

Biodefense: Actions Needed to Address Long-Standing Challenges

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Biological threats have the potential to cause catastrophic loss of life and sustained damage to the economy, societal stability, and global security. Our work in the area of biodefense has identified ways the federal government can strengthen its preparedness for a biological incident.

The Big Picture

Biodefense consists of actions to counter biological threats, reduce biological risks, and prepare for, respond to, and recover from biological incidents. The complexity of these efforts requires a whole-of-government approach. For over a decade, [GAO has evaluated](#) federal biodefense efforts related to implementation of the *National Biodefense Strategy*, biodefense preparedness and technology challenges, and federal biosurveillance efforts, among others and identified challenges and opportunities for improvement.

What GAO's Work Shows

1. National Biodefense Strategy Challenges

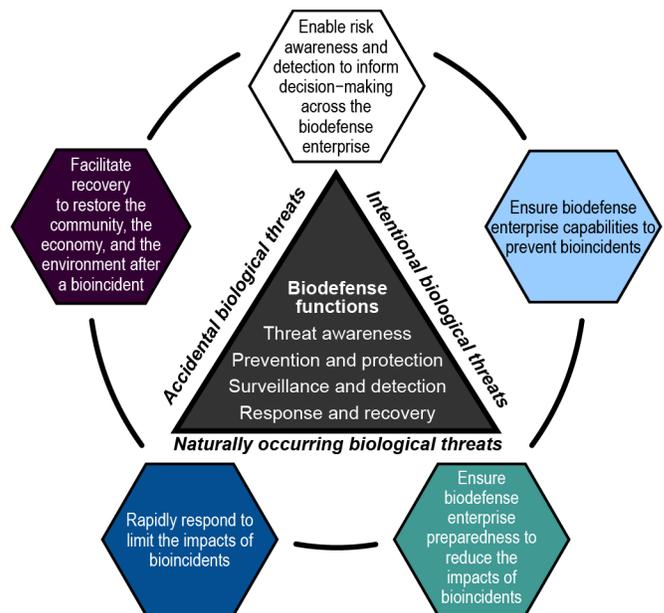
In 2018, the White House issued the *National Biodefense Strategy*, which outlined five high-level goals and functions. It was designed to strengthen federal biodefense capabilities to address naturally occurring, accidental, and deliberate biological threats. An accompanying Presidential memorandum set up a governance structure to guide its implementation, coordinate federal biodefense activities, and assess the effectiveness of goals and objectives. However, in 2020, [GAO found](#) a lack of clear procedures and planning to analyze data in a way that leveraged resources and advanced national biodefense capabilities, among other findings.

- **We recommended** that the Secretary of Health and Human Services direct the interagency biodefense body to clearly document guidance and methods for analyzing the data collected.

Further, GAO has reported on broad issues related to leadership, coordination, and collaboration as a result of fragmentation throughout the biodefense enterprise. In October 2022, the White House

updated the *National Biodefense Strategy*. The new strategy changed the biodefense governance structure, underscoring the need for institutionalized leadership to assess, prevent, prepare for, respond to, and recover from biological threats.

Five National Biodefense Strategy Goals and Functions



Source: GAO analysis of biodefense doctrine. | GAO-23-106476

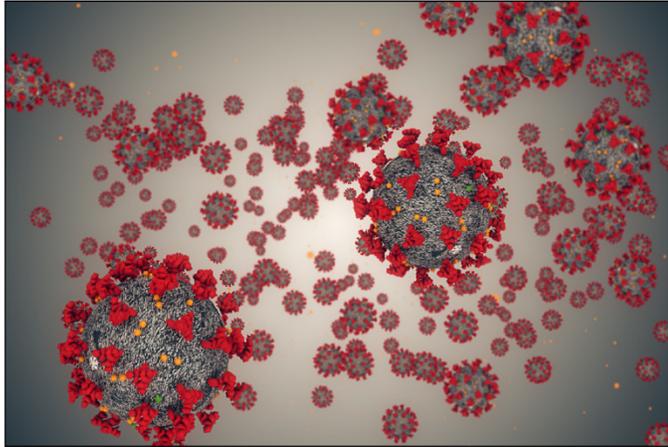
2. Biodefense Preparedness Activities Need Strengthening

Key federal agencies have developed response plans and conducted interagency exercises to prepare for and respond to biological threats. In 2021, [GAO's analysis](#) of these exercises—and the federal response to the COVID-19 pandemic and other incidents—revealed long-standing biodefense challenges. These included challenges in coordinating response capabilities, managing information, and in planning and conducting exercise

efforts. GAO further found that there was no interagency process to assess and communicate exercise priorities, or monitor results from exercises and incidents.

- **We recommended** that key federal agencies take steps to address these gaps, including assessing exercise priorities and monitoring the results of exercises and incidents to identify patterns of challenges and root causes.

SARS-CoV-2 coronaviruses



Source: donfiore/stock.adobe.com. | GAO-23-106476

3. DHS Faces Biodefense Technology Challenges

The Department of Homeland Security (DHS)'s BioWatch program, begun in 2003, is designed to provide early indication of a biological weapons attack using a system of aerosol collectors and laboratory facilities. In 2021, GAO reported on DHS's [effort to replace BioWatch](#) with a new system. This project faces risks, such as the possibility of increased false alarm rates, due to technology limitations and uncertainties with combining technologies for use in biodetection. DHS plans to reduce risk using technology readiness assessments, but GAO found that DHS's guidance for these assessments lacked sufficient detail to ensure objectivity and independence, among other findings.

- **We recommended** that DHS conduct technology readiness assessments that follow our best practices before making acquisition decisions.

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4. Challenges Exist with DHS's Biosurveillance Efforts

DHS's [National Biosurveillance Integration Center \(NBIC\)](#) integrates, analyzes, and distributes key information about health and disease events to help ensure the nation's responses are well informed, save lives, and minimize economic impact. However, in 2015, GAO found that NBIC faced several challenges that limited its ability to fulfill its mission, such as limited access to federal agency data and other coordination challenges.

- **We presented** Congress with several options to address NBIC's challenges, such as providing NBIC with additional authorities or assigning NBIC's mission to other agencies.

GAO has ongoing work reviewing NBIC and we plan to report its findings in fall 2023.

NBIC analysts review biosurveillance data



Source: National Biosurveillance Integration Center (NBIC). | GAO-23-106476

Challenges and Opportunities

The COVID-19 pandemic has brought into sharp focus the shortcomings of the nation's current preparation to respond to a nationally significant biological incident. GAO identified actions that federal agencies could take to prepare for and respond to future biological incidents. As of March 2023, 21 of 29 recommendations made remain unimplemented. We continue to monitor agencies' progress in implementing these recommendations.

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