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United States Senate Committee on Health, Education, Labor, and Pensions
“COVID-19 Response: An Update from the Frontlines”
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Testimony of

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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.

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 day⁵ versus approximately 245,000 cases and more than 3,000 deaths per day during the peak surge⁶, 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 week¹⁸ compared to a normal year where specimens testing positive for influenza would be 20 to 30 percent positive¹⁹. 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

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 billion²¹, 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

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.thenewtribune.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,

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

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 \(sciencemag.org\)](https://www.sciencemag.org/news/2021/02/09/us-rushes-to-fill-void-in-viral-sequencing-as-worrisome-coronavirus-variants-spread)

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

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.

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 roadmap⁴⁹ and the vision of national public health organizations for data modernization⁵⁰ 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 nation⁵⁶ and Congress appropriated investment in pandemic preparedness starting with President George W. Bush⁵⁷; 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 –

⁵² Papanicolaos 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](https://doi.org/10.1001/jama.2018.1150)

⁵³ https://www.healthsystemtracker.org/chart-collection/u-s-life-expectancy-compare-countries/#item-le_total-life-expectancy-at-birth-in-years-1980-2017_dec-2019-update (Accessed February 17, 2021)

⁵⁴ *Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities*, Trust for America's Health, 2009.

⁵⁵ Bradley, Elizabeth H., and Lauren A. Taylor. *The American Health Care Paradox: Why Spending More Is Getting Us Less*. New York: Public Affairs, 2015.

⁵⁶ Barry, J. M. (2005). *The Great Influenza: The Story of the Deadliest Pandemic in History* (Revised ed.). Penguin Books.

⁵⁷ "All the Things George W. Bush Said We Should Do to Prepare for a Pandemic That Donald Trump Ignored." Business Insider Nederland, May 31, 2020, www.businessinsider.nl/george-bush-said-prepare-for-a-pandemic-that-trump-ignored-2020-5?international=true&r=US.

⁵⁸ "Why We're Losing the Battle With Covid-19," New York Times Magazine, July 14, 2020, <https://www.nytimes.com/2020/07/14/magazine/covid-19-public-health-texas.html>

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.

<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.