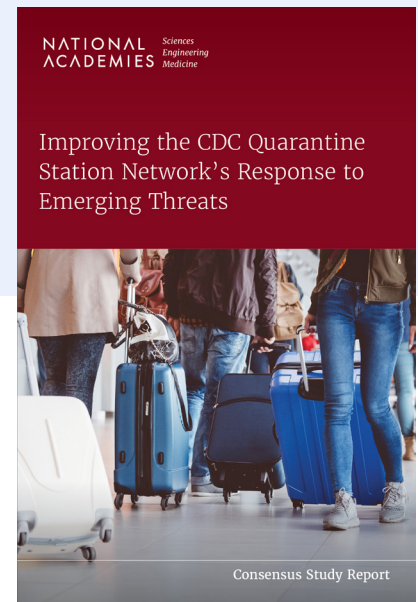


# IMPROVING THE CDC QUARANTINE STATION NETWORK'S RESPONSE TO EMERGING THREATS

The Centers for Disease Control and Prevention's (CDC's) Division of Global Migration and Quarantine (DGMQ) network of quarantine stations is responsible for mitigating public health risks at U.S. ports of entry. In 2006, the Institute of Medicine developed a report, *Quarantine Stations at Ports of Entry: Protecting the Public's Health*, per request by CDC. In response to the report's recommendations, DGMQ expanded its capacity to conduct risk assessment for microbial threats by developing a series of tools and practices, such as additional diagnostic tests and increased monitoring of humans, animals, and cargo. Overall, the network was bolstered by the addition of 18 new quarantine stations. In addition to expanding the number of quarantine stations in the network, the stations have been revamped in response to the recommendations from the report. However, due to many other needs and priorities, not all of the recommendations could be incorporated.

The emergence of COVID-19 prompted CDC to again request that the National Academies of Sciences, Engineering, and Medicine convene a committee to assess the role of DGMQ and the federal quarantine station network in mitigating the risk of onward communicable disease transmission in light of changes in the global environment, including large increases in international travel, threats posed by emerging infections, and the movement of animals and cargo. The committee was also tasked with identifying how lessons learned during COVID-19 and other public health emergencies (PHEs) can be leveraged to strengthen pandemic response. The report's recommendations span five domains: organizational capacity, disease control and response efforts, new technologies and data systems, coordination and collaboration, and legal and regulatory authority.



## **ORGANIZATIONAL CAPACITY**

Organizational capacity (OC) refers to an institution's ability to perform critical tasks and fulfill its mission. The committee identified and evaluated the four key areas that directly influence DGMQ's ability to complete its core tasks: infrastructure, finances, workforce, and organizational culture. Despite the increasing number and complexity of PHEs involving DGMQ over the past decade, the division's core funding has seen little increase, and PHEs like COVID-19 have strained its already limited workforce.

### Recommendations:

- The U.S. Department of Health and Human Services (HHS), especially including CDC, should ensure that DGMQ has the necessary financial and personnel resources, effective organizational structure, and optimal infrastructure to effectively meet its responsibilities, execute its growing volume of work, and achieve its mission.
- DGMQ should create an effective and innovative quarantine station model that matches the expanding and changing needs of a global, mobile world and augments its work in a progressively challenging infectious disease environment.

## **DISEASE CONTROL AND RESPONSE EFFORTS**

DGMQ requires access to resources and tools for disease control that can be tailored to the specific threats. For individual travelers, DGMQ's suite of infectious disease control tools includes travel restrictions, contact investigations, and (in conjunction with HHS and the White House) testing and/or vaccine requirements and bans on travel from particular countries experiencing infectious disease outbreaks. In practice, these strategies have seen mixed success in mitigating disease spread.

DGMQ was heavily involved in the COVID-19 response, collaborating with other CDC entities and other agencies to provide guidance on disease surveillance and mitigation, educate travelers, and work with various partners to implement public health measures. These

experiences highlight the importance of scenario planning for the most likely and/or concerning potential disease outbreaks, with the active involvement of key partners.

### Recommendations:

- DGMQ should develop detailed operational plans and playbooks based on the most concerning and likely scenarios for transmissible disease threats.
- DGMQ, in coordination with appropriate federal partners for implementation, should develop detailed operational plans for large-scale isolation and quarantine needs for future emergencies. These operational plans should be informed by the lessons learned during the initial response to COVID-19.
- DGMQ and CDC should commission an external formal evaluation and/or a modeling study of the effectiveness of travel restrictions and active screening and monitoring of all international travelers in preventing and mitigating disease transmission in the United States during both the COVID-19 pandemic and the 2014–2015 Ebola outbreaks in West Africa. These findings should be used to inform plans detailing when such measures should be considered in the future and to specify the types of pathogens and scenarios that warrant these measures.

## **NEW TECHNOLOGIES AND DATA SYSTEMS**

COVID-19 has revealed striking inadequacies in DGMQ's technology infrastructure, even as the pandemic has resulted in the development and implementation of new technologies for health surveillance and communication. Innovative digital technologies for collecting and aggregating data are an essential tool for protecting public health from the introduction of diseases across international borders. These data are needed for contact tracing, system reporting and monitoring, and epidemic intelligence. Technology can also be used to overcome limitations with staffing and scale-up, maximizing the effectiveness of screenings in airports and health departments.

Recommendations:

- DGMQ should increase and improve the use of innovative technology to aid in outbreak detection and response and to mitigate disease transmission. DGMQ should improve readiness and develop flexible and targeted strategies for disease control at the border and incorporate and improve on the use of digital technologies to gather health data from travelers, trace transmission, and alert exposures to travelers.
- DGMQ should support the adoption of the Office of the National Coordinator for Health Information Technology (ONC) roadmap and work with ONC to facilitate the roadmap and interoperability networks. DGMQ should also identify gaps and opportunities in legislation and regulation to support the proper use and transfer of information across data systems.
- DGMQ should ensure that all use of digital technologies, novel data streams, and interoperative public health information systems follows a careful consideration of its ethical aspects and that all actions are in accordance with existing regulations for the protection of personal data. In order to achieve this, an oversight structure should be put in place.

**COORDINATION AND COLLABORATION**

Partnerships are critical to DGMQ’s mission. The division works with both domestic and international partners in government and the private sector, including other nation’s quarantine and disease control organizations, U.S. federal agencies, and state, tribal, local, and territorial agencies and private-sector industries. The COVID-19 pandemic has revealed opportunities to strengthen these relationships to facilitate coordination for future events.

Recommendations:

- DGMQ should strengthen partnerships through defined and planned activities that enhance working relationships and continue to build trust.
- DGMQ should modernize health communication efforts with and for travelers to improve public understanding of disease control efforts as well as compliance.

**LEGAL AND REGULATORY AUTHORITY**

CDC has broad regulatory authority to control the introduction and interstate spread of communicable diseases in the United States. During the COVID-19 pandemic, DGMQ exercised powers granted to CDC under the Public Health Service Act (PHSA) of 1944 by taking actions such as (1) testing, detaining, and releasing persons entering the United States who are suspected of carrying certain communicable diseases; (2) issuing federal isolation and quarantine orders; and (3) restricting the importation of animals or other items that may pose public health threats. Many of these CDC actions were challenged in, or even blocked by, the courts. Also relevant to the use of regulatory power is the issue of DGMQ funding. Current large-scale funding methods for PHEs are inadequate.

Recommendation:

- Congress should improve the legal authority and flexibility of CDC in responding to public health threats by modernizing and improving the Public Health Service Act of 1944.

**COMMITTEE ON THE ANALYSIS TO  
ENHANCE THE EFFECTIVENESS OF THE  
FEDERAL QUARANTINE STATION NETWORK  
BASED ON LESSONS FROM THE COVID-19  
PANDEMIC**

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**FOR MORE INFORMATION**

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To read the full report, please visit  
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