

**Written Evidence Submitted by Emergent BioSolutions Inc.**  
**(C190058)**

1. This evidence is provided by Emergent BioSolutions Inc. (Emergent), whose mission is to protect and enhance life by focusing on providing specialty products, including medical countermeasures, for civilian and military populations that address accidental, deliberate, and naturally occurring public health threats. Emergent has a long-standing history of partnering with the United States and international governments to support the development of preparedness strategies and stockpiles of medical countermeasures.
2. This response addresses Paragraph 7 of the Science and Technology Committee's (Committee) Terms of Reference – *the UK's readiness for future outbreaks, including a consideration of the National Risk<sup>1</sup>, the UK Pandemic Influenza Strategy<sup>2</sup> and PHE's Global Health and Infectious Diseases Strategy<sup>3</sup>*. This evidence does not specifically address the capacity and capability of the UK research base to develop and supply vaccines and therapeutics.
3. However, Emergent has significant experience as a long-term strategic partner to the U.S. government. Emergent is providing a broad range of support to the U.S. government and other entities as they respond to the COVID-19 pandemic. For example, Emergent has partnered with AstraZeneca to provide contract development and manufacture (CDMO) services for the Oxford COVID-19 vaccine candidate. Similarly, Emergent is also collaborating with Janssen Pharmaceutical Companies of Johnson & Johnson to support the manufacturing of its lead investigational COVID-19 candidate.
4. In making this submission, Emergent's aim is to provide the Committee with an international comparison against which the Committee may be able to consider the UK's strategic preparedness for global disease outbreaks, and specifically its approach to the stockpiling of medical countermeasures.

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<sup>1</sup> UK National Risk Register 2017 Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/644968/UK\\_National\\_Risk\\_Register\\_2017.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644968/UK_National_Risk_Register_2017.pdf)

<sup>2</sup> UK Influenza Pandemic Preparedness Strategy 2011 Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/213717/dh\\_131040.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/213717/dh_131040.pdf)

<sup>3</sup> PHE's Global Health and Infectious Diseases Strategy Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/831439/PHE\\_Infectious\\_Diseases\\_Strategy\\_2020-2025.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831439/PHE_Infectious_Diseases_Strategy_2020-2025.pdf)

## Readiness for Future Outbreaks

5. The UK's 2017 National Risk Register had identified both Pandemic Influenza and Emerging Infectious Diseases (EID) as representing significant risk to the UK. The emergence of COVID-19, however, has made it clear that the impact of such EIDs has been underestimated.<sup>4</sup> Since 2017, a number of international organisations have highlighted the growing risk posed by public health threats, whether naturally occurring, accidental, or deliberate. They have also articulated some significant concerns over strategic preparedness to respond to these threats. In January 2019, for example, the World Economic Forum (WEF) published its annual Global Risk Report, stating:
6. *"Changes in how we live have increased the risk of a devastating outbreak occurring naturally, while emerging technologies make it increasingly easy for new biological threats to be manufactured and released—either deliberately or by accident. The world is badly under-prepared for even modest biological threats. We are vulnerable to potentially huge impacts on individual lives, societal well-being, economic activity and national security."*<sup>5</sup>
7. In identifying how biological risks are evolving both in nature and in laboratories, the WEF's report should have sounded a clarion alarm, highlighting the potential cost of a global pandemic together with global preparedness gaps. Gaps identified by the WEF included: under-funding of vaccine development; weaknesses of basic preparedness in individual countries; and poor global governance. Despite this report most nations found themselves unprepared.
8. In October 2019, the Global Health Security Index published its first report. The opening paragraph is striking in light of COVID-19:
9. *"Biological threats—natural, intentional, or accidental—in any country can pose risks to global health, international security, and the worldwide economy. Because infectious diseases know no borders, all countries must prioritize and exercise the capabilities required to prevent, detect, and rapidly respond to public health emergencies. Every country also must be transparent about its capabilities to assure neighbors it can stop an outbreak from becoming an international catastrophe. In turn, global leaders and international organizations bear a collective responsibility for developing and maintaining robust global capability to counter infectious disease threats. This capability includes ensuring that financing is available to fill gaps in epidemic and pandemic preparedness. These steps will save lives and achieve a safer and more secure world."*<sup>6</sup>
10. The report's overall finding is that *"National health security is fundamentally weak around the world. No country is fully prepared for epidemics or pandemics, and every country has important gaps to address."*
11. COVID-19 is a clear manifestation of the global risks from a naturally occurring infectious disease pandemic. And whilst it is not possible to be prepared for all novel diseases, there are a number of high-risk public health threats beyond pandemic influenza where it is possible to increase the

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<sup>4</sup> In 2017, the National Risk Register had estimated that "up to 100 fatalities" could result from the UK experiencing an EID. At the time of submission and subject to review, over 45,000 deaths have been recorded in the UK as a result of COVID 19. (UK Government, 2017, *National Risk Register of Civil Emergencies*, p. 34).

<sup>5</sup> World Economic Forum, *The Global Risk Report, 2019*, pp 45-46. Available at <https://www.weforum.org/reports/the-global-risks-report-2019>.

<sup>6</sup> NTI / Johns Hopkins Centre for Health Security, *Global Health Security Index, 2019*, p5. Available at <https://www.ghsindex.org/report-model/>.

UK's strategic preparedness. The World Health Organisation's (WHO) Priority Disease list identifies some of the most significant threats. This includes "Disease X," which "*represents the knowledge that a serious international epidemic could be caused by a pathogen currently unknown to cause human disease.*"<sup>7</sup> The WHO suggests that it is important to prepare for "Disease X" as far as possible. COVID-19 could arguably be considered an example of the definition for "Disease X".

12. The European Medical Agency (EMA) categorises biological agents into three categories: major infectious diseases for which treatment exists; other bacterial infections for which treatment exists; and biological agents for which currently no specific treatment can be recommended.<sup>8</sup> The U.S. Centers for Disease Control & Prevention (CDC) categorize threats slightly differently, based on the relative risks of mortality, public health impacts, and social disruption.<sup>9</sup> But both agencies categorize anthrax, botulism, plague, and smallpox, amongst the biological agents that are of high priority in relation to public health threats, and for which vaccines and/or therapeutics exist.
13. One of the enduring questions resulting from COVID-19 relates to the confidence that the public has in relation to the strategic preparedness of governments across the world to respond to EIDs, including the maintenance of appropriately resourced national stockpiles of medical countermeasures. Within the U.S. Department of Health and Human Sciences (HHS), the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) "*coordinates Federal efforts to enhance chemical, biological, radiological and nuclear threats (CBRN) and emerging infectious diseases (EID) preparedness from a medical countermeasure (MC) perspective.*"<sup>10</sup>
14. Working collaboratively with the Biomedical Advanced Research and Development Authority (BARDA), the CDC, and the U.S. Food and Drug Administration (FDA), PHEMCE oversees a sophisticated multi-year programme to optimise US strategic preparedness, including the development of long-term strategic partnerships with academia and industry to advance national preparedness. Accountable to the American people, PHEMCE's Multi-Year Budget is an unclassified and published report that details PHEMCE's priorities, including the detailed investment that is programmed for the Strategic National Stockpile of medical countermeasures.<sup>11</sup>
15. Public Health England's (PHE) Infectious Diseases Strategy 2020–2025<sup>12</sup> details how PHE plans to prevent, detect, respond to, and reduce the impact of infectious diseases. Within its Core Function of Prepare and Respond, PHE has identified a strategic priority to "*Strengthen our*

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<sup>7</sup> World Health Org., R&D Blueprint: List of Blueprint Priority Diseases. Available at <http://origin.who.int/blueprint/priority-diseases/en/>.

<sup>8</sup> Euro. Med. Agency, Human Regulatory: Biological and Chemical Threats. Available at <https://www.ema.europa.eu/en/human-regulatory/overview/public-health-threats/biological-chemical-threats>.

<sup>9</sup> Ctrs. for Disease Control & Prevention, Emergency Preparedness and Response: Bioterrorism Agents/Disease. Available at <https://emergency.cdc.gov/agent/agentlist-category.asp>.

<sup>10</sup> U.S. Dep't of Health & Human Servs., Public Health Emergency Medical Countermeasures Enterprise, 2020. Available at <https://www.phe.gov/Preparedness/mcm/phemce/Pages/default.aspx>.

<sup>11</sup> U.S. Department of Health and Human Services, Public Health Emergency Medical Countermeasures Enterprise, Multiyear Budget, Fiscal Years 2017-2021 Available at <https://www.phe.gov/Preparedness/mcm/phemce/Documents/phemce-myb-2017-21.pdf>.

<sup>12</sup> PHE's Global Health and Infectious Diseases Strategy Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/831439/PHE\\_Infectious\\_Diseases\\_Strategy\\_2020-2025.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831439/PHE_Infectious_Diseases_Strategy_2020-2025.pdf)

*response to major incidents and emergencies, including pandemic influenza*". This details the priority actions that PHE will take over the 5-year timeframe. However, resourcing and maintaining an appropriate national stockpile of medical countermeasures is not listed as a strategic priority.

16. Given this observation, and in light of the UK's experience with COVID-19, the Committee may wish to consider whether the UK's national stockpile of medical countermeasures is appropriately resourced to protect the population against a broad range of biological and chemical threats, including plans to replenish outdated stocks. The Committee may also wish to consider whether greater transparency of the UK national stockpile would afford greater assurance towards the UK's readiness for future outbreaks.

***(July 2020)***