



COUNCIL FOR  
SCIENCE AND  
TECHNOLOGY

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Prime Minister  
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*Sent by email only*

9 May 2024

*Dear Prime Minister*

## **ADDRESSING THE GLOBAL BURDEN OF ANTIMICROBIAL RESISTANCE**

We were delighted to meet with Dame Sally Davies, your Global Special Envoy for Antimicrobial Resistance, and separately with the US President's Council of Advisors on Science and Technology, in March, to discuss the international action needed to address global challenges. Part of our discussions focused on how the UK and US could strengthen collaboration with international partners to tackle the interconnected risks posed by climate change, pandemics, and antimicrobial resistance (AMR).

AMR is one of the most critical health challenges of our time and could have an impact far greater than COVID-19. The emergence and spread of superbugs that do not respond to treatments impacts global public health, animal health, food security, the economy, and sustainable development. In 2019, 1.27 million deaths were directly attributed to AMR<sup>1</sup>, and if left uncontrolled, AMR-related global deaths are predicted to rise to 10 million per year and cost the global economy \$100 trillion by 2050.<sup>2</sup> The annual cost of AMR to the NHS is already estimated to be £180m<sup>3</sup> and urgent action is needed to reduce further burden on our public services.

We welcome the UK government's domestic strategy to address AMR<sup>4</sup>, and leadership in funding global AMR initiatives, such as the recent expansion to the Fleming Fund that tackles AMR in low- and middle-income countries (LMICs). However, combatting AMR will require greater and sustained national and international action.

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<sup>1</sup> Murray, C.J.L. et al. (2022). Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *The Lancet*, 399, 629-655. Available at: [https://doi.org/10.1016/S0140-6736\(21\)02724-0](https://doi.org/10.1016/S0140-6736(21)02724-0).

<sup>2</sup> O'Neill, J. (2016). Tackling Drug-Resistant Infections Globally: Final Report and Recommendations. Available at: [https://amr-review.org/sites/default/files/160525\\_Final%20paper\\_with%20cover.pdf](https://amr-review.org/sites/default/files/160525_Final%20paper_with%20cover.pdf).

<sup>3</sup> House of Commons Health and Social Care Committee (2018). Oral evidence: Antimicrobial resistance, HC 962. Available at: <https://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/health-and-social-care-committee/antimicrobial-resistance/oral/88745.html>.

<sup>4</sup> Department for Health and Social Care (2024). UK 5-year action plan for antimicrobial resistance 2024 to 2029. Available at: <https://www.gov.uk/government/publications/uk-5-year-action-plan-for-antimicrobial-resistance-2024-to-2029>.

In September, the United Nations General Assembly High Level Meeting (HLM) will be an opportunity to commit the world to new practical steps to address the AMR emergency. As the UK prepares for the HLM, we are writing to recommend five areas for the UK government to prioritise:

- 1. Strengthening international coordination on AMR.** The effectiveness and coordination between existing global institutions will need to improve to appropriately manage AMR. **We recommend that the UK government continues to work with like-minded partners to encourage greater UN focus and coordination on evidence-based approaches to combatting AMR.** The UK government will need to consider competing international priorities and potential policy trade-offs in reaching an international agreement on addressing AMR. This includes supporting appropriately tailored targets for LMICs and supporting LMICs in accessing funding to develop national action plans.

We also support Dame Sally and your Ministers' advocacy **for an independent scientific panel on AMR – modelled on the Intergovernmental Panel on Climate Change – to advise on future AMR targets and best practice.** This panel could improve international monitoring, reporting and governance based on the latest scientific evidence on the scale and rate of change of AMR. We will continue to share our expertise on opportunities to strengthen international coordination, including through our partnerships with international science and technology councils.

- 2. Incentivising antimicrobial R&D for new treatments.** Different factors including market failure and a lack of innovation have contributed to a major gap in the discovery of new antimicrobials. We support the UK's leadership in incentivising R&D for new antimicrobials, including through the Antimicrobial Products Subscription Model pilot by NHS England and NICE,<sup>5</sup> and your previous engagement with G7 Ministers to encourage other G7 economies to implement similar models.<sup>6</sup> The UK government should now build on this success and continue work with international partners to accelerate the development of market incentives to support pharmaceutical companies in antimicrobial drug development, approval, and implementation. This could include novel approaches around tiered pricing, voluntary licencing, improving local manufacturing capacity, and use of innovative procurement strategies. **We encourage you to champion this through the G7 Leaders, and in the Finance and Health tracks.**

In addition, we strongly encourage the UK to take a lead on helping LMICs to have greater access to antimicrobial drugs. Vital to this agenda is the reform of the international financial system and the World Bank. **The UK government should champion the need for international AMR financing through the replenishment of the International Development Association.**

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<sup>5</sup> The National Institute for Health and Care Excellence. Models for the evaluation and purchase of antimicrobials. Available at: <https://www.nice.org.uk/about/what-we-do/life-sciences/nice-advice-service/models-for-the-evaluation-and-purchase-of-antimicrobials>.

<sup>6</sup> HM Treasury (2021). G7 Finance Ministers' Statement on Actions to Support Antibiotic Development. Available at: <https://www.gov.uk/government/publications/g7-finance-ministers-statement-on-actions-to-support-antibiotic-development>.

3. **Investing in diagnostics.** While the UK's diagnostic capabilities expanded significantly during the COVID-19 pandemic, the UK's diagnostic capability needs to be agreed upon and resourced for the long-term. The current diagnostics system is disjointed and complex, with decision-making in the UK more disparate and slower than in some other countries.<sup>7</sup> **The UK government should address ongoing challenges facing the diagnostics sector, including the route to adoption in the NHS, reimbursement models, regulatory pathways, as well as current workforce and manufacturing and supply chains in the UK.** There are opportunities to accelerate the adoption of innovations generated by both SMEs and global companies by the NHS and improve incentives for industry to develop new diagnostic technologies.<sup>8</sup>
4. **Developing skills and building capacity.** There is a significant shortage of infectious disease specialists and microbiologists in the UK.<sup>9</sup> The UK government **should strengthen the UK's capability to tackle AMR by investing in career pathways in academia, industry, and the NHS.** Public-private-charitable funding consortia could play a role in reinvigorating translational microbiology, as was seen in clinical pharmacology and drug discovery, through apprenticeship schemes, fellowships in partnership with industry, and public-private alliances focused on drug development.<sup>10,11</sup> This should be coupled with stronger coordination between research councils, with more shared projects and funding on AMR and translational microbiology, to address the issue of fragmented funding for AMR research.
5. **Increasing public engagement.** We welcome the UK government's efforts to increase public awareness and engagement on AMR in the lead up to the HLM. Public engagement is crucial to help encourage behaviour change among society and healthcare professionals. Continued, long-term efforts on public engagement will be needed to ensure the responsible use of antimicrobials. This includes tailoring our national curriculum to improve education on the appropriate use of antibiotics from a young age.

Finally, we make an observation on the current UK machinery of government in respect of AMR, particularly the artificial siloes between government departments. AMR is a multisectoral issue; it requires development, foreign policy, health, agricultural and financial solutions. **A combined HMG Joint Unit with a single accountable senior civil servant could create a model for smarter, more effective civil service working.**

We thank Dame Sally Davies for her leadership and encourage you to indicate your support for the HLM with your international counterparts. We would be delighted to discuss this topic in more detail with you and your Ministerial colleagues.

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<sup>7</sup> Association of British HealthTech Industries (2020). Diagnostics: A Future Roadmap. Available at: <https://www.abhi.org.uk/media/2768/diagnostics-a-future-roadmap.pdf>.

<sup>8</sup> The Academy of Medical Sciences (2021). Diagnostics: Building capacity and capability in the UK [conference report]

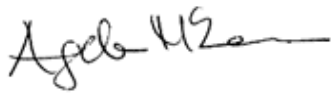
<sup>9</sup> Lawrence, S. et al. (2022). The State of Hospital Infection Services in the UK: National Workforce Survey 2021. *Clinical Infection in Practice*, 15, 100151. <https://doi.org/10.1016/j.clinpr.2022.100151>.

<sup>10</sup> British Pharmacological Society (2019). New opportunities for clinical pharmacology scientists, with first-ever apprenticeship scheme set to support UK's Life Sciences Industrial Strategy. Available at: <https://www.bps.ac.uk/news-events/news/articles/2019/new-opportunities-for-clinical-pharmacology-scient> [press release].

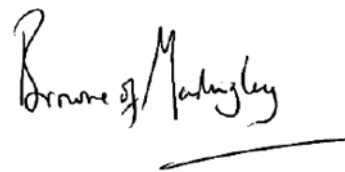
<sup>11</sup> The University of Liverpool. North West England MRC Fellowship Scheme in Clinical Pharmacology and Therapeutics. Available at: <https://www.liverpool.ac.uk/north-west-england-mrc-fellowship-cpt/>.

This letter is copied to the Chancellor of the Exchequer; the Foreign Secretary; the Secretary of State for Health and Social Care; the Secretary of State for Science, Innovation and Technology; the Secretary of State for Environment, Food and Rural Affairs; the Secretary of State for Energy Security and Net Zero; Minister of State for Development and Africa; the Minister of State for Science, Research and Innovation; the Cabinet Secretary; and the Permanent Secretaries of HM Treasury, the Foreign, Commonwealth and Development Office, the Department for Health and Social Care, the Department for Science, Innovation and Technology, the Department for the Environment, Food and Rural Affairs and the Department for Energy Security and Net Zero.

Yours sincerely,



**Dame Angela McLean**  
Co-chair



**Lord Browne of Madingley**  
Co-chair