for passage of the COVID Relief and Response Act (Division M of Public Law 116-260, enacted December 27, 2020) that provided an additional $8.75 billion to the federal CDC for COVID-19 response, including $4.5 billion dedicated to states, localities, territories, tribes and tribal organizations, largely to support vaccination efforts. This new funding will allow Washington to continue these efforts as it moves towards vaccinating as many Washingtonians as possible. Most recently, Washington received an approved expedited FEMA Public Assistance project of $550 million specifically for mass vaccinations efforts in Washington. While more federal support will continue to be key in the ongoing battle against COVID-19, these available funding streams are both appreciated and being utilized across the state of Washington.

To date, Washington's Immunization Program has received approximately $77 million in federal funds this grant year to support our agency's COVID-19 vaccine work. These funds support staffing, contracts with local health, tribes, and other community partners, media and communications, education campaigns, reminder/recall, community engagement, and equity activities. We estimate a shortfall of at least $64 million through the end of our federal grant period to continue this work at the same level. The Association of State and Territorial Health Officials (ASTHO) members are therefore grateful that Congress is working to get the American Rescue Plan Act which includes an additional $7.5 billion for COVID-19 vaccine distribution to President Biden's desk.

Global and domestic health have always been intertwined and this pandemic has certainly shown us that intersection. To slow and ultimately prevent the spread of COVID-19, the U.S. should absolutely provide global health leadership to support worldwide COVID-19 vaccination. As my colleague, Dr. Ashish Jha, testified last year, "[i]f we really want to protect the health of the American people, a central feature is to control the disease in the US and help other countries control their outbreaks as well."[30] These days, we speak of equity domestically, but we need to address the drastic looming worldwide inequity. When the U.S. is able to vaccinate any adult American who wants to receive a vaccine by this summer and most countries around the globe have barely begun COVID-19 vaccine campaigns and some countries may not see a significant portion of their population vaccinated until 2024, we are facing significant

[30] https://www.foreign.senate.gov/hearings/covid-19-and-us-international-pandemic-preparedness-prevention-and-response-additional-perspectives

global inequity.[31]

We have been lucky the COVID-19 variants have not mutated in a way that significantly reduces the effectiveness of the vaccines, but the clock is ticking. In Britain, the B.1.1.7 variant was first observed in October, rapidly rose, and became the dominant strain by December and increased deaths despite lockdown.[32] America must rapidly stand up significant genomic sequencing infrastructure to reduce the risk of COVID-19 variants. Washington ranks in the top 5 in the nation for this genomic sequencing capability, but still far too little of this sequencing is being done nationwide.[33]

Safely Reopening Schools and Long-term Care Facilities

Schools can and will safely reopen for in-person learning if communities continue to control the spread of COVID-19 with nonpharmaceutical interventions, institute effective in-school protocols, and we increase the rates of vaccinations. Many public health leaders were worried schools could be incubators for COVID-19 because schools amplify the transmission of influenza.[34] Research indicates K-12 schools can safely reopen when following strict mitigation strategies, including masks, hand washing, and ventilation, to protect children from exposure in the classroom.[35] High school students who are 16 and older can get the Pfizer vaccine when it becomes available.[36]

The Biden Administration's decision to prioritize vaccination of pre-K-12 educators will further cocoon students from the risk of COVID-19.[37] While vaccinations may not be a prerequisite for reopening of schools for in-person instruction – in fact, 300,000 Washington students are back to in-person instruction safely already – this past week's federal directive has meant that we can get even more kids back in-person in school. We all know that extended absences from school are causing developmental challenges, learning problems, especially for lower-income students, as well as depression and other mental health risks for all students.[38]

In Washington, our state and local health officials are working closely with school officials to identify the best strategies for protecting the health of school staff, teachers, and students as we return to classroom learning. Despite the positive indicators in the

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[31] "The U.S. Is Making It Harder for the Rest of the World to Get COVID Vaccines." Slate Magazine, https://slate.com/technology/2021/02/us-covid-vaccines-covax-global-south.html.
[32] "Covid-19 live Updates: East coast still a hot spot as new Virus CASES decline across the U.S." New York Times, February 23, 2021, https://www.nytimes.com/live/2021/02/23/world/covid-19-coronavirus
[33] "U.S. rushes to fill void in viral sequencing as worrisome coronavirus variants spread." Science Magazine, February 9, 2021, U.S. rushes to fill void in viral sequencing as worrisome coronavirus variants spread | Science | AAAS (sciencemag.org)
[34] https://www.cdc.gov/flu/swineflu/variant/h3n2v-schools.htm
[35] https://www.cdc.gov/coronavirus/2019-ncov/more/science-and-research/transmission_k_12_schools.html
[36] https://www.cdc.gov/vaccines/covid-19/info-by-product/pfizer/downloads/standing-orders.pdf
[37] https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/03/02/remarks-by-president-biden-on-the-administrations-covid-19-vaccination-efforts/
[38] "Opinion: The CDC's latest demands will keep millions of kids out of school unnecessarily." The Washington Post, February 12, 2021, https://www.washingtonpost.com/opinions/2021/02/12/cdc-report-schools-problems/

data, and success we're experiencing with statewide vaccination campaigns, we must acknowledge that our nation is still experiencing a disease pandemic. In this context, Washington DOH has worked closely with school officials, academic public health partners, and private sector partners to create a playbook for school reopening to help school leaders most safely open schools to routine classroom education.[39] Closely related to this playbook, Washington DOH has identified an extensive set of state supported COVID-19 testing options that school districts can implement for students and school staff. Washington DOH plans to stick with the "6 foot" distance requirements for this school year but continue to review the science and literature as we begin to plan for fall. A vast majority of states as well as the CDC still recommend or require 6 foot distance and I believe five states (DE, IN, MA, NV, VI) say 3 (or 3 to 6) feet but it is often based on community disease activity.[40,41,42]

The data indicates that the K-5 phase-in approach has a 25% lower COVID-19 introduction rate compared to a full 5-day-per-week schedule, and that high schools are more likely to have large outbreaks than elementary or middle schools. Many interventions can limit transmission among students, teachers, and staff within schools and outbreaks will be small if administrative and physical countermeasures are sufficient to limit in-school transmission. Finally, although we are excited to make sure school staff are vaccinated, we recognize that there are not yet vaccines available for people under the age of 16. Since students are likely to introduce COVID-19 into our schools, vaccinating all staff will not prevent COVID from entering schools.

Just as students have suffered being away from their schools and peers, so to have our long-term care residents suffered from this pandemic. Thankfully, the rate of COVID-19 cases has plummeted as long-term care residents have gotten vaccinated.[43] But now we must find ways for residents to have opportunities to socialize and interact. Public health leaders look forward to additional CDC and Centers for Medicare & Medicaid Services (CMS) guidance to reopen long-term care facilities safely.

II. Short-term Need to End This Pandemic

21st Century Public Health Workforce

Professional organizations representing state, local, and territorial public health agencies reported a decline in the size of the public health workforce since the Great

[39] https://www.doh.wa.gov/Portals/1/Documents/1600/coronavirus/FallGuidanceK-12.pdf
[40] https://www.masslive.com/politics/2021/02/massachusetts-commissioner-sticks-with-3-foot-social-distancing-requirements-as-he-plans-to-bring-back-all-students-to-classrooms.html Feb 23 2021
[41] https://fox59.com/news/indiana-schools-discuss-on-site-testing-new-covid-19-guidance-from-state/
[42] https://www.governor.virginia.gov/media/governorvirginiagov/governor-of-virginia/pdf/Final-Phase-Guidance-for-Virginia-Schools-6.9.20.pdf
[43] "'Safest place in the city': COVID-19 cases in nursing homes drop 89% as residents get vaccinated." USA Today, March 2, 2021, https://www.usatoday.com/story/news/health/2021/02/26/covid-cases-nursing-homes-plummet-89-residents-vaccinate/6814027002/

Recession of 2009.[44,45] This has only been further accentuated by the ongoing pandemic when the public health workforce has been stressed like no other time in recent history. Not only has the public health workforce been underinvested over the years, it has now become the target of vilification and unfair blame which has further impacted its sustainability. Prior to the pandemic, research indicated nearly 50% of the current public health workforce intended to leave or retire within the next five years.[46] There is an urgent need to build back and modernize this nation's public health workforce capacity to protect and promote the health of all Americans.

In Washington, the state DOH had to expand rapidly its workforce to respond to the COVID-19 pandemic. This translated into the hiring of over 500 staff members and the contracting of over 500 additional personnel, including for work in laboratory settings, case investigation and contact tracing, surveillance and informatics, outbreak response, public affairs/communications, diagnostic testing, and incident management command and control for dealing with the logistics of testing, contact tracing, PPE distribution and vaccinations. This "just in time" building of capacity in the midst of a crisis is no rational way of preparing our nation for future emergencies.

The diminishment of the public health workforce has affected all levels of the Washington public health system. Many local health departments transferred contact tracing to the state because they did not have local capacity. Having to hire skilled staff and train them while responding to ongoing and growing needs during the pandemic further strained the ability to continue other important work. The local and tribal public health system in Washington has performed admirably but after a year of sustained response is simply fatigued.[47] And yet the system's work is far from done.

Going forward, it is crucial to position public health agencies to have the skilled workforce required for pandemic response already in place. Many other essential public health programs had to put their work on hold as staff were shifted to assist with the pandemic. Essentially, public health has had to repeatedly "rob Peter to pay Paul" in the process. This nation must ensure that vital public health services are not compromised during an emergency regardless of its scope and scale, impacting the work in those equally important other areas.

A significant effort to rebuild the public health workforce is needed, but that workforce should not just replace lost positions. Rather, if we are to "build back better," the public

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[44] *New Data on State Health Agencies Shows Shrinking Workforce and Decreased Funding Leading Up to the COVID-19 Pandemic*, ASTHO, 2020. Retrieved from: https://www.astho.org/Press-Room/New-Data-on-State-Health-Agencies-Shows-Shrinking-Workforce-and-Decreased-Funding-Leading-up-to-the-COVID-19-Pandemic/09-24-20/

[45] *NACCHO's 2019 Profile Study: Changes in Local Health Department Workforce and Finance Capacity Since 2008*, NACCHO, 2020. Retrieved from: https://www.naccho.org/blog/articles/naccho-new-analysis-changes-in-local-health-department-workforce-and-finance-capacity-since-2008

[46] Bogaert, K., Castrucci, B. C., Gould, E., Sellers, K., & Leider, J. P. (2019). Research Full Report: Changes in the State Governmental Public Health Workforce: Demographics and Perceptions, 2014-2017. *Journal of Public Health Management and Practice*, *25*(2 Suppl), S58.

[47] "Hollowed-out public health system faces more cuts amid virus." Kaiser Health News, August 24, 2020, https://khn.org/news/us-public-health-system-underfunded-under-threat-faces-more-cuts-amid-covid-pandemic/

health workforce must be thoughtfully expanded not only to meet the immediate needs to address the ongoing COVID-19 pandemic, but also deal with future and critical prevention efforts whether for communicable disease or beyond. Recruiting, hiring, supporting, and modernizing the public health workforce will require considerable alignment between local and state needs and federal resources and leadership to be successful. That is what Americans should expect from decision makers as we eventually get to the recovery phase of this horrific pandemic.

Guiding principles include: (1) **predictable and sustained funding** through an established public health infrastructure fund that is flexible to meet ongoing and emerging needs; (2) **a focus on diversity and equity** to ensure the workforce represents the entirety of the community it serves; and (3) **expanding the public health workforce** to include highly-trained public health scientists, nurses, specialists and public health paraprofessional workers such as community health workers.

To reach the level of capacity required to build back the public health capacity needed to control COVID-19 and protect the public from future pandemics, ASTHO estimates approximately 100,000 new public health workers are needed in the following three broad categories based on: core public health capacity positions; public health clinical positions (especially nursing); and public health community engagement and outreach specialists.

Public Health Data Systems

There is significant need to modernize the nation's public health data systems. In 2009, as part of the Health Information Technology for Economic and Clinical Health (HITECH) Act, the federal government invested $27 billion to encourage hospitals and providers to adopt electronic health records.[48] There has not been a similar federal investment for public health. The lack of 21st century public health data/IT infrastructure has strained the ability for public health to aggregate data quickly furthering informatics-based decision-making. It has been a vulnerability throughout the response.

In Washington – as elsewhere across the nation – many local health departments do not have data management systems for notifiable conditions, including COVID-19, and they rely on receiving faxes for lab results and case reports. The local health department then must manually enter this into the state's central data system for disease reporting. This has slowed the state's ability to aggregate data from labs, hospitals and clinics and rapidly detect changes in the spread of COVID-19. Similarly, Washington's Immunization Information System (IIS) has been taxed in dealing with the push to vaccinate for COVID-19. Indeed, ongoing and sustained investment in building state-of-the-art public health data systems would have allowed public health agencies to identify COVID-19 "hot spots" and rapidly deploy resources to reduce further community spread.

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[48] Gold, M., & McLaughlin, C. (2016). Assessing HITECH Implementation and Lessons: 5 Years Later. *The Milbank quarterly*, *94*(3), 654–687. https://doi.org/10.1111/1468-0009.12214

State public health agencies are thankful to Congress for providing $500 million in emergency supplemental funding in the CARES Act for CDC's Data Modernization initiative and for additional annual funding of $50 million in FY2021. CDC's roadmap[49] and the vision of national public health organizations for data modernization[50] gives hope public health can get to this end goal if properly funded. Annual funding of at least $1 billion for CDC's Data Modernization Initiative (DMI) and for data modernization across state, territorial, tribal, and local public health agencies is necessary to bring data systems in to the 21st century.

This initial investment will provide an essential and immediate injection of resources that must be sustained yearly through robust annual funding to build enterprise-level systems and forge public-private partnerships for new and innovative solutions. Now, more than ever, it is critical to have strong, interoperable, national public health data systems that detect and facilitate immediate responses and containment of emerging health threats that have no regard for county or state borders. Only by investing in a modern, national public health data infrastructure – and the qualified workforce to operate it – can our nation combat threats collectively to protect the health of residents and sustain the economy in the process.

III. Long-term Needs to Prepare for Public Health Threats Ahead

Strengthen National Emergency Preparedness System

For over 400 days of response to COVID-19, Washington's public health and health care responders have demonstrated exceptional dedication to saving lives and preventing disease. That dedication aside, it is clear that without Personal Protective Equipment (PPE), laboratory testing supplies, monoclonal antibody treatments, vaccine, and vaccine delivery resources from the CDC and the Assistant Secretary for Preparedness and Response (ASPR) during this pandemic, our collective response efforts and impacts would have been less robust.

During this COVID-19 pandemic, and in previous catastrophic events, we have seen our hospitals and health care systems face personnel, and supply shortages. In order to meet preparedness and response needs of communities such as ours, CDC and ASPR must have adequate support and authorization levels along with commensurate funding to ensure local health departments and our local health care partners are equipped, as well as prepared, to manage the initial phases of an event that overwhelms our local, state, or national ability to quickly acquire the necessary supplies through routine channels.

States and hospitals need a reliable sustained source of funding to maintain operational stockpiles and to support the on-going robust country-wide preparedness. Jurisdictions must have a clear understanding of the roles and responsibilities of all entities in the

[49] https://www.cdc.gov/budget/documents/covid-19/COVID-19-Data-Modernization-Initiative-Fact-Sheet.pdf
[50] Driving Public Health in the Fast Lane, Council of State and Territorial Epidemiologists, 2019. Retrieved from: https://debeaumont.org/wp-content/uploads/2019/09/DSI-White-Paper_v15-Spreads.pdf

enterprise – federal, state and local. This includes not just the provision of needed materiel (e.g., PPE, supplies, medical countermeasures), but also the long-term storage, security, inventory control and replacement of the products.

Having seen public health respond to so many large-scale emergencies in nearly two decades of work in this field, it is clear that while emergency response gets the headlines, it is the challenge of doing more with less as a result of chronic underfunding in public health infrastructure that is the biggest struggle. Congress needs to fully fund CDC's Public Health Emergency Preparedness (PHEP) program and ASPR's Hospital Preparedness Program (HPP) so state, localities, and territories can easily and seamlessly transition from a pre-event preparedness planning mode to a real-time response, given the demands of the range crisis they may confront.

Unfortunately, level funding will not allow us to maintain active response postures while also improving systems to respond to a growing number of infectious disease such as COVID-19, measles, and vaping-associated illnesses; natural disasters such as floods, wildfires, earthquakes and tsunamis; and biological, chemical, radiological, and explosive terrorism threats.

In Washington, there are many unique and catastrophic public health threats we must plan for and potentially respond to, including natural disasters such as the eruption of Mount Rainier and other active volcanos, Cascadian Faultline and other earthquakes, tsunamis, and massive forest fires. In addition, Seattle and the Puget Sound is the gateway to Asia, and we need to enhance disease screening at ports of entry to maintain global health security. Global commerce is very much a part of the landscape of major entities in the state of Washington and cybersecurity threats must also be guarded against in the homeland security and global strategy moving forward.

Emergency preparedness funding should keep up with the unique threats that states and jurisdictions face. Congress and the federal government can look to Seattle and the state of Washington to leverage public-private partnerships to seed creative, innovative, and disruptive ideas and technologies that will change the world. Simply put, we must invest more as a nation in keeping Americans protected and safe.

Strengthen Public Health Infrastructure

Over the past 40 years, the United States has spent ever-increasing amounts of money on personal healthcare – so called individualized medicine – while at the same time governmental public health activities were simply neglected. This chronic under-investment was often unnoticed because of the lack of visibility of public health as a field. In fact, between 1980 and 2019 per capita expenditures on personal health grew by almost $9,000 while governmental public health activities only increased by $270.[51]

In 2016, America was spending almost twice as much on health care per capita as many other high income countries but simultaneously performing worse on health outcomes, with the highest rates of obesity, maternal and infant mortality and one of the

[51] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical

lowest life expectancies amongst industrial nations.[52] In 1980, life expectancy at birth in the U.S. was similar with comparable countries. Unfortunately, the U.S. is simply not keeping pace. In 2017, U.S. life expectancy was 78.6 years, compared to an average of 82.3 years for comparable countries.[53]

As a practicing physician, I recognize the absolute importance of clinical care and medicine to those who rely on it. We all know that America's health care system is a global leader and provides miracle cures to individuals daily. Yet as we look ahead, we must equally realize the value proposition of public health. Research shows that community-based prevention returns $5 for every dollar invested.[54] Simply put, public health is an amazing value.

When we invest in public health as a nation, we have the best chance at not just optimizing health outcomes but also in curbing the healthcare spending curve. Again, public health is an amazing value and we must consider even now shifting precious resources from health care to public health or we will continue down this current path: suboptimal health outcomes despite increased spending. Truly, we must figure out how to recognize the societal value of public health over the long-haul because only smart and sustained investments can realize improvement in the public's health.

This current trajectory of health spending highlights the need to invest in broader government social services, including public health infrastructure, to improve the health of all Americans.[55] Public health practitioners know the problems, have evidenced-based solutions, but require intentional smart, strategic and sustained investments. Even with respect to our current state of affairs with COVID-19, the threat of a pandemic was well known to our nation[56] and Congress appropriated investment in pandemic preparedness starting with President George W. Bush[57]; however, a lack of sustained investment has quickly depreciated this initial investment.

Over the years, I have championed the notion that public health is like the "offensive line" of a football team.[58,59] Yet we continue to focus on the "quarterback" of that team –

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[52] Papanicolas I, Woskie LR, Jha AK. Health Care Spending in the United States and Other High-Income Countries. JAMA. 2018;319(10):1024–1039. doi:10.1001/jama.2018.1150 Health Care Spending in the United States and Other High-Income Countries | Health Care Reform | JAMA | JAMA Network

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[59] "Incoming NACCHO President Dr. Umair A. Shah Shares How His Health Department Uses the Principles of Innovation, Engagement, and Equity to Advance Population Health," NACCHO, September 20, 2017,

often times, this is the healthcare system. While in football the offensive line is continually invested in as it will assure the success of the quarterback and the football team, in the real world, we do not value the offensive line that is public health. We instead spend in healthcare and yet fail to recognize that investment in the offensive line is so crucial. Repeatedly, we let the system capacity diminish so when we do have an emergency – and we always do – that very system is unable to respond as we all expect. I testified as such in Congress prior to the pandemic by saying that if do not invest in advance, "cracks will show and forces will penetrate and overwhelm the offensive line that protects the public's health."[60] It should come as little surprise that this is what has played out in COVID-19.

For far too long, our nation has neglected basic public health capacity.[19, 20] CDC's funding remains just above the level with fiscal year (FY) 2008, when adjusting for inflation,[61] and funding specific to state and local public health preparedness has been cut 25 percent from $939 million in FY2003 to $695 million in FY2021. Public Health Emergency Preparedness (PHEP) funding streams have steadily declined since initial allocation after 9/11. Indeed, in addition to the PHEP funding, many federal public health funds have been hollowed out over the years, including the 317 Immunization Grant Program, and the Prevention and Public Health Fund. In Washington – like states across the nation – public health systems at every level are struggling due to chronic underfunding, ever-increasing responsibilities, and the emergence of new threats. Public health agencies throughout Washington find themselves constantly reacting to crises, rather than working to prevent them.

We can only imagine what would happen if spending were doubled on governmental public health activities to 1% of GDP (currently less than 0.5%[62]) not just to address core public health infrastructure, but to implement proven community-based strategies that would equitably improve the health of all Americans.

Equity in the COVID-19 Response

The COVID-19 pandemic has acted as the "great revealer" of long-standing systemic and structural health inequities across our nation. The inequitable distribution of morbidity and mortality amongst black, indigenous, and people of color (BIPOC) and other populations demonstrates the absolute critical nature of addressing long-standing health inequities. To reset, reform, and rebuild throughout this challenging time and beyond, federal investments must prioritize and resource equity.

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https://www.naccho.org/blog/articles/incoming-naccho-president-dr-umair-a-shah-shares-how-his-health-department-uses-the-principles-of-innovation-engagement-and-equity-to-advance-population-health

[60] "'There is no surge plan': Despite warnings, Congress failed to fully fund pandemics bill," POLITICO, March 28, 2020, https://www.politico.com/news/2020/03/28/congress-pandemic-bill-coronavirus-152580

[61] In FY 2008, CDC funding was $6.375 billion (at the program level). FY 2020 funding is $7.694 billion (program level). Adjusted for inflation, the 2008 number would be $7.5168 billion in 2020 dollars.

[62] https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical

Public health and healthcare alike must work together to employ a health equity lens to ensure investments reach communities often marginalized and utilize a "health in all policies" framework to address the factors of health and well-being that fall beyond the scope of traditional public health and healthcare, such as housing, transportation, economic security, education, and children, family, and social supports. This work must be done intentionally in working with a variety of partners in addressing the social and structural determinants of health.

Of late, our nation is coming to grips with inequities even in COVID-19 vaccine administration. While some argue that one cannot vaccinate effectively and do so equitably, this is a false dichotomy. Our nation must value vaccinating as many Americans as quickly as possible to reach "herd immunity" but also to focus on equity in the process. It is not an "either-or" but a "both-and." We can and must do both.

The state of Washington has been focusing on doing just that in its ongoing vaccine efforts and while much work remains, much progress has already been made. Recently, the Washington DOH launched two key initiatives. In the first, DOH established the Vaccine Action Command and Coordination System (VACCS) discussed earlier, and the Vaccine Implementation Collaboratives (VICs) which affords careful and sustained community dialogue, stakeholder feedback in addressing equity in vaccination. The combination of the VACCS and VICs show how states can work together to address both in achieving their vaccine goals.

IV. Conclusion: Road Ahead

Moving forward, I think the following issues may be worthy of further policy consideration by the U.S. Senate Committee on Health, Education, Labor, and Pensions to improve our nation's public health system:

1. **Invest in public health, the public health workforce, and public health prevention systems** that are not just a value when compared to healthcare spending but provide us with the best chance of improving the health and well-being of Americans and the communities in which they live. These investments must be smart, strategic, and sustainable to ensure that we can protect and promote health of Americans for commonplace everyday issues and can be leveraged in the face never-ending emergencies such as what our nation (and globe) are facing now with respect to COVID-19.

2. **Launch a joint Congressional inquiry and/or Commission to investigate the performance of the nation's response to COVID-19.** This inquiry should be modeled after the one established post-9/11, and must be a robust review so that recommendations to improve the response systems including for public health are informed by data and best practices and devoid of political influence.

3. **Establish a 21st Century Presidential Public Health Security Commission**, which could be modeled after the Presidential Council of Advisors on Science

and Technology. This Public Health Security Commission would make policy recommendations in areas such as public health, national security threats, informatics and data modernization, workforce development, and innovation to better prepare the United States for the next pandemic.

4. **Coordinate policies, consensus-based standards, decision-making, and invest in enterprise-level IT and data infrastructure** that supports cloud-based platforms and real-time data automation. This includes closer integration of state and federal partners including the CDC to develop interoperable systems that allow for efficient data exchange, and the development of more timely, efficient and effective lab reporting systems to report COVID-19 test results to state (and local) health departments for point of care testing, as well as self-testing that is currently accomplished manually via phone, fax, .CSV file sharing, and other non-automated manners.

5. **Create a system-wide environment of innovation** that modernizes public health systems enables new public-private partnerships with healthcare providers, private sector, and other entities to create new tools that serve communities, patients, and consumers.

As I have testified previously to the U.S. House Energy and Commerce Committee, Health Subcommittee, the impact of the current pandemic underscores how crucial it is,

> [T]o direct efforts toward building healthy and resilient communities through appropriate and meaningful enhancements to proactive public health system capacity, including in areas of community preparedness, laboratory testing, surveillance and epidemiological investigation, emergency operations coordination, public health awareness infrastructure, and others alike. Investments in smart, forward-facing technologies and information systems are equally critical to the success of response capabilities and must also be remembered.
>
> Such efforts will not only help communities recover faster from an emergency but will reduce the impact of that very emergency. The more resilient a community is, the better it is able to resist, respond, and recover from a disaster. The strong and incredibly important work of…(public) health departments – the invisible offensive line of our communities – across the country should not be kept hidden but made more visible so all of us can recognize the absolute value proposition of what public health brings to the table, just like our partners in law enforcement, fire, EMS, and emergency management. With optimal and necessary support from the federal government, state and local public health partners can continue to perform the incredibly critical work that they do on a daily basis even if it remains invisible to the vast majority.[63]

[63] https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Testimony-Shah-PAHPA%20Reauthorization-060618.pdf. (Accessed February 21, 2021)

In closing, COVID-19 is the challenge of our lifetime, but it is also a watershed event to improve the health and well-being of all Americans through more robust, smart, and sustained investment in our public health system. On behalf of our state and my colleagues at ASTHO and across the public health system in this nation (and beyond), we stand ready to work with you to begin the process of proactively investing in public health. It is what our nation needs and what our nation requires to move forward successfully.

Thank you for holding this hearing to examine our COVID-19 response and provide an update from the frontlines.

The CHAIR. Thank you, Dr. Shah.
Now we'll turn to Dr. Jha.

STATEMENT OF ASHISH K. JHA, M.D., MPH, DEAN, BROWN UNIVERSITY SCHOOL OF PUBLIC HEALTH, PROVIDENCE, RI

Dr. JHA. Good morning, Chair Murray, Ranking Member Burr, Members of the Committee. It is indeed an honor to be here.

As we heard, we mark a grim anniversary this week, one year into a global pandemic that has caused unimaginable suffering and loss. But we also are seeing the beginning of the end of this pandemic. Infections and hospitalizations are down, more than 2 million vaccines are going into arms every day, and we will have enough vaccines for every American adult by the end of May. This is an extraordinary achievement of what has been a long and difficult road.

But as you've heard already this morning, the pandemic is not done with us. There is important work ahead to get back to a time when Americans feel safe living their daily lives, where our economy is thriving again.

Let's talk about what remains to be done.

First and foremost, we need to continue to focus on equitably expanding national and global vaccine supply and distribution. We are at a time when new variants and strains pose real risks, and the longer the virus circulates, the more it will mutate. Our full efforts and attention must be focused on vaccinating as many Americans as quickly as possible.

We have to do it far more equitably, far more equitably. So far, vaccinations for people of color has lagged far behind those of white Americans. We need a renewed strategy that ensures that those at the highest risk of this pandemic are getting vaccinated quickly. And Congress should demand that we systematically collect and publicly report data on vaccinations by race, ethnicity, age, and income to ensure Americans that need vaccinations are getting them.

Next, we need an aggressive global vaccination strategy, because if the pandemic has taught us anything, it's that viruses don't respect borders. If we continue a slow global rollout of the vaccine, it is entirely possible that strains will emerge elsewhere that threaten the efficacy of our current vaccines and possibly even render them useless. We will then have to reformulate, retest, and redistribute vaccines, and revaccinate our population.

At current global vaccination rates, it will take three to four years to reach widespread global immunity. Now, the Biden administration has taken important steps, including rejoining WHO, and Congress has committed funds to COVAX. These are good things, but unfortunately they are not enough. We need a strategy that isn't just about more money; it's about substantially ramping up production of these vaccines. This will require more global collaboration, and it will require U.S. leadership.

Next, closer to home, we need to build up more rapid testing. Some Americans will choose not to get vaccinated, and vaccines, as good as they are, are not 100 percent effective. That means we will continue to see some outbreaks of COVID for the foreseeable future. We need a testing and surveillance system that can help prevent outbreaks and keep us all safe. In a world of low transmission

and high vaccine coverage, we need cheap, easy-to-administer tests that are widely available. These exist today. Now, the FDA should work through the regulatory challenges to make many more of these tests available to the American people, and Congress should continue to make investments to ensure these tests are affordable.

Even with vaccinations and testing, people will get infected, and some people will get very sick, and we need more investments in therapeutics, particularly outpatient therapies. We have identified several good treatments for critically ill patients, but we have very little to offer to people before they get very sick. Congress should work with NIH to continue to support development of new outpatient treatments that can render this disease far less harmful.

Finally, we need a renewed set of investments in public health, as you heard from Dr. Shah. This pandemic has shown us the costs of under-investing in our public health infrastructure, the economic and human costs, which are not borne by all of us equally. They are borne by some of us much more than others. We need a new set of investments in public health infrastructure that puts equity at the heart of its mission.

Over the long run, we need to remember that we are entering an age of pandemics. Infectious diseases caused by pathogens jumping from animals to humans will become more common as a result of economic development and climate change, and globalization means an outbreak anywhere will quickly become an outbreak everywhere, and that's the world we are looking at.

To conclude, we are at a critical moment in this pandemic. We can see the time when we get our lives back, but we must do a few key things: invest in vaccinations, testing, therapeutics, and public health infrastructure to ensure that we bring this pandemic to a close, and to ensure that we prevent the next one. Thank you.

[The prepared statement of Dr. Jha follows:]

PREPARED STATEMENT OF ASHISH K. JHA

Introduction:

We mark a grim anniversary this month, one year into a global pandemic that has caused unimaginable suffering and loss. But, we also are seeing the beginning of the end of this pandemic. Infections are down nearly 70 percent since the peak of early January and, while we must keep wearing masks, keep social distancing, and keep being careful, data from the past two months suggests that we are turning a corner in our fight against this deadly pandemic.

As a Nation, our 7-day case average has plateaued and now rests in the same realm as our mid-summer peak, at *just under 60,000* new cases per day. Accordingly, 7-day average COVID-related hospitalizations and deaths have decreased by *66 percent* and *77 percent*, respectively, from the winter peak. These data reflect a combination of the rebound after a surge of cases during the holidays, increased national attention to masking and social distancing, seasonal trends of the virus, a high level of population immunity, and vaccination efforts ramping up across the country.

More than 2.1 million shots are now administered every day. Since December, more than 87 million doses of vaccine have become vaccinations, and many more are coming. While we began our vaccination efforts in late December with an average of 228,000 doses administered per day, the *most recent data* indicates that we are consistently administering more than 2 million doses per day, with *expected supply* over the next weeks and months likely to increase this number to more than 3 million doses per day.

Vaccine appointments across the country are scarce and the supply remains low in comparison to overwhelming demand, but we expect vaccine supply to far outstrip demand over the next month or so. The Biden Administration *recently announced* that all willing American adults will be able to receive a COVID–19 vaccine by the

end of May. This is an extraordinary achievement on what has been a treacherous road. There is important work ahead.

First, we must ramp up vaccine supply and distribution efforts across the country. Though cases, deaths, and hospitalizations remain at their lowest levels in months, we have entered a plateau phase that, with the addition of viral variants, poses the potential for further spikes which could outpace vaccine distribution. The longer the SARS-CoV–2 virus circulates in our Nation and our world, the more it will mutate. These mutations are likely to become more dominant over time, and pose serious risks of rapidly increasing the number of infections, hospitalizations, and deaths. It is imperative that our full efforts and attention be focused on vaccinating as many Americans as we can as quickly as possible over the coming weeks to avoid yet another spike in COVID–19 cases, hospitalizations, and deaths. Vaccinating all willing American adults within the timeframe presented by the Biden Administration mandates that we immediately shift our focus to expand infrastructure for vaccine distribution and administration. Meeting the Biden administration goal will require a vaccination rate of 3 million doses per day through the end of May.

Simultaneously, we must ensure that we substantially improve the equitable distribution of vaccines. There need not be any tradeoff between speed and equity. The United States right now does not have the ability for *equitable* and *widespread* distribution of vaccines to reach all American adults by the end of May—even with expected increases in supply. Local and Federal leaders must continue to establish more high-volume mass vaccination sites across the country, and specifically in communities of color that have been hit hardest by the pandemic. Where people cannot get to a vaccination site, we must bring the vaccine to them, with credible community voices addressing concerns. And we must continue to systematically collect and publicly report data on vaccinations by race, ethnicity, age, and income to ensure Americans who need the vaccinations the most are getting them.

Global Vaccination Strategy

Second, there must be an aggressive global vaccination strategy to match a rapid, equitable distribution model in the United States. Our Federal Government has both a domestic and global responsibility to ensure the adequate supply of COVID–19 vaccine. Infectious diseases do not respect national boundaries, so we must establish a global vaccination strategy that aims to protect people around the world as an important mechanism to protect the global economy, global public health, and in the process, the economy and health of the American people. A failure to equitably distribute global vaccines may result in large financial and human costs. Consider the facts: studies suggest an inequitable vaccination distribution may ultimately result in almost twice the number of deaths. Failure to employ an aggressive global strategy will allow more virulent and dangerous strains to emerge. So far, our vaccine candidates have withstood the emerging strains, maintaining their efficacy against these new variants of concerns. But over time, it is possible that strains will emerge that threaten the efficacy of our current vaccines and essentially, render them useless. We will then have to reformulate, retest, and redistribute vaccines and revaccinate our population. Unfortunately, our current global strategy is neither rapid nor equitable. At the current global rate of *6.39 million* doses administered per day, it will take nearly 5 years to reach widespread global immunity (assuming 75 percent protection with a 2-dose vaccine). An estimated *90 percent* of people in low-income countries will not be vaccinated in 2021. Our government has taken initial steps to advance an equitable global vaccination process, including rejoining the World Health Organization and engaging with COVAX (COVID–19 Vaccines Global Access).

Our government has committed *$4 billion* to COVAX, with a potential new pledge of $2 billion through 2021 and 2022. But while these contributions are substantial, this budget falls far short of global need. Current estimates suggest that COVAX will secure close to 2 billion doses by the end of the year, with at least *1.3 billion* of those directed toward *92 low-and middle-income nations*, covering at least *20 percent* of the participating population. However, this is nowhere near the 60 –70 percent (or more) of vaccinated individuals required to achieve global immunity. To meet this goal, COVAX should instead aim to procure and distribute enough doses to fully vaccinate four to five billion people by the end of this year. Scaling up its targets to this level will require substantial additional funding but money is not the biggest barrier. Limited supplies and manufacturing capacity will make ramping up global vaccine production a complex endeavor; it will require more than just relaxing intellectual property rights or technology transfers. Rather, it will require global collaboration and solidarity to address challenges at every step of the supply chain. We will need to work closely with our allies and take an aggressive approach. It can be done, but we will need U.S. leadership.

Testing

In addition to vaccinations, testing must remain a central part of our strategy against COVID–19. As vaccinations increase, it is important to remember that we should not expect to vaccinate 100 percent of Americans. We know some Americans will forgo vaccinations despite their safety and efficacy.

That means we will continue to see some outbreaks of COVID for the foreseeable future. For example, more than *90 percent of American children* are vaccinated against measles but the outbreak of *over 1,000 measles cases* in NY in 2019 highlights what can happen when a disease finds its way to those who are not vaccinated. In recognition of imperfect vaccine coverage and the imperfect protection offered by vaccines, it is important that we build a sustainable viral surveillance and testing system that can help prevent COVID–19 clusters and ensure that we can all engage in things we value, such as getting back to school and work, getting together in large groups, and living our lives in ways that are safe.

While the United States has substantially ramped up its COVID–19 testing infrastructure over the past year, we are still heavily reliant on slow and expensive PCR testing. The accuracy of these tests offers value as we try to curb the pandemic, but in a world of low transmission and high vaccine coverage these tests are not the proper tool for surveillance. Instead, we should be looking to cheap, rapid antigen tests that could be self-administered, cheap, and widely available. We could imagine using these before large gatherings. They could be used during the school year, especially next year when many younger children will not yet be vaccinated. They could be used for high-risk endeavors, such as when a community comes together to watch a play in a packed auditorium. These tests ideally would be available over-the-counter and would make it very easy to continue the simple, low-level testing needed in a world that is post-pandemic but where COVID–19 has not been fully eradicated.

Many companies have developed antigen tests that cost less than five dollars and can return results in less than 15 minutes. *The UK has been a leader in distributing and leveraging these tests*, and have relied largely on Innova Medical Group, a California company who *ships millions of rapid tests a day to Europe* but still does not have FDA approval to distribute tests in the United States. The FDA has been slow to approve these cheap, rapid antigen tests primarily due to concerns about accuracy and lack of thorough data, and maintaining the rigor and high standards of FDA approval are important. However, rapid tests serve a different role than PCR tests and should be evaluated accordingly. Accuracy is undoubtedly important for diagnostic tests, particularly ones used by physicians in a clinical setting. But in the midst of a pandemic, these rapid tests have shown enough efficacy that, in combination with their high speed and low cost, would allow them to play a critical role in keeping our economy open and people safe. It would be beneficial for the FDA to work through these regulatory challenges with the recognition that these tests are different from PCR tests, and offer substantial value despite their reduced accuracy.

Congress, in turn, should make investments to ensure that these tests are easily available to Americans and that there is effective messaging on how these tests should be used in the coming months and years. Doing so would be a valuable step in preparing our Country for the post-pandemic world.

Therapeutics

Another key element in establishing pandemic resilience is the development of safe and effective therapeutics, in both inpatient and outpatient settings. As we continue into the Fall and next Winter, we can expect to see a rise in cases once more, even as the majority of Americans are vaccinated. We must ensure these infections do not result in hospitalization or death. A few promising therapeutics appear to lower death rates in the inpatient setting, but investment in developing effective outpatient treatments has been and remains too limited.

Thus far, in clinical trials, three inpatient therapies have shown clear promise: remdesivir (likely given early in the disease course), dexamethasone (for advanced disease) and most recently, interleukin—6 receptor blockers, which are also likely useful in advanced disease. We still need more inpatient therapies to save our most critically ill patients.

While effective inpatient therapeutics are important and we are making progress here, the therapeutic landscape for early outpatient interventions has been disappointing. If we are able to develop such therapies, we could dramatically lower the impact of COVID on severe illness and prevent hospitalizations. So far, the *NIH has recommended monoclonal antibodies* as protective therapeutics, but clinical trial data is still lacking and only a few candidates have presented *promising preliminary results*. The FDA has approved Emergency Use Authorization for *select monoclonal*

antibodies in outpatients: bamlanivimab (developed by Eli Lilly), casirivimab, and imdevimab (both developed by Regeneron). Monoclonal antibodies are potentially important but they must be given as infusions and given early in the disease course before the patient is hospitalized. These logistics have created a strange situation. Despite their development and availability, monoclonal antibodies are largely underutilized. More concerningly, initial studies suggest the South African and Brazilian variants of concern *may demonstrate escapability* from these monoclonal antibodies, and we do not yet have enough data to determine efficacy against other new variants. Other companies are developing antivirals for mild outpatient cases, including Merck's *MK–4482* and Synairgen's *SNG001*. However, these drugs are still in the initial phases of clinical trials and we really don't know if they will work.

Members of President Biden's COVID–19 Advisory Board have argued for a *three-pronged approach to ending the pandemic*, alongside a robust vaccination campaign: (1) improve genomic surveillance (2) develop multivalent vaccines (vaccines which are protective against more than a single strain of the virus) and (3) develop scalable treatment options to mitigate severe cases. This last prong is absolutely crucial to ensuring a stable recovery. Efforts by the NIH's ACTIV program began far too late, and targeted expensive therapies with limited applications. We need a renewed focus by the NIH on practical outpatient therapies (ideally those administered orally) for COVID–19. To achieve this, we must increase funding for research and development, scale up recruitment in clinical trials, and rapidly assess which drugs are safe and effective for use.

Building an Equitable Recovery

As we build robust models of vaccination, testing, and therapeutics in our recovery, equity must be at the center of our strategies. So far, there have been *clear disparities* we are still working to repair. Investments in our public health infrastructure must be made equitably to build a healthier society, and Congress has an important role to play in funding these investments. A *comprehensive national public health system* incorporates both disease prevention and health education, incorporating state, local, and Federal agencies to promote health, surveil and predict emerging threats, and retain the capacity to respond to emergencies. The United States Public Health system is fragmented across local, state, and Federal jurisdictions and consistently underfunded. *In 1969*, the Federal Government contributed almost 50 percent to total public health expenditures. But, by 2013, that number had fallen to less than 15 percent. The Prevention and Public Health Fund, established by the Affordable Care Act and designed to sustain investment in public health at the Federal level, *remains at 50 percent of what* should have been funded due to the reappropriation of money to other programs.

This consistent underfunding and underinvestment in public health is not without its consequences, consequences too often felt by America's most vulnerable populations. For example, analyses by our research group show a direct correlation between hospitals where Intensive Care Units reached capacity due to a larger number of COVID–19 patients faster, and the social-vulnerability index (SVI). Underinvestment in public health aligns with structural inequalities and has left people in these communities, including communities of color and rural areas, vulnerable to the disparate impact of the pandemic. Additionally, a lack of data infrastructure has led to difficulties in collecting data related to cases and deaths by race early in the pandemic. This issue continues within the vaccine roll-out. *As the Biden administration* has prioritized, key changes must be made to improve the Nation's public health data-collection capacity to allow us to recognize and improve racial disparities in health.

Public health funding must anticipate rather than react to public health emergencies. We saw an increase in funding in 2009 during the H1N1 pandemic, and slight increases in supplementary funding in 2014 and 2016 in response to Zika and Ebola respectively. After these viruses came under control, investments stopped and there has not been continued growth in improving our public health systems.

We have built up our public health infrastructure during the pandemic, and now must continue past the COVID–19 crisis and continue allocating money and resources to public health agencies. Currently, as the vaccine rollout continues, Federal and philanthropic efforts are spending money on vaccine education campaigns, and are funding local community-based organizations to increase communication and access. We cannot let these investments stop after the pandemic is over. Giving community-based organizations and local health departments the money and resources to continue to engage their constituencies in public health education will be necessary to reduce the disparities made clear by the pandemic so we emerge from this crisis a healthier, more resilient society.

A New Age of Pandemics

Investment in public health infrastructure is all the more important when we consider that pandemics will start to become recurring events in our lives. As a result of climate change, deforestation, agricultural intensification, and globalization, infectious diseases caused by a pathogen jumping from animal to human are spreading throughout global society and are increasing in probability as a consequence of continued development destroying or diminishing animal habitats. Of all new and emerging human infectious diseases, *75 percent* can be traced to animals, mostly from wildlife.

Additionally, as global travel becomes more pervasive, epidemics are more likely to turn into pandemics. The number of Chinese passengers who traveled by air in 2019 was *7 times higher* than in 2003, when the original SARS pandemic hit. *World Bank data* shows that the global increase of passengers went from 1.7 billion in 2003 to 4.2 billion in 2018. Thus, it is imperative that we continue to allocate resources to prepare for this future reality.

Conclusion

We are at a critical point in our response to the COVID–19 pandemic. If vaccine supply projections hold and distribution and administration efforts are rapidly increased across the country, we should be able to begin vaccinating the general population by the end of April or early May. If we accomplish this goal with the speed, equity, and efficiency required, we should begin to bring the acute stage of this pandemic to an end by early summer.

While there is much work that remains and we will be combatting this virus for years, important public health restrictions can begin to be eased by late spring into summer. From there, we can begin to build a new normal, that can be even better than where we were before this pandemic struck. All of this is contingent on vaccinating a vast majority of Americans, having an effective testing and surveillance infrastructure that lets us monitor and manage the disease, and applying some common-sense public health measures that will prevent new flare ups.

Congress must allocate for key investments, both nationally and globally, in disease surveillance, stockpiling healthcare supplies, equitably increasing the capacity and resilience of our public health infrastructure, just to name a few. Only then will we emerge from this crisis as an America that is prepared and ready for what the future may bring.

The CHAIR. Thank you, Dr. Jha.

I will now turn to Dr. Abraham.

STATEMENT OF JERRY P. ABRAHAM, M.D., MPH, CMQ, DIRECTOR, KEDREN HEALTH VACCINES, LOS ANGELES, CA

Dr. ABRAHAM. Madam Chair Senator Patty Murray, Ranking Member Senator Richard Burr, Senators, I would like to thank the Committee for this opportunity to discuss this paramount issue, the COVID–19 pandemic.

My name is Jerry Abraham, and I'm a family and community medicine physician, a global injury epidemiologist, and a medical quality specialist practicing in South Los Angeles. I provide care to patients at Kedren Health, a federally qualified health center and acute psychiatric hospital serving low-income patients, diverse patient populations of South Los Angeles.

First, on behalf of Kedren and our President, Dr. John Griffith, we extend the warmest thanksgiving and gratitude to each of you for inviting us to share our experience and perspective on the issue of health care service and public health delivery to underserved populations during this time of this COVID–19 pandemic.

Before I begin, we at Kedren want to acknowledge the local leaders who make it possible for our measured success, Governor Gavin Newsome in the State of California Department of Public Health, our Los Angeles County Department Board of Supervisors, our

Board of Supervisor Holly Mitchell, our local L.A. County Board of Supervisors, specifically the city of Los Angeles and Mayor Eric Garcetti, our Counselor Karen Price, and, of course, our very own Congressional Representative Maxine Waters, who represents us here in Washington.

I would also like to begin by thanking the Biden administration for their leadership in working with physicians and other providers across the country to address the COVID–19 pandemic. It has made a tremendous difference to have national leadership, transparency, and communication about the pandemic and this vaccination effort.

Across this country, the pandemic has exposed deep-seated divides within our communities. Data from the CDC shows that Black and Latino populations who contract this disease are dying at twice the rate of other populations. Nowhere is this felt more deeply than in South Los Angeles, where we work. Those living in poorer communities struggle daily with access to medical care amongst the worst pandemic in over 100 years.

This population is more likely to utilize public transportation, to struggle with limited access to mental health services, to have difficulties related to language and insecurity due to the lack of immigration documentation. They usually lack medical insurance. Our population suffers from higher rates of hypertension and diabetes and obesity.

The point is that racial and ethnic, economic, lack of equitable access to health care and public health, and a whole raft of other issues related to disparities result in health outcomes that are different. While it is easy to unmask this effect related to vaccination rates, the same forces play out throughout the entire health care system.

But really, why I'm here today is to tell you about the story of the little Kedren that could, the historically Black institution from South Los Angeles that started in the '60's by 22 Black psychiatrists when African American individuals in South L.A. had nowhere to turn when they were in mental health crisis. That's the place that I work, and that's the place that answered the call of March 2020 when we knew we had to be a part of the response of this pandemic.

We became a resource, a safe haven, safe harbor, truly that light for testing right away for our county and our city. We knew that testing strategy and contact tracing would be critical in ending this epidemic. In December, when the FDA approved Pfizer and then shortly thereafter Moderna and the EUA was approved, we knew we needed vaccines, and we picked up the phone and we did what we do best every day, overcoming health disparities and addressing social determinants of health and achieving health equity. We called and we asked our department of public health where are our vaccines, and we worked in lock step with our local public health jurisdiction to make sure that we got vaccines.

Our nurses had COVID, our patients had COVID, and we knew we needed to vaccinate our community now. So we ended up getting 100 doses. Christmas Eve we started calling. By New Year's Eve we put 50 doses into the arms of our staff, and the next day

100, then 150, and today over 52,000 doses into the arms of people in South Los Angeles.

We said don't give us enough just for us, give us enough for our brothers and sisters to our right and left, other health care workers who had nowhere else to turn. And after that we said give us enough for all of our frail and our elderly and our vulnerable that needed a vaccine today.

What we do and what we do exceptionally well is we take down every barrier that stands in the way of our patients and their vaccines: Internet, email, phone, transportation, I can't speak English, I cannot walk, I cannot see, hear, talk. None of those are reasons not to get vaccinated in this country, and we made sure we broke down every one of those barriers.

What we do exceptionally well, why we're the Center for Excellence and the exemplary role model is we vaccinate a high volume of individuals as equitably as we can, and we report that data back accurately and timely, back to the appropriate jurisdictions.

No barrier stands in the way with our patients. What stands in our way is we need more vaccines. We need more hands to administer them. We're thankful for every volunteer who comes and helps, over 200 volunteers daily. And we need more resources, and we're very thankful for the work of Congress and this Senate in making sure that's achievable.

This is our shot. We must end this epidemic. We must engage and educate and vaccinate our communities. We can achieve 100 million vaccines and more, as Senator Burr mentioned, and we will and can get back to work, get back to school, loving our loved ones and doing all those wonderful things we used to do before this pandemic, loving and hugging and kissing everyone.

That's the story that we have to tell, and thank you so much for allowing us this opportunity to be here before you today. Thank you.

[The prepared statement of Dr. Abraham follows:]

PREPARED STATEMENT OF JERRY P ABRAHAM

Madam Chair Senator Patty Murray, Ranking Member Senator Burr, Senators, I would like to thank the Committee for this opportunity to discuss the paramount issue of the day; the COVID–19 Pandemic.

My name is Jerry Abraham, and I am a Family & Community Medicine Physician, a Global Injury Epidemiologist, and a Medical Quality Specialist practicing in South Los Angeles. I provide care to patients at Kedren Health, a FQHC community health center and acute psychiatric hospital serving low-income, diverse patient populations of South Los Angeles.

First, on behalf of Kedren Community Health Center and our President and CEO Dr. John Griffith, we extend the warmest thanksgiving and gratitude to each of you for inviting us to share our experience and perspective on the issue of healthcare service and public health delivery to underserved populations in this time of COVID–19.

Before I begin, we at Kedren want to acknowledge those local leaders who make it possible for our measured success. Governor Gavin Newsom and the State of California Department of Public Health, our Los Angeles County Board of Supervisors, specifically Supervisor Holly Mitchell, our local LA County Department of Public Health, and many city of Los Angeles officials including Mayor Eric Garcetti and Councilor Curren Price and of course our very own Congressional Representative Maxine Waters who represents us here in Washington, DC.

I would also like to begin by thanking the Biden Administration for their leadership in working with physicians and other providers across the country to address the COVID–19 pandemic. It has made a tremendous difference to have national

leadership, transparency, and communication about the pandemic and the vaccination effort.

Across this country, the pandemic has exposed deep seated divides within our communities. Data from the Centers for Disease Control and Prevention (CDC) shows that Black and Latino populations who contract this disease, are dying at twice the rate of other populations.

Nowhere is this fact more deeply felt than in Los Angeles where those living in poorer communities in South Los Angeles struggle daily with access to medical care amid the worst Pandemic in more than 100 years. This population is more likely to utilize public transportation, to struggle with limited access to mental health services, to have difficulties related to language and insecurity due to the lack of immigration documentation, and last, they usually lack medical insurance. These populations also suffers from higher rates of hypertension diabetes, and obesity. For example, South Los Angeles has a rate of diabetes that is three times higher than the rate of diabetes in other parts of the state. All of these challenges are contributing to the unequal and uniquely adverse medical outcomes from the Pandemic. According to recent data released in mid-February by the Los Angeles County Department of Public Health showed that among those who were vaccinated with at least one dose, only 5 percent were Black, while 33 percent were white and 23 percent were Latino and 19.1 percent were Asian. Among Black residents in Los Angeles 65 and above, only 24 percent of Black residents had received at least one dose of the vaccine compared to 42 percent of white residents 65 and up.

The point is that racial and ethnic, economic, lack of equitable access to healthcare and public health, and a whole raft of issues related to disparities have conspired to result in health outcomes that are different. While it is easy to unmask this effect related to vaccination rates, the same forces play out throughout the entire health care system. As the Nation approached 500,000 deaths and mortality numbers were exceeding 3000 deaths per day, the community in South Los Angeles had to do something to ensure no one was left behind. At a time when many had lost hope, Kedren Community Health Center decided something had to be done to change this dynamic. We needed action at the local level where people live and work with the full participation and empowerment of the population. I call this the "Kedren Miracle" where a disenfranchised community pulled together under Kedren Community Health Center to build one of the most effective vaccination units in this Pandemic which continues to this day to serve as a model throughout the USA.

Over the last several months, we have been able to transform Kedren into a COVID–19 vaccination center serving the people of South Los Angeles. We have worked with the Los Angeles County of Public Health and received tremendous support from California Governor Newsom's Administration, including the CalVolunteers program, which has provided dozens of volunteers to help staff the clinic. We have also received support from the Americorps, American Red Cross, International Medical Corps, Salvation Army, Americares, among other official channels for volunteerism and service—they help us serve over 15,000 members of the community every week.

During this phase of the vaccination effort, the limiting factor in our efforts has been vaccine supply. Like many parts of the country, the demand for vaccine has outpaced supply since the first vaccines were distributed in December. This has been particularly true in communities that look like our community, with an overwhelming majority of people of color, and those who get their health insurance from Medicaid. Studies have shown that Black and Brown communities have simply not gotten their fair share of COVID vaccines.

Through our advocacy efforts and by being loud, we at Kedren have been able to secure vaccines to serve over 15,000 people every week. That number is increasing, but we still have the capacity to do more. We stand ready to serve our community, and to help ensure Black and Brown people in particular don't get left behind when it comes to getting vaccinated.

Communities like ours are the ones that have been hit hardest by this pandemic. Residents in the communities around Kedren are far more likely to have been hospitalized or die from COVID–19 than in most other parts of the state. We will continue to be more exposed to risk if we cannot get enough people vaccinated against this deadly disease.

In recent days, the Newsom Administration has adopted new guidance that will allocate a disproportionate share of the state's vaccine supply to communities that have higher concentration of high-risk patients. Using the Health Equity Index to guide vaccine allocations makes sense. When you fight a fire, you don't just sprinkle

a little water around the entire fire. You aggressively attack the parts that are burning the hottest and pose the most immediate risk.

That same principle is now driving the Newsom Administration's approach to vaccine distribution. But it is not enough to just have vaccine in these areas. We need to make sure we have the people power, the communications outreach and the infrastructure necessary to get the shots into arms.

This can't be done by just using apps to make appointments at mass vaccination sites. While thousands of people have gotten their shots at mass vaccination clinics like the one at Dodger Stadium in Los Angeles, if we rely only on these mass sites, we will have distorted and inequitable distribution of shots. The technology needed to navigate the state's vaccine appointment system can be confusing in particular to older patients. The ability to get to these sites requires the ability to take hours out of your day to be able to sit in line, limiting opportunities for those who have to work or single parents who have to care for their children. And of course, it requires use of a car. Even in Los Angeles, thousands of low-income people do not have their own car to be able to access a drive-thru mass vaccination site.

Over the next several weeks, it will be essential to build a network of community-based vaccine administrators. It will be important to involve physicians and other providers in every single community. The California Medical Association is working with the state's Third Party Vaccine Administrator to help build a network of community physicians and other providers to help the state achieve its goal of vaccine equity. As vaccine supply becomes less of an issue, it will be important to make the vaccine available for people in the community where they live through their local providers.

We also know there are high levels of vaccine hesitancy in our Black and immigrant communities. There are many historic reasons for this skepticism which we do not have to go into here. But it does underscore the added importance of getting vaccine into the hands of community providers. Many people have a personal relationship with their local physician or community clinic. When people utilize other health care services, we need to be able to vaccinate people as well. If people are in a place they know with a health care professional they trust, they are more likely to be able to talk through their vaccine hesitancy issues. Local physicians and others can help advocate for their patients to be vaccinated, and hear their concerns, while addressing them with science and compassion.

By late April, we fully anticipate going from a vaccine supply problem to a vaccine demand problem. If we truly want to bring an end to this pandemic, we will need a robust, and community-specific communications and persuasion strategy. Physicians will be an important part of that outreach, but we cannot do it alone. We need to build partnerships with trusted community leaders and create a high-touch, multi-faceted strategy to promote vaccine acceptance.

We have had our share of hiccups over the last several months. It is no small thing to create a statewide vaccination program for roughly 30 million adults. We know that many of the same problems we've seen in California are plaguing other parts of the country. Some of this is to be expected, but that does not mean we should be silent or accepting. We must continue to push for a faster and more equitable vaccine distribution at every turn.

We have learned a great deal since vaccinations began in December, and we share the Biden administration's optimism that we can get vaccines to those who want and need them by late spring/early summer. But we are also clear eyed about the challenges that lie ahead. With continued transparency and cooperation between Federal, state and local governments, along with health care providers and community leaders, we can meet those challenges head on and bring an end to this pandemic.

The Kedren Model—The Secret Sauce

Kedren Community Health Center is a federally qualified health center (FQHC) that provides quality, integrated health and behavioral health services to children, youth, adults and families irrespective of immigration status, residency, language, culture, gender, ethnicity, religion, sexual orientation or one's ability to pay. Annually, KCHC provides care for more than 100,000 patients. Kedren Community Health Center is a trusted care provider in South Los Angeles and has worked to exemplify some of the best practices for distributing the COVID–19 vaccine and breaking down barriers to accessing the COVID–19 vaccine for vulnerable individuals in South Los Angeles.

For example, one of the biggest barriers cited by patients attempting to become vaccinated has been the appointment registration process. Many seniors have had to rely on children, nieces, nephews or other friends who are more comfortable using the internet to schedule an appointment. In addition, many vulnerable residents lack access to reliable broadband or simply do not have the time to wait for appointments to become available. Kedren Community Health Center. Adding to the problem and due to the digital divide, many of the local residents do not have internet access, or own a computer, or even have access to a smartphone. We worked to develop a simplified system that allowed both appointed and walk ins, a system that used a combination of paper and "point of care" information collection that could be entered into the county's online data base later. As a consequence, Kendren Community Health Center became one of only a handful of country affiliated vaccination facilities where walk ins are welcome.

Additionally, interpreters for almost every language spoken in South Los Angeles are available onsite. As of March 5, 2021, more than 12,000 people are vaccinated at our facility each week. One immediate outcome was that many—many of them Black and Latino healthcare workers who worked independently or in small practices that were excluded from that vaccination efforts of the larger hospital system have received their vaccine doses at Kendren Community Health Center. I would like to add that although our federally Qualified Health Center accounts for only a small fraction of the 100's of vaccinating organization in greater Los Angeles, we routinely account for nearly 10 percent of the COVID–19 vaccinations given within the county. It doesn't seem possible *that so few can do so much for so many*.

We have been relentless in this effort to save lives, much like Noah gathering people and animals before the great flood, Kendren Community Health Center has become a beacon for those trying to address the COVID–19 flood. Organizations such as the Los Angeles County Department of Public Health, International Medical Corps, AmeriCorps, the faith-based community, and myriad of other organizations and donors, many from the community have come to our aid and are providing surge support and human resources to enhance this vaccination effort. The result is a small city of vaccinators, with temporary shelters, stockrooms, endless deliveries of vaccine, needles and medical commodities. We have been so successful in promoting vaccination efforts in our community model that we routinely send a fleet of trucks to other vaccine sites throughout the city to take their unused vaccines!

Kedren Community Health Center's Framework

Kendren Community Health Center has a robust framework for distributing COVID–19 vaccine effectively and efficiently to vulnerable populations, the aged and the disabled. It is a model built on trust at the most local level of the health system.

Phase 1: Increase vaccination at fixed sites within the community

Phase 2: Expanding services and recruit additional vaccination sites

Phase 3: Develop Academic Partners to improve options for access and quality

Phase 4: Develop mobile vaccination teams for those hardest to reach

Phase 5: Conduct mass vaccination events uniquely tailored to the population

I would like to speak to Kedren Community Health Center's Vision for a future where inequality in medical services doesn't force people in my community to wait at the end of the vaccine line to ensure their survival. We are on a mission to get as many people in the life boat as possible. We are targeting support to drive up vaccinations to over 1 million people in South Los Angeles and beyond this year in an equitable and culturally focused program able to reach those most at-risk. Second, we will not let this experience fade. We also have a dream that we have been able to work in a manner that will contribute to expanded healthcare infrastructure in our community when the pandemic subsides. Last, we hope that the heroic work of Kedren Community Health Center, and the work of our partners, will serve as an example of others seeking to address the problem of unequal access to health services in underserved, vulnerable, disabled, minority and at-risk populations during this Pandemic and beyond.

Thank you for this opportunity to testify before each of you today on this very important subject. I humbly respect your time and admire your service to our Nation. I am happy to answer any questions you may have.

SUMMARY OF JERRY P. ABRAHAM

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The CHAIR. Thank you, Dr. Abraham.
We will turn to Dr. Fuchs.

STATEMENT OF MARY ANN FUCHS, DNP, RN, NEA-BC, FAAN, VICE PRESIDENT OF PATIENT CARE AND SYSTEM, CHIEF NURSE EXECUTIVE, DUKE UNIVERSITY HEALTH SYSTEM, DURHAM, NC

Ms. FUCHS. Thank you, Chair Murray, Ranking Member Burr, and Members of the Committee. I'm honored to represent our many

frontline staff who have worked tirelessly to care for all of our patients, including those suffering with COVID–19.

Duke University Health System is comprised of a hospital and health care network that spans the care continuum, and we're dedicated to providing high-quality patient care, educating tomorrow's health care leaders, discovering new and better ways to treat disease, and partnering with our community to improve health. We appreciate the Committee's leadership in addressing the current pandemic, and on behalf of Duke Health, thank you for the critical support Congress has provided over the last year, including through the CARES Act and subsequent legislation.

Over the last year, COVID–19 has posed persistent challenges for the communities we serve, our patients, and our team members. And as Chief Nurse of our health system, I know these issues firsthand.

As COVID–19 persisted, I worked with multiple teams to create new strategies to meet patient care needs, reallocated internal resources to adapt to influxes of patients, and quickly pivoted when circumstances changed. We set up new delivery models and care practices, established testing and treatment sites, and stood up vaccination sites for employees and patients. We served our community as a major transfer center for the sickest patients and provided resources to skilled nursing facilities in the form of testing, staffing, and training.

We responded to the ever-changing information by regularly updating our care, holding town halls and virtual forums for our employees in the community; and like many health systems, we were the hub of the COVID–19 response in our community.

This past year has offered us many lessons learned which I hope can inform the future actions of this Committee. We are committed to protecting our workforce. We were impacted by a real and global shortage of N95 masks and other PPE, as well as stockpiles that contained expired PPE. Our supply chain team worked around the clock sourcing from around the globe to ensure we had adequate and effective PPE.

Our workforce must be cared for and offered respite. Caring for critically ill patients, comforting families with loved ones suffering in isolation, and fearing bringing the virus home to our families has taken a significant toll on the mental well-being of our workforce. We are seeing their exhaustion compounded by pandemic-related anxieties and increased responsibilities at home.

In my role as President of AONL, we continue to advocate for resources to protect the physical and mental health of the workforce, and we know through a recent national AONL study that the inability of health care workers is still a major issue, along with addressing burnout and building resilience.

Duke Health also joins other organizations, including the AHA and AONL, in supporting the Dr. Lorna Breen Health Care Provider Protection Act. And before the pandemic, our nursing workforce needs outpaced our supply. Thus, we continue to support increased funding for Title 8 Nursing Workforce Development Programs and support the Future Advancement of Academic Nursing Act, which would make critical investments in nursing infrastructure.

COVID–19 has also served as a blunt reminder that we cannot afford to overlook our public health infrastructure and workforce. Thanks to a grant from our state, Duke Health's COVID–19 Support Services Program has been able to assist community members requiring to isolate or quarantine. Over 30,000 people have been provided relief payments, meals, supplies, transportation, and medication delivery.

We established a Vaccine Equitable Distribution Committee to better understand our data and reach marginalized populations, including those who are disproportionately impacted by the virus. We have dedicated appointments and vaccines, and we partner intentionally with community organizations. This work has improved the rate of African Americans vaccinated in our community from 8.8 to more than 15 percent today.

The impact of the expansion of telehealth services has facilitated connection to our communities and demonstrated the efficacy in delivering care. We want to ensure that telehealth will remain accessible to more patients on the other side of this current crisis.

The substantial financial impacts of COVID–19 on hospital and health systems will also have lasting effects. Systems now face difficult decisions to reduce cost. Additional support is needed, including eliminating further reductions in payments through Federal programs, including Medicare and Medicaid, to maintain access to care.

In closing, as the number of vaccinations increase, in combination with continued infection prevention measures, we need to acknowledge pandemic fatigue, be patient with each other, and work together to continue to provide the highest quality care in the safest manner.

Thank you for the opportunity to serve on the witness panel for this important conversation.

[The prepared statement of Ms. Fuchs follows:]

PREPARED STATEMENT OF MARY ANN FUCHS

Chair Murray, Ranking Member Burr, and Members of the Committee, I am honored to represent our many frontline staff and other team members who have worked tirelessly to care for all of our patients, including those suffering from COVID–19. I am Mary Ann Fuchs, Vice President of Patient Care & System Chief Nurse Executive at Duke University Health System and Associate Dean of Clinical Affairs at the Duke University School of Nursing. I also serve as the current president of the American Organization for Nursing Leadership (AONL), which is the national professional association of more than 10,000 nurse leaders who manage and facilitate patient care in all settings across the care continuum. AONL is the voice of nursing leadership and a subsidiary of the American Hospital Association (AHA). Thank you for the opportunity to testify.

Duke University Health System is comprised of a hospital and health care network supported by outstanding and renowned clinical faculty, nurses, and care teams. This network is dedicated to providing high-quality patient care, educating tomorrow's health care leaders, discovering new and better ways to treat disease through biomedical research, and partnering with our community to improve health everywhere. Duke's services span the full continuum of care, from primary care to medical and surgical specialties and subspecialties, all dedicated to putting our patients at the forefront of everything we do.

Founded in 1998 to provide efficient, responsive care, the health system includes three hospitals—Duke University Hospital on our Duke University Medical Center campus in Durham, North Carolina, Duke Regional Hospital, and Duke Raleigh Hospital. In addition to our hospitals, Duke Health has an extensive, geographically dispersed network of outpatient facilities that include primary care offices, urgent care centers, multi-specialty clinics, and outpatient surgery centers. Duke Primary

Care is the largest primary care network in the greater Triangle, North Carolina area with family and internal medicine providers and pediatricians in more than 40 locations throughout the region. Duke Connected Care, a community-based, physician-led network, includes a group of physicians, hospitals, and other health care providers who work together to deliver high-quality care to Medicare Fee-for-Service patients in Durham and its surrounding areas.

The Private Diagnostic Clinic (PDC) is the faculty physician practice for Duke Health. It is one of the first and largest academic multi-specialty group practices in the United States. The PDC owns and operates more than 140 primary and specialty care clinics throughout central and eastern North Carolina. Through a diverse and integrated network of Duke providers, patients have convenient, accessible, and high-quality primary and specialty care close to home.

Duke HomeCare & Hospice offers hospice, home health, and infusion services. Hospice care is offered to terminally ill patients in their home, skilled-nursing facilities, assisted-living facilities, and at our two inpatient facilities located in Hillsborough and Durham, North Carolina. Home health services are available to patients who are homebound and in need of nursing services, physical therapy, speech therapy, or occupational therapy. Infusion services are provided at home or at work for individuals who need intravenous therapy.

We appreciate the Committee's leadership in addressing the current COVID–19 pandemic. On behalf of Duke Health, thank you for the support Congress has provided to hospitals, health systems, and all providers over the last year. The CARES Act and subsequent legislation established and added to the Provider Relief Fund, which provided critical resources to better prevent, prepare for, and treat COVID–19.

As a tertiary and quaternary care center, we put the person who needs our care at the center of everything we do. Since well before the arrival of the COVID–19 pandemic, the safety of our patients is and always has been our first priority. Our hospitals safely manage infectious diseases every day. And we will continue to provide safe, effective, patient-centered care in our facilities.

Over the last year, COVID–19 has posed persistent challenges for the communities we serve, our patients, and our team members on the frontlines. Below, I address the many ways in which we adapted care for our community and our patients, many of whom are very sick and require complex, coordinated care. I will also share our experience standing up a robust testing program and rolling out a successful vaccine campaign. I also share some perspectives on the challenges ahead and how to apply lessons learned to future public health threats.

A View From the Frontlines: Provider Care and COVID–19

As the chief nurse of our health system, and on behalf of the many nurse leaders on the frontlines of this pandemic, I know firsthand the issues facing our patients, our nurses and other provider colleagues, and our health care organizations. At Duke, we provide tertiary and quaternary services and serve the highest acuity patients. In order to meet our mission, we need appropriate staffing (nurses, respiratory therapists, physician staff, others) and equipment (personal protective equipment (PPE) and other intensive equipment) to best care for our patients, their loved ones, and each other.

I worked with multiple teams comprised of nurse, physician, and administrative leaders to create new strategies to meet patient care needs; reallocated internal resources to adapt to influxes of patients; and quickly pivoted when circumstances changed. Specifically, our team developed appropriate staffing models; new policies and procedures in support of infection prevention for patients, visitors, and staff and appropriate use and reuse of PPE and supplies; new care models and patient care practices; established new testing and treatment sites; and stood up multiple vaccination sites for employees and patients, among many other things. We also worked in our community in a variety of ways, including serving as a major transfer center for the sickest patients, and providing resources to skilled nursing facilities in the form of COVID testing, staffing, and training to care for that patient population.

As a team, we responded to the ever-changing information by regularly updating our policies and procedures, holding weekly town halls for employees, convening virtual community forums with our experts to learn more about testing and vaccines, and providing other outreach—including through print materials and online communications—to inform our workforce and community about our pandemic response. Like many health systems, we were the hub of the COVID–19 response in the com-

munity. The vital role health systems played in the response is something I hope this Committee will consider when drafting future policy.

At Duke, we are extremely committed to protecting all of our workforce and have learned so much about this coronavirus since it first emerged in the United States in early 2020. In the beginning, we had too little information about the virus and how it is transmitted, uncertainty that was compounded by a real and global shortage of N95 masks and other PPE, as well as stockpiles that contained expired PPE. We know that the same challenges were impacting hospitals all over the country, including those facing additional resource challenges and workforce shortages.

Very early in the pandemic, we made a commitment at Duke to universal masking for all our team members, and we later expanded that to require masks for patients and visitors. Our Supply Chain team worked around the clock sourcing from around the globe to ensure we had adequate safe and effective PPE—including surgical masks, gloves, and gowns—for our teams. Given these challenges, I am proud of our Duke community and the partnerships across both the health system and university to help address some of our most pressing needs.

Over a year ago, facing a critical shortage of N95 face masks of our own, Duke Health research and clinical teams confirmed a way to use existing vaporized hydrogen peroxide methods to decontaminate the masks so they can be reused. The process uses specialized equipment to aerosolize hydrogen peroxide, which permeates the layers of the mask to kills germs, including viruses, without degrading the mask material. As a result, the decontamination process allowed for thousands of N95 masks to be reused at all three of our hospitals, easing some of the shortage and curbing the need for other alternatives using unproven decontamination techniques. Our experts also provided guidance to other hospitals and health systems across the country so that they could develop and implement such procedures.

Recognizing the Mental Health Needs of the Front-Line Workforce

The impact

The pandemic has profoundly affected our health care teams and clinician leaders, emotionally and physically. Caring for critically ill patients, comforting families of loved ones suffering in isolation, and fearing bringing the virus to our families has taken a significant toll on the mental well-being of our workforce. The unfortunate reality is physicians and nurses already suffered from high rates of depression, burnout, addiction, and suicide before the COVID–19 pandemic.

Early on in the pandemic, in my role as president of AONL, we joined leadership from other national nursing organizations to meet with the Coronavirus Task Force to collectively advocate for three priorities: keep our nurses safe; allocate nurses so we have enough staff to care for our patients and communities; and ensure nurses have the supplies and equipment they need to treat patients. While we continue to advocate for resources to protect the physical health of clinicians and staff, we are also advocating for resources to support their mental health.

To help shed light on nurse leaders' primary challenges, leading practices, and areas of support during this pandemic, AONL fielded a pulse check study of more than 1,800 nurse leaders in July 2020. Participants included nurses at all leadership levels, mainly in the hospital and health system setting. The primary challenges identified were access to PPE and other supplies, communicating and implementing changing policies, surge staffing, reallocation and training, and emotional health and well-being. AONL fielded a follow-up study last month, and while the report is still in development, we do know that the availability of health care workers is still a major issue along with addressing burnout and building resilience. These issues are not specific to nursing and also extend to physicians, respiratory therapists, transport specialists, and environmental service staff.

I am proud of all our Duke Health team members for their commitment to our patients and support of their colleagues during unthinkably challenging professional circumstances, but none of us are immune to the burdens the pandemic has placed on our mental health. We are seeing the exhaustion among nurses, first and foremost, followed by the feelings of being overwhelmed and anxious and having difficulty sleeping, as many nurses also face challenges of managing other responsibilities for their families and conducting virtual school at home. This fatigue and strain, which at times presents as post-traumatic stress disorder, has been dramatically exacerbated over the last year.

As a result, we are starting to see more of our skilled workforce leave or planning to leave, which is also being reported in recent surveys conducted nationally. This kind of high turnover will have a significant impact on the future of delivering

health care. Compassion fatigue is just as real and consequential as physical exhaustion, and while the COVID vaccines bring hope, we are seeing the respect for frontline workers dwindle as the public tires of this pandemic. Unfortunately, we also are starting to see an increase in inappropriate and violent behaviors as a result of the incredible toll this pandemic is taking on those seeking care in our hospitals and clinics, which is another complicating factor for our workforce.

Our response and proposed solutions

The constant challenge of caring for COVID patients—by serving as their family and managing death and dying in addition to intensive care—means our workforce must be cared for and offered respite. We provide mental health resources through Duke's Personal Assistance Service (PAS), which provides assessment, short-term counseling, and referrals by a staff of licensed professionals to help resolve a range of personal, work, and family problems. PAS services are available at no charge to benefit-eligible Duke faculty, staff, and their family members. Duke also sponsors an emotional support and well-being hotline and online resources conveniently available to staff, faculty, and our broader community. In addition, our chaplains provide needed support to frontline staff in their care settings across the health system.

In addition to supporting the National Academy of Medicine's *Action Collaborative on Clinician Well-Being and Resilience*, the AHA and AONL have developed a number of resources to address burnout and promote resilience, especially during the COVID–19 pandemic. These include guides on grieving when there is no time to grieve, embracing mindfulness, and addressing moral distress. The AHA also created the *Caring for Our Health Care Heroes During COVID–19* resource, which outlines the ways hospitals and health systems are helping to care for and support the health care workforce during this crisis. The document focuses on three areas—mental health, food, and housing—and features case examples from across the country. It also provides a list of national well-being programs and resources developed for healthcare workers.

Further, Duke Health joins other organizations, including the AHA and AONL, in supporting the Dr. Lorna Breen Health Care Provider Protection Act, which aims to reduce and prevent suicide, burnout, and behavioral health disorders among health care professionals. Named for a physician who led the emergency department at New York-Presbyterian Allen Hospital, the bill would authorize grants for providers to establish programs that offer behavioral health services for front-line workers. In addition, the bill would require the Department of Health and Human Services to study and develop recommendations on strategies to address provider burnout and facilitate resiliency, and it would direct the Centers for Disease Control and Prevention to launch a campaign encouraging health care workers to seek assistance when needed. Thank you to Senator Kaine and Senator Cassidy for leading this effort. I hope this Committee will give the legislation swift consideration.

Moving forward: Planning for the future from lessons learned

This past year has offered us many lessons learned to better care for our patients during and after public health crises. We continue to treat patients who suffer from chronic conditions as a result of COVID–19 and who will need long-term care in the community. From the early phases of COVID–19 through recent surges and into the future, we will continue to see adaptation in the care we provide our patients and the safety we ensure for our workforce.

The pandemic created regional collaboration between (historically) competitor health systems, who pulled together above and beyond the connections that exist in NC, and the state emergency management collaboratives (RACs) that are in place to address natural disasters and other emergencies. Health systems like ours began weekly coordination of our response, sharing supplies and resources and ensuring access to care and an equal sharing of the burden of COVID cases. Lessons learned through these efforts could be translated into mutual aid expectations for any future similar public health crises.

The Hospital at Home program allows us to care for patients at home. We recently launched this initiative at Duke Raleigh Hospital and have seen firsthand the benefit of allowing acute healthcare services to be provided outside of a hospital setting in response to the surging COVID–19 pandemic. At Duke University Hospital, we are providing enhanced home care services to COVID–19 positive patients who can be treated at home and thus provide better access to hospitalization for more acutely ill patients.

Thanks to a $7.4 million grant from the North Carolina Department of Health and Human Services (NC DHHS), Duke Health's COVID–19 Support Services Program has been able to assist individuals and families required to isolate or quar-

antine due to COVID–19. The program, which initially covered three counties and has expanded to nine, has served approximately 30,000 people through relief payments, food boxes, meals, COVID supplies, transportation, and medication delivery. Duke has partnered with 15 minority-led community-based organizations to provide these much needed services in our community.

At Duke Health, our top priority remains the health and safety of our patients, their loved ones, and each other. Our planning team has been diligently coordinating with our state leadership and developing the proper preparations for administering all three COVID vaccines now currently available. At Duke Health, we see the vaccine working to protect our team—with over 70 percent of our team members having been vaccinated—and in recent weeks we have not seen any COVID–19 infections in vaccinated team members.

As part of our commitment to getting vaccine to those most impacted by COVID–19, we have established a system-wide Vaccine Equitable Distribution Committee to better understand our data and reach historically marginalized populations, including those who are disproportionately impacted by COVID–19. We have dedicated appointment blocks and allocation for these populations, and we partner intentionally with community organizations.

We continue to partner with the community to pilot "pop-up" vaccine clinics. Recently, we joined with the Latino Community Credit Union, La Semilla, El Centro Hispano, Greenlight, and Immaculate Conception Church through the LATIN–19 initiative to create a vaccine clinic geared toward the Latino community. We also have partnered with the Durham Recovery & Renewal Task Force's Faith Leaders Round Table to hold an event at Nehemiah Christian Center in downtown Durham. We continue to collaborate with the African American Covid–19 Task Force and Community Health Coalition, Meals on Wheels, Lincoln Community Health Center, and additional faith communities to provide vaccine allocation and transportation for vulnerable communities.

As supply increases and eligibility categories expand, we will continue to build on the above efforts and develop additional strategies with the communities we serve. Through this work, the health system has improved the rate of African Americans vaccinated from 8.8 percent on February 1, 2021, to more than 15 percent today. While we are still not where we need or want to be, we are making progress and will continue to do so. All combined, this outreach is just one way to address the enormous health equity gaps that COVID–19 has exposed. Our nation's health policies must prioritize addressing these health disparities so that they are no longer systemic impediments to patient care and access.

We are following the guidance and direction of our public health experts, including our infectious disease and infection prevention colleagues, closely monitoring and adopting new findings, and following clinical protocols developed by expert scientists and clinicians in every discipline of care. We will continue to manage the pandemic's impact on everything we do, while also seeing to the important challenge of maintaining resilience within our workforce.

Preparing for future health emergencies now means doing all that we can to ensure a strong, deep, and viable health care workforce in the future, including our physicians, physician assistants, and especially our nurses. Even before the COVID–19 pandemic, our nursing workforce needs outpaced our supply. We are grateful for the leadership of Senator Burr and Senator Merkley in advancing the reauthorization of Title VIII Nursing Workforce Development Programs. We were pleased its reauthorization was included in the CARES Act enacted last March and thank Congress for supporting legislation to update and improve programs that help to grow and support the nursing workforce in the United States.

We continue to advocate for increased funding to the Title VIII Nursing Workforce Development programs to increase the nursing and nursing educator workforce. Each year, nursing schools must deny admission to thousands of potential students because they do not have enough faculty to teach these aspiring nurses. The Title VIII programs support nursing schools but also seek to add diversity to the nursing profession and improve access in health shortage areas. Along with the broader nursing community, we support the Future Advancement of Academic Nursing (FAAN) Act, which would make critical investments in our nursing infrastructure, including underserved areas by supporting the needs of nursing students, helping retain and hire diverse faculty, providing resources to modernize nursing education infrastructure, and creating and expanding clinical education opportunities. These legislative efforts are essential and will help prepare nursing students as they transition from the classroom to the frontlines of patient care. Thank you to Senator Merkley for his leadership introducing the FAAN Act.

COVID–19 has served as a blunt reminder that we cannot afford to overlook our public health infrastructure and workforce. At a state level, and in the absence of a coordinated and consistent public health infrastructure with sufficient resources, communities, long-term care facilities, and public health officials turned to health systems and hospitals to support testing, case identification and contact tracing, facility interventions in long-term care and communal living facilities, assistance for historically marginalized communities, and most recently vaccination at scale in our communities. While health systems including Duke Health have stepped forward to do this work, these additional responsibilities have substantially added to the burden and burnout of our teams and increased financial losses and challenges. Further ongoing investment in public health infrastructure is critical.

We appreciate the tremendous and ongoing coordination with our Governor's Office and NC DHHS to develop a statewide plan to respond in lockstep to the current pandemic. But because our public health infrastructure is resourced differently in every county, the local-level capacity to respond to public health threats varies significantly across our state. The pandemic has highlighted a critical need to narrow these gaps in pursuit of a stronger and more coordinated public health system. In follow-up to legislation enacted by Congress in December, we are grateful the North Carolina General Assembly approved a bill last week that will provide $84 million to local health departments across our state.

As the Trust for America's Health notes,[1] public health departments must respond quickly to emergencies while maintaining the day-to-day work they already do to support healthy communities, including managing chronic disease and substance misuse. We echo the TFAH's call for robust funding "to ensure that all communities are served by health departments with comprehensive capabilities" and to minimize the vulnerabilities recently exposed. We are grateful for Chair Murray's leadership on legislation that would strengthen the state and local public health infrastructure. Thank you to this Committee for its attention to these issues and for seeking policy solutions that will address workforce needs and provide access to care for all patients.

As president of the AONL, I served on an AHA task force that developed a *Pathways to Recovery* compendium of resources to help inform hospitals and health systems' work to respond to and recover from the pandemic. It spans 11 areas, including workforce, testing/contact tracing, communications (both internal and external), supply chain, ancillary/support services, plant operations, financial management, governance, patient experience, transitions in care, and risk management. It is intended to help hospitals align with where their own communities are in the pandemic.

COVID–19 highlighted the disparities in care and the need for health equity. In addition to addressing systemic racism within health care, we recognize the importance of recruiting and retaining a diverse health care workforce, reflective of the communities we serve. The AHA and AONL developed resources to help health leaders implement and foster workforce diversity and inclusion within their organizations. These tools also address bias and examine how institutionalized and systemic racism result in inequities in care.

I must also note the impact of the unprecedented expansion of telehealth services and access to telehealth resources since the start of the pandemic that has helped us stay connected to our communities. Our experience, and that of fellow health systems across the country, has demonstrated the efficacy of telehealth in delivering care in a public health emergency, and we want to ensure that it will remain beneficial, acceptable, and accessible to more patients when applied in the appropriate ways on the other side of the current crisis.

We are grateful that the Centers for Medicare and Medicaid Services (CMS), through emergency waiver authority, have provided numerous telehealth flexibilities, and we urge further action by Congress and CMS to make many of these flexibilities permanent after the pandemic. In the near term, we support the Temporary Reciprocity to Ensure Access to Treatment (TREAT) Act (S. 168), introduced by Senator Chris Murphy and Senator Roy Blunt, that would create Federal uniform licensing for the duration of the COVID–19 pandemic. We also support changes to Section 1834m of the Social Security Act to allow more medical professionals, including, occupational therapists, physical therapists, and speech-language pathologists, to be able to be reimbursed by Medicare for their services after the public health emergency ends. Finally, we urge Congress to address technological,

[1] *https://www.tfah.org/wp-content/uploads/2021/03/Public-Health-Infrastructure-Fact-Sheet-3-1-21-1.pdf.*

broadband, and other gaps to access along with any further telehealth expansion efforts so that the digital divide is not a barrier to quality care.

The substantial financial impacts of COVID–19 on hospitals and health systems will also have lasting impacts. Systems now face difficult decisions to reduce costs, potentially limiting support to health care professionals, further development of needed infrastructure, and support for their communities. The economic impacts for patients and those who have lost health care insurance or cannot afford patient financial responsibilities are further impacting providers facing financial challenges now due to the COVID–19 pandemic. Additional support is needed, including eliminating further reductions in payments through Federal programs including Medicare and Medicaid to maintain access to care for patients.

In closing, nursing has been ranked the most trusted profession by Americans for decades, with a large majority of survey respondents rating the honesty and ethical standards of nurses as high or very high. Nurses have the skills, expertise, creativity, and unique ability to problem solve and lead while putting the patient's whole health at the middle of everything we do. As the spring and summer bring an increasing number of vaccinations per day, in combination with continuing to mask and practicing healthy behaviors after receiving the vaccine, we need to acknowledge pandemic fatigue, be patient with each other, and work together in being innovative to provide highest quality care in the safest manner possible. In my role at the AONL and with the AHA, we will continue to support state efforts to expand scope of practice laws, allowing non-physicians to practice at the top of their licenses.

Thank you for the opportunity to serve on the witness panel for this important conversation. At a recent HELP Committee hearing, Ranking Member Burr, who has been a great partner for Duke Health and health systems across North Carolina throughout the challenges of COVID–19, commented that it would be "devastating" if we do not learn from the lessons of the current pandemic. I wholeheartedly agree. Our collective weaknesses and failures have rarely been so important to understand or on such public display—but we have also seen our nearly unlimited capacity for resilience, innovation, and responsiveness. We look forward to working with you to apply those lessons, cement our strengths, and create an even more robust health care infrastructure to address future challenges.

The CHAIR. Thank you, Dr. Fuchs. And thank you to all of our witnesses today. We look forward to your responses to our questions.

We will now begin a round of 5-minute questions, and I ask my colleagues to please keep track of your clock and stay within those 5 minutes.

Dr. Shah, for over a year we have been responding to the greatest public health crisis in over a century. COVID–19 has pushed our public health system to the brink and underscored a lack of desperately needed resources. That's why Democrats included robust funding for vaccines and awareness campaigns, testing, and public health workforce in the American Rescue Plan, among other critical public health priorities.

In the all-hands-on-deck effort to end the pandemic, we must center our response on equity and reach every community. Populations hardest hit by COVID–19, including communities of color, tribes, and other underserved populations, must be prioritized, and outreach efforts and websites and information tools must be accessible to people with disabilities and English language learners.

Dr. Shah, can you tell us what is Washington State doing to make sure things like testing and vaccines are accessible to everyone?

Dr. SHAH. Thank you, Senator Murray, and thank you again to all of you for your leadership on this issue.

I would say that there are a number of things that we've been doing, and it starts not just today but starts way back in the fall.

It was really around a number of dialogs and sessions where we reached 20,000 Washingtonians to also work with them and learn from them what their prioritization thoughts were.

In addition to that, we have put together, as is in my written testimony, the Vax Center, which is a public-private partnership coming together to help with really efficiencies and numbers, but also a fix, which is really a combination of dialog sessions and feedback sessions with stakeholders for equity.

I think the key message is that COVID–19 did not start these inequities, it has only made them worse. So we have really an incredible amount of work ahead of us to make sure that we're really underscoring all the feedback from these communities and all the people that are impacted disproportionately by COVID–19, but also addressing them by giving them a voice in the work that we're doing, and I think that's critical as well.

The CHAIR. Okay, thank you very much.

Dr. Abraham, we do have a long history of health inequities in this country which have only been exacerbated by the pandemic, as Dr. Shah just said. It is completely unacceptable that Black people are dying from COVID–19 at 1.4 times the rate of white people, and that native Hawaiian and Pacific Islander populations are contracting COVID–19 at over 3 times the rate of white populations. Despite this, in nearly all states, Black and Latino people have received a lower share of vaccinations compared to their share of cases, deaths, and population.

We know vaccinations are an essential tool to end this pandemic, and they need to reach communities that are hurting the most. I am impressed with your health center's success in vaccinating communities of color you serve. Tell us how we can make sure vaccines and information about them are reaching communities of color.

Dr. ABRAHAM. Sure. Thank you for that question, Senator Murray. As Dr. Shah and Dr. Jha mentioned, we have to build this public health infrastructure yesterday, and we really needed those networks, and what we have really strong in South L.A. are networks of Black and brown physicians who knew we had to work together to race to get our patients vaccinated. So we've been in close collaboration with the physician community in South L.A. to figure out how we can better coordinate our response. We work in lock step.

This whole rollout has been a series of marriages, a series of marriages between Kedren and our local Department of Public Health. It has been working in lock step with our state government and making sure that the supply chain reached community health centers, FQHCs, to make sure that we get clinicians and providers access to the essential medicines because this is what we do every day. We vaccinate our patients, we care for them, and we educate them. So trust us to continue to do our job and we will get more of America vaccinated.

But what we built today really is a revolutionized health care delivery system. There is an opportunity in this crisis, and that really is to bring a public health infrastructure that has been lacking, and we must wed public health and the health care delivery system together.

The CHAIR. Thank you very much.

Senator Burr, I'll turn it over to you.

Senator BURR. Thank you, Madam Chair.

All of you have talked about inequities. Let me just put another one on the table: rural versus urban. It hasn't been mentioned, and I think you leave out a lot of America when you don't talk about rural America and how difficult it is to reach.

Dr. Abraham, it is unbelievably refreshing to hear you say we just built our system, what we needed. Regardless of what Washington said, we built what works, and that's what's so unique about the local communities and the empowerment of those communities.

Dr. Shah, as I mentioned in my opening statement, we're closely examining the first year of our response to the novel coronavirus, and we've seen things we didn't expect. One of the most obvious recent things, partnership between pharma companies with each other, an innovator or discoverer and now a big pharma company that takes on a contract manufacturing role to finish and fill.

We never dreamed that these things would happen, but they're happening. Our successes are due in large part to the ability of state and local public health officials to identify and address the unique needs of their community during the pandemic. The way that Raleigh handles COVID–19 in North Carolina is not the same as Seattle, and we need to address it.

Let me ask you, Dr. Shah, do you agree that state and local officials should be the leading voices for the needs of their community as we continue to respond to COVID–19?

Dr. SHAH. Senator, thank you for that. Absolutely, state and local officials have an incredible role to play, and we do need to lead because we do know our states, we do know our localities, so absolutely.

That said, we also have a responsibility to make sure that our Federal partners are also at the table and also leading. There are certain things that the CDC can do, that the guidance that allows for consistency across the country is also incredibly helpful.

I will tell you on the front lines, it has been so challenging this entire year of up and down, back and forth, left and right, this and that, to try to fight a pandemic. So all the tools that we can have, there are roles of government at the Federal level, the state level and the local level that all work together so ultimately we are protecting the community member, and that consistency of either policy or communications is absolutely critical to the success not just for this pandemic but in future emergencies.

Senator BURR. Dr. Jha, we have spent millions over the last decade to set up a surveillance system in the United States as an early warning system to detect things like this. Hopefully it would have seen the pandemic earlier, responded to it faster. Did our surveillance system fail, and what should we do?

Dr. JHA. Yes. So, Senator, thank you for that question. A year ago, in January 2020, actually, I wrote a piece in which I said that I thought the U.S. would have a relatively robust response to the pandemic because we had such a good surveillance system. We had great laboratories, great doctors, great nurses, great hospitals. We do.

It obviously did not work. I think our surveillance systems are not as robust as we need them to be. We don't do enough surveil-

lance out in the community. One of the things that we've learned, for instance, is wastewater surveillance is a very good way of finding diseases before we start detecting them in humans. We haven't really made a national effort to do that kind of surveillance.

There's a whole series of things that are much more public health and not so much who comes into the doctor's office that we need to be investing in. And then the other part that really failed us was the data infrastructure. Even if you could identify cases or diseases, we could not aggregate it and look at the broader pattern in individual states, let alone across the country.

Just yesterday COVID tracking, which was an effort by a group of journalists, packed up after a year of pulling together data and making it widely available. That's the data that we all use as a Nation, was data coming from a group of journalists.

We need the government to be able to pull together data across states, do surveillance, and make it available for policymakers and academics. None of that worked as well as it needed to.

Senator BURR. Dr. Jha, how can the private sector be better leveraged and incorporated into biosurveillance systems to support Federal, state, and local public health decision-making?

Dr. JHA. Well, the private sector has the tools, right? I mean, if you think about genomic surveillance, for instance, there are some fabulous American companies that have that technology, and the U.S. Government has to partner with them. I completely agree with the premise of this and your other question, that so much of the success of this pandemic has come from the Federal Government, and sometimes state governments, partnering with the private sector. That's how we have beaten this thing. And when we think about future investments, that's the mindset we're going to have to use.

Senator BURR. Thank you, Doctor. Thank you, witnesses.

The CHAIR. Senator Casey.

Senator CASEY. I want to thank Chair Murray, and I want to start as well by thanking the witnesses for the focus on public health infrastructure. I want to thank Chair Murray for her dedication to this issue over time, because we don't talk about it enough and, frankly, have not moved forward in a manner that would prepare us for the next pandemic.

I'll start with Dr. Shah. You talked about the need to build resilience in the public health system, and about the relationship between both public health infrastructure and public health preparedness. So I've got a couple of questions.

Do you think it's possible to be as prepared as possible for a public health emergency without investing in public health infrastructure?

Dr. SHAH. Well, thank you, Senator, for that question. I will say that it becomes extremely difficult. It's really about building the capacity not in the middle of the crisis, or not reactively trying to throw dollars at it, but in advance to build that capacity so public health can respond. So what Dr. Jha just mentioned about the surveillance systems, the data systems, he's absolutely right. These are systems that in advance of COVID–19, if we had this investment in public health infrastructure, would have been robust, would have been strong.

Now, we can look back, that's fantastic, but we really need to be looking forward, and that's really about investing in systems in a very smart, strategic, and sustainable way.

Senator CASEY. Part of that, I guess, is at the local level, and I guess the follow-up to that is who are the people you would hire and the other investments you'd make, and what other resources would be used when we're not in the middle of a public health emergency, as you suggest, to be prepared for what's ahead of us?

Dr. SHAH. Well, I think we need to be thinking—look, our department of health in Washington has been stood up for 400-plus days. I mean, that's remarkable. The same thing in Harris County down in Texas. The same thing for 300-plus days. We're talking about a year-plus of response. Public health systems are fatigued both physically and, honestly, emotionally.

I think the key message is that we need to be thinking about how do we make smart investments in that workforce so we support the workforce, we make sure that workforce is both physically and emotionally and behaviorally supported, but we should also think about bringing into the workforce the technology, the logistics, folks that have the cost-effectiveness, who understand process flow, who have efficiencies in that. And also, we in public health have to do a better job of communications. We have to do a better job of really making sure that we can engage with our communities so people recognize that we are part of the solution, not part of the problem.

Senator CASEY. Doctor, thanks very much.

I want to move to Dr. Jha regarding children, and I want to start by thanking him for being such a great communicator at a time when we needed clear and science-based communication across the country.

The one issue that relates to our children that has gotten some attention but probably not enough, that while children are less likely to become seriously ill from COVID–19 by way of comparison to adults, they still can spread the virus, and you and others have spoken about MISC, the multi-system inflammatory syndrome in children, a very serious condition.

After we prioritized the high-risk populations and are immunizing now tens of millions of people, once we get to the immunization of children and teens to reduce community transmission in cases of this MISC, and we know that all of the major drug companies are running or plan to run pediatric vaccine trials, can you speak to the process that's underway and assess the safety and efficacy of these vaccines for children and teens as you see it right now?

Dr. JHA. Yes. Senator Casey, thank you. It's a critically important question because it will make—it's going to be very hard to reach population herd immunity if everybody under 18 is not vaccinated. And while the disease does have a much milder effect on most kids, there are high-risk children with chronic diseases for whom this can be quite substantial; and then, of course, we do ultimately want to get kids vaccinated.

I think we can, and I think the question is when are we going to have the data to feel comfortable about the safety of these vaccines in children? I do believe we have trials running by Moderna

and some of the others also, for kids 12 and older, and I expect a lot of that data to be available by mid to late summer.

The problem will be the younger children and looking for efficacy, looking to see does the vaccine actually work. When infection numbers get very, very low, you're going to need very large trials to prove that the vaccines are effective. We may need to think about this a bit differently. We may need to say we want to make sure these things are safe in children and use that as a bar. But there's a lot of work to be done. We do have to get our kids vaccinated, and I worry, especially for younger ones, that it may take a while to have the data to feel comfortable doing it.

Senator CASEY. Doctor, thank you very much.

Thanks, Chair Murray.

The CHAIR. Thank you.

We'll turn to Senator Cassidy.

Senator CASSIDY. Thank you, Madam Chair.

Dr. Jha, there was just an article in the MMWR about the strong relationship between obesity, even that which people would think not being very obese but nonetheless is obese, and its risk factor for hospitalization and death. Now, Dr. Abraham and I did our training in the same area in South Los Angeles, and my own medical practice was with the poorly insured in Louisiana. And as we know, there is more of a risk factor for obesity in those who are lower socioeconomic regardless of race.

To what degree do you think we can explain the disproportionate impact upon some sub-populations relative to their associated increased risk of having obesity?

Dr. JHA. Senator Cassidy, it's a really good question, and I think you're absolutely right that we're still really learning about the impact of obesity on this disease. But no doubt about it, based on all the data that I've seen, obesity is a meaningful risk factor for having poor outcomes.

I think if you look at the broader picture of the fact that, for instance, African Americans have died at much higher rates of this disease, or Latinos, a lot of it is much higher rates of infection, which is I think driven by work conditions and——

Senator CASSIDY. That is increased rates of infection, but we know that there are a lot of folks who are infected and we don't know that they're infected, correct?

Dr. JHA. Absolutely.

Senator CASSIDY. Do you have surveillance testing to establish that point, or is that intuition?

Dr. JHA. Well, we have very good data that they're certainly identified far more often as having been infected, and given that testing rates have often been lower in African American communities, you'd have to—it stands to reason that the level of infections in these communities are much, much higher as well.

Senator CASSIDY. That's more of an intuition than actually having data on that. Everybody respects your intuition, but it's still an issue there.

Secondly, we are looking at an outcome of prevention of infection, but it does seem as if there are surrogates for prevention of infection, specifically the development of antibody response to vaccination than perhaps the height of the antibody response. Cannot

these surrogate measures be used to measure vaccine efficacy in children? Obviously, their immune systems are robust. They typically respond to vaccines better than those who are older, and yet this vaccine produces good immunologic response in those who are older. What are your feelings about using a surrogate as a marker of immunity?

Dr. JHA. It's a great question, Senator Cassidy. As a physician, you know that the science here is evolving but getting better. I think the key question you're asking is how confident are we about the correlates of immunity? How confident are we that antibody response, or T cells, which we can also measure, really reflect somebody's immune status? And my sense is that we're pretty close to that point, but we haven't really nailed it down.

I can easily imagine, especially as infection numbers get very, very low into the summer, if we want to measure efficacy in children or in other populations, we may need to get to using correlates of immunity as opposed to direct infections, and that seems to me to be reasonable as long as we've established that, in fact, those correlates are right.

Senator CASSIDY. Dr. Jha, we'll stay with you once more. Obviously, there's been a lot of concern regarding schools not reopening.

[Inaudible] heavily favored by teachers' unions than not, even though CDC continually said that you could safely reopen taking normal precautions. I am actually associated, or at least my wife is, with a school that did testing, and we found that the teachers and the students who were infected typically brought the infection—in fact, they always brought the infection into the school. It did not spread within the school.

What are your feelings about the ability of schools to safely reopen now?

Dr. JHA. Senator Cassidy, I believe, and I've been pretty vocal in the last several months, that I think most schools in America can open safely as long as we put in important mitigation efforts—universal masking, reasonable ventilation, and I believe testing does add a layer of protection. I have at this point believed, given how much vaccines we have, that I think we should go ahead and vaccinate teachers and staff. It would certainly add a very important layer of protection. But there's no doubt in my mind that we can get schools open in a way that will keep kids and teachers and staff safe.

Senator CASSIDY. Two more things. Dr. Fuchs, let me just say thank you for giving a shout out to the Lorna Breen Act. That is something which I am sponsoring with Tim Kaine, so thank you for the shout out. We want to take care of our health care providers.

Dr. Abraham, I did do my training at L.A. County USC, and the patients you see are my patients as well, and in a sense I feel as if we're brothers in kind of cheering for the less fortunate. So thank you for all the work you do.

With that, I yield back.

The CHAIR. Thank you very much.

We'll turn to Senator Baldwin.

Senator BALDWIN. Thank you, Chair Murray. And thank you to our expert panel today.

Public health experts have warned that the coronavirus continues to adapt, mutate, and change, and I'm increasingly concerned about the rise of new and potentially more harmful variants. This is why I authored the Tracking COVID–19 Variants Act. It would provide resources necessary to dramatically scale up our Country's sequencing, surveillance, and outbreak analytics capacity.

I was proud to see a version of my bill included as part of the Senate-passed American Rescue Plan, and I look forward to seeing the President sign that bill into law, hopefully very soon.

Dr. Shah, many experts have noted that we could see another spike of new infections due to a rise of variants. What can states do to respond to these emerging variants, and how will scaling up our surveillance efforts and our ability to do genomic sequencing for coronavirus make us better prepared for the future of this pandemic and future pandemics?

Dr. SHAH. Senator Baldwin, thank you for that set of questions. Let me say that the number-one thing that states can do is what I said, stay the course. We have to make sure that those mitigation efforts for prevention, which is really the robust measures around wearing of masks and making sure that we're careful as we reopen, that we do so based on evidence and the best we can for not dialing up too quickly because, as you know, that can also be challenging when you have to dial back or if there's another surge.

But the other thing in the State of Washington and one of the things that I'm really proud of from the Department of Health standpoint is that we are in the top five in states when it comes to genomic sequencing when it comes to the variants, and we have discovered variants in the State of Washington. The other piece of it is that we've actually invested in more laboratory capacity in the public health lab at the state level and working in partnership with the University of Washington.

I think there is something we can do to invest in our own state public health systems from a laboratory surveillance standpoint, but also working with our partners in the academic centers. We need to do a better job and more of genomic sequencing because, remember, as you said, viruses, this is what they do. They love to mutate. They love to change. They're trying to get the next human being to try to figure out how to infect. So this is what variants do, but our job is to make sure those public health measures are robust and strong, while we're also searching and seeking out so we can get data to individuals, policymakers, and obviously to public health officials so we can continue to monitor what's happening.

Senator BALDWIN. Ideally and pragmatically, what percent of positive COVID tests should receive genomic sequencing to really keep on top of or keep close track of emerging variants?

Dr. SHAH. This is a tough one, because across the globe there are certain countries that are doing a better job, in Europe, for example, the United Kingdom, where it's somewhere in that 5 to 7 percent range. We're not there. We're obviously markedly lower than that.

I think it's really about continuing to make sure that we make progress on it, but we do need to be working with CDC and many

of our partners like APHL, the Association of Public Health Laboratories, to really learn what exactly the optimal percentage is.

But it's really not about just a percentage. It's about making sure it's distributed throughout the country so we have strong surveillance systems, and then we're also looking and using those surveillance systems to really discover pockets of where things are happening across the country.

Senator BALDWIN. Thank you.

I know my time is running out, but I did want to ask a question to Dr. Abraham. Community health centers like the one you lead play a critical role in providing health services to underserved populations. In my home State of Wisconsin, there are nearly 20 federally qualified health centers providing really important care around the state.

Now, last month the Biden administration established a partnership with community health centers to expand their role in COVID–19 vaccinations, and in Wisconsin the 16th Street Community Health Center in Milwaukee was named one of the participating sites.

I'm curious to hear from you, are the successes that you're having at Kedren being replicated at community health centers across the country, or do you think your experience is unique, and do you think more needs to be done to help community health centers in their vital mission in serving the underserved, especially as it concerns vaccines?

Dr. ABRAHAM. Thank you so much, Senator Baldwin. It also reminds me of the question that Senator Burr had mentioned about rural populations, as well.

Community health centers and AFQCs really play a critical role, whether it's urban underserved Los Angeles, or whether it's rural parts of this Nation. What we've learned is that the heroic work at Kedren and the work of partners and public-private partnerships really is an example for other community health centers throughout this country, especially where there is unequal access within those communities, whether they are rural or urban, anyone who is underserved or vulnerable, those that are differently abled, minority, or at high risk for any disease during this pandemic.

What we do is no secret. It's not a magic trick. We just need more vaccines, more hands, and more resources, and the more of those that go to the places where we receive our care, whether those are AFQCs, whether those are small and solo physician practices, that's how we're going to get everyone vaccinated. That's what we do every day, COVID or no COVID.

The CHAIR. Thank you.

Senator Collins.

Senator COLLINS. Thank you, Chair Murray.

Dr. Jha, I would like to talk with you about the critical issue of reopening our schools. I've been very concerned about the fact that so many of our students, particularly in the more urban areas of the country, still are not back in school. Maine, I'm pleased to say, is doing a good job in this regard.

Just last week I talked to the head of Maine CDC who made the point that children are actually safer in schools in many cases than they would be in their community or in their home doing remote

learning. I have tremendous respect for the CDC, but I'm very disappointed in its latest guidance on school reopenings. You have talked about that for some people in public health, that it did not appear to be particularly well-grounded in the evidence and science. Similarly, Dr. Allen from Harvard has questioned the advice on distancing, suggesting that for children 3 feet might be adequate as long as they're wearing masks. You've talked also about the need and important role for ventilation.

Could you please give us your views on schools reopening and what could be done to expedite reopening of virtually all schools so that we don't have more and more children falling behind, additional mental health problems, social development not progressing, and all of the adverse side effects from children not being in school?

Dr. JHA. Senator Collins, it's a really good question. It's a really important question. The effects of children not being in school over the last year I think have been very substantial. They have not been borne by everyone equally. I think children from poorer backgrounds have borne disproportionately the impact of this. And then let's also be honest that when kids are at home, the caretaker is often the mother and therefore has had very negative effects and very negative labor market effects on women and their ability to work.

The societal effects here are very, very large, and I think we need to think about how do we get kids back to school safely. One of the things I've been frustrated by is we've set up what I think has been a false dichotomy. We've set up kids' education versus teacher safety. And the truth is we need both. We need both if we're going to do this over the long run.

I believe there is a way to get kids back into school full time now and certainly into the future that keeps teachers and staff safe and kids learning. And the principles of that in my mind are—and this is really based on where we are today—right now you need to have universal masking in school, and you've got to have pretty high levels of adherence, 90-plus percent. You're not going to get 100, but you've got to have most people adhering to that.

Second is ventilation. I really do think that having reasonable ventilation in schools is critical, and I think most schools can get that.

Third is I have argued that testing is an important component of keeping schools safe. You catch outbreaks early. You offer a level of assurance to everybody that you can do this.

Last but not least is vaccinations, and I said this to Senator Cassidy. Given how much vaccines we now have, I believe it is important to prioritize teachers, and when I say teachers I also mean other staff in schools.

I did not mention 3 feet versus 6 feet. I did not mention deep cleaning of surfaces. I think there's a lot that's gotten us distracted. I think if we focus on these things we can keep teachers safe, we can keep kids safe and open schools, and I think we have the ability to do all of this now, not 6 months or a year from now. That's what we need to focus on.

Senator COLLINS. I could not agree with you more, and I hope that school officials, teachers, parents and others will follow the advice that you just gave. Thank you so much.

The CHAIR. Senator Kaine.

Senator KAINE. Thank you, Chair Murray and Ranking Member Burr, and thank you to the witnesses for this important hearing.

Dr. Fuchs, I want to thank you for your testimony about the challenges—it's hard to say thank you—about the challenges that our nursing workforce is facing, mental health challenges. And you indicated in your testimony that as a result we're starting to see more of our skilled workforce leave or planning to leave, which is also being reported in recent surveys. This kind of high turnover will have a significant impact on the future of delivering health care.

I want to thank Chair Murray and others. Senator Cassidy mentioned the Breen Act. You helped put funding into the COVID bill to start to deal with the mental health needs of our frontline health care workers and public safety professionals.

But, Dr. Fuchs, what would you suggest to the Committee that we might want to consider going forward to make sure we provide resources so that we don't see the kind of high turnover that you are concerned about?

Ms. FUCHS. Thank you for that question, Senator Kaine. This actually is a complex issue because, indeed, some of the factors for individuals may very well be different depending upon individual situations. But one I would say is that clearly providing consistent support and education and access to services I think is extremely important for not just the nursing workforce but for others. So the acts that you have sponsored I think will be very helpful.

I think there is a direct need to really study the impacts of the pandemic on the workforce to be able to really look at different strategies that may be helpful in addition, and I think we have to continue to support our workforce. But we're starting to see now, with patients reentering care facilities, that the public is stressed, and the public is now acting out more in addition, and placing largely nurses and those in the direct care environments in a position to be disrespected and in more violent situations.

I think that we're going to have to place emphasis on the support of workplace violence initiatives to be able to support our staff, amongst other initiatives.

Senator KAINE. Let me ask a question, Dr. Jha, about long COVID and how we should be thinking about that as we're thinking about what we need to do. I had COVID in March and April nearly a year ago, and it was a mild case, thank goodness. But one of the effects of it was nerve tingling 24/7, every nerve ending in my body, and a heating pad sensation that happens about four or five times a day where it just feels like somebody has turned a heating pad on. It heats up, and then 15 minutes later it goes, then it crops up somewhere else.

These are mild symptoms that don't stop me from working, and the tingling thing actually helps keep me awake in long hearings.

[Laughter.]

Senator KAINE. My Governor in Virginia had COVID. Six months later, no sense of smell. Obviously, there's nothing wrong with my

skin, and there's nothing wrong with his nose. It's a neurological issue, probably just altered the thalamus or something like that. But these are not debilitating symptoms, but many have debilitating symptoms: fatigue, heart impairment, respiratory problems, brain fog. I did get asked if I had that and I said no, but my friend said, well, how would anyone know?

[Laughter.]

Senator KAINE. But as we're thinking about going forward and the way we look at the health magnitude of this crisis, there will be a day when the President will declare that the emergency is over, but there's this huge category of these long COVID consequences that we still don't completely understand.

Maybe for Dr. Jha, how should we be thinking about that as we are trying to put together the right plan to take care of the Nation's health needs going forward?

Dr. JHA. Senator, it's a fabulous question. First of all, I'm happy to hear that your symptoms are mild. But as you pointed out, there are people who struggle with substantial symptoms. I think one of the things that I found most frustrating over the last year, for people who like to focus on mortality rates and essentially argued for let Americans get infected, is that we did not appreciate the effects for the large number of people who got infected and recovered, didn't die, thankfully, but had substantial debilitating symptoms.

I would say two or three things. One is, first of all, we need to really study this much more carefully. We have to apply science to it the way we do everything else, and NIH I think has been doing some really good work on building cohorts and really trying to figure out what are the predictors, how long do these things last.

Obviously, we need to work on therapeutics to try to resolve some of these symptoms, address some of these symptoms. There's some preliminary data that actually vaccinations can potentially be helpful for long COVID. I don't want to overstate how good the science on that is, but there is some preliminary data that it might be the case. I'm hoping that as more people get vaccinated, that will show up.

The last point I'll say is when our President declares the public health emergency over, we are going to find a large number of Americans with substantial disability from this virus, from this infection, and the cost of that, human and financial, is going to be long term, and we're going to have to manage that as a country.

Senator KAINE. Thank you, Dr. Jha.

Thank you, Chair Murray.

The CHAIR. Thank you.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Madam Chair.

Thank you to all of our witnesses. I really appreciate this discussion about the mental health side of what we're dealing with this COVID.

I think last year at this time we were all very keenly focused on the health impact, what was happening to people who were coming down with the virus. And then shortly after that we saw the economic crisis that came following the health. And now I think we are into this third wave of a crisis, and I think it's the mental health and behavioral health side of it. You want to talk about long

haul and those long-lasting impacts, whether it's the impacts on kids, the societal impact that has been referenced here today, as we think about our providers and what we need to do to ensure that they have the help and support, and also recognizing the stigma that attaches.

If you are the mental health provider that says I need mental health help now—there was an article in the Sunday News about the doctor who took her own life after dealing with COVID and then coming back with the stress of handling it all. So I think we need to be very cognizant of what we're doing to address the behavioral and the mental health needs of not only our medical professionals, our children, but at all levels now.

I was looking at a full-page—it was an advertisement but not really an advertisement. It was an informational piece that was put out by the Alaska Mental Health Trust Authority, full page in our newspaper yesterday. But they are partnering with the State Department of Health and Social Services. They're bringing together a coalition of health care organizations, government agencies, social service providers, and community members, and they call it Crisis Now, and it's a framework for expanding the behavioral health crisis response. They're doing it in our larger communities. The big components of it are a mobile crisis team, a 23-hour and short-term crisis stabilization center, where those who are experiencing mental health or substance use emergencies can go for safe care.

The question—and I don't know, maybe this is to Dr. Jha or to Dr. Shah, maybe any of you—I understand that this Crisis Now framework is based off SAMHA's National Guidelines for Behavioral Health Crisis Care model. So the question is whether or not folks are familiar with these guidelines or if there are similar models that are being implemented to address the behavioral needs that we're seeing within the hospitals, and more particularly in the emergency rooms, because it's in the emergency rooms that you get them first, and the ability to be able to respond is perhaps limited.

I throw that out as a jump ball to whomever would receive it.

Dr. ABRAHAM. Senator, this is Dr. Abraham. I work at an acute psychiatric hospital. Kedren is a federally qualified health center that has an outpatient mental health outfit, as well. One of the things, if you come and visit us in South L.A., that you'll visibly see is there is joy. There is music, there is dancing. We're turning the story around. We're at war with COVID, and we are winning, and that is part of improving people's mental health.

I'm hoping that with our strategies to really combat this pandemic, we do get back to work, back to school, back to loving our loved ones, and I think that has a significant impact on the burden of mental health both for our workforce and also the patients and the public that receives the care that we provide them.

What I've noticed about the over 200 volunteers that come and show up every day from AmeriCorps and the American Red Cross and the Salvation Army, they are happy, and they now feel part of the solution. We are solutions oriented at Kedren, and we've seen how that has directly impacted people who have been morally injured by this pandemic, those that are dealing with the realities of burnout. For health care providers, mental health care providers

who are suffering, this is the antidote, this is the cure, this is the shot. We say let's get everybody vaccinated, and we've seen how positively it has impacted our community.

Senator MURKOWSKI. Thank you, Doctor.

Dr. SHAH. This is Umair Shah in Washington. I want to also give a shout out to Dr. Zink, who is the state health official in Alaska, and she does a fantastic job.

Senator MURKOWSKI. She's a rock star, really.

Dr. SHAH. She is, she absolutely is.

I'm not familiar with that program, but I think one of the biggest concerns from a patient standpoint is that across the country we had, prior to the pandemic, some 1 in 10 Americans had some sort of anxiety disorder or anxiety symptoms, and during the pandemic that has increased to 4 out of 10. So we've had an increase in that. And on the provider side we've had compassion fatigue as well, where there's also been the concern that even psychiatrists or responders have not been able to cope with their own challenges from a mental health and behavioral health standpoint as they're now addressing the person in front of them.

I will agree with Dr. Abraham that there are moments that we need to—first of all, we need to support our health care and public health workforce, absolutely. But there are also moments that we need to champion. So, for example, in the State of Washington, we celebrated several weeks ago our millionth dose. Governor Inslee recognized the millionth dose, which is Ruby T., a 90-year-old from Eastern Washington who was the symbolic millionth dose who had received a vaccine, and there was a big celebration, confetti and things like that. It brought such an incredible positive uplifting to our own team at the Department of Health.

I will say that now, as we're closing in on our 2 millionth dose, actually, this week, in fact we just passed it yesterday, there are moments of celebration in the midst of this horrific pandemic. But we do need to not just celebrate. We also need to support. We need to put the resources in not just for physical health but really for emotional behavioral health. As you know just as well as I do that this is what providers are least likely to come forward and say I've got a problem, I've got an issue, I've got a challenge, I am burned out, and this is why we need to be really careful, methodical and forthright in supporting our health care and public health professionals with emotional health support.

Senator MURKOWSKI. Thank you.

The CHAIR. Thank you.

We'll turn to Senator Hassan.

Senator HASSAN. Well, thank you, Chair Murray and Ranking Member Senator Burr. And thank you to all of our witnesses for your testimony today and for the optimism that you have been expressing as well. I think it's much needed.

I want to start with the issue of long-term care facilities. I want to start with a question first to Dr. Shah and then to Dr. Jha.

In New Hampshire, more than 70 percent of COVID–19-related deaths occurred within our long-term care facilities. Despite consistent pressure from me and many of my colleagues, the previous administration failed to provide the clear and consistent guidance

and resources that these facilities needed to protect their residents and their staff.

Secretary Shah, moving forward, what steps should we be taking to better support long-term care facilities and ensure that they are protecting their residents against COVID–19 and other infectious diseases?

Dr. SHAH. Senator, thank you for that question. I will say one thing that is absolutely critical, which is that as we are continuing to prioritize populations for vaccines across the country, we cannot forget the absolutely critical importance of vaccinating seniors, those who are older in our communities, especially in long-term care facilities.

As you remember, in the State of Washington very early on in this pandemic, we had a long-term care facility where there were real issues, and that was the first focus across the country of what we needed to do as a system to respond to the needs within those long-term care facilities.

I think it's really three-fold. First of all, we have to continue with the process of vaccinations, and we need to make sure that the staff and the persons who are within those facilities are vaccinated. We have to prioritize that. Fortunately, we have been, but we need to continue to prioritize that, especially as we have turnover in either staff or people.

No. 2 is we need to make sure that we have those resources within those facilities so they also can continue to have all the protective measures, the personal protective equipment, masks and hand sanitizers, et cetera, and they have enough room to be able to cordon off individuals who are sick or have symptoms, to be able to get them out of that facility, or at least away from others.

No. 3, which is back to that additional question that I answered previously around behavioral health, we also have to be really thinking about the impact on seniors, on those who are in long-term care facilities by isolation away from families, away from others who they normally would be relying on to be able to touch and feel and be a part of a family, and that is absolutely critical for us to be doing, to make sure that those resources are also there from a behavioral health standpoint as we also continue to fight the pandemic.

Senator HASSAN. Thank you.

Now I want to turn to Dr. Jha, because outside of congregate care settings, home health workers face unique challenges accessing paid sick leave and personal protective equipment, and many individuals who receive home-based care are struggling to access vaccines.

Dr. Jha, what steps can we take to improve vaccine availability for workers and patients across all types of care settings, including for those who are unable to travel to centralized vaccine sites?

Dr. JHA. Yes, Senator, it's such an important question, and there are a couple of components to that. First of all, I want to talk about home health workers. These are some of the least well paid people in our society. A lot of them are hourly in their wages, and the idea that a lot of them have turned down the opportunity to get the vaccine and we say they're vaccine deniers or they're being hesitant, we fail to understand that these people have lives where they can't

take time off if they end up having side effects in a way that I could when I had my vaccine shot. I could take a day off if I needed it. Many people cannot.

I think there are some really important issues about understanding the context in which people are turning down vaccinations and finding policies as well as really having the organizations themselves being able to pay people to take that time off or help them get vaccinated, I think that's a really important area that has not gotten enough attention, and we've been quick to dismiss these individuals who work incredibly hard, often multiple jobs, and get paid so very little.

More broadly, I think right now in terms of getting people vaccinated across the country, my take is we really need an all-of-the-above strategy, and I think the Administration has largely been doing this right. They have large sites, FEMA sites, that will attract a lot of people and will get a lot of people through, but there are a lot of home-bound individuals who can't get to these sites. So that's why we need things like mobile vans, or we need community-based organizations that know where these people are and can reach out and connect with them.

My overall thinking on this has been we've got to let states do a lot of this, and then states have to push this out to community-based organizations who actually understand the community at large and can implement a lot of these vaccination strategies.

Senator HASSAN. Thank you very much.

I see that I'm over time, Chair Murray, so I will submit the rest of my questions for the record. Thank you.

The CHAIR. Thank you.

Senator Marshall.

Senator MARSHALL. Thank you, Madam Chair, I appreciate it.

My first question will be for Dr. Abraham. Dr. Abraham, like you, I'm a physician, oversaw three county health departments. I volunteered in federally qualified health clinics. We have 21 in Kansas, very proud of them. And I'm used to dealing with finite resources, and you are too. I just want to talk for a second—I wrote an op-ed for the Wall Street Journal published last night and just kind of talk to you about how do we save the most lives.

Are you familiar with some of the new studies coming out saying the effectiveness of one shot of the vaccines? Have you been following those stories? Well, good.

I think what we're seeing is that one shot of either the Moderna or the Pfizer vaccine is 75 to 90 percent effective for one shot. And the other big news is that you can still get the second shot 12 weeks later and be just as effective and raise it.

If you have a finite set of number of shots and you're trying to get to herd immunity as quickly as possible, after you get the high-risk people who get two shots, let's say seniors and everybody with diabetes and heart disease—you know your clinic better than I do—if we would give you the flexibility of giving everybody one shot now and then coming back in the next 3 months and picking up that second shot, does it make sense to you that we could impact a greater number of folks?

Just a quick example. If I gave you 200 vaccinations and you had your choice to give 100 people two shots or 200 people one shot,

which would result in the greater number of people that are effectively vaccinated? And the answer is the latter, 150 people in the latter scenario, the first scenario maybe 90.

What would your thoughts be that you could do with that, if I could give you the flexibility to do that?

Dr. ABRAHAM. Thank you so much for that question, Senator. I would gladly take those 200 vaccines and I will make sure they get into the arms of Americans, and that's what we have to do. We've got a race against time right now. We don't have a moment to waste, not a drop to waste of this vaccine. Whichever vaccine you are offered, whether it's Pfizer, Moderna, or now Johnson & Johnson, and I'm sure there are many in the pipeline, we'll see what the technologies bring in terms of updated versions as we continue to combat variants.

However, I too believe that we must get this vaccine out. As previously stated, it is not either/or, it is all. My second-dose patients need their second dose, and they're lining up outside my gate, and if you get your first dose, we'll do everything in our power to get you your second dose. But we are dealing with a rationed, limited supply of these vaccines. But I do believe achieving that herd immunity as quick as we can is critical.

To some of the points made earlier about mobile units, getting those vaccines out to the home-bound, homeless encampments, to jail populations, there is clearly a critical use for single-dose vaccines. It is all, not either/or.

Senator MARSHALL. I visited a federally qualified health clinic last week in Wichita that has the mobile center, and we're out there doing it.

I want to turn now and just talk a little bit about the disparity, about the lack of equality of opportunity for the vaccines. In Kansas, I'm ashamed to tell you, as of about a week ago, 10 percent of white Americans already had the vaccine and 5 percent of African Americans or minorities were vaccinated, and this was so predictable. I could just bang my head against the wall what happened. What did we do wrong? We knew this was going to be the case, that it would be a challenge, and I knew the places to cure the problems were federally qualified health clinics and the county health departments. Those are the ones that can get the vaccines to those people. Was it that you didn't get the vaccines, or that people didn't want to get them? I just can't imagine you didn't give everything you had out.

Did our Governors not make the right choices on where to distribute the vaccines? Maybe, Dr. Shah, you can tell me. We know it's been a bad deal. What did we do wrong?

Dr. SHAH. Well, Senator, thanks for that question. I will tell you one of the things that we have to recognize is that we've also been moving throughout every, if not all, 50 states, that the vaccines have been going not just in general to the communities but they're going to specific priority populations. So health workers, long-term care facilities, and seniors, and then essential workers. We have to make sure that our denominator is correct, that we're looking and comparing it not just to the general population of a percentage of certain populations within our states but really those who are eligible for the vaccine.

The reason I bring up that comment is that this is not an excuse; it's an explanation. We need to be thinking about all of this information. But as we move into populations, you are absolutely correct, we need to continue to prioritize equity, we need to continue to be thinking throughout the system what can we be doing. And we've been doing that for months.

But I will tell you the challenge has been that these public health systems and health care delivery systems, whether it's county health departments, whether it's what's happening within the health care facilities or community health centers or pharmacies, that all are ramping up with limited supply. So as we get more vaccine, we are going to see more logistics and more operations, but then we've got to shift into vaccine hesitancy.

This is just continuing to follow and move and evolve as the vaccine process evolves, as well as the pandemic itself.

Senator MARSHALL. My time has expired, but I think we got something wrong. And until we identify what we got wrong, it's going to be hard to correct. Thank you.

I yield back.

The CHAIR. Thank you.

Senator Hickenlooper.

Senator HICKENLOOPER. I appreciate all of your service and your time on this issue. I mean, COVID and the distribution of the vaccines has been one of the greatest public health challenges this country has faced, and it did obviously start with a lot of bumps in the road, but I for one have been very impressed that the resolution of a lot of these issues—obviously, there are 50 different Governors in this country. I know that too well. I think that the responses and the evolution of the effort has really been dramatically improved.

Yesterday—you guys have discussed this, the new guidelines and allowing the fully vaccinated a little more freedom with still some constraints. I spent a lot of time in small business and was curious what rays of hope you see for small businesses and what kind of timeline that looks like, and I'm thinking specifically of the retail small businesses like cafes, beauty salons, places where they in many cases have less than 10 and sometimes have only 2 or 3 employees. What kind of guidelines and what kind of support do you see helping facilitate them coming out of this as quickly as possible?

Dr. SHAH. Senator, I'm not sure if that question is for me or for someone else, but I can take a quick stab at it and then maybe turn it over to my colleagues.

I would just say from the standpoint of what we had been very, very interested in throughout and supportive of throughout is to be able to reopen and to reopen safely. Vaccines provide us that glimpse of hope. And why does it do that? Because now you have patrons in restaurants and in bars and throughout different establishments, retail establishments, who are vaccinated, who have little chance or markedly lower chance of transmitting to the person next to them in the café or next to them somewhere else.

As we continue to see increases in vaccine rates, we are going to start to see decrease in transmission, and that's what vaccines really promise us.

However, we have to continue to be thinking about all those mitigation efforts that Dr. Fuchs, Dr. Abraham, Dr. Jha mentioned throughout, that these public health measures cannot just go away. We have to continue to dial up while we're also thinking about very carefully what we can dial down. But unless we do that carefully, unfortunately we can see another surge, and that's what this virus has taught me this entire year. It is a super-slick virus that has broken every rule in the playbook, and if we are not super-smart in response, then exactly what will happen will be another potential surge.

Dr. ABRAHAM. Senator Hickenlooper, this is Dr. Abraham. I just wanted to add to that it's critical that we get the vaccines to where people live, work, and play. And for smaller businesses, it's impossible to close your doors. How are you going to send everyone to a vaccination site? How are you going to wait in line for hours? You may not have PTO or child care or transportation. Those are all barriers to small businesses getting their workforce vaccinated. So it's critical that we take those mobile units, we partner with our roots in the ground, the network of our business leaders, and let's get to your business and vaccinate your staff so they can safely continue the services they provide.

Senator HICKENLOOPER. I couldn't agree more. I think that, and being willing to work on weekends, which I see you guys have made that evolution.

The last thing I'll throw out there just as a concern. Years and years and years ago, I was a scientist. I got a master's in geology, did my master's, published a couple of papers, but I can't ever remember seeing so much distrust of science. And at a time where it's so important, have you guys—again, I won't direct this to any one of you; feel free to chime in. But how do we go about rebuilding trust in science, especially in terms of rebuilding our public health departments?

Dr. ABRAHAM. Really quickly, this is Dr. Abraham. I'll just say we deal with this every day on the front lines. We're vaccinating over 2,500 people a day. Whether you're Black or brown, white or yellow, you legitimately have every reason to have questions. It is your body, your health. What is mRNA? What is an mRNA vaccine? These are real questions, and you have every right to ask them. There are questions around health literacy. There is sometimes a lack of basic science understanding, and we must meet people where they are.

It's critical to take the time to engage them. We answer their questions and educate them, and those that are medically eligible, we've seen that they roll up their sleeves, and let's not confuse a lack of access for hesitancy, and let's not confuse not finding parking in South L.A. as I don't have time for a vaccine or I don't want a vaccine. So those are all critical issues that we look at, Black and brown vaccination rates. You've got to start teasing a lot of those things out.

But take time, answer people's questions. Let's be honest with them. And those who choose to get vaccinated, we will vaccinate you.

Senator HICKENLOOPER. Great. Thank you.

I'm out of time. I have more questions, but thank you so much.

The CHAIR. Thank you.

Senator Tuberville.

Senator TUBERVILLE. Thank you, Madam Chair. Thank you very much.

Thanks for all of your service and what you're going through, a very tough time. What a tough time for the world and our Country.

I worked in education for the last 40 years, and the last 20 years I saw a huge uptick in mental health problems with our kids. I don't know whether it has anything to do with drugs—I'm sure it does—lack of family. But we have a huge uptick.

Now, the question I've got for all of you, if anybody wants to answer this, we're getting ready, just watching our doctors and our first responders work for the last year, overworked, stress, which can cause a lot of problems. Do we have a plan to help these people that are first responders once, hopefully, we see the light at the end of the tunnel in this pandemic? Are we preparing for what we can do for these people who have done so much for us, and then at the end of the day it's going to hit us right between the eyes of what the problems they're going to have?

Dr. ABRAHAM. Dr. Abraham here. I'll answer really quickly. Thank you for that question, Senator.

As I say, the mantra that we have is more vaccines, more hands to administer them, and more resources and funding. When it comes to the hands, there are just not enough health care workers in our communities. We don't have enough nurses and doctors and every other health care worker that helps us deliver essential medicines and health care delivery and public health in this country.

Part of it is we've got to buildup the workforce because, myself included, has not taken a day off since the day before Christmas, and that just can't keep happening. That's not sustainable. But my colleagues are racing against time in ICUs, keeping ventilators operating and keeping people from dying. The least we can do in public health and community health centers is race against time to get this vaccine out, but it's not sustainable and we need more health care infrastructure and more public health and more hands, and that means we do need to train people to do health work well.

Senator TUBERVILLE. Would anybody else like to answer that?

Dr. JHA. One thing I would just quickly add is during this last year, what we saw was a pretty unmitigated attack on health care professionals, people accusing doctors and nurses of lying about how many cases of COVID there were, a real turning on these heroes who I think have saved so many lives across the country.

One of the things we've got to do moving forward is make sure that we are not doing that moving ahead, that we're not attacking frontline health care providers as somehow being dishonest, when I think they have been anything but that.

Then the second is that as we come out of this pandemic, we really do need to, from a policy point of view, look at our payment systems that have made it very, very difficult for primary care practices and independent practices to survive in this pandemic. We need to find new ways of paying doctors and nurses and health care providers.

There's a lot of work ahead, but it certainly begins, I think, by showing people respect and understanding what health care workers have gone through, and not questioning their motivations.

Senator TUBERVILLE. Thank you.

Dr. SHAH. Senator Tuberville, first of all, I'm from Cincinnati originally, so I just want to give a little shout-out to you from that previous job with your career there.

I will say that, in addition to what Dr. Abraham and Dr. Jha just mentioned, I do think there is an incredible need for us to invest in that health care and public health workforce both for more of them and training and support, but also behavioral health-wise. Your question was are we ready for that for the future, and my answer is I don't think so. I don't think we are. I don't think we've done enough. I don't think we have done enough. I don't think we did enough prior to this pandemic, I don't think we've done enough during this pandemic, and I don't think we're doing enough moving forward to make sure that the health and the health care needs and the mental health and behavioral health needs of our health care workers and our public health workers are addressed.

We have not done enough to support it. We've got to do more. And if we do not get this right, we are going to lose more people from the health care system and the public health system, and it's going to be a terrible loss for this country.

Ms. FUCHS. I can't agree enough with my colleagues on the panel today. This is a big issue, and we are not prepared for the future workforce for health care. I recently had the opportunity to speak with both Rear Admiral Mix and Orsega about the public health workforce and the large gaps in the numbers of people, in the numbers of nurses that we have prepared either in the whole workforce or in the Reserves.

This is an extreme area and opportunity for us moving forward, and then back to the concept of how we're caring for people within our organizations. Wherever they're delivering care, we have to have flexible services that meet individual needs in a place where they can accept and be comfortable with those resources. That will take a very broad approach that will require additional sources of resources to be able to impact our workforce.

Senator TUBERVILLE. Thank you very much.

If I could just make one statement, Madam Chair? I told this to General Pierre last week, who is over at Operation Warp Speed. I've been in sales and recruiting all my life. I've watched how things work. We've got a lot of people that's not taking this vaccine, and we've got to have a lot more take it, even when there's more vaccines to be given. We need to come up with a marketing plan. At the end of the day, when we've got vaccines and 30, 40, 50 percent of the people will not take it, we've got to have a marketing plan, television and radio, to go in and say this is why you've got to take it. We can't just set back and expect people to take it. It's not going to happen.

I think at the end of the day, probably here in a month or so, we're going to be at a point where we've got to make a statement of marketing and getting this thing out to get this thing behind us.

Thank you very much. Thank you for your service.

Thank you, Madam Chair.

The CHAIR. Thank you.

Ms. FUCHS. Can I make a comment, please? We need a sensitive approach to how we educate the American people. We need to meet them where they're at, as Dr. Abraham has said. We need to recognize that we have a great opportunity here. As a nurse on this panel on the front lines of our Country, nurses are the most trusted professionals as rated by our public for years, and I don't believe we've taken the opportunity to really maximize the potential that we have in order to impact vaccinations. So I look forward to partnering with many to be able to help in this work in the future.

The CHAIR. Great. Thank you.

Senator Rosen.

Senator ROSEN. Thank you, Madam Chair and Ranking Member Burr, for holding this really important hearing today.

I just want to thank all of the doctors here for your compassion during the pandemic, not just you but all of our health care workforce, all of our first responders who have gone above and beyond to serve our Nation. We are eternally grateful for what you have done for those 500,000-plus families who have lost loved ones alone and just all of it. I'm just so grateful and I thank you on behalf of our Nation.

It is encouraging to see that 92 million Americans have been getting vaccinated, about 856,000 so far in Nevada. But greater access to the vaccine can't come soon enough. Far more needs to be done. So despite our progress, there have been challenges with appointment scheduling systems, long lines, too many individuals in underserved areas and rural communities being left out, and many Americans still waiting for their first or second shot as we know that the virus variants continue to mutate. It's critical that we rapidly review what's working and make changes to ensure that no one is left behind.

Dr. Jha, from a broad systemic perspective, what do you see as the long-term changes we need to do to improve vaccine delivery, especially to our most vulnerable communities? And then I think part of this would be to address our public health infrastructure, our data systems, creative ways to meet people where they're at regardless of their communities. What else can we do to help you with this?

Dr. JHA. Great. So let me kind of lay out what we know nationally, and then obviously folks like Dr. Shah can talk much more about the individual state-level experience.

When we look across the country, we see a lot of variation, some people doing very well, some states doing very well, and other states struggling. If you look at what differentiates states that are doing well from those that are struggling, keeping things very simple is probably the most important. A lot of states I think have made this far too complicated and have made it very difficult for people to sign up, to arrive at a vaccination place, and the more difficult we make it, the harder we make it for people with fewer resources, fewer capabilities, fewer support systems to actually make it through the system.

We really have to have a ground game where we go out to people and make this incredibly easy. We've heard some of this from Dr. Abraham, what he's doing in L.A., but it has got to be much more

about getting out into the communities, and I worry a lot about the rural areas of the United States because I just feel like we have not paid enough attention to how we're going to get vaccines out there.

The problem here is that we're trying to recreate a public health system that we have hollowed out over the last decade, and now we find ourselves saying, boy, it would really be useful if we had a system that had good data, that had a really terrific workforce that we could plug into, but we don't. And so we've got to build it for the short run, because vaccines are a short-term problem and we've got to get people vaccinated quickly. But then we've got to make sure we don't pull all those investments away once people are vaccinated and say, Okay, we're done, we're leaving. We've got to leave a lot of those resources and infrastructure behind not just for future pandemics but all the other health crises, opioids and other things that continue to plague our Nation. We've got to continue to make investments in those.

I'm hoping that vaccines become really the step that we need to leave a public health infrastructure that helps us address all sorts of other public health challenges.

Dr. ABRAHAM. Senator Rosen, I just wanted to add really quickly—Dr. Abraham here—the digital divide in America, the digital fortress we've created as barriers to people and their vaccines, we really need to transform some of the digital demons that have stalled grandma's shot and train them and teach them and empower them to be digital angels that actually help us use these systems. These technologies are supposed to help us, not harm us, not stand in the way between people and their vaccines. And we need to understand why we need this data, and there may be more creative ways to capture it than having a 65-plus senior in our community fighting with their computer so that they can get a vaccine.

Senator ROSEN. I couldn't agree more.

I just have a few seconds left, so I want to talk quickly about therapeutics research and access. We know that we're going to have vaccines, but people will still become ill. So quickly, I just really want to ask what suggestions do you have to improve access for COVID–19 therapeutics for our vulnerable patients, maybe particularly in rural areas or in areas that are underserved and folks not able to get to a Tier 1 hospital, perhaps. That's going to be our challenge now as people become vaccinated.

Dr. JHA. Let me start by quickly saying I think this is an area—look, we've done a lot of things well. The scientific community has been extraordinary. The NIH has been extraordinary. But I would say that therapeutics is one area where we probably have underinvested. I think there are a variety of issues. We've done pretty well with inpatient therapies. We've got monoclonal antibodies, but they need outpatient infusion, which is very difficult in a lot of contexts. We actually are under-using them.

I think given the billions of dollars appropriately invested in vaccines, I would like to see a similar effort for therapeutics. The virus is not going away, even when most of us have gotten vaccinated. We'd like to get to a point where if you got infected, you could take a 5-or 7-day oral course of something which would dramatically reduce your chances of getting sick. We don't have that. We got dis-

tracted with things like hydroxychloroquine and all that stuff. We've got to let science drive this, and we've got to let NIH really—give them a lot more resources to push new therapies. We don't know which ones will work, but we've really got to try and put a lot more effort into this area.

Dr. SHAH. The other thing I would just say is we have to also support our rural systems, to Dr. Jha's point, rural hospitals, rural health care providers, rural health departments that are doing an incredible amount of work, both on the vaccine side but also on the therapeutic side. We need to make sure we continue to support them because they have challenges that are quite different than what's happening in the urban areas. We need to make sure that we're also thinking about those in a very methodical way.

Ms. FUCHS. I would also add that different innovative models of care delivery are really important. So the work that's gone on about hospital-at-home programs or being able to deliver services from an enhanced home care perspective is some of the work that we have done in our health system, and we have seen the ability to treat people at home versus bringing them into the hospital. So these therapeutics I think have to be available to be able to be delivered in multiple places.

For example, we believe we can deliver remdesivir in the patient's home. We're not able to do that right now because of the restrictions around it. So we have to think innovatively about how we can deliver care differently to be able to touch the people wherever they are, and especially in our rural communities.

The CHAIR. Thank you.

Senator ROSEN. Thank you. I yield back. Sorry, Madam Chair.

The CHAIR. Thank you very much.

I will turn to Senator Burr.

Senator BURR. Thank you, Senator Murray.

I have one question, and then some comments. And on the comments, any of you that want to refute what I say, feel free to do it.

Dr. Jha, some COVID–19 models have started to incorporate weather patterns into their predictors for the trajectory of pandemics. Are there other data points or sources of information that we should be including in our surveillance and predictive models to provide a better picture of the virus pathway?

Dr. JHA. Oh, Senator, this is a fabulous question. And let me say, throughout this entire pandemic, as I have tracked this pandemic in our Nation, sometimes I look at public health data, but a large chunk of what I look at is not traditional public health data at all. I look at Google mobility data. I look at open-table reservations data, not because I'm trying to get a restaurant reservation but because it tells us something about how people are behaving.

We have in the public health world—and this is a broader societal problem—a not-thought-through how this incredible proliferation of data that is out there is getting incorporated and used for public health modeling.

Of course, we need basic laboratory data and all of that, the standard stuff, but we need a new approach. And it raises a whole series of questions, Senator, because countries like China, for instance, use incredible amounts of social-generated data, but they do

it in a way that I think is not consistent with our values. It's not the way we would want to do it in a democracy with privacy and security.

We need to find ways—these are policy issues, these are regulatory issues—where we can access and use these kinds of data in a way that people feel that their privacy is still being conserved. We have barely begun to scratch the surface of this issue.

Senator BURR. Well, I'm delighted to hear you say that because I think we do have to think outside the box as we talk about in the future a layered surveillance system, one that leverages technology, and we've proven in medical research that you can de-identify data and it can be used and used very successfully.

A few comments. With the flu every year we flood the zone, to use a football analogy, as the coach would say. We flood the zone with vaccines, and we make it as easy as possible, in large part because we've got unlimited vaccine production. We never thought about the multi-use manufacturing needs that we were going to have, and we've got to re-think that, and we've got to incorporate that into our architecture of the future.

When airlines adopted a mask policy and put HEPA filters in every airplane, and people started flying with a mandatory mask and with filtration but no social distancing, we never had an instance of super-spreader on an airline from the time they restarted that new system.

I'm not sure why we're so scared on schools. If we've got a mask and we've got filtration and we've got distancing, which is the third thing, and the fourth thing is we've got a population of kids that we have the data that shows they're less likely to contract, it's just amazing to me that we have put off so long putting these kids back to school and letting mothers and fathers go back to work and to resume some normalcy in their lives.

Three, the vaccine process—I agree with Dr. Jha—we've made it way too difficult, and I think, Dr. Abraham, you simplified it where you are. I remember I was in a hospital 1 day that is known for heart bypass surgery. And when they explained to me what a typical day was like and the first two operations, they required them to stay inpatient the night before. My question was why? There's an added expense. And they made it clear that any missed operation the next day broke their model of how they reduce cost in health care but make money at the end of the day.

If you can't assure that your first two people wake up and show up on time for their pre-op, you've messed up the entire day of bypass surgery.

Well, any time we have an interruption in the line of people that are sticking in arms when we've got a limited number of stickers—Dr. Abraham, I think you alluded to it—we have missed an opportunity. So we've got to simplify this, as was said. We've got to make sure that our focus is on sticking as many arms as we possibly can in a given day with the number of vaccines that we have, and the system today was not set up to do it.

We have a limited number of health care professionals that can do it. This is not new. We identified this in the early 2000's when we started the pandemic legislation with PAHPA and other things. We identified that we needed a parallel effort to try to identify a

world delivery system, because sticking people in arms is a very difficult thing in a national and global picture.

Well, thank God we've had health care professionals that were retired that have come back to the front lines and volunteered pro bono to come out and stick people because they're already trained, and we've got to tap into that supply even greater.

Either Dr. Jha or Dr. Shah alluded to the fact that we can't get there if we've got 147 million Americans that aren't going to be vaccinated because they're under the age of 18. And I agree totally, as this infection begins to decline, the pediatric indications that are needed for historical determination to make safety and efficacy pass the test is going to be impossible. It will take years, and we really need to do that population, at least down to an 8-year-old, before school goes back next year.

I hope that some of the words that you go out and preach are words that accept the standard that we're going to have to use technology to close the gap on making those determinations, which is not the historical model that FDA and others have used. We're asking Federal agencies, quite frankly, to do things they haven't done historically, in large measure because technology gives us the ability to gap that now.

But let me assure all of our witnesses, government is the last one that will take advantage of it unless it's the medical community that pushes Congress to make the changes, that pushes the Federal agencies to make those changes. Partnering with the private sector is absolutely essential to mapping out the way to address pandemics of the future, and we are the worst partner for the private sector, we the government, that exists in the marketplace. We've got to change that. It can no longer be that the CDC is in charge of all testing, which is where we were 1 year ago on March the 9th, and not until we created RadX over at NIH with Dr. Collins' leadership did they start to partner with the private sector to bring all sorts of new testing capabilities both in office and in home, and we're going to continue to expand on that. But we've got to get outside of the historical paradigms that exist. Technology, innovation, and investment are the only way that we will improve the future, and that's in all aspects of pandemics.

The heroes in this story are the individuals on the front line. Without them, we'd fail. With them, we have accomplished something that 12 months ago most people believed we couldn't do. We've developed three vaccines, and hopefully a fourth very soon. We have immunized now millions of Americans. And I agree with the comments that were made, we can't stop looking at America and saying when are we going to be immunized? Until we find a way to be the driver of global immunization, then we will not feel comfortable about where we are.

America needs to open up our schools, we need to open up our businesses, we need commerce outside of the United States, and until we find a way to immunize globally, that is not going to happen at the levels that we've got to get it to. So it's not just about how do we buy 600 million doses for the United States which can vaccinate every American. It's how can we use American assets to leverage manufacturing capabilities, both here and globally, to where we manufacture cost-effective vaccines, maybe with U.S.

technology, maybe with U.S. companies, and we leverage the rest of the world to do it. You'll never get them to do it if we don't display a willingness to partner between the Federal Government and the private sector going forward.

Chair Murray, I thank you for this hearing. I thank our witnesses for their expertise. I'm willing to take any criticism about my observations from any of you.

The CHAIR. Well, thank you very much, Ranking Member Burr.

I just have a couple more questions, and I want to again thank all of our witnesses.

Dr. Jha, if you can just answer me. In December the U.S. ranked 43rd worldwide in sequencing of coronavirus variants, which is why I pushed to include $1.75 billion for genomic sequencing and surveillance activities at the CDC in the American Rescue Plan. But, Dr. Jha, what do you see as the biggest challenges ahead in terms of identifying, tracking, and stopping these emerging variants?

Dr. JHA. Two things, Senator. First, I think your push for more sequencing was exactly right. It's what we need. I do believe—look, there's no reason why the U.K. has to be the global leader in sequencing. We have so much sequencing capacity in our Country and we just need to be doing a lot more of it, even a lot more than we have right now.

I remain, as I said in my opening remarks, pretty worried that we are not taking these variants seriously enough. Within a year of this disease outbreak, we have seen multiple variants that challenge our vaccines. None of them will defeat our vaccines yet. We are on a track for three or four more years until the world is vaccinated, and the question is how lucky do we feel that we will not see the rise of a variant that will make all of our vaccines ineffective.

We need a surveillance program certainly in the United States that's far more robust. We need a surveillance program globally that's far more robust. But identifying these variants isn't enough. We've got to get the world vaccinated, as Senator Burr said. It is absolutely in our national interest, in our economic, political, and health interest, to get the entire world vaccinated as quickly as possible, and we are not on track to keep the American people safe, but we need to in terms of getting the whole world vaccinated.

The CHAIR. Thank you. I'm not for relying on luck myself.

Dr. Abraham, the health care safety net has never been more important. Millions of people rely on our community health centers for primary care services. They are really a lifeline for our families, as you so know, and I was really glad we were able to secure billions in the American Rescue Plan. That investment will really help our health centers continue caring for COVID–19 patients, but we have been solely centered on COVID–19.

I wanted to ask you, in addition to your work addressing COVID–19, how have you been able to manage the other primary care needs of your community throughout this pandemic?

Dr. ABRAHAM. The short answer is it has not been easy. It has required an all-hands-on-deck approach. Whether you are the receptionist in our clinic or the medical assistant, every single person, including the person that wears that business hat, we've all

had to race to help every patient because despite COVID, our patients still have their needs, their diabetes, their hypertension, their heart disease, and they need their refills, and they need access to diagnostics and to treatments, and we can't delay that because of this pandemic. That creates a whole other storm.

What we do definitely is we need to have more hands on deck, more team-based health care delivery. We need more of all of it, so every dollar that you send from this Act to a community health center really helps us better care for our community. It gets more hands hired. It gets more resources, whether it's getting out into the community, a mobile mammogram unit, all of those things are required. But they do take resources, and with more resources we can really do more for our communities.

The CHAIR. Thank you, and I think that's one of the things we have not focused on, that the other cost of this pandemic has really been all of those other health care needs that we have not been focused on that have been neglected for a variety of reasons, including people not going in to get their care, but also because of the lack of access. So we need to really be aware of that focus.

I want to thank all of our witnesses today and all of our colleagues for a really thoughtful discussion. Again, I especially want to thank Dr. Shah, Dr. Jha, Dr. Fuchs, and Dr. Abraham for sharing your time and knowledge with all of us and for the work you are doing on the front lines and for so many who are working their way through this.

For any Senators who wish to ask additional questions, questions for the record will be due in 10 business days, Tuesday, March 23rd at 5 p.m.

This hearing record will also remain open until then for Members who wish to submit additional materials for the record.

This Committee will next meet on Tuesday, March 15th, in Dirksen 106 at 10 a.m. for a hearing on the nomination of Julie Su to be Deputy Secretary of Labor.

The Committee stands adjourned.

ADDITIONAL MATERIAL

STATEMENT FROM THE AMERICAN COLLEGE OF PHYSICIANS

March 9, 2021

The American College of Physicians (ACP) is pleased to submit this statement and offer our views regarding the response to the public health emergency (PHE) caused by Coronavirus (COVID–19). We greatly appreciate that Chair Murray, Ranking Member Burr, and the Health, Education, Labor, and Pensions (HELP) Committee has convened this hearing, "Examining Our COVID–19 Response: An Update from the Frontlines", held on March 9, 2021. Thank you for your shared commitment to ensuring that clinicians have the opportunity to share their views about the response to the PHE caused by COVID–19. Through the experiences of its physicians on the frontlines of furnishing primary care during the COVID–19 pandemic, ACP has consistently provided input and recommendations to lawmakers surrounding the ongoing need for personal protective equipment (PPE), increased support for the frontline physician workforce, adequate funding for COVID–19 testing, contract tracing, and vaccine distribution, and continued telehealth expansion. Support for these policies is vital to the pandemic response effort now after the national PHE comes to an end.

The American College of Physicians is the largest medical specialty organization and the second-largest physician membership society in the United States. ACP members include 163,000 internal medicine physicians (internists), related sub-

specialists, and medical students. Internal medicine physicians are specialists who apply scientific knowledge and clinical expertise to the diagnosis, treatment, and compassionate care of adults across the spectrum from health to complex illness. Internal medicine specialists treat many of the patients at greatest risk from COVID–19, including the elderly and patients with pre-existing conditions like diabetes, heart disease and asthma.

Personal Protective Equipment

The various coronavirus relief packages, including the recently enacted American Rescue Plan Act (ARP), H.R. 1319, began and now continue to provide desperately needed personal protective equipment (PPE) to frontline physicians, nurses and other health care workers. The ARP included possible PPE funding in several provisions, including the use of the Defense Production Act (DPA) for procurement of supplies and services including PPE. However, ACP members and internists and other frontline health care workers are still experiencing difficulty in obtaining some types of PPE. Accordingly, ACP has continued its financial contributions that will help Project N95 to secure appropriate inventory levels for PPE, particularly for hard-to-obtain items such as nitrile gloves.

ACP has partnered with Project N95 since June 2020 to provide PPE for internal medicine physicians, filling an urgent need for frontline ACP member physicians during the COVID–19 pandemic. Since the beginning of the pandemic ACP has been vigorously advocating for the need for adequate PPE, calling on suppliers and the Federal Government to ensure the availability of essential PPE to protect frontline physicians. Many individual physicians, especially those outside of hospitals, had been closed out of ordering PPE through distributors at reasonable prices and quantities.

Despite recent reports that U.S. suppliers of N95 respirators have inventory available, the distribution system in the U.S. is still not working effectively enough to allow individual physicians to order high-quality PPE to meet their needs. ACP is continuing to see members needing to order PPE through our distribution partnership with Project N95, which is why we continue to provide financial support to Project N95. The demand crunch has shifted from N95 respirators to nitrile patient exam gloves, with gloves being the latest example of a product where the minimum order quantities are so high that only the largest distributors can easily compete for inventory supplies.

The need still exists for ACP to offer an alternative buying channel for our members, which we are doing through Project N95, but the need has declined significantly since last summer. Sales of N95 respirators through ACP declined 50 percent from August to December, and declined 34 percent from December to January and February. However, we still have hundreds of members buying through ACP and Project N95.

Support Frontline Physician Workforce

Primary care physicians, including internal medicine specialists, continue to serve on the frontlines of patient care during this pandemic with increasing demands placed on them. During the pandemic's worst months, there was an increasing reliance on medical graduates, both U.S. and international, to serve on the frontlines in this fight against COVID–19. Many residents and medical students played a critical role in responding to the COVID–19 crisis and providing care to patients on the frontlines. For residents, COVID–19 has inflicted additional strain on them as they were redeployed from their primary training programs and put onto the frontlines to care for the sickest patients, often putting their own health at risk, and many without appropriate PPE at the time. ACP recommends the following legislation from the previous, 116th Congress, that should be reintroduced and passed in the current 117th Congress to assist medical graduates and the overall physician workforce:

- **Conrad State 30 and Physician Access Reauthorization Act, H.R. 2895, S. 948, (116th Congress):** This bill allows states to sponsor foreign-trained physicians to work in medically underserved areas in exchange for a waiver of the physicians' two-year foreign residence requirement. It increases the base number of annual Conrad waivers available to each state from 30 to 35, with a demand-based sliding scale to determine the number of available waivers in future years, and includes a provision to address the current backlog in the system for physicians on J–1 visas who wish to acquire permanent residency status (green card).

- **Healthcare Workforce Resilience Act, H.R. 6788, S. 3599, (116th Congress):** This bill would authorize immigrant visas for health care clinicians, including up to 15,000 physicians who are eligible to practice in the United States or are already in the country on temporary work visas. The visas would provide a pathway to employment based green cards. View ACP's *letter* of support to Congress for S. 3599 in the 116th Congress.
- **The Student Loan Forgiveness for Frontline Health Workers Act, H.R. 6720, (116th Congress):** This bill would forgive student loans for physicians and other clinicians who are on the frontlines of providing care to COVID–19 patients or helping the health care system cope with the COVID–19 public health emergency.

COVID Testing, Contact Tracing, Treatment and Vaccines

ACP strongly *supported* several provisions in the American Rescue Plan (ARP) Act of 2021, H.R. 1319, that directly will help to contain the COVID–19 pandemic. ACP supported the provisions in the ARP to provide $49 billion to HHS to detect, diagnose, trace, and monitor COVID–19 infections, and for other activities necessary to mitigate the spread of COVID–19. ACP also supported the ARP provisions to require Medicaid coverage of COVID–19 vaccines and treatment without beneficiary cost sharing with vaccines matched at a 100 percent Federal medical assistance percentage (FMAP) through one year after the end of the PHE. It also gives states the option to provide coverage to the uninsured for COVID–19 vaccines and treatment without cost sharing at 100 percent FMAP. ACP is pleased that these provisions help cover vulnerable populations during the PHE caused by COVID–19.

To address current and looming pharmaceutical therapies and vaccine shortages during a pandemic, ACP recommends that the Federal Government should work with pharmaceutical companies to ensure that there is an adequate supply of pharmaceutical therapies and vaccines to protect and treat the U.S. population. ACP also supports measures to increase pandemic influenza vaccine and antiviral medications in the Strategic National Stockpile (SNS) as discussed below to prepare for a future pandemic. ACP also supports measures to increase domestic production of vaccines and antiviral medications, including providing liability protections to decrease barriers to manufacturing while maintaining protections for individuals injured from the use of vaccines and antiviral medications.

Accordingly, ACP strongly supported the provisions in the ARP to provide $7.5 billion in funding for the Centers for Disease Control and Prevention (CDC) to prepare, promote, administer, monitor, and track COVID–19 vaccines, and $6 billion to the Department of Health and Human Services (HHS) to support advanced research, development, manufacturing, production and purchase of vaccines, therapeutics, and ancillary medical products utilized for treatment and prevention of COVID–19. ACP is also appreciative of the $1 billion in the ARP for vaccine confidence activities to promote education and increase vaccination rates.

ACP *supports* requirements that COVID–19 vaccines be provided at no cost to all patients, regardless of coverage status. ACP supports an all-hands-on deck approach to administer COVID vaccines, which includes primary care offices. **We urge Congress to work with the administration, state and local governments, and vaccine distributors to support physicians who wish to administer the COVID–19 vaccine by ensuring community-based practices are included in distribution plans. In a January 2021** *survey*, **71 percent of medical practices reported being unable to obtain COVID–19 vaccine for their patients, and independent medical groups were significantly less likely to have access than those owned by hospitals or health systems**. It is vital that vaccinators record the vaccine administration data within the patient's medical record and promptly report to the state's immunization information system (IIS) or other designated CDC system. Ideally, health IT systems would automate vaccination data sharing with minimal additional effort required, including reporting to state IISs and notifying the patient's primary care team of their vaccination status and other relevant information.

Continuing Telehealth Expansion

ACP strongly supports the expanded role of telehealth as a method of health care delivery that may enhance patient-physician collaborations, improve health outcomes, increase access to care and members of a patient's health care team, and reduce medical costs when used as a component of a patient's longitudinal care. Telehealth can be most efficient and beneficial between a patient and physician with an

established, ongoing relationship and can serve as a reasonable alternative for patients who lack regular access to relevant medical expertise in their geographic area. Primary care physicians have had to convert in-person visits to virtual ones in response to the COVID–19 PHE, and practices are experiencing huge reductions in revenue while still having to pay rent, meet payroll, and meet other expenses without patients coming into their practices.

During the Coronavirus pandemic, internal medicine specialists continue to deliver care to their patients with the expanded utilization of telehealth made possible by new policies either enacted by Congress, the U.S. Department of Health and Human Services (HHS), as well as private payers. However, many of the telehealth flexibilities and policy changes made by Congress and HHS are due to expire at the conclusion of the PHE, wherein patients and physician practices would be expected to revert back to primarily face-to-face services without any type of risk-based assessment for gradually reopening medical practices and health systems to care for non-COVID and non-acute patients.[1] This quick reversal in policy does not take into account patients' comfort level in returning to physician offices to seek necessary care, as well as changes in office workflow and scheduling practices to mitigate spread of the virus within practices resulting in substantially lower volume of in-person visits for as long as the pandemic is with us. Therefore, the quick reversal in policy is not an effective way to recover from the PHE, nor prepare for possible future outbreaks.

The College believes that the patient care and revenue opportunities afforded by telehealth functionality will continue to play a significant role within the U.S. healthcare system and care delivery models, even after the PHE is lifted. Please see ACP's *response* to the HELP Committee for the Committee's June 17, 2020, hearing, "Telehealth: Lessons from the COVID–19 Pandemic" and more recently ACP's *statement* to the House Committee on Energy and Commerce's March 2, 2021, hearing, "The Future of Telehealth: How Covid–19 is Changing the Delivery of Virtual Care". In order to address the many barriers to patient access and physician adoption and use of telehealth prior to the COVID–19 pandemic, and properly assess how to foster and strengthen longitudinal, patient-centered care delivery, **ACP believes that the following existing PHE flexibilities and waivers should be continued—and not allowed to expire—to support making telehealth an ongoing and continued part of medical care now and in the future, allowing time for further evaluation on which ones should be maintained as is, revised or expanded**:

- **Pay Parity for Audio-Only and Telehealth Services:** The College wholeheartedly supports the Centers for Medicare and Medicaid Services' (CMS) actions to provide additional flexibilities for patients and their doctors by providing payment for telephone services. These changes in payment policy address some of the biggest issues facing physicians as they struggle to make up for lost revenue and provide appropriate care to patients. Primary care services delivered via telephone have become essential to a sizable portion of Medicare beneficiaries who lack access to the technology necessary to conduct video visits. ACP is discouraged to learn that CMS will not continue coverage of telephone evaluation and management (E/M) services beyond the PHE, despite mounting evidence about the effectiveness of expanding coverage for these services. While ACP has supported the Agency's actions to provide coverage and payment parity for such telephone services, the College is very concerned about the impact of reversing these changes at the conclusion of the PHE. **ACP believes that existing PHE flexibilities and waivers should be continued, and not be allowed to expire—including pay parity for audio-only phone calls—to support making telehealth an ongoing and continued part of medical care now and in the future, allowing time for further evaluation on which ones should be maintained as is, revised or expanded. We also urge removal of the requirement for the use of two-way, audio/video telecommunications technology so that telephone E/M services can continue to be provided to Medicare beneficiaries.**
- **COVID–19 Vaccine Counseling:** Although most community-based physician practices are not yet administering COVID–19 vaccinations, many

[1] Doherty R., Erickson S., Smith C., Qaseem A. "Partial Resumption of Economic, Health Care and Other Activities While Mitigating COVID–19 Risk and Expanding System Capacity." American College of Physicians, May 6, 2020: *https://www.acponline.org/acp-policy/policies/acp-guidance-on-resuming-economic-and-social-activities-2020.pdf*.

report providing significant counseling and risk factor reduction services to patients who are concerned about COVID–19 or who are trying to get vaccinated against the virus. However, coding and payment has not been made available to allow physicians to bill for these services. While office visit E/M visits, telephone E/M, virtual check-ins, and e-visits have been made available by CMS during the pandemic to provide for virtual care, these coding options are not sufficient to meet the current needs. Specifically, the E/M visits are not available for billing as no diagnoses have been established to necessitate an E/M visit. Patients are calling for advice from their doctors, not to set up a visit for a medical problem/issue they are experiencing. Additionally, virtual check-ins are an ineligible option as they are for patients seeking to determine whether an E/M visit is necessary. In the case of COVID–19 vaccinations, patients are seeking to understand the risks associated with getting a COVID–19 vaccine, and where to find a vaccine. These are not examples of patients checking in with their physician to understand whether an office visit is necessary. It is merely for advice and counseling. **ACP recommends that Congress urge, or if necessary, require CMS to make coding and payment available for time spent by physicians providing counseling services to patients who are seeking to mitigate their risk for COVID–19 infection. Specifically, ACP encourages CMS to make payment and coverage available for CPT code 99401 (Preventive medicine counseling and/or risk factor reduction intervention(s) provided to an individual (separate procedure); approximately 15 minutes), wRVU 0.48. The College believes that this code adequately describes the resources and physician work involved in providing counseling and risk factor reduction services to patients with inquiries about COVID–19. We encourage CMS to temporarily make payment available for this code through at least December 31, 2021 and waive the face to face requirement associated with this service.**

- **Geographical Site Restriction Waivers:** ACP strongly supported CMS' policy changes to pay for services furnished to Medicare beneficiaries in any healthcare facility and in their home—allowing services to be provided in patients' homes and outside rural areas. ACP has long-standing policy in support of lifting these geographic site restrictions that limit reimbursement of telehealth services by CMS to those that originate outside of metropolitan statistical areas or for patients who live in or receive service in health professional shortage areas.[2] While limited access to care is prevalent in rural communities, it is not an issue specific to rural communities alone. Underserved patients in urban areas have the same risks as rural patients if they lack access to in-person primary or specialty care due to various social determinants of health such as lack of transportation or paid sick leave, or sufficient work schedule flexibility to seek in-person care during the day, among many others.[3] **Accordingly, it is essential to maintain expanded access to and use of telehealth services for these communities, as well as rural communities, and ACP recommends that Congress permanently extend the policy to waive geographical and originating-site restrictions after the conclusion of the PHE.**
- **Telehealth Cost-Sharing Waivers:** ACP appreciated the flexibility provided by CMS to allow clinicians to reduce or waive cost-sharing for telehealth and audio-only telephone visits for the duration of the PHE. At the same time, we call on CMS or preferably Congress to ensure that they make up the difference between these waived copays and the Medicare allowed amount of the service. Many practices are struggling or closing. It is critical that CMS and other payers not add to the financial uncertainties already surrounding these physicians. Given the enormity of the COVID–19 pandemic, cost should not be a prohibitive factor for patients in attaining treatment. This critical action has led to increased uptake of telehealth visits by patients. **At the conclusion of the COVID–19 PHE, ACP recommends that Congress urge, or if necessary re-**

[2] Daniel H, Snyder Sulmasy L. "Policy Recommendations to Guide the Use of Telemedicine in Primary Care Settings." American College of Physicians, November 17, 2015: *https://www.acpjournals.org/doi/full/10.7326/M15-0498*.

[3] Webb Hooper M, Nápoles AM, Pérez-Stable EJ. "COVID–19 and Racial/Ethnic Disparities." JAMA. Published online May 11, 2020. doi:10.1001/jama.2020.8598.

quire, CMS to continue to provide flexibility in the Medicare and Medicaid programs for physician practices to reduce or waive cost-sharing requirements for telehealth services, while also making up the difference between these waived copays and the Medicare allowed amount of the service. This action in concert with others has the potential to be transformative for practices while allowing them to innovate and continue to meet patients where they are. ACP believes that existing flexibilities and waivers should be continued, and not be allowed to expire, to support making telehealth an ongoing and continued part of medical care now and in the future, allowing time for further evaluation on which ones should be maintained as is, revised or expanded.

- **Flexibilities in Direct Supervision by Physicians at Teaching Hospitals:** CMS has noted that in instances where direct supervision is required by physicians and at teaching hospitals, the agency will allow supervision to be provided using real-time interactive audio and video technology through the calendar year 2021. The College welcomes this decision by the agency to allow attending physicians and residents/fellows the ability to communicate over interactive systems asynchronously by waiving the in-person supervision requirement. This important step promotes efficient patient care and allows physicians and supervisees to work together unencumbered by social distancing restrictions. **We encourage Congress to urge, or if necessary require, CMS to maintain these modifications, and not allow them to expire.**
- **Revised Policies for Remote Patient Monitoring Services:** CMS finalized policy stating that following expiration of the COVID–19 PHE, there must be an established patient-physician relationship for RPM services to be furnished—ending its interim policy permitting RPM services to be furnished to new patients. The Agency also finalized policies allowing consent to receive RPM services to be obtained at the time RPM services are furnished and noted that practitioners may furnish RPM services to patients with acute conditions as well as patients with chronic conditions. RPM services have been a critical component of care, especially during the COVID–19 pandemic. ACP is pleased to see the Agency finalized a number of policies that will be beneficial to both patients and their care teams. These changes expand access to services at an important time, as patients and their care teams need additional resources to meet current challenges. These changes will help relieve physician burden and allow physicians more time to treat complex patient issues that require more than remote monitoring. We continue to believe that Congress should urge, and if necessary, require, CMS to extend the interim policy to allow RPM services to be furnished to patients without an established relationship.
- **Interstate Licensure Flexibility for Telehealth and Promotion of State-Level Action:** ACP supports a streamlined approach to obtaining several medical licenses that would facilitate telehealth services across state lines while allowing states to retain individual licensing and regulatory authority.[4] We appreciated CMS' temporary waiver allowing physicians to provide telehealth services across state lines, as long as physicians meet specific licensure requirements and conditions. These waivers offer an opportunity to assess the benefits and risks to patient care in addressing the pandemic as well as the ability to maintain longitudinal care for patients who move across state lines. While these waivers do not supersede any state or local licensure requirements, they provide the opportunity to promote state-level action that may further promote more streamlined licensure requirements across the country. ACP also supports the Temporary Reciprocity to Ensure Access to Treatment (TREAT) Act, S. 168, H.R. 708, which would provide temporary licensing reciprocity for telehealth and interstate health care treatment.

[4] Daniel H, Snyder Sulmasy L. "Policy Recommendations to Guide the Use of Telemedicine in Primary Care Settings." American College of Physicians, November 17, 2015: *https://www.acpjournals.org/doi/full/10.7326/M15-0498*.

Conclusion

We commend you and your colleagues for working in a bipartisan fashion to develop legislative proposals to combat the ongoing Coronavirus crisis—as well as future pandemics—through continuing innovative policies. We wish to assist in the HELP Committee's efforts in this area by offering our input and suggestions about ways that Congress and Federal health departments and agencies can intervene through evidence-based policies both now and beyond the PHE. Thank you for consideration of our recommendations that are offered in the spirit of providing the necessary support to physicians and their patients going forward. Please contact Jared Frost, Senior Associate, Legislative Affairs, with any further questions or if you need additional information.

AMERICAN ACADEMY OF FAMILY PHYSICIANS
March 9, 2021

Hon. PATTY MURRAY, *Madam Chair*,
Hon. RICHARD BURR, *Ranking Member*,
Senate Committee on Health, Education, Labor, and Pensions,
428 Dirksen Senate Office Building,
Washington, DC.

DEAR MADAM CHAIR MURRAY AND RANKING MEMBER BURR:

On behalf of the American Academy of Family Physicians (AAFP) and the 136,700 family physicians and medical students we represent, I applaud the Health, Education, Labor, and Pensions Committee for its continued focus on COVID–19 response. I write in response to the hearing: "Examining Our COVID–19 Response: An Update from the Frontlines" to share the family physician perspective and the AAFP's policy recommendations for ensuring that our health care system can make a complete recovery from the ongoing COVID–19 pandemic.

Family physicians are on the frontlines of the COVID–19 pandemic screening, diagnosing, triaging and treating patients who are fighting the virus while continuing to provide comprehensive care to their patients with ongoing health care needs, including management of chronic conditions. They are keeping patients healthy and keeping them out of the hospital and emergency room while many of them have also provided surge staffing when hospitals have been overwhelmed. *The COVID relief legislation that the Senate passed last week placed a heavy emphasis on testing, treatment and vaccines to control COVID–19—primary care is the gateway to all three*.

COVID–19 has highlighted the inefficiencies and inequities that already existed in our health care system. As the pandemic continues, individuals are struggling more than ever to access the essential primary health care services they need to stay healthy. Family physicians are committed to doing everything possible to prevent and slow the spread of COVID–19 while ensuring that patients get the care they need. However, they can't do it alone; there are specific actions that the Federal Government should take now to support access to and coverage for COVID–19 treatment and prevention.

Recommendations

- *Equitable Vaccine Distribution*—According to a recent survey, nearly nine in ten primary care clinicians want their practice to be a COVID–19 vaccination site, only 22 percent are considered as such by their health department, local hospital, or health system.[1] Additionally, independent practices have had a more difficult time obtaining COVID–19 vaccines for their patients than those affiliated with a hospital or large health system.[2] It is frustrating that primary care has been overlooked as an outlet for equitable vaccine distribution even though it is equipped to target those most vulnerable and in need.

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[1] Larry A. Green Center. "Quick COVID–19 Primary Care Survey." Series 26 Fielded February 12–16, 2021. *https://static1.squarespace.com/static/5d7ff8184cf0e01e4566cb02/t/60368efc6f135d069645fa93/1614188285446/C19+Series+26+National+Executive+Summary.pdf.*

[2] Medical Group Management Association. *https://www.mgma.com/news-insights/press/nation%E2%80%99s-physician-practicesleft-out-of-covid-19?utm-source=ga-organic-st-01.26.21&utm-medium=social&utm-campaign=ga-vaccine-press-release*.

While we do not believe legislation is needed to address this problem, we call on Congress to support Federal, state, and local efforts to prioritize primary care practices in COVID–19 vaccine distribution.

- *Disparities in Vaccination Rates*—Data indicate that Black and Hispanic adults under 50, as well as rural residents, are more likely to report vaccine hesitancy or indicate that they will not get the COVID–19 vaccine.[3] However, 85 percent of individuals across demographic groups report that their primary care physician or other clinician is the most trusted source of information about COVID–19 vaccines and they will rely on them when deciding whether to get the vaccine.[4,5] As trusted members of their communities and the primary source of comprehensive health services in rural and under resourced areas, community primary care physicians play an integral role in ensuring equitable vaccination rates across the state. According to data from the Medical Expenditure Panel Survey, primary care physicians provided 54 percent of all clinical visits for vaccinations, which made them more likely to administer vaccines than other stakeholders, such as pharmacies or grocery stores.[6] **As Congress considers policies to reduce the disparities in COVID–19 vaccine uptake, including investing in a national vaccine promotion campaign, it is important to recognize the role of primary care physicians in combating vaccine hesitancy.**
- *Telehealth*—Family physicians have rapidly changed the way they practice to meet the needs of their patients during the COVID–19 pandemic. About 70 percent report that they want to continue providing more telehealth services in the future. Telehealth can enhance patient-physician collaboration, increase access to care, improve health outcomes by enabling timely care interventions, and decrease costs when utilized as a component of, and coordinated with, continuous care. Given these benefits, patients and physicians alike have indicated that current telehealth flexibilities should continue beyond the public health emergency. **Congress should act to extend Medicare telehealth flexibilities and ensure telehealth is permanently recognized across payers as a valuable modality of providing primary care services beyond the public health emergency**.
- *Primary Care Workforce*—COVID–19 has both highlighted and exacerbated the physician workforce shortages facing communities throughout the Nation. It has demonstrated the urgency of building and financing a robust, well-trained, and accessible primary care system in our Country. According to the American Association of Medical Colleges, we will need 52,000 additional primary care physicians by 2025 in order to meet the health care needs of our growing and aging population and be prepared to respond to future crises.[7] **Congress should address the primary care physician shortage by increasing investments in the Teaching Health Center Graduate Medical Education (THCGME) program and the National Health Service Corps, which train and place primary care physicians in underserved and rural communities**.
- *Mental Health of Physicians*—Even prior to the pandemic, burnout among health providers was a pervasive public health concern, with some studies reporting burnout in more than 50 percent of clinicians. According to the American Board of Family Medicine, primary care physicians have experienced the highest rate of death (26.9 percent) among health pro-

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[3] Kaiser Family Foundation. KFF COVID–19 Vaccine Monitor. February 2021. Available at: *https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-february-2021/*.

[4] Kaiser Family Foundation. KFF COVID–19 Vaccine Monitor. December 2020. Available at: *https://www.kff.org/coronavirus-covid-19/report/kff-covid-19-vaccine-monitor-december-2020/*.

[5] Kaiser Family Foundation. KFF COVID–19 Vaccine Monitor. January 2021. Available at: *https://www.kff.org/report-section/kff-covid-19-vaccine-monitor-january-2021-vaccine-hesitancy/*.

[6] Analysis conducted by the Robert Graham Center. Publication forthcoming.

[7] Petterson, S. M., Liaw, W. R., Phillips, R. L., Jr, Rabin, D. L., Meyers, D. S., & Bazemore, A. W. (2012). Projecting US primary care physician workforce needs: 2010–2025. Annals of family medicine, 10(6), 503–509. *https://doi.org/10.1370/afm.1431*

vider specialties during COVID–19.[8] Physician burn out during the COVID–19 pandemic has become worse, negatively impacting happiness, relationships, career satisfaction, and patient care. A January 2021 report showed that 47 percent of family physicians are burnt out, and 20 percent of all physicians are clinically depressed.[9] **Congress should invest in the mental health needs of our Nation's doctors, particularly during the pandemic, and fight the stigma around seeking necessary treatment by passing the Dr. Lorna Breen Health Care Provider Protection Act**.

- *Personal Protective Equipment (PPE)*—Access to PPE has been a continual challenge for primary care providers during the pandemic. Survey data shows that 1 in 3 primary care practices are consistently having trouble getting PPE.[10] Family physicians are on the front lines screening, testing, and treating patients for COVID–19 in outpatient and inpatient settings, often at great personal risk. It is imperative during public health emergencies that health care workers have adequate protection to decrease personal harm and the spread of disease. **Congress should increase PPE production and stabilize the supply chain by passing legislation, such as the Protect our Heroes Act of 2020 and ensure that community-based primary care physicians are not excluded from PPE distributions from the Strategic National Stockpile**.
- *Inadequate Reimbursement for Testing*—Some primary care physicians report that payment rates for COVID–19 testing have dropped so significantly that they do not cover the cost of the COVID–19 testing supplies, and therefore jeopardizing access to a tool that is crucial to stopping the spread of COVID–19.[11] With new variants of coronavirus emerging, testing will be especially important. **Congress should address the inadequate reimbursement by clarifying that public and private payers must reimburse the complete cost of a COVID test**.
- *Medicaid Parity*—Recent data show that Medicaid enrollment has increased by more than 6 million since the start of the COVID–19 pandemic, and trends suggest that enrollment will continue to increase a result of pandemic-related job losses.[12] The demand for primary care physicians in the Medicaid program is more acute than ever. Inadequate Medicaid payment threatens access to primary care services in areas hardest hit by COVID–19, and without proper support during this public health emergency and beyond, family physician practices could be forced to close. **Congress should ensure Medicaid beneficiaries have timely access to primary care by raising Medicaid payments to at least Medicare payment levels**.

We thank you for your leadership and actions to date to help our Nation combat COVID–19. The AAFP stands ready to partner with you on additional legislation to recover from the pandemic and improve our public health preparedness. Should you have any questions, please contact Erica Cischke, Senior Manager of Legislative and Regulatory Affairs or John Aguilar, Manager of Legislative Affairs.

Sincerely,

GARY L. LEROY
MD, FAAFP
BOARD CHAIR
American Academy of Family Physicians

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[8] Gouda D, Singh PM, Gouda P, Goudra B. An Overview of Health Care Worker Reported Deaths During the COVID–19 Pandemic. J Am Board Fam Med. 2021 Feb;34(Suppl):S244-S246. doi: 10.3122/jabfm.2021.S1.200248. PMID: 33622846.

[9] Kane, L. (2021, January 22). 'Death by 1000 CUTS': Medscape National Physician Burnout and Suicide Report 2021. Retrieved March 05, 2021, from *https://www.medscape.com/slideshow/2021-lifestyle-burnout-6013456?faf=1#28*.

[10] Larry A. Green Center. "Quick COVID–19 Primary Care Survey." Series 20 Fielded September 4–8, 2020. *https://static1.squarespace.com/static/5d7ff8184cf0e01e4566cb02/t/5f6510dc99d76d706832ba29/1600458973290/C19+Series+20+National+Executive+Summary.pdf*.

[11] Kliff, S. (2021, February 03). Burned by Low Reimbursements, some doctors stop testing for COVID. Retrieved March 08, 2021, from *https://www.nytimes.com/2021/02/03/upshot/covid-testing-children-pediatricians.html*.

[12] Corallo, B., Rudowitz, R. (2021, January 21). Analysis of recent national trends in Medicaid and CHIP Enrollment. Retrieved March 5, 2021, from https://www.kff.org/coronavirus-covid-19/issue-brief/analysis-of-recent-national-trends-in-Medicaid-and-chip-enrollment/.

[Whereupon, at 12:14 p.m., the hearing was adjourned.]

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