Twenty Years After 9/11: The Public Health Preparedness We Need Now

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September 11, 2021 (9/11) will mark 20 years since the terrorist attacks on the World Trade Center and the Pentagon, the foiled attempt to hijack Flight 93, and the subsequent anthrax attacks in October. Significant strides in advancing local, state, and national public health preparedness through investments that build core preparedness and emergency response capabilities have been made since. Twenty years after 9/11, COVID-19 demonstrated that our nation's public health readiness, despite the tireless efforts of committed and skilled public health professionals who have admirably responded, was compromised by disconnected local, state, and federal data systems and disease surveillance capacity; an inadequate medical supply chain to meet demand for personal protective equipment; insufficient surge capacity to meet the national demand for contact tracing and case investigation; and varied attention to building equity and community resilience activities into ongoing response and recovery efforts. So, do we have the preparedness we need? The answer is mixed.

SUSTAINABLE INVESTMENTS OR BOOM-AND-BUST

Before 9/11, the US Centers for Disease Control and Prevention (CDC) bioterrorism preparedness program consisted of a $40 million annual cooperative agreement with states that was focused on building state and territorial capacity for preparedness planning, epidemiology, and surveillance; building biological and chemical laboratory capacity; and implementing the Health Alert Network. Congress appropriated nearly $1 billion to the CDC in fiscal year 2002, and the agency reorganized its preparedness activities in support of states and territories, including the creation of a new national center now known as the Center for Preparedness and Response. With these federal resources, states and territories created preparedness programs that were far more robust than before 9/11, guided by a set of 15 emergency preparedness and response capabilities, first promulgated in 2011, which now serve as the national standards for public health preparedness planning.

The need for governmental public health to integrate new preparedness and response capacities with established response partners required public health professionals to learn and use the Incident Command System and National Incident Management System components in both day-to-day and emergency operations. Since 9/11, public health and medical entities have used the Incident Command System structure to carry out activities prescribed by the Federal Emergency Management Agency's National Response Framework, specifically Emergency Support Function 8, which addresses the provision of public health and medical services during times of major emergencies and disasters. Public health preparedness is now a core part of the nation's homeland security efforts, with the original focus areas of bioterrorism preparedness expanded to a comprehensive set of capabilities that include emergency operations coordination, fatality management, mass care, medical countermeasure dispensing and administration (including the Strategic National Stockpile), responder safety, and volunteer management.

Congress has had a significant role in establishing our modern public health preparedness system and in preparing the nation for the future. The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Pub L No. 107–188) amended the 1994 Public Health Service Act (Pub L No. 78–410) to improve preparedness planning and coordination, established state and territory cooperative agreement funding programs for public health and hospital and health care preparedness, and created the National Pharmaceutical Stockpile Program. In 2006, the Pandemic and All-Hazards Preparedness

Act (PAHPA; Pub L No. 109-417) established a new Assistant Secretary for Preparedness and Response in the Department of Health and Human Services; provided new authorities for several federal programs, including the advanced development and acquisitions of medical countermeasures; and called for the establishment of a quadrennial National Health Security Strategy. In 2013, PAHPA was reauthorized in the Pandemic and All-Hazards Preparedness Reauthorization Act (Pub L No. 113–5), allowing continued funding for public health and medical preparedness programs and granting state health departments greatly needed flexibility in dedicating staff resources to meeting critical community needs in a disaster. In 2019, PAHPA was reauthorized as the Pandemic and All-Hazards Preparedness and Advancing Innovation Act (Pub L No. 116-22), which sustained vital public health and health care programs and authorized the use of the Public Health Emergency Fund when the secretary determines there is significant potential for or outright declares a public health emergency.

The first 20 years of public health preparedness and response is characterized by large initial investments in preparedness programs and the establishment and demonstration of the capabilities and capacities needed to integrate with emergency management partners. Significant accomplishments included planning efforts that ensure compliance with the Incident Command System and National Incident Management System in state and local health structures, exercising and demonstrating emergency plans to test staff and systems capabilities, and recruiting public health preparedness subject matter experts for health agency roles. However, efforts to quantify readiness over the past 20 years have validated mixed results in the states. These findings are well documented in Trust for America's Health Ready or Not? report series, the National Health Security Preparedness Index, the Johns Hopkins Center for Health Security's Global Health Security Index, and various reports of the Bipartisan Commission on Biodefense, among several other reports.

A consistent finding of these reports, echoed by many national public health advocacy groups, is the need for sustained investment in preparedness to address the "boom-and-bust" cycle of budget increases during emergencies and decreasing investments post hoc and the need for investments to support public health infrastructure and capabilities to address both everyday and emergency events. Since the recession of 2008, and with waning attention to public health emergencies, agencies' preparedness investments and resources needed to sustain progress have declined. Although some of the decline in funding has been made up with one-time emergency supplemental appropriations for large-scale disasters such as the H1N1 influenza, Ebola, Zika, and now COVID-19, these supplemental funds are restricted to specific uses to address a given emergency. Consequently, despite funding increases during emergencies, public health agencies were unable to sustain temporary workforce expansions or to implement enterprise-wide data systems, as emergency funding has been emergency-specific and ebbed as the emergency's intensity decreased.

COVID-19, PREPAREDNESS, AND THE FUTURE

COVID-19 could motivate us to change this boom-and-bust cycle and move national preparedness efforts forward by building sustained public health capacity. With more than $51 billion allocated to state and territorial health agencies to respond to and recover from COVID-19, health departments now have significant resources dedicated to epidemiology and laboratory capacity enhancements ($30.4 billion), workforce expansion ($7.4 billion), and data modernization ($1.1 billion). These funds are intended to be used for COVID-19–related activities, but some may also be used to support other infectious disease response and cross-cutting capacities, such as information technology and workforce improvements. These new investments will help support long-term capacity building, especially in the areas of disease investigation and surveillance, laboratory services, data systems improvements, and health equity—especially if they are sustained with longer term investments in our nation's public health infrastructure.

As we look at the public health preparedness needed now, a lesson learned from COVID-19 and many other disasters over the past 20 years becomes strikingly obvious: disasters and public health emergencies exacerbate and worsen disparities among persons of color, underresourced communities, and disabled Americans. If the first 20 years of public health preparedness were formative in developing public health's formal role as an emergency responder, the next 20 should advance an agenda that addresses health equity, community resilience, and the social and political factors that affect health. Disaster and emergency recovery programs should focus less on restoration, or "bouncing back," and more on helping communities bounce forward to conditions that are improved by the opportunities these emergencies present.

Readiness for catastrophic infectious disease events such as the COVID-19 pandemic, but also natural disasters including Hurricane Katrina and Superstorm Sandy, illustrates the benefits of deliberately focusing on efforts that build resiliency and rebuild with equity and sustainability in mind. The importance of community engagement's role in crafting policy to reduce social vulnerability cannot be overstated. The COVID-19 pandemic provides us the opportunity to return to a next normal in which community members are active in rebuilding and redesigning their public health and health care systems in a way that is governed and guided locally, developed with state guidance and input, and supported with federal resources. One such model of community resilience is under way in Rhode Island, where the state health department has supported Health Equity Zones development and local efforts to build healthier, more resilient communities.

So, do we have the preparedness we need now? The past 20 years suggest that a state of complete and total preparedness for all public health emergencies may not be a realistic goal. Nevertheless, efforts should be placed on cultivating and maturing a coordinated national response and building local community resiliency to respond to and bounce forward from events that overwhelm typical public health operations. Building core capabilities for emergency response alongside efforts to promote place-based, community-led approaches to building healthy and resilient communities are the work of the next 20 years. The more prepared we are for large-scale emergencies, the better we will be in rapidly detecting, responding to, and preventing more typical emergencies, such as foodborne illnesses, health care–associated infections, vaccine-preventable diseases (e.g., measles), and mass casualty events. AJPH

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