Protecting Americans Against Biological Threats

Reversing the Decline of the Biodefense Enterprise

KEY TAKEAWAYS

1. The U.S. biodefense enterprise is in decline. Its mission is to ensure healthy families and workers, sustaining a robust economy that enables a strong military. Yet the United States lacks a resilient healthcare system with diversified supply chains for tests, treatments, vaccines, and personal protective equipment (PPE). Its human and veterinary workforce, hospital capacity, and air quality remain inadequate. In 2025, multiple federal actions degraded U.S. biodefense.
2. Risks abound. It is becoming cheaper, faster, and easier to develop bioweapons. The risks of naturally occurring and accidental bioincidents are increasing. China has **surpassed** U.S. outputs in 66 of 74 key technological domains, including many areas of **biotechnology**. As with rare earths, the U.S. medical supply chain has become increasingly vulnerable to external actors.
3. There is a path forward. Congress and the administration should restore White House leadership; fund key federal, state, and local capabilities, including surge capacities; create a coherent U.S. industrial policy built on public-private partnerships, resilient supply chains, and assured demand; and work closely with international allies.

By Maj. Gen. (ret.) Paul Friedrichs, J. Stephen Morrison, Michaela Simoneau, and Sophia Hirshfield

This is the third in a series of briefs about making the United States safer against rising biological threats.

BACKGROUND & CONTEXT

The national science and technology base is essential to U.S. national security, economic prosperity, a healthy population, and global competitiveness. Also essential are public and veterinary health services across the county. Together they form the core of U.S. biodefense.

The first Trump administration leveraged its 2018 National Biodefense Strategy (NBS) to create Operation Warp Speed, a public-private partnership built on federally funded research into coronaviruses and the mRNA delivery platform. The results were safe and effective tests, treatments, and vaccines, saving millions of lives. The mRNA platform is proven to be highly safe and effective in delivering drugs that treat cancer, stimulate the immune system, and improve health in other ways.

Public biodefense officials have a mandate to strengthen and exercise local, nationwide, and international response capabilities, including risk communication and community engagement. Best practices from recent outbreaks offer concrete ideas to update the U.S. strategy for preparedness and resilience. New technologies can improve indoor air quality, while viral vector, recombinant protein, and mRNA platforms can produce vaccines much faster and on a greater scale.

The U.S. administration is pursuing dangerous funding reductions, including over 55 percent for the National Science Foundation, 40 percent for the National Institutes of Health, and 35 percent for the Biomedical Advanced Research and Development Authority (BARDA). It has eliminated all U.S. Department of Health and Human Services (HHS) funding for research involving the mRNA platform. This stands in sharp contrast to China's sustained funding for biotechnological research. Congress can play a critical role in countering these reductions.

LEGISLATIVE OR POLICY IMPLICATIONS

Several pieces of legislation could provide opportunities to strengthen the U.S. biodefense enterprise. These include the National Defense Authorization Act, the Pandemic and All-Hazards Preparedness Act (PAHPA), the Department of State Policy Provisions Act, and related appropriations bills.

The president's new National Security Strategy, the America First Global Health Strategy, and America's AI Action Plan are relevant. Several executive orders seek to improve the resilience and independence of the U.S. pharmaceutical industry. However, industry will delay major changes until assured that Congress will sustain these policies,

CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES

including on most-favored nation prescription drug pricing, the Strategic Active Pharmaceutical Ingredients Reserve, domestic production of critical medicines, and the Section 232 National Security Investigation on pharmaceutical imports.

CHALLENGES & RISKS

Weakened Federal, State, and Local Capabilities: More than 80 percent of state and local response capabilities are traditionally funded by the federal government; those funds have been cut by 50 percent or more, threatening the health of families and workers. In the meantime, the administration has not clarified the mission or future funding for the HHS Administration for Strategic Preparedness and Response (ASPR), BARDA, and the Strategic National Stockpile (SNS).

Losing the Competitive Edge: The United States has ceded leadership in most critical biotechnology research and development domains to China. Recently proposed cuts in federal funding levels will further reduce U.S. innovation. The 2025 NDAA may begin to slow the U.S. decline by directing new biotechnology-related rules and requirements and authorizing new programs.

Weak Industrial Policy: U.S. supply chains are increasingly vulnerable, subject to intermittent shortages of medical products and PPE. Unlike most other industrialized nations, the United States lacks an effective industrial policy for biomedical products and has not invested in sustaining an industrial base for these products. Private industry is encouraged to pursue divergent goals: to onshore manufacturing while reducing prices, without certainty of future demand or government stockpiling requirements. The results are confusion, uncertainty, and deferred investment. U.S. reliance on China for research and development (R&D), raw materials, generic medicines, and antibiotics creates an economic and national security vulnerability similar to China's control over rare earth minerals.

RECOMMENDATIONS

1. **White House Leadership:** Mandate and staff a White House Office of Biopreparedness (WHOBP) as a senior directorate on the National Security Council with budgetary and spending approval authority. This office should be tasked to (1) update the NBS and forge an integrated national plan for biodefense investments that encompasses human, animal, and plant health responsibilities; (2) provide Congress with annual countermeasure preparedness reviews; and (3) oversee implementation of a whole-of-government strategy to strengthen medical supply chain resilience.

2. **Key Federal, State, and Local Capabilities:** (1) Require that HHS retain ASPR, BARDA, and the SNS in their established roles and fund requirements validated by the WHOBP; (2) restore and where appropriate expand funding in core public, veterinary, and plant health preparedness and response capabilities; (3) restore funding to regain world leadership in R&D, including mRNA, recombinant protein, and viral vector vaccine research and expand investments in other platform technologies; (4) reauthorize and resource the core capabilities in PAHPA to guarantee the design, development, manufacturing, and deployment of medical countermeasures within 100 days of the identification of a pathogen of concern; and (5) authorize and fund HHS and U.S. Department of Agriculture (USDA) to develop U.S.-based, regional, and global surge manufacturing capacity for tests, treatments, vaccines, and PPE.

3. **The Private Sector Role:** (1) Authorize the Department of Defense, HHS, and USDA to pursue public-private partnerships modeled after Operation Warp Speed and recent U.S. actions to reduce Chinese control of rare earth minerals; (2) authorize funding and contracting authorities for the Defense Advanced Research Projects Agency, Project BioShield, and USDA; (3) direct the WHOBP to incorporate the private sector more fully into preparedness plans, tapping private sector infrastructure and manufacturing capabilities and increasing investments to achieve near-shoring goals; and (4) fund programs to increase a technically skilled biodefense workforce.

4. **International Burden Sharing:** (1) Require departments and agencies to ensure U.S. biopreparedness investments leverage commitments by key allies, partners, and multilateral bodies; and (2) incorporate biopreparedness into exercises with partners to reduce supply chain vulnerabilities and promote U.S. innovations abroad.

For more information, contact: **Chloe Himmel** at 202.775.3186 or **chimmel@csis.org**.

CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES