

# Biological Security Strategy Call for evidence

February 2022

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## Introduction

The COVID-19 pandemic has taught us that effective preparation against biological threats requires a combination of effective risk assessment, planning, generic capabilities to respond to crises and prior experience of any given risk. Learning from COVID-19, we will improve our ability to anticipate and respond to biological threats through effective surveillance, improve our national preparedness and readiness across the whole risk lifecycle, and exploit opportunities presented by these risks<sup>1</sup>.

The UK's Biological Security Strategy<sup>2</sup> published in July 2018, brought together for the first time the work that takes place across Government to protect the UK and our interests from significant biological risks, no matter how these occur and no matter who or what they affect. The 2018 strategy noted that while the likelihood of many of the worst-case biological risks is low, their potential impact is significant. Factors such as globalisation and rapid advances in technology will affect our risk picture.

## Background to this Call for Evidence

Published in March 2021 the Integrated Review of Security, Defence, Development and Foreign Policy (the Integrated Review) set out the vision for the UK's role in the world over the next decade. The Review set out the need to review and reinforce the cross-government approach to biological security, **including a refresh of the 2018 strategy**<sup>3</sup>. As part of this work to refresh the strategy in 2022, the Government will reevaluate the risk landscape and consider the evolving priorities since COVID-19 and in light of rapid advances in science and technology. The COVID-19 pandemic has altered the risk landscape and the UK's response capabilities - in some instances capabilities have been improved (for example, mRNA vaccine technology) which have wider potential applications, and in others we must learn lessons from the current pandemic to build a more effective system for handling these complex biological risks.

This Call for Evidence has been launched to inform a refresh of the Biological Security Strategy review by providing a platform for external input and challenge on the strategy and its delivery. The UK government is consulting with a wide range of stakeholders across and beyond government to inform its development. **Input from technical experts** on this Call for Evidence is encouraged,

<sup>1</sup> HMG Resilience Strategy Call for evidence. GOV.UK. https://www.gov.uk/government/consultations/national-resilience-strategy-call-for-evidence

<sup>3</sup> HMG. (2021). Global Britain in a Competitive Age: The Integrated Review of Security, Defence, development and foreign policy. GOV.UK. Retrieved December 10, 2021, from <a href="https://www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy">https://www.gov.uk/government/publications/global-britain-in-a-competitive-age-the-integrated-review-of-security-defence-development-and-foreign-policy</a>

<sup>&</sup>lt;sup>2</sup> HMG. (2020). CCS's National Risk Register 2020 . GOV.UK. Retrieved December 10, 2021, from <u>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/952959/6.</u> <u>6920\_CO\_CCS\_s\_National\_Risk\_Register\_2020\_11-1-21-FINAL.pdf</u>

including those with a background in biological engineering, biological security, contingency planning, and other related technical fields. Please limit your input to the questions set out below.

This Call for Evidence is distinct from the recently concluded Resilience Strategy Call for Evidence<sup>4</sup>. The Resilience Strategy will set out a new vision and whole-of-society approach for the UK's resilience, providing an overarching strategy for how resilience is maintained and developed across Government. The Biological Security Strategy provides a comprehensive view and system-wide approach to biological risks.

The refreshed Biological Security Strategy will not affect the COVID-19 public inquiry. Once the terms of reference for the public inquiry have been published in draft, Baroness Hallett, the Chair of the COVID-19 inquiry, will take forward a process of public engagement and consultation.

## Scope

The 2018 strategy identifies several significant biological security risks relating to human health, animal and plant health, the environment, accidental release, and deliberate attack. These include:

- a major health crisis (such as pandemic influenza or new infectious disease);
- antimicrobial resistance;
- a deliberate biological attack by state or non-state actors (including terrorists);
- animal and plant diseases, which themselves can pose risks to human health; and
- accidental release and dual-use research of concern

The 2020 National Risk Register (NRR)<sup>5</sup> identified **a major human health crisis** (such as pandemic influenza and non-influenza infectious outbreaks) as one of the most significant civil emergency risks facing the UK (a Level E risk).

Antimicrobial Resistance is also included in the NRR. Lord O'Neill estimated, in his independent review on AMR, that if no action was taken, by 2050, AMR will account for an extra 10 million deaths a year globally.

The NRR assesses that **a deliberate biological (or chemical) attack** against the UK or its Armed Forces, and the proliferation of chemical, biological, radiological and nuclear (CBRN) technology to state and non-state actors, are aspects of this risk picture that may become more likely over the longer term. The UK's counter terrorism strategy, CONTEST, also sets out the importance of preparing for the highest impact terrorist risks, including those using biological agents.

The impacts of major animal and plant diseases are also far-reaching and such outbreaks are

<sup>&</sup>lt;sup>4</sup> HMG Resilience Strategy Call for Evidence 2021. GOV.UK. <u>https://www.gov.uk/government/consultations/national-resilience-strategy-call-for-evidence</u>

<sup>&</sup>lt;sup>5</sup> HMG. (2020). CCS's National Risk Register 2020 . GOV.UK. Retrieved December 10, 2021, from <u>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/952959/6.</u> <u>6920\_CO\_CCS\_s\_National\_Risk\_Register\_2020\_11-1-21-FINAL.pdf</u>

likely to occur naturally as well as inadvertently (Foot and Mouth Disease 2007). Around 60% of all human diseases and 75% of all new and emerging infectious diseases are zoonotic diseases – that is, naturally transmitted from animals to people<sup>6</sup>. **Zoonoses are a major pathway** by which an emerging pathogen could arise. Alongside the continuous management of diseases endemic to the UK there were 22 outbreaks of exotic notifiable animal diseases in the UK between August 2000 and December 2017. These individual outbreaks are estimated to have incurred costs to the Government ranging from £300,000 to more than £3 billion. Plant and animal disease outbreaks can also have significant effects on the environment and on human health.

Accidental release and dual-use research of concern pose considerable risks to the UK such as those experienced when smallpox and Foot and Mouth diseases escaped from insecure labs<sup>7</sup>. The WHO assesses that dual-use research, where life science research is capable of being misapplied to do harm, has substantially increased in the past two decades<sup>8</sup>, and that there are large gaps in international oversight mechanisms for dual-use research.

## Questions

### **Question 1**

What are the key biological security opportunities, challenges, threats and vulnerabilities facing theUK:

a. now?

### <u>Avian flu</u>

The avian flu pandemic (bird flu) continues to effect farmers, posing a zoonotic risk of infecting humans as well as large numbers of livestock and domesticated birds. The winter of 2021 saw the largest ever outbreak of diagnosed cases of H5N1 avian influenza in the UK.<sup>1</sup> Although the risk of transmission of bird flu to humans is rare, particularly in the UK (due to the UK's current biosecurity measures), there have been cases of human infection, including recently in January 2022.<sup>2</sup>

Future outbreaks combined with suboptimal vaccination rates and a reduced healthcare workforce

As COVID-19 exemplified, future outbreaks can lead to pandemics with catastrophic consequences. The UK has already witnessed successful eradication rates of diseases including tuberculosis (TB) and polio due to the scientific discoveries of their relevant vaccines.

To illustrate their impact, the World Health Organization had previously declared that the UK eliminated highly infectious measles in 2017 thanks in large part to the measles vaccination. Likewise, the measles vaccination resulted in a 73% drop in deaths between 2000 – 2018 globally.<sup>3</sup> However, the UK's elimination status was revoked in 2018 due increasing cases of measles linked to reduced uptake in people receiving both doses of the vaccine. In order to achieve herd immunity and protect those who cannot receive the vaccine, 95% of the

<sup>&</sup>lt;sup>1</sup> Department for Environment, Food & Rural Affairs and Animal and Plant Health Agency, "Bird flu- Latest situation: Chief Vet warns poultry keepers against complacency or risk losing flocks to bird flu," 3 November 2021. <u>https://www.gov.uk/government/news/bird-flu-latest-situation-avian-influenza-prevention-zone-declared-across-great-britain</u>.

<sup>&</sup>lt;sup>2</sup> UK Health Security Agency, "Human case of avian flu detected in UK," 6 January 2022. https://www.gov.uk/government/news/human-case-of-avian-flu-detected-in-uk.

<sup>&</sup>lt;sup>3</sup> World Health Organization. <u>https://www.who.int/news-room/fact-sheets/detail/measles</u>.

population needs to be fully vaccinated (having received both doses).<sup>4</sup>

In addition to concerns around vaccination rates, 1 in 10 nursing jobs and 1 in 17 doctors' positions in NHS health services are currently unfilled due to staffing shortages because of burnout from increased pressure and heavy workloads during the COVID-19 pandemic.<sup>5</sup> This poses a substantial threat to patient care, treatment times, and the UK's ability to manage future outbreaks, such as flu or COVID variants.

Vaccine uptake is historically lower for minority and lower income populations leaving these groups at a higher risk of infection. Though there are various reasons for this trend, a large contributor is a lack of trust in the medical field due to historic lack of transparency, treatments that ignore or are not designed with ethnic backgrounds in mind, clinical trials that have disproportionately excluded underrepresented ethnic groups, and immoral experimentation.<sup>6</sup> It is vital that future vaccinations are accompanied by sufficient and tailored communication campaigns that address these vulnerable groups to encourage uptake.

#### b. in five years?

#### Food security and gene editing

Wheat, barley, oats, and rapeseed oil comprise the most produced crops in the UK, accounting for 50% of the UK's croppable area.<sup>7, 8</sup> However, these crop yields, which are staple foods for not just the UK but globally, are highly vulnerable to disease. Wheat is susceptible to 31 pest and pathogens caused by fungi, viruses, and bacteria.<sup>9</sup> In addition, the effects of climate change, such as severe droughts or unseasonably wet periods, threaten to destroy harvests or even increasingly disperse diseases and alien species. Climate change and habitat destruction also risk losing wild relatives of crops which could be used as alternative food sources or for breeding. This loss of biodiversity means we will be dependent on a select few genotypes.

Although food security faces many threats, there are opportunities with new innovations in gene editing and genetically modified (GM) bacteria to protect crops. Gene editing is already proving invaluable for wheat production with, for example, the John Innes Centre using it to identify the key gene in wheat that is responsible for the preservation of 50% yield.<sup>10</sup> Researchers are hoping to harness this discovery to produce wheat that is more disease resistant and heat resilience. Likewise, researchers in Imperial College London, University of Edinburgh's Roslin Institute, and the University of London have harnessed this technology to edit the DNA in chicken cells to prevent bird flu from replicating in the chicken's cells.<sup>11</sup>

<sup>&</sup>lt;sup>4</sup> UK Health Security Agency, "Measles in England," 19 August 2019. https://ukhsa.blog.gov.uk/2019/08/19/measles-in-england/.

<sup>&</sup>lt;sup>5</sup> Campbell, Denis, *The Guardian*, "Staffing crisis deepens in NHS England with 110,000 posts unfilled." 3 March 2022. <u>https://www.theguardian.com/society/2022/mar/03/staffing-crisis-deepens-in-nhs-england-with-110000-posts-unfilled</u>.

<sup>&</sup>lt;sup>6</sup> NHS, Vaccination: race and religion/belief, February 2021. <u>https://www.england.nhs.uk/south-east/wp-</u> content/uploads/sites/45/2021/05/Vaccination-and-race-religion-and-belief-A4.pdf.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/747210/struct ure-jun2018prov-UK-11oct18.pdf.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/1056618/AUK 2020\_22feb22.pdf.

<sup>&</sup>lt;sup>9</sup>Simón María Rosa, Börner Andreas, and Struik Paul C., "Editorial: Fungal Wheat Diseases: Etiology, Breeding, and Integrated Management," Frontiers in Plant Science, Vol 12, 2021. <u>https://www.frontiersin.org/articles/10.3389/fpls.2021.671060/full</u>.

<sup>&</sup>lt;sup>10</sup> John Innes Centre, "Gene-editing discovery yields high promise for wheat fertility in a changing climate," 8 November 20221. <u>https://www.jic.ac.uk/press-release/gene-editing-discovery-yields-high-promise-for-wheat-fertility-in-a-changing-climate/</u>.

<sup>&</sup>lt;sup>11</sup> Lee, Bruce Y., Forbes, "Can Gene Editing Stop The Bird Flu? Here Is The Latest With Chickens," 5 June 2019. <u>https://www.forbes.com/sites/brucelee/2019/06/05/can-gene-editing-stop-the-bird-flu-here-is-the-latest-with-chickens/?sh=16b539d12193</u>.

Gene editing has great potential to enable farmers to produce more crops and protect livestock. This innovation will also enable farmers to reduce their reliance on pesticides that are harmful to the environment and use of antibiotics that contribute to the spread of antimicrobial resistance. However, this opportunity will only be possible if the UK continues to apply a pragmatic approach to the research and use of gene editing. DEFRA's new changes to legislation around genetic technologies is a welcome first step for supporting this research field.<sup>12</sup>

### c. in 10 years?

#### Antimicrobial Resistance (AMR)

Antimicrobial Resistance (AMR) poses a significant challenge now, in 5 years, and in 10 years. As SfAM's Impact of COVID-19 on AMR report found, COVID-19 has resulted in increased antibiotic prescribing and disruption to stewardship activities due to reduced microbiology testing capacity and access to laboratories, disruptions to research, increased reliance on telemedicine, and increased use of biocides in domestic cleaning and hand sanitizers.<sup>13</sup>

In addition, our understanding of AMR in the environment remains woefully low. The environment plays a significant role in the development and dissemination of AMR and is thus a key component of the Interagency Coordination Group (IACG) on Antimicrobial Resistance's One Health Approach to tackling AMR.<sup>14</sup> However, there is no current statutory policy in place in the UK dedicated to measuring, monitoring, or controlling the spread of AMR in the environment. Efforts to reduce AMR's spread in animals and humans will be wasted if the environmental component is not better evaluated, mitigated, and incorporated into the UK's AMR policies.

#### Climate change's effect on spreading diseases

The effects of climate change, such as flooding, droughts, and changes in water salinity and temperature, enable diseases to grow and spread to new areas. This poses a threat to crops that lack resistance to these new diseases or livestock that have no prior exposure to pests.

Moreover, these effects enable the spread of vector-borne diseases to new areas. Vectorborne diseases are infectious pathogens that have been transmitted to humans by vectors (e.g. bloodsucking insects such as ticks and mosquitos). More than 17% of all infectious diseases are vector-borne with examples such as malaria resulting in 400,000 deaths annually.<sup>15</sup>

Fungal diseases, such as Mucormycosis known as the "black fungus" infection amongst COVID-19 patients in India, are also at risk of spreading due to climate change. This is particularly concerning as no vaccines are currently available for fungal pathogens.

### Food production and soil degradation

While we have listed resilient crops under 5 years, food production will also be effected by the consequences of climate change and soil degradation. With the Food and Agriculture Organisation (FAO) estimating that the world will need to produce 60% more food to feed a growing world population of 9.3 billion by 2050, it is vital that the UK adapt more resilient and

<sup>&</sup>lt;sup>12</sup> DEFRA, "New powers granted to research gene editing in plants,", 20 January 2022.

https://www.gov.uk/government/news/new-powers-granted-to-research-gene-editing-in-plants.

<sup>&</sup>lt;sup>13</sup> Society for Applied Microbiology, AMR case study: the impact of COVID-19, May 2021. <u>https://sfam.org.uk/asset/65F4EF3E-7AE8-406D-AE0E66D800ED6E93/</u>.

<sup>&</sup>lt;sup>14</sup> United Nations Environment Programme, Antimicrobial Resistance: a global threat, 2022. <u>https://www.unep.org/explore-topics/chemicals-waste/what-we-do/emerging-issues/antimicrobial-resistance-global-</u>

threat#:~:text=AMR%20represents%20a%20major%20global,important%20reservoir%20of%20antimicrobial%2 Oresistance.

<sup>&</sup>lt;sup>15</sup> World Health Organisation, "Vector-borne diseases,"2 March 2020. <u>https://www.who.int/news-room/fact-</u> <u>sheets/detail/vector-borne-diseases</u>.

environmentally friendly agricultural practices.<sup>16</sup> Already the total harvested production of wheat in 2020 decreased by 40%, the smallest UK wheat harvest since 1981, due to extreme weather conditions.<sup>17</sup>

Likewise, soil degradation, whereby soil loses its capacity to support animals and plants, is a concern for biodiversity loss, food production, carbon storage and water regulation. Soil plays a significant role in many life cycles and ecosystems including carbon cycles, producing minerals, cleaning water, preventing flooding, and supporting plant and animal life.<sup>18</sup> Soil also has great potential for future drug discovery as exemplified by the antibiotic penicillin, which is derived from the soil fungus, Penicillium. However, intensive farming practices, including overgrazing and intensive cultivation, have sped up soil degradation threatening these vital processes.

### Question 2

How can the UK capitalise on the identified opportunities?

## a. What are the key global, regional and domestic trends affecting UK biological security out to 2030?

Both globally and domestically, antimicrobial resistance (AMR) is an increasing threat to the UK's biological security. Currently, it is estimated that at least 1.27 million people died in 2019 due to bacterial AMR.<sup>19</sup> This number is projected to increase to 10million deaths annually by 2050.<sup>20</sup> As previously mentioned in our response to Question 1, the disruptions to antimicrobial stewardship and research due to COVID-19 has exacerbated AMR's spread.

b. How should the Government prioritise its efforts to identify and respond to these?

<sup>7</sup> HMG. (2008). Foot and mouth disease 2007: a review and lessons learned. GOV.UK. https://www.gov.uk/government/publications/foot-and-mouth-disease-2007-a-review-and-lessons-learned; HMG. (1980). Report of the investigation into the cause of the 1978 Birmingham smallpox occurrence. GOV.UK. <u>https://www.gov.uk/government/publications/report-of-the-investigation-into-the-cause-of-the-1978-birmingham-smallpox-occurrence</u>

<sup>8</sup> WHO. (2021). Emerging technologies and dual-use concerns: a horizon scan for global public health. Retrieved 6 January, 2022 from <u>https://www.who.int/publications/i/item/9789240036161</u>

<sup>&</sup>lt;sup>6</sup> UN Environment Programme (2020). Preventing the next pandemic - Zoonotic diseases and how to break the chain of transmission. Retrieved January 10, 2022, from: <u>https://www.unep.org/resources/report/preventing-future-zoonotic-disease-outbreaks-protecting-</u> environment-animals-and

<sup>&</sup>lt;sup>16</sup> Graziano Da Silva, José, United Nations Chronicle, "Feeding the World Sustainably." <u>https://www.un.org/en/chronicle/article/feeding-world-sustainably</u>.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/1056618/AUK 2020\_22feb22.pdf.

<sup>&</sup>lt;sup>18</sup> Begum Tammana, Soil degradation: the problems and how to fix them. Natural History Museum 16 April 2021. <u>https://www.nhm.ac.uk/discover/soil-</u>

degradation.html#:~:text='When%20soil%20degrades%2C%20the%20processes,as%20floods%20and%20mas s%20migration.

<sup>&</sup>lt;sup>19</sup> Murray Christopher JL, Ikuta Kevin Shunji, *et al.* Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *The Lancet* 12 February, 2022; 399 (10325), 629-655.

https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02724-0/fulltext.

<sup>&</sup>lt;sup>20</sup> UN Ad hoc Interagency Coordingating Group on Antimicrobial Resistance. April 2019. <u>https://www.who.int/news/item/29-04-2019-new-report-calls-for-urgent-action-to-avert-antimicrobial-resistance-crisis</u>.

c. How do new mitigations which emerged through the COVID-19 pandemic (such as mRNA vaccines) alter the risk landscape?

### d. How might surveillance tools<sup>9</sup> and capabilities enhance our resilience to natural hazards andmalicious biological threats?

Both the UK's 20-year vision and 2019 One Health Report found that 'There is no structural, statutory surveillance dedicated to assessing the level of AMR in the environment in the UK.' <sup>21, 22</sup> SfAM's 2021 AMR in the environment case study argues that more routine and consistent surveillance and research of AMR in the environment is essential for combatting its spread.<sup>23</sup>

Currently, there are significant knowledge gaps around AMR in the environment that surveillance could fill thus preventing and reducing the spread of AMR. Those gaps include identifying the different drivers of AMR in the environment, understanding the role of the environment in AMR's evolution and dissemination, and determining the feasibility and success rates of various mitigation measures for containing AMR's spread in the environment.

With climate change increasing global temperature and extreme weather events, conditions which favor bacterial growth, AMR will likely evolve and disperse. Without sufficient research, scientists cannot identify and implement successful solutions for containing AMR in the environment.

### e. Are there successful examples of surveillance and/or wider approaches and capabilities for mitigating biological risks in other countries that we can learn from?

The World Health Organisation's (WHO) Expanded Programme on Immunization created in 1974 has been the most successful health intervention in the world by providing centrally funded vaccines globally. In 2020, the programme inoculated 83% of infants worldwide with the diphtheria-tetanus-pertussis (DTP3) vaccine.<sup>24</sup>

# f. What further steps should the UK take to maximise our resilience to and preparedness for natural hazards, accidental release, malicious biological threats, and emerging zoonotic pathogens?

Increased support for research and collaboration across the UK is vital for identifying future threats and solutions to current ones. As previously mentioned in response to Question 2D, the UK needs routine and consistent surveillance of antimicrobial resistance in the environment to better understand its development and dissemination.<sup>25</sup> Once sufficient monitoring is in place, the UK's AMR action plans should identify specific targets for controlling and reducing the release of contaminants at risk of inducing AMR into the environment.

### g. What role would health systems overseas (including in Low and Middle Income Countries) and their resilience play?

Antimicrobial resistance is a global health problem with no boundaries. It is therefore crucial

<sup>23</sup> Society for Applied Microbiology's AMR in the environment case study, 2021. https://sfam.org.uk/resource/amr-case-study--amr-in-the-environment.html.

https://sfam.org.uk/resource/amr-case-study--amr-in-the-environment.html.

<sup>&</sup>lt;sup>21</sup> HM Government. UK One Health Report: Joint report on antibiotic use and antibiotic resistance, 2013 – 2017. <u>https://www.gov.uk/government/publications/uk-one-health-report-antibiotic-use-and-antibiotic-resistance-in-animals-and-humans</u>.

<sup>&</sup>lt;sup>22</sup> UK Department of Health and Social Care. UK 20-year vision for antimicrobial resistance, 24 January 2019. <u>https://www.gov.uk/government/publications/uk-20-year-vision-for-antimicrobial-resistance</u>.

<sup>&</sup>lt;sup>24</sup> World Health Organisation, Immunization coverage, 15 July 2021. <u>https://www.who.int/news-room/fact-sheets/detail/immunization-</u>

coverage#:~:text=During%202020%2C%20about%2083%25%20of,and%20disability%20or%20be%20fatal.

<sup>&</sup>lt;sup>25</sup> Society for Applied Microbiology's AMR in the environment case study, 2021.

that overseas health systems have sufficient stewardship measures in place for controlling its spread, including reducing antibiotic prescriptions for both animal and human health and containing the release of containments into the environment. More coordinated global monitoring systems could help to identify outbreaks and sources of AMR.

Likewise, global vaccine roll it is imperative for public safety both home and abroad. Failing to vaccinate low- and middle-income countries leaves those nationals at risk and jeopardizes vaccination progress in the UK. Without sufficient vaccination roll out, everyone will be at risk of new viral variants. As the saying goes, no one is safe until everyone is safe.

h. Should research and laboratory standards, safety and security play more of a role (domestic and international), and what else should we be doing?

### Question 3

26

What lessons can we learn from the UK's biological security delivery since 2018, including but not limited to COVID-19?

## a. Which are the key successes we should look to develop and build on, and where are areas for development?

The UK should continue to develop and protect its ability to successfully develop vaccines at rapid pace as it did with COVID-19. In line with the Government's 2021 consultation on research bureaucracy, reducing research funding bureaucracy, including reducing unnecessary reporting, monitoring, application processes, and providing more flexibility, is a key component for the success of future research as evidenced by the quick allocation of funding and support that enabled the development of COVID-19 vaccines.<sup>26</sup>

### b. How can the future development and delivery of the strategy be improved by adjustments toUK systems, capabilities and the UK life sciences industry?

The UK's testing capacity is vital for the future of the UK's biological security strategy. The UK's limited testing capacity and supplies during COVID posed a significant challenge to the research community which depends on this evidence collection for understanding the nature of a virus. This then informs modelling, containment strategies, and the development of vaccines and therapeutics.<sup>27</sup> Any isolation strategy will only be as good as the underlying testing.

Likewise, ensuring access to personal protective equipment (PPE) in all UK healthcare settings is crucial for protecting those on the frontlines. Investing in vaccine research and manufacturing facilities in the UK now will be vital for the UK's future outbreak management.

- c. Should the UK have a single accountable role or body responsible for meeting the full range of biological threats?
- d. What can we learn from other countries' biological security practises and experiences?
- e. How should the UK engage with, support or influence, existing multilateral and other international collaborative efforts towards biological security to improve the impact of our strategy?

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file/1046070/independent-review-of-research-bureaucracy-interim-report.pdf.

<sup>&</sup>lt;sup>27</sup> Society for Applied Microbiology, SfAM response to HoC Science and Technology Committee UK Science Capability and Influence in Global Outbreaks, July 2020. <u>https://sfam.org.uk/resource/sfam-response-to-sci-com-uk-science-influence-global-outbreaks.html</u>.

### Question 4

How should progress be monitored and evaluated, and how often should the strategy be refreshed?

- a. Are there successful approaches in other countries that we can learn from?
- b. How should UK collaborations, investments, and interventions be designed to assure the development and delivery of the strategy?

<sup>&</sup>lt;sup>9</sup> As defined in the World Health Organization's 2021 'Draft Genomic Surveillance Strategy': 'genomic data for pathogens with pandemic and epidemic potential (sic) inform risk assessments and can support development of vaccines, therapeutics, diagnostic assays, and decisions on public health social measures'. Retrieved 10 January, 2022 from <a href="https://www.who.int/news-room/events/detail/2021/12/08/default-calendar/who-consultation-on-the-global-genomic-surveillance-strategy-for-pathogens-with-pandemic-and-epidemic-potential">https://www.who.int/news-room/events/detail/2021/12/08/default-calendar/who-consultation-on-the-global-genomic-surveillance-strategy-for-pathogens-with-pandemic-and-epidemic-potential</a>

## **Response details**

Submissions of evidence from all interested parties are invited as part of the Government's process to inform the current biological security risk landscape. You should note that any positions expressed do not necessarily represent current or future UK policy.

The deadline for responses to the call for evidence is 29 March 2022. Please note the following:

- Unless confidentiality is specifically requested, each representation could be made public.
- Please provide your response in a word document, and specify which question is being addressed.
- Early responses are encouraged where possible.

### **Further information**

Information provided in response to this call for evidence, including personal information, may be published or disclosed in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the UK General Data Protection Regulations (GDPR), and the Environmental Information Regulations 2004).

If you want the information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence. In light of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential.

If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding.

We will process your personal data in accordance with the Data Protection Act 2018. For more information, please see the <u>Privacy Notice</u>.