

Center for Preparedness and Response (CPR)
Board of Scientific Counselors (BSC) Meeting
Thursday, July 16, 2020
Webinar

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**CENTER FOR PREPAREDNESS AND RESPONSE (CPR)
BOARD OF SCIENTIFIC COUNSELORS (BSC) MEETING
THURSDAY, JULY 16, 2020
WEBINAR**

Roll Call, Introductions, and Review of Federal Advisory Committee Rules, Duties, and Conflict of Interest

Kimberly Lochner, ScD; Deputy Associate Director for Science, CPR and Designated Federal Official, CPR BSC

Dr. Lochner began by providing an update on the Center for Preparedness and Response Board of Scientific Counselors (BSC) membership. The board welcomed new member Dr. Kathleen Tierney, the Former Director of the University of Colorado Boulder Natural Hazard Center. Also added were two Ex-Officio Member positions. Dr. Paula Bryant will represent the National Institutes of Health (NIH) and RADM Denise Hinton, the Food and Drug Administration (FDA). The Board also welcomed Dr. Kristin DeBord from the U.S. Department of Health & Human Services (HHS), Office of the Assistant Secretary for Preparedness and Response (ASPR). Lastly, Mr. A.J. Schall, Jr., was added as a Liaison member representing The National Emergency Management Association.

Dr. Lochner reviewed the BSC responsibilities, as per its charter, and the conflict of interest waivers. Prior to the meeting, all Confidential Financial Disclosure Report Update Forms were completed and returned to Dr. Lochner. Members were asked to identify any conflicts of interest. No conflicts were identified.

During the meeting, a quorum must be maintained. If it is lost at any point, a break will be taken, or the meeting will be adjourned until a quorum is resumed. Dr. Lochner conducted the roll call and quorum was met. Dr. Lochner monitored attendance throughout the meeting to ensure quorum was upheld.

All participants agreed to having their comments recorded and speakers were instructed to identify themselves before speaking to ensure an accurate record was created.

Welcome and Call to Order

Suzet McKinney, DrPH, MPH; Chair, CPR BSC

Dr. McKinney called the CPR BSC Webinar to order at 12:42 PM EST.

Dr. McKinney began by briefly reflecting on the events that have occurred since the last time the BSC met on January 24, 2020 and expressed gratitude for being able to see all those present via Zoom. Dr. McKinney noted that we are in 'unprecedented times' as we are battling a pandemic and also because we are dealing with issues regarding racial injustices and disparities in the United States.

CPR Director: Update

John Dreyzehner, MD; MPH, FACOEM the current events underscore that preparedness is prevention. Preparedness is intimately linked to other critical public health prevention and primary prevention efforts, such as diabetes, obesity, cardiovascular disease, and hypertension, which affect so many people in the world and increase the risk of an untimely death from COVID-19. Dr. Dreyzehner stressed that primary prevention efforts, endeavors aimed at the elimination of health disparities, and efforts to achieve optimal health for all will put the nation in a better place to weather outbreaks, pandemics, as well as other public health threats.

Dr. Dreyzehner began his updates with an overview of what has occurred with respect to the COVID-19 pandemic since the last meeting in January. The first U.S. case was reported on January 20, 2020. The CDC Incident Command Center was set up on January 23, 2020 and on January 24, 2020, CDC issued a press release regarding a second case in the US. The origin of both US cases were believed to be related to travel in China. The tally in China, at that time, was 571 cases and 17 deaths. Human transmission had been confirmed, and 15 health workers in China had been impacted. CDC worked diligently to stand up enhanced airport screening for arriving passengers from Wuhan Province in China across six airports in the United States. A level one travel notice was issued for China and level three (avoid nonessential travel) for Wuhan. Known symptoms at the time were dry cough, headache, temperature, and a fever above 104°. The CDC website was updated to include information regarding the novel virus, which is now referred to as SARS-CoV-2 and the disease as COVID-19, and a field team was sent to Washington, DC to assist in local efforts to track the outbreak and case contacts.

As of today's meeting, CDC is 193 days into the COVID-19 response, with 178 days as an agency-wide activation. The world tally of confirmed cases is more than 13.5 million, with a death total of 584,990 according to the Johns Hopkins Coronavirus Resource Center. There are 188 countries and regions affected. The latest tally from July 14, 2020, showed the United States approaching 3.4 million cases with 60,971 new cases since July 15th. There are 135,991 deaths with 773 new deaths since July 15th. More than 45 million people have been tested with a positivity percentage of 9%. Over 5,600 CDC staff have participated in the incident response, and more than 1,500 staff members have been deployed constituting over 2 million work hours and counting. From a Center perspective, more than half of the CPR staff have been directly involved with the response, with almost all of the remaining staff of over 600 individuals contributing directly or indirectly.

It is now known that asymptomatic transmission of SARS-CoV-2 can occur, and about 40% of those affected are asymptomatic. Zero prevalence studies suggest the case counts are off by a factor of 10, so many more cases have occurred than are able to be confirmed and counted. Antibody response occurs, but it may not be permanent. There are persistent after-effects in some patients and certainly disproportionate impacts on marginalized populations.

CDC continues to recommend the use of face masks, social distancing, hand washing, and flu shots in the Fall months to slow the spread of the COVID-19 pandemic, as well as reduce the burden on the healthcare system.

CDC and CPR staff are mostly on telework status, with some Emergency Operation staff, Incident Management staff, and senior leaders on campus to support the ongoing response. CDC continues to plan for returning to campus once local conditions make it possible.

Dr. Dreyzehner also provided updates on CPR senior leader positions. Dr. Ian Williams is the Deputy Director for Science. Ms. Lovisa Romanoff is the Deputy Director for Management Operations. Ms. Chris Kosmos is the Director of the Division of State and Local Readiness (DSLRL). Dr. Sam Edwin is the Director of the Select Agents and Toxins (DSAT), and Dr. Chris Brown will be the new Director of the Division of Emergency Operations (DEO).

Finally, Dr. Dreyzehner mentioned the release of a report from the National Academies of Science, Engineering, and Medicine (NASEM). In 2017, CDC contracted with NASEM to conduct a scientific review of evidence-based best practices in public health emergency preparedness. This was an assessment of the literature and peer-generated science since 2001. The NASEM committee was charged with examining information gaps that would aid in improving planning, practice, and future investments in public health preparedness. When the report was commissioned, COVID-19 was not occurring and is therefore not a part of the report. The report was released on July 14, 2020 along with a webinar. A number of BSC members (present and past) contributed to the report. CDC will utilize the report as it continues to improve the evidence-base for preparedness and response activities.

Listening Session: BSC Members' Perspective on COVID-19 Pandemic

This portion of the agenda was provided so that CDC could hear the BSC Members' perspectives on the COVID-19 Pandemic and their experiences. Dr. Parham Jaber, Ms. Michele Askenazi, and Dr. Brent Pawlecki were asked to begin the discussion.

Parham Jaber, MD, MPH, Association of State and Territorial Health Officials (ASTHO), CPR BSC Liaison Representative

Dr. Jaber is the Chief Deputy Commissioner for the Virginia Department of Health and he shared some of what he has focused on in Virginia. As the U.S. declared this pandemic a national public health emergency, many states outside of New York were looking at what was going on there and, in Virginia, immediately the thought was that they may have to stand up their convention center and other medical special needs shelters as alternative care facilities. Therefore, deliberations began on staffing, logistics, equipment, funding, and other resources. Three sites were planned for in Northern Virginia, Central Virginia, and the Eastern Shore. The state was days ahead of activating a million-dollar investment with the Army Corps of Engineers and the localities to make the facilities active, when they began to see New York's COVID-19

numbers began to plateau. This signified to several states that the virus could be controlled utilizing creative measures and overburdening the health system could be avoided.

Dr. Jaberri stated that the first mantra of emergency preparedness is to save lives and the state's primary focus was on patients that were most symptomatic and at highest risk, while targeting resources to areas where they would be best utilized. Testing was another area of emphasis, as well as strengthening the testing capacities of the state, private, and commercial labs. Those involved in outbreak investigations, symptomatic individuals residing in long-term care facilities and their staff, and uninsured and underinsured populations were identified as the first priority areas. Virginia had struggles with a lack of personal protective equipment (PPE) that were similar to other states.

Virginia has not hit its peak, so the state is preparing, in a scientific sense. Like others, it is not sure when the first wave ends, and the second wave begins. There was simply a flattening of the curve and the waves continue. The state is trying to determine ways to take care of more patients efficiently and quickly.

Currently, PPE availability is no longer an issue, but there is a lack of reagents for testing, as well as insufficient capacity, and coordination. These new challenges have caused the state health department epidemiologists and logisticians to creatively manage and coordinate the limited resources to provide the greatest use to their population. Virginia is ensuring that it makes the best use of the recent stimulus funds for COVID-19.

Dr. Jaberri noted some key lessons learned from the pandemic. Virginia knew there would be school closures, but the level of shutdown that will occur in the Fall and the stay-at-home orders were never appreciated along with all the economic impacts. Therefore, the state is deliberating on the social impacts, job losses or furloughs, and the effects of those. The investments in local public health over the years have diminished, but Virginia is making use of the lessons learned from past responses to begin to rebuild its public health infrastructure as it responds to the pandemic.

Dr. Jaberri noted other concerns from ASTHO. Additional assistance is needed in the state around the area of vaccinations. Operation Warp Speed is a program that aims to deliver 300 million doses of a safe, effective vaccine for COVID-19 by January 2021. These steps will build on established federal and state pandemic vaccination plans and the lessons learned during the 2009-2010 H1N1 influenza pandemic, with the understanding that the requirements for a COVID-19 vaccine will evolve over time. There is a sense of the priority groups, but states need CDC's help with planning. Specific planning assumptions and details guiding this national effort have not been provided to state and local partners by the White House Task Force. ASTHO looks forward to the opportunity to collaborate with CDC in this regard.

Michelle Askenazi, MPH, National Association of County of County and City Health Officials (NACCHO), CPR BSC Liaison Representative

Ms. Askenazi is Director of Emergency Preparedness, Response, and Communicable Disease Surveillance at Tri-County Health Department (TCHD) in Colorado. TCHD stood up its incident management team in late February 2020 and began addressing medical surge capacity, significant needs for first responders, exposure uncertainties, and PPE. TCHD reviewed its plans for medical surges and alternate care facilities to apply to the pandemic. With intensive care units (ICU) now reaching maximum capacity levels in some parts of the country, alternate care facilities are being prepared should they be needed locally.

Another effort undertaken was determining ways to present the agency's data. TCHD ensured availability of case updates and data dashboards. Providing information pertaining to issues such as hotspots, accessibility to testing, case updates, incidents rates, and positivity rates are critical. TCHD maintains and monitors the data, along with 3-, 7-, and 14-day rolling averages to direct its work and further direction.

Other issues worked on included public health orders, local and state prevention measures, and educational campaigns regarding life going forward with the existence of COVID-19. Testing is also prioritized. TCHD utilizes all the resources throughout its jurisdiction for testing and finding new ways to leverage resources among community clinics, providers, and health systems. There is also an effort with community services to support individuals with COVID-19 or those in quarantine to ensure they have the resources for issues such as mental health, financial, transportation, and legal matters. TCHD also continues to expand its work with investigating and contact tracing to assist in virus mitigation, including addressing childcare and school settings.

TCHD also has a call center to provide recommendations, information, and guidance to its partners and the public. Ms. Askenazi noted that the importance of communication at the beginning of a pandemic was one of the lessons learned in the past and underscored during the COVID-19 response. TCHD holds weekly townhalls held with partners, distributes newsletters, and creates messages to ensure the best information is made available as the pandemic evolves. As states begin to open, TCHD created a taskforce to answer questions from businesses on how to reopen safely utilizing the public health orders that are in place and to ensure adherence and has implemented weekly webinars that provide information and answer questions. The webinars are available in English and Spanish.

TCHD is now planning for the upcoming flu season. It is determining ways to supplement its work given that almost all staff have been directed to the COVID-19 response. Due to the response, people have gotten behind on their immunizations, so the agency is finding ways to reestablish those capabilities while also planning for COVID-19.

Brent Pawlecki, MD, The Goodyear Tire & Rubber Company, CPR BSC Member

Dr. Pawlecki serves as the Chief Medical Office for The Goodyear Tire & Rubber Company and is a part of the Business Group on Health. Dr. Pawlecki stated that Goodyear was impacted from the beginning of the outbreak due to its major operations out of China and that CDC was one of

the main agencies the company turned to for data and information, as was the case with many of his colleagues and other companies. Unfortunately, there were concerns around releasing information too early or not disseminating information, and when there was not information in a timely fashion, a need arose to create and search for sources of information from multiple outlets. This ultimately led to confusion and distrust in the system across companies. The leadership role at the CDC did not hold firm in the way the public expected and hoped that it would as in times past. Companies, therefore, banded together across multiple levels to discuss their issues.

Goodyear does understand that information and knowledge evolve over time. Even if there is improbability, stating or publishing the uncertainty of information and saying that the information is evolving becomes crucial to providing solid messaging. Unfortunately, there has been several instances of undermining of the messaging in the common press, and it has been a challenge trying to sort through the messages now circulating. Goodyear, like others, have had to create many of its own policies and procedures over time and supplement them once the CDC was finally able to catch up with the needs of the private sector.

This continues today. Dr. Pawlecki monitors the travel guidance every day because Goodyear is a global company, and he has to make decisions about what happens in their companies around the world. It does not appear that the maps and recommendations have been updated since China was the epicenter. He asked CPR to review those components to ensure they are updated and relevant to those who utilize them. Many of Goodyear's policies, procedures, and legal documents are created utilizing this information. When the information is not available, the company has to create it themselves.

BSC Member Discussion

Dr. Christina Egan from the Association of Public Health Laboratories (APHL) provided reflections from the laboratory perspective. The experiences with the COVID-19 pandemic are those never experienced by public health laboratories in her 20-year career. The breadth and scope of this event is overwhelming. For example, in four months, the Wadsworth Center tested 100,000 specimens by PCR and 50,000 by serology. The lab was fortunate to be able to get additional staff and equipment. Some of the research labs were turned into COVID testing labs, but it took an enormous effort to accomplish this.

APHL has some ongoing issues. Reagents and supplies are presenting significant problems. Public health labs are consistently shifting platforms and reagents based on available supplies. The Wadsworth Center has five or six platforms and assays. They have to ensure people are properly trained and are confident in all of the methods. The lack of reagents is affecting some of the other public health operations as well. The reagents used for other critical laboratory testing, such as food testing for *Legionella*, are also those used for COVID testing, so as routine laboratory tests resume, the availability of reagents is insufficient. There is also a problem revalidating assays. There is also a lack of specimen collection kits. This insufficiency causes concern about the activities that will occur in the fall when respiratory illness and flu

surveillance activities have historically increased. Many of the kits have been distributed to states and counties; however, Dr. Egan hopes there will be adequate supplies for hospitals, where most of the flu surveillance is conducted.

Another hurdle the agency has never had to tackle before is providing results to private citizens. The laboratories' systems were created to provide testing results to partners in the public health department. Now, drive-thru clinics are having to provide results and numerous phone calls to private citizens. As a result, the public health labs are struggling to keep up with the surge. Finally, increased positivity rates in the states result in additional testing. Labs have to retest large numbers of nursing home and adult care facility residents, and with the lack of reagents and supplies, this presents even more challenges. Dr. Egan said strategy discussions are needed to find ways to address the needs in light of the shortage of supplies and reagents.

Dr. Octavio Martinez highlighted that behavioral health needs are occurring and will continue to occur post COVID-19. Behavioral health needs, he felt, would skyrocket. For example, Mental Health America, in the Dallas, Texas area, provides evidence-based online screening. Their screenings have increased since January 2020. They are finding more cases of depression (495%), anxiety (497%), and substance abuse (629%). This is just in the Dallas area, not nationwide numbers. He would like to add mental health into the planning discussions going forward not only for the communities but also for the frontline workers and hospital providers, particularly those in the ICUs and emergency rooms. The Hogg Foundation has partnered with the [University of Texas – Austin] Dell Medical School on a pilot program that will provide behavioral health services to frontline providers, especially in light of the case in New York, where a doctor took her life.

Dr. Pawlecki emphasized the importance of trust. It is also an issue for those in Texas because it impacts not only following the current guidelines, but it also will impact the vaccination rate. The vaccination rates were not inspiring pre-COVID-19, but they will need to be post-COVID-19. A recent survey was conducted among Hispanic and Latino citizens in Texas; 80% have a distrust of the government. There are numerous programs being created with multilingual outreach built in, but if grassroots work is not conducted, trust of the government will not be reestablished. Perhaps the lessons learned during HIV to overcome mistrust could be applied to this effort. He suggested utilizing allies and peers, overcoming language issues, and involving the community to reestablish trust in the government.

Dr. Martinez asked if Dr. Pawlecki had anything to add regarding reestablishment of trust from the business sector perspective and community level, as well. Dr. Pawlecki in his response stated that Goodyear works very closely with the public health department in Summit County, Ohio. Some of the issues expressed by the health department are that they are only getting information around the same time as the public when the Governor makes a proclamation or determination. The public health department should be the frontline for information when there are questions in the community. Dr. Pawlecki has also talked with other public health departments across the country located in areas where Goodyear factories are located. Some departments are more knowledgeable of information that emerges but all of them refer back to

the information provided by the CDC. There is a need for information to be readily available to the health departments.

Dr. Benjamin Chan is a state epidemiologist in New Hampshire, and a liaison member of the Board representing the Council of State and Territorial Epidemiologists (CSTE). He echoed many of the comments already stated. While epidemiologists have been preparing for pandemic viruses for years, if not decades, there are a number of gaps COVID-19 has exposed that need to be addressed in planning measures going forward. When addressing population health, the focus should not only be protecting the public from the virus but also how to maintain access to primary care, vaccination services, behavioral and mental health care, while also addressing any disparities. These are challenges at all levels of government: local, state, and federal.

Dr. Chan also underscored the vast need for engagement and information. This is highlighted by the number of guidance documents that CDC has disseminated for specific scenarios and situations for its partners and groups. Guidance has to be tailored to address the different nuances of businesses trying to reopen. One of the struggles is supplying guidance in a timely fashion that is science-based and actionable. The demand for information has created a bottleneck. The needs at the public health level and community level are evolving faster than the science, so there is a continuous need to engage and update.

Dr. Chan said another challenge is incorporating public health into all aspects of the response. Data reporting and surveillance measures need to be improved in order to strengthen the existing infrastructure; however, there also needs to be a focus on the very foundational ten essential public health services. Per the essential public health services, investigating disease is only one aspect. It is also essential to engage policymakers, as this is playing out at the government and political level. Linking individuals to care is also important, as well as addressing preparedness and response in a broader and more holistic fashion relative to the ten essential public health services. How can preparedness be incorporated into policymaking, community partnerships, and engagement of the community?

Board member Dr. Dawn Wooley is a professor at Wright State University. She is also a virologist and state-certified biosafety professional. She stated that the mixed messaging that emerged from multiple federal agencies on masks, aerosol droplets, and even social distancing has led to a great deal of confusion and was dismayed by the information that was emerging. Because Dr. Wooley teaches biosafety, she was sought out by local news outlets to clarify the messages to the public. The mixed messages, in Southwest Ohio, has led to a large amount of noncompliance and mistrust. The public also lacks confidence in officials and feel they are not knowledgeable. Politics added to this mix made it a disaster. There is no place for politics in safety and public health, but unfortunately it is there. The question is how can this be rectified.

Dr. Wooley also stated that there is a continued need to train the public properly on using masks. In a recent medical appointment, Dr. Wooley witnessed medical professionals wearing their masks upside down, over their mouth and not their nose, or fidgeting with them

constantly. The agencies should work together to promote a very clear and concise message, like a public announcement campaign, that will address these issues, which she said is needed because of the differing information on masks over the course of the pandemic. Dr. Wooley noted that there are publications that provide instructions on how to construct such a mask. If these types of instructions were given at the beginning of the pandemic, imagine the impact it would have had. She stressed that what is needed now is a unified, clear, concise public message campaign that is used across the agencies. People also have to be given these messages consistently, and they should be simple and effective. Hopefully, this will bring about compliance.

Dr. Wooley also reflected on the first days of the HIV epidemic, when there was the belief that a vaccine would be discovered in no time. There has yet to be a vaccine developed for HIV. Furthermore, some of the reporting she has heard concerned her because it seems that there is a rush to create a COVID-19 vaccine. She does not want the same mishaps that happened with HIV, whereby the people who participated in vaccination studies at that time were actually made more susceptible to HIV as a result of the trials. It would be awful if the COVID-19 vaccine was found to be not effective, but far worse if what was given actually made people more susceptible to the virus. It is important to develop measures in the absence of a vaccine and to begin to consider that there may never be a vaccine. There is a great deal of effort being put into finding a vaccine but so were the efforts to find one for HIV. The focus should be put on getting out effective messages and not rushing the vaccine.

Dr. Alonzo Plough asked if NACCHO is working with its partners locally to link those in the community to the resources they need. Ms. Askenazi said NACCHO is working with its trusted community partners who have relationships with the community and work with refugee and immigrant communities to leverage resources and link individuals to the care and resources they need. Since there is a mistrust of the government, those systems are being relied on heavily to disseminate information. Mental health services are also being rendered. In Colorado, there is a crisis counseling program that was initiated over the last few weeks to help support disaster recovery, provide basic supportive and educational contact, and deliver group counseling for first responders. The agency is also providing messaging regarding seeking care safely when going to doctor visits and the emergency room, as well as telehealth options. NACCHO is also being very attentive to the information being provided through its data dashboards. Through syndromic surveillance, the agency continues to look at cases of COVID-19 and mental health indicators as a result of the virus.

Dr. Plough also pointed out that public health has never had to address difficult scientific information during hyper politicized discourse. He wrote an article in 2011 called *Pandemics and Health Equity*. It talked about how poorly the H1N1 vaccine distribution was handled in South Los Angeles, which is comprised largely of African American and Latino populations. If it is believed the mask messaging has been difficult, wait until the anti-vaccination groups surface once a COVID-19 vaccine is developed. Their message will resonate with the natural vaccine hesitancy and the continued lack of trust that already exists in marginalized populations.

Overcoming these hurdles will require an integration of practice in a dramatically different way. This will mean working with partners, who can reach the hyper local community dynamics, and these are entities that have not traditionally been at the table. They can move the needle in ways federal agencies cannot. In addition, state and local level partners do not have some of the constraints that the federal agencies have. In fact, for example, United States mayors are leading these types of efforts.

Dr. McKinney asked Dr. Plough to share the link to his article with Dr. Lochner so that the Board may read it.

Dr. Kasisomayajula Viswanath is the Lee Kum Kee Professor of Health Communication at the Harvard T. H. Chan School of Public Health. He serves as a board member on the BSC. For the past six months, he has been assisting with crafting communication messages for COVID-19 and conducting studies on the virus.

When assessing the impact caused by misinformation, there is too much reliance on anecdote, and anecdotes get a lot of attention, he said. But the data shows that 60 to 70 percent of people are actually wearing masks most of the time or some of the time. Sixty to 70 percent of the people are actually supportive of public health mitigation measures. There is a lot of support for public health and public health measures. Only 20 to 30 percent of the population is against the preventive measures, but they are occupying the media landscape and gaining a tremendous amount of attention. They have garnered so much attention that it gives the perception that everyone is opposed to the preventive measures, but the data does not show that to be true. Therefore, data needs to be collected in terms of social behavioral sciences, communication sciences, and data that tracks the behaviors and people's thinking as a result of exposure to misinformation. A harmonization of different types of data could potentially help in developing some action plans.

Dr. Viswanath stated that the magnitude of the crisis was a surprise to most in the sense of the swift spreading of the virus and the resulting shutdown of the economy, as well as asking 7 billion people in the world to act in a certain fashion. This has never happened before. But what was not a surprise and is embarrassing and causing mistrust are the inequities that accompanied this crisis. For the last 25 to 30 years, conversations have been occurring regarding social determinants of health. It has been worked on in practice, theory, and research. The government did not bring the appropriate parties to the table when questions arose. It was three months into the crisis before anyone queried about those being disproportionately affected by the COVID-19 Pandemic, and individuals were actually shocked that certain sections of the population were being disproportionately affected despite all the knowledge that has been garnered. This cannot happen going forward and is inexcusable. There should be infrastructure, systems, partners, and people in place and at the table when developing plans and data systems.

BSC Discussion: What Does Preparedness 2.0 Look Like

During this session, the Board discussed the future direction of preparedness. Dr. McKinney began the session by reflecting on some of the past disasters and emergencies the U.S. has dealt with in the last 20 years.

- 9/11 and anthrax attacks, 2001
- SARS, 2003
- Hurricane Katrina, 2005
- Haiti earthquake, 2010
- Joplin, MO tornado, 2011
- Superstorm Sandy, 2012
- Various infectious diseases: H1N1, Ebola, Zika, and now COVID-19

After 9/11 and the anthrax attacks of 2001, it seems as though almost every single year there was a different type of threat that needed to be addressed, and the response required would stretch the limits of what responders thought was possible and challenge them to develop plans and capabilities with their organizations and jurisdictions to manage the threats.

Through this timespan, CDC's and ASPR's capabilities for preparedness began to expand. CDC began to pivot and challenge local and state jurisdictions to ensure the plans they developed to address threats were truly operational. COVID-19 is causing public health to have to expand once again and find approaches to improve systems at every level of government and determine new ways to move forward and move the needle on preparedness and response in a manner that integrates public health across all sectors. This session began with comments from Ms. Christine Kosmos, Director Division of State and Local Readiness, on public health emergency management and response capabilities and then followed by Dr. Joanna Prasher and Ms. LaBrina Jones leading the discussion regarding CPR strategic planning.

Christine Kosmos, Division Director, DSLR, CPR

Ms. Kosmos began by reminding the Board of some questions they were asked about in a previous meeting. The purpose was to assist DSLR in assessing its progress, current direction, and future steps. The Board provided some advice, suggestions, and thoughtful conversations previously, but the Division would like to reexamine the questions using the lens of the state, local, tribal, and territorial partners. She asked that the Board either verify or add additional thoughts for DSLR and CPR to consider in its Preparedness 2.0 planning. There are many lessons learned from the COVID-19 response, and those lessons will fundamentally change programs in a variety of ways. Below are the two questions for the Board.

- Public health emergency management and response capabilities have been built at the state and local level. As the programs in DSLR continues to evolve and grow, does it

make sense to continue to evolve the subject matter expertise in the practice of public health emergency management and response?

- From a programmatic perspective and in partnership with state, local, tribal, and territorial, DSLR has set a program goal for state and local programs that will assure operational readiness for any sort of threat or hazard that may threaten the health and safety of their communities. Is DSLR still on target or what needs to be altered as the Division learns and grows as a discipline so that it may continuously improve its programs?

The following is a summary of the comments and suggestions put forth by the Board.

- It is imperative that state, local, tribal, and territorial jurisdictions continue to expand and grow around developing emergency management and response capabilities. The growth and expansion are critical to achieving operational readiness, which is particularly apparent after what has occurred as a result of COVID-19.
- Research shows that individuals, organizations, communities, and societies find it difficult to think about worst-case scenarios. They instead focus on what they know, what they think they know, what is being done at the present time, and will look at future disasters in the same way as past disasters. In other words, they depend heavily on the lessons learned from past incidents to inform them on how to handle future events. Reports already show in certain parts of the country the system is failing. Going forward, think proactively about the possibility of major failures in plans addressing public health emergencies, and how they will be overcome. What happens at these points when it looks like things are totally breaking down or things are coming so quickly that they cannot be managed? What happens if there is a massive loss of credibility and massive reputational damage to the scientific community? What can be done?
- Achieving the public health preparedness capabilities set forth have afforded the opportunity to build structures like the Incident Management Teams, made it possible to respond, and to have greater infrastructure because of the lessons learned over time. There also exists unequivocal and incredible community partnerships across all the disciplines. A capacity has been built that allows responses to occur in the best ways possible, so it is critical to maintain those abilities and allow for greater expansion of public health practices and infrastructure.

Dr. Joanna Prasher, Acting Director of Policy and the Senior Advisor for Medical Care and Countermeasures, CPR

CPR is developing a Strategic Planning Roadmap that will aid in identifying the places where the Center can and should be making the most difference and concentrating its efforts in the overarching public enterprise. Before COVID-19, Dr. Dreyzehner began a process that would examine and develop the next steps that are most impactful for the Center's stakeholders. These efforts continue even in the midst of the pandemic. CPR is early in this process and wanted to provide an overview of the plans thus and hear the Board's thoughts.

The planning is a five-phase process. The Center is currently in Phase 2. This will be a bottom-up approach to ensure those who have been working in this arena are a part of the planning.

1. *Strategic Elements Survey:* Between April 1 and May 2020, a survey was conducted on the mission, vision, and values. Thoughts were collected to be used for the succeeding pieces of the plan.
2. *Division/Office Key Annual Focus Areas:* From June 2020 and on into August 2020, meetings have occurred with each of the component divisions and offices with the goal of identifying where they have been, where they are currently, how they are responding to COVID-19, and recommendations for future direction. What are the annual focus areas for the next year for COVID-19 and other areas of concern?
3. *CPR Strategy:* In the fall, the information collected will be compiled and rolled out to smaller working groups. The workgroups will synthesize the inputs received and report them out to the larger CPR leadership team. Afterwards, more vetting will occur with stakeholders.
4. *Implementation Plan:* By October and November 2020, what has been learned will result in a strong implementation plan that will include metrics and a communications plan.
5. *Execution and Monitoring:* From November 2020 on into September 2021, the plan will be executed and monitored for effectiveness.

Ms. LaBrina Jones, Executive Partnerships, Oversight, and Performance Management Lead, CDC

Ms. Jones posed three questions to the Board that will aid CPR in the development of the Strategic Planning Roadmap.

1. How can CPR be a catalyst for further developing the public health tools, collaborations, and public health workforce needed at all levels?
2. The ongoing public health emergency has demonstrated that an effective public health response requires partnership across sectors. Where are investments needed to encourage integration of the medical and emergency management sectors into public health emergency preparedness and response efforts? What might these efforts look like?
3. CPR's mission has been to protect people from public health threats by improving and advancing preparedness and response at home and abroad. Does this mission need to change or evolve at all following the COVID-19 pandemic?

The following is a summary of the comments and suggestions put forth by the Board.

- COVID-19 has presented a unique challenge because universities had to close and the current guidance halted public health students from participating in experiential learning occurring via clinicals, laboratory rotations, and practica. During the pandemic response, those students who were close to graduation, could not complete that part of their programs, and therefore, had delayed graduation. This made them unavailable to

address the surge capacity needed for the workforce. There is now an opportunity to think about the future workforce. Some of the frontline workforce is completely burned out, but there is still a great deal left to accomplish. So, some deliberations need to be given to the future workforce. How will it look? What will the pipelines look like? How will students complete clinicals as schools go back online?

- Evolving federal, state, and local preparedness and response will require the evolving of partnerships. In the era of decreasing public health funding, partnerships are relied upon heavily. The pandemic has highlighted the need to develop and evolve commercial partnerships, like those utilized to procure PPE and testing supplies. The Strategic National Stockpile (SNS) was not sufficient and unable to be maintained because of the pandemic. Therefore, at the national or federal level, how can commercial partnerships be developed to ensure adequate supply is maintained that is utilized to respond to and protect the healthcare workforce, as well as address the increasing testing needs? States have had to step into this role and have been very successful at procuring what is needed from local business partners and those who have overseas and international connections to garner supplies needed. These partnerships also need to be developed at the federal level. Over the course of months or possibly years, how do we maintain the supply chains that are needed? This will require commercial and business partnerships.
- The all-hazards approach is the right place to start. An all-hazards approach was used for business continuity, but we became very comfortable with where we were and did not realize the major complexities. As bad as conditions are presently, they could be much worse. Imagine if the IT systems were inoperable or there was no Zoom and Teams and other tools that are making work possible. These complexities need to be part of the discussion. How do we operationalize to address all of the specific needs?
- The mission statement has not changed and is accurate, but it needs to be thought of more broadly. Think of health not just in the health of the individual but also the health of communities, as in the case of underserved communities, which are being impacted the toughest. This is a public emergency that needs to be built into the mission statement.
- Communication is key. Mechanisms need to be developed that will disseminate messages in a timely, consistent, and trusted way. Utilize the networks that are already in place. There are people on the ground from a public health perspective, and they should facilitate access to the communities for disseminating information that is common, trusted, and as current as possible. Those community efforts can receive feedback that will help determine the local needs. The information should be bidirectional so that conversations can occur that will help address all the necessities.
- CDC has a social vulnerability index. Is DSLR utilizing the index to evaluate preparedness efforts around vulnerability and examine risk assessments occur at the local level with local health departments? It should be part of the educational and strategic process that happens at the local level.
- The Health Equity Kickoff just occurred. Morehouse School of Medicine received a grant for \$1 million from Google through the Satcher Health Leadership Institute. They are

developing a health equity platform for national health disparities data. Partner with such institutions so that CDC may utilize data that will address particularly communities of color and ensure they are prioritized when determining the necessary resources needed in preparedness and response efforts.

- The public health infrastructure has been woefully underfunded at the state level over many decades now. Could CPR help local health departments make an argument for investing in the state-federal partnership that needs to exist in order to strategically leverage resources so that the best return on investment (ROI) is taking place? What is happening at the state level does not need to be duplicated at the federal level but rather they leverage one another's skillsets to gain the maximum benefit. This would probably be more of a policy communication initiative and may impact the three questions. Could there be a work policy brief that would assist the states in helping their legislators understand why they need to fund the public health infrastructure?
- Assessing whether state and local readiness efforts were effective is not the real issue. It is more important to determine what worked and what needs to be improved. You do not need to change the mission, but instead refine it in a way where you are able to determine what is effective and ineffective.
- Determine what data is needed to inform your processes. There are a lot of data out there like communications science and behavioral, and it is critical to double up those types of data systems. Everything does not have to be created in CPR. A lot of indices are being created through different outlets. For example, the Segal Family Foundation and the Robert Wood Johnson Foundation have developed data systems. Is there a way to bring them together as a one-stop outlet?
- From a stakeholder perspective, determine who is not at the table. Businesses play very critical roles, but there are also groups within the communities that should be engaged and involved in planning conversations. These should be bidirectional conversations. What kind listening sessions are available that incorporate a reciprocal process rather than a one-way method?
- Public communication is very critical. This is not just providing material in plain language or local language. Draw on communication science to inform communication plans and keep those plans in place for future emergency responses. Pass those lessons learned and processes along to state and local partners so that they may develop effective communication plans as well.
- The mission does not need to change, but it should evolve. Changes made should be based off the lessons learned through the current pandemic. Identify those things that have worked well and those that have not.
- Communication is a critical component as well as using the Board to assist in developing the communications that would benefit individuals across the federal government and the academic, industry, and manufacturing sectors. The same is occurring at the FDA. The agency is considering all the needs across the board whether it be devices, biologics, drugs, food workers, veterinary medicine and so forth. There is a huge conglomerate of individuals who can be queried to discover what is needed as far as communication and what may have been missed. Hopefully, this can be done across government agencies.

- When examining local preparedness and response, determine what is needed from local and federal partners. In talking with partners, you can discover some of the challenges with the communication streams and identify any gaps that need to be addressed. Figure out how partnerships intersect and how to protect the workforce at all levels. Lastly, determine the best forms of communication for the partners.
- When delivering messaging that addresses the work that is occurring, provide the message in laymen's terms so that people can grasp the impact of the work, as well as CDC's role in working with the community and globally.
- There are so many resources within the academic community, and they are eager to be connected and to participate in the response efforts. Too much work is still occurring in silos. Capacity is present, but not enough coordination of efforts is occurring.
- CPR can be a catalyst by reaching out to other federal agencies and developing a clear and concise public messaging campaign. Repeated and consistent messaging is needed, not to the point that the public will tune it out, but enough so that the message is being reiterated. The messaging regarding the importance of seatbelts could be used as an example for how to gain traction when sending out messages regarding the importance of wearing a face mask and how to properly wear it. Federal agencies have to find a way to work together to deliver this unified message.
- The pandemic has underscored the importance of having a fully functional public health laboratory and training programs, such as a preparedness and emergency response laboratory fellowship. It would be valuable, bring young scientists to the field, and add more individuals to the workforce.

CPR BSC Workgroup Review and Future Directions

Suzet McKinney, DrPH, MPH; Chair, CPR, BSC

The Biological Agent Containment Working Group (BACWG) was assembled to provide input to the BSC/CPR regarding biological select agents, importation of infectious materials, and containment of polioviruses. It was first convened in May 2017. The Directors of the Division of Select Agent and Toxins (DSAT) and the U.S. National Authority for Containment for Poliovirus (NAC/U.S. NAC) from CDC serve as co-leads. The BACWG's purpose and activities included the following:

- Gather information, conduct research, analyze relevant issues and facts in preparation for discussion at BSC/CPR meetings
- Provide independent review and evaluation of U.S. National Authority for Containment of Poliovirus (U.S. NAC) polio containment policies and guidance documents, drafted by CDC U.S. NAC, to BSC CPR for consideration and discussion that these products promote effective containment and mitigation efforts for U.S. facilities retaining poliovirus materials.
- Provide independent expert input to the BSC/CPR for consideration and discussion regarding program operations for the U.S. NAC and CPR's DSAT's current regulatory oversight of biosafety and security operations

Dr. McKinney shared a list of activities performed by the BACWG.

- NAC Policy: Storage Outside of Containment
- NAC Policy: Physical Security
- NAC Policy: Record of Access
- NAC Policy: Inventory
- NAC Policy: Transfer
- NAC Policy: Personnel Reliability
- NAC Policy: Personal Protective Equipment and Hand Hygiene Practices
- NAC Policy: Biorisk Management and Risk Assessment
- Study and findings from assessment of U.S. government approaches to oversight and governance of biological entities with potential to spread beyond human control

Dr. McKinney asked Dr. Sam Edwin, Director, DSAT and Dr. Lia Haynes Smith, Director NAC to provide their perspectives regarding the work of the BACWG, if they felt the group fulfilled its duties, and what might be needed moving forward.

The BACWG assisted DSAT with some of the complex issues it faced and provided solutions. The working group provided an independent perspective related to several of DSAT's activities these included:

- Risk assessments and occupational health considerations for select agent inspectors entering BSL-2/ABSL-2 and BSL-3/ABSL-3 laboratories
- Biosafety and security risks posed by positive-strand RNA viruses
- Inactivation criteria requirements for select agents
- Regulatory framework for synthetic biology
- BSAT inventory accountability
- Oversight and governance of research with potential pandemic pathogens
- Reducing number of potential exposures to select agents in clinical/diagnostic laboratories
- Impact analysis of the select agent regulations
- Building a culture of incident reporting

The BACWG also shared their findings with the BSC in the form of report titled *Assessment of United States Government Approaches to Oversight and Governance of Biological Agents with Potential to Spread Beyond Human Control*. Dr. Edwin noted that there are parallel discussions occurring within the U.S. government addressing the same issues highlighted in the report.

Dr. Smith noted that much of the BACWG's time was used to work with NAC on the development of policies and guidance. They have provided expert input on over eight policies and three guidance documents. The policies and documents have been shared with the poliovirus facilities and has helped to improve the Global Action Plan III (GAPIII) implementation in the United States. It has also strengthened collaboration between the NAC and laboratories.

GAPIII is the global standard for how facilities should handle poliovirus containment. It has 16 elements and 139 sub-elements; however, some components are quite vague. NAC, in discussion with the BACWG, determined the highest risk areas that required additional guidance and policy development.

Dr. Smith also discussed the continued need for the NAC to receive expert input from the BSC, particularly with regard to:

- Identify areas believed to present the greatest risks in the U.S. to prioritize U.S. NAC policy and guidance development
- Ensure U.S. NAC products translate into meaningful requirements and guidance for U.S. facilities retaining PV materials
- Identify decisions facing U.S. NAC likely to have the biggest implications for these facilities
- Evaluate current U.S. NAC activities and program development plans
- Identify research priorities for biosafety and security operations related to PV containment
- Input on U.S. NAC scientific projects

The NAC proposed the formation of the Poliovirus Containment Work Group (PCWG). The purpose of the work group would be to provide findings, observations, and outcomes to the BSC CPR regarding CPR efforts to improve and ensure biosafety and security associated with containment of polioviruses. The initial activities for the group would be to provide input and review of new NAC policies and guidance documents that have been developed, as well as input on two scientific projects that will support the NAC in its evidence-based approach to policy development.

The work group membership will be co-chaired by two BSC members and comprised of 6 to 7 members, including the co-chairs. The members' expertise would include virology, microbiology, molecular biology, biosafety, security, and public health. If the BSC votes to approve the work group, the NAC will begin outreach to new potential members before the end of July 2020, with the first meeting of the work group occurring in October 2020.

Since the BACWG has fulfilled its charge, Dr. McKinney proposed the dissolution of the BACWG and the formation of the PCWG, which will continue to support Dr. Smith and the NAC. Each action requires a vote by the BSC.

With no additional questions, Dr. McKinney asked for a motion to dissolve the BACWG. Dr. Wooley made the motion to dissolve the BACWG. The motion was seconded by Dr. Tierney. Dr. Lochner did a roll call of the voting members, and there was unanimous approval to dissolve the BACWG.

Dr. McKinney requested a motion to approve the creation of the PCWG which will focus solely on the work of the NAC and polio containment. Dr. Wooley made the motion to form the PCWG. Dr. Martinez seconded the motion. After roll call, the voting members unanimously approved to form the PCWG.

Dr. McKinney expressed her appreciation for being able to work with the NAC and be a part of the BACWG. She looks forward to what is to come with the PCWG.

Public Comment Period

Sandra Steiner is the Scientific Clearance Official for CPR and the Secretary for the Latino Hispanic Health Work Group. Latinos and Hispanics have been disproportionately affected by the COVID-19 pandemic. The work group is collaborating with the Emergency Operations Center, as well as the At-Risk Task Force. They are also doing community outreach work around communications and conducting listening sessions. The endeavor is on behalf of CDC. The listening sessions are held with partner organizations that are faith based, private, and community based. There is a listening session study also occurring. She hopes the feedback that is garnered from the community will help CDC prepare better in the future.

Meeting Recap and Action Items for October In-Person Meeting

Dr. McKinney thanked all the members for providing their perspectives on the COVID-19 pandemic. The BSC members shared their personal experiences as well as challenges that they have identified. Multiple members emphasized the importance of messaging and coordinated messages within the public health emergency preparedness responses. There was also concerns around mental health and behavioral health. Those make for ripe areas where all can examine plans and processes to identify areas for improvement. Between now and the October 2020 meeting, it is presumed that there will be many more lessons learned around COVID-19 and the steps needed to be better prepared.

She also was thankful for the discussion that occurred related to Preparedness 2.0. She felt she has had significant involvement with the work of DSLR as a public health preparedness director in Chicago, as well as through her work on the BSC. She is always very enthusiastic to hear about the work of DSLR, but what was most valuable was hearing all the thoughts and comments from the BSC members in terms of how DSLR should frame Preparedness 2.0 given the evolution of public health emergency management as a new competency or discipline within state, local, and territorial public health. She also appreciated the comments given to the colleagues in the policy space. The thoughts shared will help them continue to progress within their work.

Dr. Dreyzehner thanked all the members of the BSC for their thoughtful and candid feedback and discussion around areas of improvement for the public health system collectively, noting that when thinking about Preparedness 2.0, other hazards cannot be ignored. A large part of Preparedness 2.0 has to be systems and infrastructure that can be adapted and scaled rapidly regardless of the hazards faced. Dr. Dreyzehner shared that in his past experiences as a local

and state health official, he became all too familiar with the public's distrust of government situations. He is familiar with the activities that must be carried out to gain trust. CDC must decide how it will collectively move away from polarization and recognize that this is one nation collectively impacted by the pandemic like never before, and it could occur again. Hopefully, more will not occur on top of what has already transpired, but the common saying in the preparedness field is "hope is not a plan". Dr. Dreyzehner's career as a local and state health official taught him the value of local knowledge and perspectives, which will be needed for Preparedness 2.0 to be effective. This cannot be just a federal responsibility. This cannot be a top-down solution. Responsibility is shared by all levels of government. Preparedness is locally built upon networks of people; the trust that they have for one another; relationships; knowledge; and built-in cultural sensitivities. CDC relies on the local knowledge and trusted relationships of its local partners. Dr. Dreyzehner also addressed any media personnel who may have tuned in to the webinar and acknowledged their critically important role. CDC values the way the media can amplify messages. Conversely, when there is confusion, CDC must do its part to reduce the confusion.

Meeting Adjourn

With no further comments, Dr. McKinney adjourned the meeting at 3:59 PM EST.

APPENDIX A:

CPR BSC Webinar Meeting Attendance Roster
July 16, 2020

NAME	AFFILIATION	PRESENCE
Suzet McKinney	Chair and SGE	Via Zoom
Octavio Martinez	SGE	Via Zoom
Alonzo Plough	SGE	Via Zoom
Jennifer Horney	SGE	Via Zoom
Brent Pawlecki	SGE	Via Zoom
Catherine Slemp	SGE	Via Zoom
Kathleen Tierney	SGE	Via Zoom
Kasimayajula Viswanath	SGE	Via Zoom
Dawn Wooley	SGE	Via Zoom
Paula Bryant	Ex Officio	Via Zoom
Kristin DeBord	Ex Officio	Via Zoom
Denise Hinton	Ex Officio	Via Zoom
Michele Askenazi	Liaison	Via Zoom
Benjamin Chan	Liaison	Via Zoom
Christina Egan	Liaison	Via Zoom
Parham Jaber	Liaison	Via Zoom
Laura Magana	Liaison	Via Zoom
Jamie Ritchey	Liaison	Via Zoom
AJ Schall	Liaison	Via Zoom

APPENDIX B: CPR BSC MEMBERSHIP ROSTER

DESIGNATED FEDERAL OFFICIAL

Kimberly Lochner, ScD
Deputy Associate Director for Science,
CPR Centers for Disease Control and Prevention
Atlanta, Georgia

CHAIR

Suzet McKinney, D.Ph., M.P.H.
CEO/Executive Director
Illinois Medical District Commission
Chicago, Illinois

MEMBERS

David Fleming, MD
Vice President Global Health Programs
PATH
Seattle, Washington

Jennifer A. Horney, MPH, PhD
Professor and Director, Program in Epidemiology, College of Health Sciences
University of Delaware
Newark, Delaware

Octavio N. Martinez, MD, MPH, MBA, FAPA
Executive Director
Hogg Foundation for Mental Health
The University of Texas
Austin, Texas

Brent Pawlecki, MD
Chief Health Officer
The Goodyear Tire & Rubber Company
Akron, Ohio

Alonzo L. Plough, PhD, MPH
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Robert Wood Johnson Foundation
Princeton, New Jersey

Catherine C. Slemp, MD, MPH
Health Consultant
Charleston, West Virginia

Kathleen Tierney, PhD
Emerita Director
University of Colorado Boulder
Boulder, Colorado

Kasisomayajula Viswanath, PhD, MA, MCJ
Lee Kum Kee Professor, Health Communication
Department of Social and Behavioral Sciences
Harvard School of Public Health
Boston, Massachusetts

Dawn Patricia Wooley, Ph.D.
Associate Professor
Department of Neuroscience, Cell Biology, and Physiology
Wright State University
Dayton, Ohio

EX OFFICIO MEMBERS

Kristin L DeBord, PhD
Director, Strategy Division
Office of the Assistant Secretary for Preparedness and Response
Washington, D.C.

Denise M. Hinton
Chief Scientist, Office of the Chief Scientist
Office of Counterterrorism and Emerging Threats
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Paula Bryant, Ph.D.
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Division of Microbiology and Infectious Diseases
National Institute of Allergy and Infectious Diseases
National Institutes of Health
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LIAISON REPRESENTATIVES

Christina Egan, PhD, CBSP
Chief, Biodefense Laboratory, Wadsworth Center
Association of Public Health Laboratories (APHL)
New York State Department of Health
Albany, New York

Laura Magana, PhD
President and CEO
Association of Schools and Programs of Public Health (ASPPH)
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Parham Jaber, MD
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Director, Delaware Emergency Management Agency
National Emergency Management Association (NEMA)
Smyrna, Delaware

APPENDIX C: ACRONYMS

APHL	Association of Public Health Laboratories
ASPPH	Association of Schools and Programs of Public Health
ASPR	Assistant Secretary for Preparedness and Response (HHS)
ASTHO	Association of State and Territorial Health Officers
BACWG	Biologic Agent Containment Working Group
BSC	Board of Scientific Counselors
CIO	Centers Institute and Offices
CPR	Center for Preparedness and Response (CDC)
CDC	Centers for Disease Control and Prevention
CSTE	Council of State and Territorial Epidemiologists
DEO	Division of Emergency Operations (CDC)
DSAT	Division of Select Agents and Toxins (CDC)
DSLRL	Division of State and Local Readiness (CDC)
EOC	Emergency Operations Center
FACA	Federal Advisory Committee Act
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
FSAP	Federal Select Agent Program
GAP III	Global Action Plan III
NACCHO	National Association of County of County and City Health Officials
NASEM	National Academies of Science, Engineering, and Medicine
NIH	National Institutes of Health
PCWG	Poliovirus Containment Work Group
PHEP	Public Health Emergency Preparedness
PPE	Personal Protective equipment
HHS	US Department of Health and Human Services
SLTT	State, Local, Tribal and Territorial
TCHD	Tri-County Health Department
USDA	United States Department of Agriculture
USG	US Government
US NAC	US National Authority for containment