



THE CENTRE FOR  
LONG-TERM RESILIENCE

# Independent Progress Review: UK Biological Security Strategy

The Centre for Long-Term Resilience,  
Biosecurity Policy Unit  
August 2024

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# Independent Progress Review: UK Biological Security Strategy

## First Year Report

August 2024

The Centre for Long-Term Resilience, Biosecurity Policy Unit

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*For the up-to-date independent progress tracker, please see*

<https://www.longtermresilience.org/post/independent-progress-tracker-uk-biological-security-strategy>

**Acknowledgements:** This report was prepared by The Centre for Long-Term Resilience's Biosecurity Policy Unit, with special thanks to Richard Moulange as primary researcher, Lucy Di-Nozzi for design, Mikee Mercado for online publication and Alexis Harrell for communications.

**Updates:** We will update the tracker on a periodic basis using public-facing materials and log any changes. For any additions, clarifications or corrections to the tracker please email [biosecurity@longtermresilience.org](mailto:biosecurity@longtermresilience.org)

**Suggested citation:** The Centre for Long-Term Resilience Biosecurity Policy Unit (2024). *Independent Progress Tracker: UK Biological Security Strategy*. London UK: The Centre for Long-Term Resilience.

## Summary

In June 2023, the UK Cabinet Office published an updated national Biological Security Strategy (BSS) outlining the government's plan to strengthen the UK's capabilities for preventing, detecting and responding to biological threats. The BSS includes a high-level summary of the strategy's implementation plan, outlining short, medium and long-term commitments to facilitate the delivery of the BSS priority outcomes.

Our tracker provides an independent assessment of the public progress that the UK Government has made in implementing these commitments in the first year following the BSS publication. Our review of the first year highlights some key findings and recommends priority actions the current Government could take to ensure our security against biological threats.

Our assessment draws solely on public-facing evidence to ensure transparency and objectivity. Due to the sensitive nature of national security issues, some updates are justifiably not disclosed publicly by the UK Government. In such instances, our evaluation is limited and may not reflect all progress made on BSS commitments. We acknowledge this limitation while encouraging publicly accessible updates when appropriate to assist with external accountability.

This independent progress tracker will be updated on a periodic basis, and we can be contacted at any stage regarding additions, clarifications or corrections.

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## Context

In June 2023, the UK Cabinet Office published an updated national Biological Security Strategy (BSS) ([UK Cabinet Office 2023](#)). The BSS consists of 15 priority outcomes, which commit government departments to a range of activities, organised across four pillars:

- 1) UNDERSTAND:** Understand the biological threats that we face today and could face in the future.
- 2) PREVENT:** Prevent biological risks from emerging, where possible, and threatening the UK and UK interests.
- 3) DETECT:** Rapidly detect, characterise and report the presence and nature of biological hazards that could represent a significant risk or threat to the UK or UK interests.
- 4) RESPOND:** Respond to biological risks that have reached the UK or UK interests to lessen their impact and enable a rapid return to business as usual.

In addition to the priority outcomes, the BSS also identified three cross-cutting **strategic enablers** to support the four pillars: (i) governance, leadership and coordination; (ii) a UK science base and health and life sciences sector; and (iii) international leadership.

To facilitate the successful delivery of these outcomes and strategic enablers, the BSS states it is accompanied by an implementation plan that has not been released to the public.

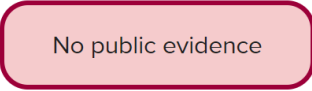
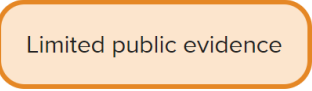
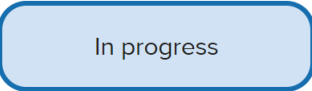
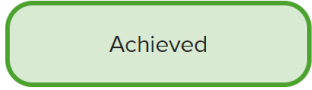
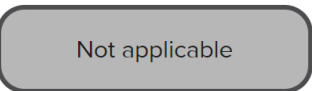
Instead, the BSS includes a summary in the form of a high-level strategy implementation plan, specifying short, medium and long-term commitments across each of the four pillars.

Drawing solely on public-facing materials, our tracker provides an independent assessment of the progress that UK Government departments have made in implementing these commitments in the first 12 months following the BSS publication.

## Methodology

The 15 priority outcomes and three strategic enablers were each assessed individually using their associated short, medium and long-term commitments described in the BSS High-Level Implementation Plan. Commitments that were not already specific and easily measurable were assigned criteria representing progress based on supporting language from the BSS and the commitment’s associated outcome.

The implementation status of each commitment was then assigned using the following definitions:

	<p>There is no public-facing evidence that progress has been made towards meeting the commitment. This does not preclude the possibility that relevant stakeholders have made progress privately.</p>
	<p>There is public-facing evidence that some progress has been made towards the commitment, but it may be indirect. For instance, increased recruitment in an area broadly related to the overarching outcome without specific reference to the outcomes of an activity, or explicit reference to achieving the commitment.</p>
	<p>There is public-facing evidence that substantial progress has been made towards meeting the commitment. For example: publishing detailed implementation plans to achieve the commitment or completing procurement rounds to increase operational capacity and access specific expertise.</p>
	<p>There is public-facing evidence that the commitment as specified has been achieved.</p>
	<p>Progress made on this commitment was not assessed. For instance, where longer-term commitments were dependent on shorter-term commitments that had not yet been achieved, those longer-term commitments were not evaluated.</p>

In assessing the UK Government's progress in implementing the BSS, we have exclusively looked at public-facing materials. We believe this approach is important for ensuring transparency, verifiability and objectiveness in our assessment.

However, we recognise that certain outcomes in the BSS pertain to national security issues, where detailed updates are understandably less likely to be disclosed in the public domain. Consequently, our assessment may represent a conservative estimate of overall progress. While we support the public release of informational updates wherever possible, we respect the necessity of maintaining security in sensitive areas and do not intend to criticise the UK Government for the lack of publicly accessible information where it is appropriate.

## First-Year Progress Review

The full, live database of the evidence supporting this work is available [here](#).

In the first year since the release of the BSS, there is evidence that UK Government departments have made significant progress on many short-term BSS commitments, in addition to some over longer timeframes. Below, we highlight two outcomes in particular that have achieved progress: responsible innovation efforts (Outcome 5) and activities to mitigate antimicrobial resistance (AMR) (Outcome 7). However, our independent review has also identified areas that require urgent addressing and we outline three recommendations based on our findings.

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**Outcome 5:** The UK is a world leader in responsible innovation, shaping international norms and standards

- **Short-term:** Establish a new UK Biological Security Leadership Council: a forum to engage strategically with the Life Sciences and Biotechnology sectors, and develop proportionate and pro-innovation approaches to risk management
- **Medium-term:** Undertake a programme of work to minimise the risks from biodata without stifling innovation
- **Long-term:** Continue to promote and develop responsible innovation practices across the UK and internationally
- **Long-term:** Promote UK innovation in biosecurity technologies internationally, attract inward investment, and support UK exports

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The Department of Science, Innovation and Technology (DSIT) have made clear positive progress on the BSS commitments associated with Outcome 5. DSIT achieved their short-term commitment to establish a UK Biological Security Leadership Council in September 2023 ([UK Department of Science, Innovation and Technology 2023](#)).

There has also been a clear effort to bolster domestic responsible innovation practices, through initiatives such as the Engineering Biology Regulatory Sandbox Fund and the exploration of options for synthetic nucleic acid screening implementation ([UK Department of Science, Innovation and Technology 2024a](#); [UK Department of Science, Innovation and Technology 2024b](#)). There have similarly been apparent efforts to develop and promote responsible innovation practices in collaboration with the United States, through initiatives such as the US-UK Strategic Dialogue on Biological Security and the US-UK partnership on AI safety ([Cabinet Office 2024a](#); [UK Department of Science, Innovation and Technology & AI Safety Institute 2024a](#)), as well as internationally, through the UK's participation in the UK AI Safety Summit 2023 and AI Seoul Summit 2024.

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**Outcome 7:** Reduce the risk from the spread of infectious diseases, pests and invasive species, including drug resistant infections, in the UK and overseas

- **Short-term:** Use findings from the Call for Evidence on antimicrobial resistance (AMR) to inform the next National Action Plan
- **Medium-term:** Publish the new National Action Plan for AMR (2024–2029)

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Both of the specified commitments associated with Outcome 7 have also been achieved in the past year. The UK’s second 5-year National Action Plan to support the 20-year vision for AMR was published by cross-government departments including DHSC and Defra in May 2024 ([HM Government 2024](#)). This Plan clearly draws on feedback gathered from the UK Government’s ‘Antimicrobial Resistance National Action Plan: call for evidence’, which ran from November 2022 to January 2023 ([Department of Health and Social Care and Department for Environment, Food & Rural Affairs 2023](#)). For instance, the update addresses comments about the difficulty for stakeholders to identify and assess progress on the government’s priorities by setting out the government’s research priorities pertaining to AMR.

However, Outcome 7 has a broader remit than the two AMR-specific commitments outlined in the BSS implementation plan summary and requires further actions to reduce the risk from the spread of infectious diseases, pests and invasive species. This shortcoming highlights the need for a more detailed public implementation plan beyond the high-level summary included in the BSS. This and other findings after our first-year review of progress have led to the following three recommendations:

**Recommendation 1: Publish a detailed implementation plan by the end of 2024 for the purposes of transparency and public accountability**

While the BSS provides a high-level summary of its non-public implementation plan, its short, medium and long-term commitments assigned to each of the four pillars are not representative of the full range of activities necessary to achieve the Strategy’s outcomes. In addition, the timeframes for short, medium and long-term commitments are not defined in the BSS. As noted in the Covid Inquiry’s Module 1 report, the BSS “lacks deadlines by which actions should occur and by which the government’s progress could be measured. The public cannot know if the government has failed if the government itself is unwilling or unable to describe and set objective tests by which its actions can be measured, nor can the officials whose job it is to implement such a strategy” ([Hallett 2024](#)). Specified commitments and outcomes are also variable in their specificity and measurability, making it difficult to publicly evaluate progress in some cases.

**Publishing a detailed implementation plan with additional, specific commitments for each outcome that encompass the full scope of what must be delivered will be valuable for four key reasons:**

- (i) Increases the likelihood of successful BSS implementation
- (ii) Allows for better coordination of various government initiatives that impact biosecurity, including, but not limited to, the National Vision for Engineering Biology, the Plant Biosecurity Strategy, and the UK's Global Health Framework
- (iii) Facilitates greater accountability within the Government and from external parties, enabling transparent and accessible tracking of progress and allowing for identification of areas in need of additional attention and resourcing
- (iv) Ensures the Government receives credit for substantial progress made on the BSS outcomes not reflected in the existing high-level implementation plan summary

**Recommended Actions:** Task the lead government departments for each BSS pillar with providing additional, specific commitments for each BSS outcome that encompass the full scope of what must be delivered to achieve the stated objectives. Measurable actions and deadlines should be specified for each commitment. For activities with national security sensitivities, the UK Government should carefully evaluate which commitments can be shared publicly. We recommend that all non-sensitive commitments are published in full in an updated public implementation plan by the end of 2024.

### **Recommendation 2: Address critical progress concerns with the development of the National Biosurveillance Network and ensure it is adequately resourced**

The National Biosurveillance Network (NBN) announced in the BSS is an ambitious project that, if delivered in full, will provide the UK with world-class outbreak detection and protect the British public from emerging biological threats. The Covid-19 Inquiry module 1 report states that the “best defence against the spread of pathogens was and remains strong national surveillance and detection mechanisms” (Hallett 2024). Whilst scoping and strategic planning for the NBN have taken place, there is a risk that the comprehensive disease surveillance system described in Outcome 9 of the BSS may not be fully realised. The NBN is also essential for the operational functionality of the Biothreats Radar, another key commitment of the BSS that is critical for UK national security.

In our first-year progress review, we found that May 2024 updates from UKHSA indicated that early procurement rounds did not achieve the full suite of deliverables, highlighted underspending, and indicated that time delays and the complexity of the Government's biosurveillance activity could hinder the NBN's delivery and ultimate effectiveness (UK Health Security Agency 2024).



Resolving these issues is crucial. To reach its full potential, the NBN needs to incorporate new pathogen-agnostic technology to detect new pathogen outbreaks. The BSS acknowledges this as the ultimate ambition of the NBN, but also states that there are “significant technical and operational challenges with metagenomic approaches that require considerable and sustained funding.” Despite a specific commitment by the UKHSA to develop a sustainability plan for pathogen-agnostic functions for the New Variant Assessment Platform by the end of December 2023 ([UK Health Security Agency 2023](#)), we were unable to find public evidence of this deliverable. After Alpha Phase 2 which runs until March 2025, operational plans are urgently needed to incorporate new pathogen-agnostic technology.

The NBN presents the best way for the UK to detect outbreaks early and prevent pandemics, and its completion would place the UK as the world leader in biosurveillance. Underspending and progress lags will jeopardise this vision and leave the UK public vulnerable to new disease threats.

### **Recommended Actions:**

- Prioritise funding for the NBN in FY 24/25 and in the next HMT spending review.
- Appoint a Senior Responsible Owner (SRO) to coordinate cross-government engagement for the successful delivery of the NBN. This SRO should be outside of UKHSA with links with all relevant departments to ensure NBN integration is feasible and achieved. Such an appointment will be a step towards addressing the project risks identified in the recent May 2024 NBN update ([UK Health Security Agency 2024](#)).
- Request an urgent update from UKHSA on its sustainability plan for pathogen-agnostic functions for the New Variant Assessment Platform.
- Task the UKHSA Advisory Board and the appointed external evaluator for the NBN with providing comprehensive advice on mitigating all issues and risks identified at the end of Alpha Phase 2 in 2025.

### **Recommendation 3: Urgently prioritise developing biological event response plans and exercising our response to such event**

National-level and smaller-scale exercises, such as those described by Outcome 4, are valuable tools for informing effective response plans against different biological threats ([UK Cabinet Office 2023](#)). However, as far as we are aware, no biological event-related exercises have taken place, although the previous government’s lead minister of the strategy announced plans for 2025 exercises ([UK Cabinet Office 2024b](#)).

Relatedly, we found limited public evidence to suggest that progress has been made in developing a roadmap to inform a “set of tested response plans” to guide the UK’s response to a spectrum of biological threats (Outcome 13). Taken together, this potential lack of

progress is particularly concerning given the shortcomings identified in historical exercises and the Government's response to COVID-19, as outlined by the module 1 findings of the UK Covid-19 Inquiry ([Hallett 2024](#)).

Conducting exercises will ensure that the Government understands and can operate the system effectively and will help identify lessons and gaps to inform future response plans, strengthening the UK's preparedness for future biological events. This will also support the delivery of the UK Cabinet Office's medium-term commitment to providing a coordinated package of exercises on priority biosecurity scenarios.

### **Recommended Actions:**

- Task the National Exercising Programme (NEP) with conducting a Tier 1 pandemic exercise by mid-2025 and require the publication of the findings and recommendations that can be made public from that exercise within 3 months, in line with Recommendation 7 of the UK Covid Inquiry's Module 1 report ([Hallett 2024](#)).
- Task Cabinet Office with providing an update on the roadmap towards comprehensive response plans against a spectrum of biological threats (Outcome 13) and request that this roadmap clarifies how learnings from historical and future exercises, and the Government's response to Covid-19, will be integrated into updated response plans.

## **The value of successful implementation**

Since the publication of the BSS, we have publicly recognised its value to the British people and have assessed its successful implementation to be crucial to addressing biological threats, concluding that all its commitments need adequate resourcing to be commensurate with the risks our nation faces ([Rose et al 2023](#)). In particular, we expect the successful delivery of BSS commitments to confer major economic and security benefits:

- **Safeguarding national security:** The UK is increasingly vulnerable to biological threats, whether these come in the form of another pandemic, a terrorist attack, or antimicrobial resistance. The national security risk of these biological threats is increasing year-on-year due to the complex interplay of factors such as global health, climate change, and increased geopolitical tensions. ([UK Cabinet Office 2023](#)). The BSS is the most comprehensive strategy in the UK to date capable of addressing biological risks and safeguarding our national security.
- **Ensuring economic stability and NHS resilience:** COVID-19 cost the UK an estimated £376 billion and took a substantial toll on the health of our nation ([National Audit Office 2022](#)). There is a reasonable likelihood that another serious pandemic could occur within the next decade ([UK Cabinet Office 2023](#)). The first duty of any

government is to keep the country safe, and guaranteeing the biological security of the UK through full realisation of BSS commitments will protect the UK economy, NHS and British lives.

- **Elevating the UK's science and technology (S&T) industrial base:** Developments in the life sciences, particularly in engineering biology and biotechnology, will drive advances in health, medicine, agriculture, and a range of applications in the UK's burgeoning bioeconomy. The bioeconomy is projected to grow significantly due to advances in these areas, unlocking \$2-4 trillion in annual direct global economic impact next decade ([Department for Science, Innovation and Technology 2021](#)). To leverage future advances and stay competitive, the UK must harness its domestic talent and invest in a way that encourages the responsible innovation outlined in the BSS.

The BSS, if implemented in full, will improve the UK's resilience and preparedness against biological threats. However, the resources necessary for delivering the BSS have not been guaranteed. Given its importance to the UK and British people, BSS funding needs to be prioritised in the next FY24/25 budget and spring spending review with ringfencing for biological security in departments across the government.

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