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Twenty Years After the Anthrax Terrorist Attacks of 2001: Lessons Learned and Unlearned for the COVID-19 Response

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Twenty Years After the Anthrax Terrorist Attacks of 2001
Lessons Learned and Unlearned for the COVID-19 Response

The 20th anniversary of the terrorist attacks on September 11, 2001, resulted in deep national reflection. Less remembered are the events that began to unfold 7 days later as anonymous letters laced with deadly anthrax (Bacillus anthracis) spores began arriving at postal facilities, media companies, and congressional offices. The first death from inhaled anthrax exposure occurred on October 5, with an additional 4 deaths and 17 infections over the ensuing months. The anthrax attacks exposed a health system ill-equipped to respond to acute emergencies.

Modernizing the Health System
Before 2001, state and local health departments operated mostly during weekday business hours, with limited capacity for coordination. State laboratories were largely unable to test for anthrax or other bioterrorism agents. The health care sector was also unprepared, unable to effectively diagnose and treat patients infected with novel pathogens. Hospitals lacked operational plans for a surge response or to initiate crisis standards of care.

The anthrax attacks in 2001 through to the COVID-19 pandemic 19 years later revealed deep fissures in public health emergency preparedness.

Before the events of 2001, there was little formal coordination among hospitals and no dedicated strategy for responding to biological and other threats. But after the anthrax attacks, hospitals developed emergency operations plans for a range of scenarios, including bioterrorism and pandemic influenza. Key hospital reforms included patient surge plans, interoperable communication systems, and planning for hospital evacuations. Hospitals also organized into health care coalitions to jointly plan for health emergencies and share resources.

Enhanced Federal Capacities
Federal programs established after 2001 changed the public health landscape. In 2002, the Department of Health and Human Services created the Office of Public Health Emergency Preparedness (OPHEP) to coordinate federal agencies. The OPHEP provided funding for health departments and hospitals for bioterrorism planning. The Pandemic and All-Hazards Preparedness Act of 2006 replaced the OPHEP with the Office of the Assistant Secretary for Preparedness and Response and expanded 2 key grant programs. The Public Health Emergency Preparedness cooperative agreement and the Hospital Preparedness Program provided dedicated funding to health departments and hospitals for human resources and emergency response.

Federal programs also helped coordinate federal, state, tribal, and local health agencies and defined unified preparedness goals. Before 2001, the Centers for Disease Control and Prevention (CDC) conducted all testing for bioterrorism agents, whereas today, a network of approximately 120 laboratories uses standardized methods to test for biological threat agents. The US established the National Strategic Stockpile (SNS) to distribute medicines, vaccines, and medical supplies to the states in a health emergency. Health departments operate around the clock, have plans to distribute the SNS resources, and have systems to communicate with the public and hospitals.

The Model State Emergency Health Powers Act
The anthrax attacks also highlighted fragmented and antiquated public health laws. State health codes evolved independently, leading to profound variation in their structure, substance, and procedures. Disparate laws undermined coordination among state and national authorities. Following the anthrax attacks, the CDC tasked the Center for Law and the Public’s Health at Georgetown and Johns Hopkins universities to draft the Model State Emergency Health Powers Act (MSEHPA), which was completed on December 21, 2001. By 2006, 38 states had adopted the MSEHPA in whole or in part. The MSEHPA requires states to develop health emergency plans, defines a declared emergency, and provides extensive emergency powers.

Preparedness for Influenza, Ebola, and Zika Viruses
The 2009 influenza A(H1N1) pandemic put new emergency systems to their first major test. Within weeks of identifying the novel influenza virus, the CDC developed and deployed to states a test to diagnose infections. The SNS allocated personal protective equipment to states. Health departments investigated outbreaks and conducted surveillance at hospitals and health clinics. The Government Accountability Office concluded, “Prior pandemic planning and federal funding paid off.”

Health emergency preparedness, however, began to wane after the influenza A(H1N1) pandemic, and the West African Ebola virus epidemic exposed national
vulnerabilities. In 2014, a symptomatic traveler from Liberia presented to a Dallas hospital but was discharged without adequate diagnostic assessment. When he returned to the hospital days later, he was diagnosed with Ebola virus disease. Subsequently, 2 nurses in that Dallas hospital contracted Ebola virus disease, and 1 had traveled on a commercial airline.

On the heels of the Ebola virus epidemic, another health crisis emerged: a Zika virus disease epidemic in the Caribbean and the Americas, which was linked to severe birth defects. Congress did not authorize funding for surveillance, mosquito control, and health worker training until 7 months later. By 2018, the CDC reported more than 4800 pregnancies in which mothers tested positive for Zika virus disease; 1450 infants from these pregnancies were examined at age 1 year or older, and 14% had health effects likely due to exposure to the virus.6

Lessons Unlearned in the COVID-19 Response

The failure to sustain public health readiness has had tragic consequences for the ongoing COVID-19 response, with the US surpassing 700,000 COVID-19-related deaths in early October 2021. As memories of the faulty response to the anthrax attacks faded, so too did US commitments to sustain public health readiness. Adjusting for inflation, federal preparedness funding for state and local health departments decreased by nearly half between 2003 and 2021, from $939 million to $695 million.7 Federal funding for hospital preparedness decreased by nearly two-thirds, from $515 million in 2003 to $280 million in 2021 (adjusting for inflation).7

The global economic crisis of 2008 exacerbated federal funding cuts, as states also reduced public health spending. By 2018, 10% of 591 health departments that responded to a stratified, randomized survey reported emergency preparedness cuts.8 More important were the steep reductions in the public health workforce; more than 55,000 jobs were lost. Staff shortages left health departments unable to adequately conduct case investigations and contact tracing. Amid the COVID-19 crisis, Congress had to enact the American Rescue Plan Act of 2021 to fund COVID-19 testing, contact tracing, and mitigation.

The federal government did not replenish the SNS after the 2009 influenza pandemic, which left many hospitals without access to sufficient supplies of personal protective equipment. The CDC, which in 2009 rapidly developed and deployed testing assays to state laboratories, struggled to do so early in the COVID-19 outbreak, markedly limiting surveillance.

Even the exercise of emergency health powers, ranging from mask and vaccine mandates to business closures and lockdowns, became politically divisive. During the COVID-19 pandemic, governors used the MSEHPA to declare health emergencies and wield enhanced powers. However, state legislatures and governors in several states placed limits on public health authorities: 8 states banned mask mandates, 8 states banned vaccine mandates, and 20 states restricted or banned proof-of-vaccination requirements. Since March 2020, 12 laws were enacted in 9 states to curtail the exercise of governors’ emergency powers or increase legislative oversight.9 Whereas the CDC led a nationwide effort to modernize and expand public health authorities after the anthrax attacks, the COVID-19 pandemic has resulted in the weakening of public health powers.

Strengthening Pandemic Preparedness

The anthrax attacks in 2001 through to the COVID-19 pandemic 19 years later revealed deep fissures in public health emergency preparedness. A key similarity between these 2 events was the failure of ill-equipped health departments and hospitals to adequately respond. When each health crisis occurred, the nation urgently provided emergency funding, only to be followed by continued deterioration of health capacities. Ending the cycle of panic and neglect requires building core public health and hospital capacities, replenishing the SNS, and strategic planning including tabletop exercises.10 The public health community, the medical profession, policy makers, and the public must learn the lessons of the failed COVID-19 response, beginning with a rigorous after-action report comparable with that of the 9/11 Commission. It will be essential to understand why the US allowed its health capabilities to deteriorate and to identify a comprehensive strategy to end the vicious circle of panic to neglect.

ARTICLE INFORMATION
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Additional Information: Mr Gostin reported that following the initial anthrax attacks, he led the drafting of the MSEHPA at the request of the CDC.

REFERENCES