



Written Testimony
House Energy and Commerce Committee,
Subcommittee on Health

Examining the Reauthorization of the Pandemic and All-Hazards Preparedness Act

Statement of

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Chairman Burgess, Ranking Member Green, and other members of the subcommittee. I am Rear Admiral Stephen Redd, Director of the Office of Public Health Preparedness and Response at the Centers for Disease Control and Prevention (CDC). I appreciate the opportunity to be here today to discuss CDC's public health preparedness and response mission, and the agency's role in implementing the Pandemic and All-Hazards Preparedness Reauthorization Act of 2013 (PAHPRA).

CDC advances the health security of the nation by helping communities prepare for, detect, and respond to public health consequences of all hazards. These hazards include chemical, biological, radiological, and nuclear threats, natural disasters, and emerging infectious disease. For 72 years, this has been CDC's core mission. CDC's multidisciplinary workforce supports an integrated national system that continually monitors the public's health and is able to respond when a threat is identified. This ability is enhanced by our long-standing relationships and close collaboration with federal, state, and local partners.

In carrying out the mission set forth under PAHPRA, CDC draws on expertise from throughout the agency, including world-class laboratory testing, surveillance (for disease detection), epidemiology, guidance to healthcare providers, incident management, logistics, emergency risk communication, disease control programs, distribution of medical countermeasures, human and animal medicine, and responder health and well-being. Our multidisciplinary workforce enables an integrated national system that is nimble and prepared to detect and respond to any developing situation that could affect the health of people in the United States. In addition, CDC draws on its long-standing relationships and close collaboration with state and local partners to protect the health of communities across the country, and collaborates closely with the Assistant Secretary for Preparedness and Response (ASPR), the Food and Drug Administration (FDA) and other federal partners.

Prepare

The Pandemic and All Hazards Preparedness Reauthorization Act of 2013 (PAHPRA) reauthorized several public health preparedness programs. The CDC's Public Health Emergency Preparedness Cooperative Agreement Program (PHEP) (which includes the Cities Readiness Initiative (CRI)) is crucial to CDC's close collaboration and longstanding relationships with state and local health departments and ensures the nation is prepared for the next public health emergency. Additionally, CDC's role in the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) is critical to national preparedness for chemical, biological, radiological, nuclear threats, pandemic influenza, and emerging and re-emerging infectious diseases.

Public Health Emergency Preparedness Cooperative Agreement Program (PHEP)

The PHEP cooperative agreement program is the largest CDC state program and provided approximately \$600 million to state, local and territorial public health departments in FY 2017. The program supports these jurisdictions to develop plans for public health preparedness and response, and has been instrumental in integrating state and local health departments into their jurisdictions' emergency response structures. PHEP currently supports 62 awardees – the 50 states, eight territories and freely associated states, and four directly funded cities (New York City; Washington, D.C.; Chicago; and Los Angeles). Funding is awarded according to a base-plus population formula prescribed by statute, which ensures a minimum amount of funding to each awardee. These funds support preparedness and response staff, enable exercises to test and validate capabilities, provide training, and pay for laboratory and communications equipment essential to maintaining preparedness. In addition, CDC personnel support PHEP awardees by helping to identify and address gaps in preparedness capabilities, providing planning resources to ensure the needs of at-risk individuals are incorporated into response strategies, and improving response capabilities from experience gleaned during public health responses.

Cities Readiness Initiative (CRI)

CRI, funded through the PHEP cooperative agreement, enhances preparedness in the nation's 72 largest population centers, where nearly 60% of the population resides. These cities use CRI funds to develop, test, and maintain plans to quickly receive medical countermeasures from the Strategic National Stockpile (SNS) and distribute them to local communities. This program, which relies on local boots on the ground, enables effective response to large-scale public health emergencies that require life-saving medications and medical supplies.

Public Health Emergency Medical Countermeasures Enterprise (PHEMCE)

Through the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) led by ASPR, CDC works with HHS agencies and other federal partners to enhance preparedness for chemical, biological, radiological and nuclear threats, pandemic influenza, and emerging and re-emerging infectious disease. The PHEMCE employs a collaborative approach to make scientifically and clinically sound decisions in prioritizing federal investments in medical countermeasures. CDC brings together its scientific expertise and its experience in public health practice to inform the use of preventative measures and treatment during a public health emergency.

Specifically, CDC subject matter experts:

- Develop clinical guidance on the use of PHEMCE medical countermeasures – crucial to ensure health departments and clinicians know the safest, most effective way to use medical countermeasures.
- Inform operational details for SNS deployment – this includes informing which products should be deployed first based on epidemiology and laboratory data and clinical guidance.
- Provide technical expertise to state and local partners for the development and execution of deployment and dispensing plans for PHEMCE medical countermeasures.
- Conduct regular operational readiness reviews and exercises with state and local partners to prepare them and build their capacity to receive and dispense PHEMCE medical countermeasures.

- Provide regulatory science expertise to inform legal mechanisms (Emergency Use Authorizations, Emergency Use Instructions, Investigational New Drug Protocols) and guidance on the use of non FDA approved MCM or the use of FDA approved MCMs for unapproved indications

To ensure that our partners have the knowledge and skills they need to dispense MCMs in a timely manner CDC offers virtual and in-person training, guidance documents, technical assistance, exercises, and other training programs. In FY 2016, CDC supported 18 full-scale exercises, and trained 2,232 federal, state, territorial, and local emergency responders representing 43 different jurisdictions on how to receive and distribute products from the SNS.

Detect

World-class scientific expertise in disease progression, epidemiology and laboratory methods ensures CDC is ready and able to detect and develop a response to a broad range of threats, including highly hazardous and infectious diseases like Ebola, smallpox, Zika, anthrax, and H7N9 influenza.

CDC uses advanced molecular detection techniques that combine next-generation genomic sequencing, high-performance computing, and epidemiology to identify pathogens faster and more accurately. Laboratories from all over the world send specimens to CDC because they know CDC will be able to identify pathogens that other laboratories cannot.

Through Advanced Molecular Detection investments, CDC is able to detect outbreaks faster, before they have become widespread. These advances are applied in dozens of areas such as foodborne disease, influenza, antimicrobial resistance, hepatitis, pneumonia, and meningitis. Moreover, CDC shares genetic sequencing capabilities with state and local health departments, and funds them to acquire these tools that help them respond more quickly and effectively at the local level, lessening the chances that disease outbreaks will spread.

Vector-borne diseases present a specific preparedness challenge, as we saw in the Zika emergency. CDC is one of the nation's authorities on vector-borne diseases, like Zika, plague, and dengue. CDC scientists who specialize in vector-borne disease have deep expertise in entomology, microbiology, virology, veterinary medicine,

zoology, and public health that does not exist elsewhere. These experts develop diagnostic tools and clinical guidance -- as well as methods of treatment, prevention, and vector control -- to slow the spread of these diseases. For example, CDC scientists have determined that a natural plant ingredient called nootkatone effectively repels and kills the mosquitoes and ticks that can spread disease. Nootkatone appears to work differently than available insecticides, and it could help fight mosquitoes that are resistant to existing insecticides.

CDC also maintains unique laboratory capability to rapidly detect exposure to radionuclides and more than 150 chemical threat agents. This information about human exposure helps public health officials rapidly assess health risk, determine the most effective treatment, and reduce additional exposures.

A Strong Laboratory Response Network

Rapid identification of disease is critical to addressing public health threats before they become a crisis. This requires that the highest quality specialized laboratory testing be available around the country. CDC's Laboratory Response Network is an integrated system of federal, state, and local laboratories that provides early detection and characterization of biological, chemical and other public health threats. The linking of these laboratories through the Laboratory Response Network has advanced our preparedness capabilities and provided for rapid testing, timely notification, and secure communication of laboratory results. The close partnership between laboratorians, epidemiologists and clinicians at CDC, state and local health departments, and healthcare facilities ensures the most rapid detection and mitigation of health threats.

For example, in response to the MERS (Middle East Respiratory Syndrome), Ebola and Zika virus outbreaks, CDC provided Laboratory Response Network laboratories across the United States with assays authorized for Emergency Use to quickly identify cases of infection during these outbreaks.

Public Health Surveillance

Public health surveillance—the collection, analysis, and use of data to target public health prevention and intervention activities—is the foundation of public health practice at CDC, and continues to represent CDC’s core work, whether as detective work in the field, or advanced analysis to understand disease transmission. CDC monitors population health information around the clock to detect and track diseases. For example, following 9/11, CDC invested in using health-related data based on syndromic surveillance in Emergency Departments as an early warning system for a bioterrorist attack. Those investments are paying dividends as this system now allows officials to detect a wide range of health threats, from opioid overdoses to chemical exposures to disease outbreaks. Moreover, CDC collects, analyzes, and interprets human, animal, environmental, and food surveillance data, to identify and respond to potential health threats before they become emergencies.

To ensure a nationwide surveillance capability, CDC supports surveillance infrastructure and practice at the state and local levels through the National Notifiable Disease Surveillance System, the National Syndromic Surveillance Program, the National Healthcare Safety Network, the Emerging Infections Program Active Bacterial Core Surveillance, and components of national influenza surveillance. As part of CDC’s Surveillance Strategy, we are modernizing the tools and services used in the National Notifiable Disease Surveillance System and the National Syndromic Surveillance Program and are implementing standards for exchanging data. CDC’s Surveillance Strategy guides our agency’s efforts to make U.S. surveillance systems:

- More adaptable to rapidly changing technology
- More versatile in addressing evolving health threats
- More adept at accessing and leveraging healthcare data
- More capable of meeting demands for timely, population-specific, and geographically-specific information

Beginning in FY 2016, Congress recognized the large and growing threat of antibiotic resistance and appropriated funding to CDC to detect and respond to resistant pathogens, prevent the spread of resistant infections, and collaborate with partners to encourage innovation for new prevention strategies. CDC has multiple surveillance systems that can detect and track resistant threats across healthcare, food, and the community. One important investment begun in 2016 is CDC's Antibiotic Resistance Laboratory Network, which supports nationwide laboratory capacity to rapidly detect antibiotic resistance in healthcare, food, and the community, and inform local responses to prevent spread and protect people. The Antibiotic Resistance Laboratory Network includes seven regional laboratories, the National Tuberculosis Molecular Surveillance Center, and laboratories in 50 states, five cities, and Puerto Rico. The Antibiotic Resistance Laboratory Network is vital to detecting new and emerging resistant pathogens, including those that are untreatable, to trigger infection control response measures to prevent spread. The Antibiotic Resistance Laboratory Network collects actionable data on threats including carbapenem-resistant Enterobacteriaceae (CRE), *Candida auris*, and *Neisseria gonorrhoeae*. Some strains of these pathogens have become resistant to all or nearly all available antibiotics. In addition, samples from the Antibiotic Resistance Laboratory Network can be made available to researchers to support innovations in antibiotic and diagnostic development.

CDC's Global Disease Detection Operations Center monitors outbreaks 24/7, assesses their potential risk to the United States and communities around the world, and improves global public health surveillance. Since 2017, CDC has tracked more than 170 unique diseases globally and identified outbreaks in more than 190 countries. CDC works with the 17 Phase 1 and 14 Phase 2 Global Health Security Agenda partner countries to help them build the core public health capacities necessary for identifying and containing outbreaks before they become epidemics that could affect us all. The 17 Phase 1 countries receive direct financial support and technical assistance from CDC and the 14 additional countries receive only technical assistance from CDC. Our work through the Global Health Security Agenda emphasizes four critical areas: surveillance, laboratory, workforce development, and rapid response capability. In addition, CDC medical and public health officers staff United States Quarantine Stations that are located at 20 ports of entry and land-border crossings where the majority of

international travelers arrive. These health officers are an important line of defense to prevent the introduction and spread of infectious diseases.

Respond

CDC's number one priority during any public health emergency is to protect the health of the public. CDC subject matter experts respond regularly to events such as foodborne outbreaks, natural occurring anthrax and botulism cases, smallpox vaccine adverse event cases, and seasonal influenza. CDC's readiness activities, expertise, and infrastructure provides the foundation for all types of public health emergency responses and is scalable and can surge to support larger events such as the 2012 - 2013 meningitis outbreaks and MERS. The expertise and systems used in such responses can be augmented further for larger public health emergency responses such as the 2009 H1N1 response, 2014 Ebola response, and the Zika response.

State and local public health agencies are the front lines of public health preparedness and response. CDC provides ongoing technical assistance and, where requested, on-the-ground personnel and materials to assist with response efforts. CDC's established relationships with state and local health departments ensure that day-to-day public health systems function effectively and efficiently and that emergency response actions are appropriate to the threat. These continuous relationships, between and during emergency responses, ensure a level of trust and collaboration that cannot be overemphasized. During the stress of an emergency response, having a trusted partner you can turn to immediately can mean the difference between life and death for patients, and ensures the rapid delivery of public health services, such as vaccinations and clean water, for communities.

CDC experts lead and staff every activation of the agency's Emergency Operations Center (EOC), ensuring response activities are effective and efficient. CDC has activated its incident management system for 67 responses over the last 16 years. During a response, CDC's EOC rapidly deploys scientific experts, coordinates the delivery of supplies and equipment to the incident site, monitors response activities, provides resources to

state and local public health departments, and disseminates timely and accurate information within government, to health care providers, and to the public. During the agency's Ebola and Zika responses, 3,700 and 1,700 CDC staff participated in the response, respectively. During the Ebola response, CDC staff completed over 2,000 field deployments to West Africa. CDC also responds to public health events that do not require EOC support. In fiscal year 2017, CDC assisted state, local, and overseas public health authorities in 23 epidemiologic investigations of emerging infectious disease outbreaks. In addition, the Global Rapid Response Team, stood up following the 2014 Ebola outbreaks, has over 400 ready and rostered experts. Since its inception, that team has provided nearly 9,000 person-days of support for response activities.

We are committed to continuously improving our response capability. After each activation, whether for a real event or exercise, we conduct a thorough after-action review to identify strengths to sustain and areas for improvement. Use of this information is key to improving performance for the next incident or event.

Conclusion

I want to leave the Committee with three primary points about CDC's role in public health emergency preparedness and response.

1. Our responses are built on our longstanding partnerships with state and local public health authorities;
2. Our detection capabilities and surveillance programs are based on our broad and deep scientific, medical, and programmatic expertise; and
3. Our response capacity ensures timely aid to state and local public health systems in times of crisis.

CDC has 72 years of experience in bringing top scientific expertise to health emergencies and remains a trusted partner in the United States and around the world. CDC stands ready to do its part to protect the health and well-being of the American public and save lives. We cannot necessarily predict the next disaster, but we know that being prepared protects health, saves lives, and prevents economic losses.

Thank you for the opportunity to testify.