UK Defence Innovation

Cabinet Office

Biosecurity Frontiers

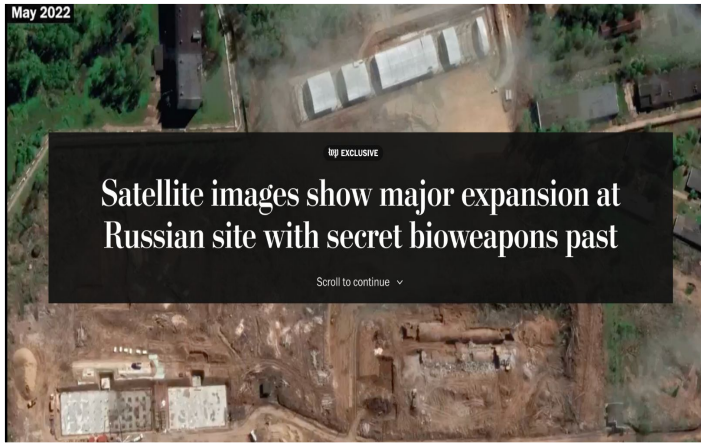
Themed Competition

Collectively, Biosecurity risks are the most significant facing the UK

A pandemic and a malicious CBRN attack on the UK are two of the top catastrophic risks in the National Risks Register.

- A future pandemic on the scale of Covid-19 is *"a certainty".* Geopolitical instability requires strong UK leadership.
- The dangerous global security environment is diversifying and intensifying the bioweapons threat.

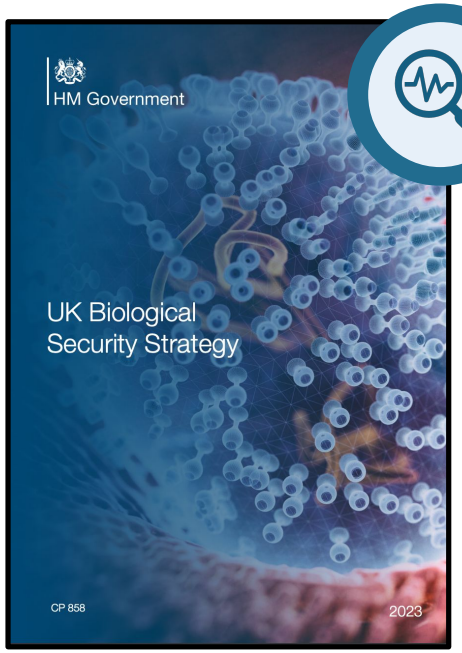
Resilience is at the heart of this Government's approach to protecting the UK from global threats.



The 2023 UK Biological Security Strategy

Vision: ***"By 2030, the UK is resilient to a spectrum of biological threats, and a world leader in responsible innovation"***

UK-wide approach *covering naturally occurring pandemics, bio incidents and accidents, and bioweapons.*



Understand	Prevent	Detect	Respond
the biological risks we face today and into the future	risks from emerging or from threatening the UK and UK interests	and report biological risks as early and reliably as possible	to lessen impact on the UK and UK interests, to enable rapid return to normal

Enablers: UK and international leadership, specialist sovereign capabilities, thriving sectors for solutions.

Biological Security Strategy - Successes to Date

Our first **Implementation Report** was published on gov.uk in July 2025

It details achievement since publication of the BSS in 2023 - including **delivering 100% of the short-term commitments.** It sets out the CBR community's **ambitions and commitments** for the year ahead.

Understand	Prevent	**Detect**		Respond	
Integrated reporting via a UK Biothreats Radar	Mitigating risk of AI use to develop bioweapons	Forensic lab network improving deterrence and attribution	NHS metagenomics for rapid bedside detection of health threats	Exercise PEGASUS, AMR National Action plan and UK Pan Prep Strategy	A national network of UK Biosecurity Centres
					

Challenge areas

This competition has 3 challenge areas, seeking innovative solutions to some of the UK's most pressing biosecurity challenges - across One Health and National Security.

We are seeking proposals against the following areas:

1. Biodetection and Biosurveillance
2. AI and Diagnostics, Therapeutics and Vaccines
3. Develop non-pharmaceutical protective systems

Proposals must address at least one of the challenges and move technologies through Technology Readiness Levels (TRL). Innovations must progress up to a minimum of TRL 4 and a **maximum of TRL 6 for Challenge 1 and 3**, and a **maximum of TRL 7 for Challenge 2.**

Challenge 1: Next Generation Biodetection & Biosurveillance

The government is seeking to bolster biosurveillance capabilities to detect and monitor traditional and novel threats that are naturally derived or manmade.
Capabilities include:

- Sensitive or low-latency detection of novel outbreaks within communities or particular locations, including technologies deployable outside of the laboratory and potentially in harsh environments.
- Technologies which monitor outbreaks as well as initially detect them.
- Bioforensics and attribution technologies which allow us to understand the characteristics or origin of a threat are also of interest.

For further information, please refer to 5.1 in the competition document.

Challenge 2: AI and Diagnostics, Therapeutics and Vaccines (DTVs)

The government is seeking industry support in harnessing AI to support the discovery, development and deployment of diagnostic, therapeutic and vaccine (DTV) candidates. This would likely focus on priority pathogens identified by the UK Health Security Agency and novel biological threats.

For further information, please refer to 5.2 in the competition document.

Challenge 3: Non-pharmaceutical Protective Systems

The government is looking to diversify and strengthen the supply chains of personal protective equipment (PPE). Proposals could include:

- Ways to increase efficiency and manufacture lower-cost PPE
- Development of universal Respiratory Protective Equipment, seeking adaptations to masks that improve their fit test pass rate.
- Innovative PPE decontamination and disinfection
- Biodegradable alternatives to polypropylene for PPE production and confirm viability in manufacturing processes.
- Solutions which remove humans from operations in a contaminated area.

For further information, please refer to 5.3 in the competition document.