NSC GHS working draft paper, Dec 29 2017

This paper is structured as follows, to align with CO NSS guidance and the Fusion Doctrine:

- **UK interests and objectives** (guided by political, security, regional and prosperity goals);
- **Situational update** (is the plan on track or off?);
- **Outlook scenarios** (assessments of best and worst cases and a judgement on the probable outcome);
- **What would UK strategy look like**? (reflecting what allies are doing or might be encouraged to do)
- **What is the UK's catalytic contribution**? (reflecting UK capabilities across the full spectrum of activity)
- **What are the decisions for Ministers today**?

1. UK interests and objectives

Improving global health security (GHS) is both in the UK's national interest and a global public good. It means building national, regional and international capability to detect, prevent, respond to and contain global health threats, enabling countries to comply with the International Health Regulations (IHR)[1].

This paper focuses on a subset of global health threats: infectious disease epidemics, emerging diseases with epidemic potential (such as pandemic influenza, plague and Ebola), and the threat posed by drug-resistant microbes (antimicrobial resistance, AMR)[2]. These threats do not respect national borders, and pose a risk to our health and prosperity. The UK plays a vital role in mobilising and supporting an effective international response, especially by building capacity in developing regions and countries through WHO and other partners.

The National Security Strategy (NSS) and Strategic Defence and Security Review (SDSR) (2015) recognised the importance of GHS for UK security objectives. The risk of a *major human health crisis* in the UK, linked to disease outbreaks in countries with weak governance and health systems, is a Tier One risk.

Making the world safer from all infectious disease threats and AMR directly contributes to the UK's national security objectives:

- **Protecting the UK's people** (NS01) - By reducing the risk of infectious diseases reaching our borders and ensuring that we continue to have access to effective treatments in the future.
- **Projecting UK influence** (NS02) - By building on the leadership demonstrated in containing the Ebola epidemic and WHO reform, in addition to our technical credibility, to influence both international and national responses and investment in GHS.
- **Promoting UK prosperity** (NS03) - By safeguarding our economy at home and internationally, including our growing trade and investment partnerships with developing nations. Failure to prevent deadly disease outbreaks can have a huge impact on prosperity and growth, as well as on human lives. The 2003 SARS outbreak cost an estimated $30bn

Commented [c1]: Whats the UK view on whether IHR's are fit for purpose

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[1] The International Health Regulations (IHR) are an international legal instrument that provides a standardised framework to prevent and respond to acute public health risks and mitigate their potential to cross international borders. The IHR entered into force on 15 June 2007 and are binding on 196 countries, including all Member States of WHO.

[2] The full definition of Global Health Security, set out in the WHO's International Health Regulations, takes an 'all hazards to health' approach, including for example extreme hot and cold weather, chemical spills and radiation events.

globally and the World Bank estimates that the annual global cost of moderately severe to severe pandemics is roughly $570 billion (0.7% of global income).

Since the Ebola crisis in West Africa and the publication of the O'Neill report on antimicrobial resistance (AMR) in 2016, new opportunities and challenges have arisen that require a reinvigorated cross-government response to global health threats that integrates GHS into the wider UK security agenda. These include Brexit and the new US administration, as well as evolving and emerging health threats. The current National Security Capability Review (NSCR) is an opportunity to ensure the UK's investment, including in GHS, is joined-up, effective and efficient.

The 2015 NSS and SDSR emphasised UK leadership and investments in GHS and AMR, and included two new commitments: (i) to develop UK capacity and capability to respond to health emergencies overseas and (ii) to publish a cross government biological security strategy. The first of these is currently being taken forward as part of the Department of Health's GHS portfolio and HMG's support to WHO.

The UK Biological Security Strategy will be published early in 2018, and will be signed by ministers from the Home Office, DEFRA, and DH. It will draw together for the first time all of the work that takes place across Government to protect the UK and its interests from significant biological risks to humans, animals or plants. It covers all risks whether they arise naturally, or through the less likely event of an accidental release of hazardous biological material from laboratory facilities or a deliberate biological attack. There are a number of cross-cutting commitments in the strategy that government departments are committed to deliver.

2. Situation – current and future threats

Despite major advances, infectious diseases present a sustained threat to the UK and global populations. Urbanisation, population growth, climate change, conflict and the movement of people can increase the risk for new infections to emerge and for existing ones to spread. Many infections have the potential to spread rapidly, including in regions with weak health systems (sub-Saharan Africa, low income countries (LICs) in Asia), and fragile and conflict affected states (the Middle East). While conflict and consequent humanitarian crises (such as the current cholera outbreak in Yemen), do not directly threaten the UK's population health, the impacts on security could be significant.

The 2014 outbreak of Ebola in West Africa rapidly spread within and between countries resulting in over 11,000 deaths[3] and causing profound disruption. The World Bank estimates that this outbreak cost the economies of Sierra Leone, Guinea and Liberia $2.8 billion. There are numerous examples of other diseases that have recently caused major outbreaks, or which have the potential to do so. Of most concern are zoonotic diseases, which can adapt and spread from animals to humans. Six major zoonotic disease outbreaks between 1997 and 2009 were estimated to have cost the world more than US$80 billion. An example of current interest is Influenza A - H7N9 (avian influenza/'bird flu'), a new subtype of flu virus that emerged in humans in 2013[4]. By September 2017, the virus had given rise to over 1,500 cases infection in humans, and 612 deaths[5]. So far, H7N9 has demonstrated only limited

[3] http://www.who.int/csr/disease/ebola/en/
[4] http://www.who.int/influenza/human_animal_interface/influenza_h7n9/en/
[5] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/600476/H7N9_risk_assessment_2017.pdf; http://www.fao.org/ag/againfo/programmes/en/empres/h7n9/situation_update.html

ability to spread between humans, but it could evolve to give rise to a global pandemic of influenza with a potentially high death rate[6].

Other long-established diseases such as plague and yellow fever remain present and tuberculosis is a major concern, including in the UK. Despite the existence of a vaccine, diphtheria is an ongoing threat and is currently causing an outbreak amongst refugees in Cox's Bazar in Bangladesh. [7]

Drug resistance is a growing global threat, as one of our main tools against infectious diseases loses its effectiveness. The 2016 O'Neill Review on antimicrobial resistance (AMR) concluded that already 700,000 lives are being lost each year to drug resistant infections. Globally, 480,000 people develop multi-drug resistant tuberculosis each year. Ten million lives per year and a cumulative total of USD$10 trillion in economic output will be at risk by 2050 if we fail to take action now.

It is not only AMR which poses an economic risk. The economic costs to the UK of failing to prevent and control major outbreaks of infectious disease such as these are high, whether or not the UK is directly affected By one estimate, a pandemic of influenza with a high mortality rate (similar to that seen in the 1918 influenza pandemic) might cost the UK economy up to of 4.3% of GDP, compared to 1% if two doses of an effective vaccine have been administered to the population beforehand[8].[9] The cost to the UK of bringing the Ebola outbreak in West Africa under control would have been considerably higher had the outbreak spread more widely, including to the UK itself, and potentially even greater should the threat be intentional. Given the potential consequences and costs of CBRN threats and hazards the UK Health Departments invest in cost-effective stockpile[10] of medical countermeasures.

Although the UK has a complete and comprehensive infectious disease and chemical/environmental surveillance and response system, our ability to rapidly detect and control the spread of disease and other serious threats to health is enhanced by our ability to share data and expertise, exchange information, and collaborate closely on a cross-border and reciprocal basis with our nearest neighbours. Most health protection and security collaboration between governments within Europe takes place through participation in EU agencies, systems and networks such as the European Centre for Disease (ECDC) prevention and Control and the Health Security Committee. In order to minimise any additional risk to public health as a result of the UK exiting the EU, DH Ministers' preferred negotiating position is that the UK continues to participate fully in relevant EU agencies and systems, which we hope to achieve through negotiations on the security partnership.[11]

The cross government approach is co-ordinated by the Department of Health and DFID, working closely with other departments. Taking a whole of government approach and building on the previous strategy, Health is Global, it is proposed that current efforts to promote global health security as part of mainstream UK diplomacy complement efforts to promote

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[6] https://www.cdc.gov/flu/avianflu/h7n9-virus.htm

[7] **TO ADD - animal/environmental risks example**

[8] http://www.bmj.com/content/339/bmj.b4571

[9] **TO ADD - line on possibility of pandemic flu vaccine stockpiling & potential costs of an epidemic to the NHS; possibly also costs to agricultural industry eg of swine flu**

[10] The contents of the stockpile takes account the following parameters: CBRN Risk Assessments and the planning assumptions linked to this; Availability of appropriate countermeasure; Logistics of stockpile deployment; Cost of countermeasures; Cost effectiveness and cost-benefit of the stockpile

[11] **TO CHECK - PHE re regional dimension and Paul Macnaught re Brexit**

international development and business, trade and investment, all underpinned by research and learning. The current UK response is summarised below.

- In 2015 the UK undertook a pilot GHSA assessment of our IHR compliance and capabilities. This concluded that the UK had 'demonstrated a strong baseline position', and made some recommendations for further improvement[12]. However, there has been limited follow up since, and the UK has been challenged by some international partners to undertake a full WHO Joint External Evaluation (JEE) of its IHR capacities.
- Since the Ebola response, the UK has increased its influence on the international system, in line with the NSS and NSDR 2015 commitments. Globally, UK leadership and investments are delivering results, including:
    - Achieving the UNGA political commitment to AMR in 2016 through the CMO's leading international role and support to the Global Action Plan on AMR.
    - Working through the G7 (focusing on biosecurity and biosafety) and G20 (influencing the wider agenda including IHR and AMR) to strengthen their commitment to GHS and ensure that they continue to advocate for the One Health approach. The UK will host the G7 Health Ministers plus Mexico at a meeting of the Global Health Security Initiative in March 2018 for a meeting focused on pandemic influenza.[13]
    - Working through the EU and NATO to develop the ~~its~~ resilience of Member States to health risks~~agenda~~, including requirements to deal with mass casualties through warning systems, mapping emergency medical capabilities and developing surge capabilities.
    - Implementing an ambitious set of research and programme investments to strengthen GHS, allocated as Official Development Assistance (ODA)[14,15]. These are complemented by many of DFID's programmes (such as support for GAVI and the Global Fund) to strengthen health systems and public health, tackle the persisting infectious diseases of poverty, and build population resilience through women's empowerment, education, water, hygiene and sanitation, and nutrition.
    - Pushing for support to and reform of the UN system,[16] focusing on WHO's oversight and co-ordination role and its performance.
    - Developing UK-China and UK-India government partnerships for joint research, including on AMR.
    - Strengthening cross-HMG processes for monitoring global outbreaks such as the Cabinet Office coordinated International Health Response Network and providing expertise to respond, including through the UK Public Health Rapid Support Team

[12] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/456984/IndependentReport_GHS_acc.pdf

[13] **TO ADD - role of the GHS Action Group (official level)**

[14] These include the Fleming Fund (improving laboratory capacity and AMR data and surveillance in low and middle income countries), the UK Public Health Rapid Support Team, WHO R&D Blueprint programme and product development partnerships, the Global AMR Innovation Fund, the UK Vaccines Network and DFID's new regional programme, Tackling Deadly Diseases in Africa.

[15] The UK's Independent Commission on Aid Impact (ICAI) review of the UK ODA-funded response to global health threats (to be published early 2018), has concluded in its draft report that: '*...the UK government responded rapidly to address the weaknesses in the international response system exposed by the Ebola crisis, developing a coherent and evidence-based framework for addressing global health threats, and establishing a portfolio of relevant and often pioneering programmes and influencing activities. The portfolio shows strong potential to be effective, particularly in terms of influencing WHO reform, building surveillance systems in high-risk countries, developing new vaccines and supporting a timely response to new outbreaks*'. The report also notes a number of areas for improvement, including the need to strengthen overarching cross government strategy and co-ordination with regard to support to developing countries.

[16] These include the UK's investment in the Contingency Fund for Emergencies and the WHO Health Emergencies programme, and co-ordination with the World Bank and other international finance institutions (IFIs).

and the UK Emergency Medical Team (working with WHO and other partners) and the UK military (to respond to humanitarian needs and rapid onset natural disasters)[17].

- Working with European partners to share disease surveillance data and participate in the ECDC for building regional capacity for emergency preparedness and response[18].

The international response has also strengthened since the Ebola outbreak:

- Progress has been made on WHO reform, and GHS, AMR and the One Health approach to human, animal and environmental health have all featured in G7 and G20 communiques. Both the US and Canada are actively engaged in the biosecurity element of the G7 Global Partnership against the spread of weapons and materials of mass destruction, which Canada will chair in 2018. Germany provided strong leadership on AMR during its 2017 G20 presidency, and Argentina (supported by the UK) proposes to continue to prioritise AMR in 2018.
- The UK is a member of the Global Health Security Initiative, a partnership launched in 2001 by Canada, the European Union, France, Germany, Italy, Japan, Mexico, the UK and the US to strengthen preparedness and response to threats of biological, chemical, radio-nuclear terrorism (CBRN) and pandemic influenza.
- The US is a founder and major supporter of the post-Ebola Global Health Security Agenda, which has an international membership and aims to improve capacity to address the range of natural, accidental and deliberate risks to human, animal and plant health, with an increasing focus on the security aspects. The UK is a member of the GHSA and active in the AMR and the Biosecurity/biosafety work packages.
- Following the SARS epidemic, China has developed capacity in its surveillance and response system, and is keen to share expertise with Africa in partnership with the UK.

However, financing for GHS and AMR, including for WHO to strengthen national health systems for both prevention and response in developing regions, remains inadequate[19].

3. Outlook scenarios

Infectious disease outbreaks are likely to become more complex and challenging[20], with increasing risks and risk drivers. The increasing transnational flow of commodities, people and animals increases risk of transmission, along with urbanisation and increasing population density. Other factors are unpredicted zoonotic epidemics (such as Ebola), climate change and its effect on disease patterns, food and water insecurity, changing food and agricultural systems, and humanitarian crises.

In the short to medium term, Ebola in West Africa and previous outbreaks such as SARS demonstrate the ongoing potential for existing or new infectious diseases to appear rapidly and / or unexpectedly. There are 2-3 outbreaks of concern every week in Africa, most of which are rapidly contained by swift action. Examples of recent successes include containment of plague in Madagascar, and yellow fever and Ebola in DRC. The UK (alongside the US and

[17] The benefits of clear and effective civilian / military operations were exemplified in the UK response to the Ebola outbreak. MOD has recently published revised military doctrine to help clarify appropriate roles and responsibilities for civ/mil operations.
[18] **TO ADD - animal and environmental health to this bullet et Early Warning System**
[19] **TO ADD - new info - under-funding of CFE**
[20] https://www.weforum.org/projects/managing-the-risk-and-impact-of-future-epidemics

others) is supporting WHO and countries to ensure compliance with IHR, which require all countries to have core capabilities for health security. Over 60 (of 194) countries completed a JEE of their IHR capabilities in the last two years, with slower progress on AMR Action Plans. This demonstrates growing national commitment, but also points to substantial capacity challenges in epidemic preparedness and response, particularly in fragile and conflict affected states.

The Ebola crisis also demonstrated the importance of strong, functional national health systems in effectively addressing global health threats. It is critical that countries are able to maintain effective control of known threats (such as tuberculosis and other diseases of poverty) while simultaneously having resilient, flexible and adaptive systems in place to detect and prevent emerging problems, and to respond fast. Other risk factors include access to safely managed water and sanitation services to limit transmission of infectious diseases and AMR.

Access to new products can still take many years, and some of the existing tools to control infectious disease are underutilised or are at risk:

- Many millions lack access to effective medicines for common and treatable infections, contributing to further transmission. Adequate quantities of quality assured medicines and other supplies are not always available even in the UK; there is currently a shortage of the antibiotic combination piperacillin / tazobactam for treatment of severe pneumonia[21], and the availability of diphtheria antitoxin (DAT) has substantially decreased in recent years[22].
- Even when supplies are available, they may be substandard: according to the WHO, an estimated 1 in 10 medical products in low- and middle-income countries is substandard or falsified[23]. Manging this risk is critical, given that the UK's health system relies on highly cost effective generic imports that are often manufactured by emerging economies such as India (over a third of the UK's medicines are competitively sourced from generic suppliers in India and other emerging economies, so cost effective ways to guarantee quality are critical).
- AMR is exacerbated by poor prevention, lack of diagnostic tools, sub-standard drugs and inappropriate prescribing and overuse, with large rises globally in the consumption of antimicrobial agents[24].
- Despite real progress, immunisation coverage remains sub-optimal in many countries. Anti-vaccine movements have been empowered by the spread of misinformation, including through social media channels.

In the medium to longer term, health threats will continue to take a toll on human lives and to adversely impact on economic development and inclusive growth, with greater risks for low income countries. Effective systems take time to establish, and need to be maintained. Health systems in poor countries or those affected by conflict will remain or become fragile, and populations will continue to face shocks and extreme poverty, food insecurity and lack of water and sanitation. At the same time, the drivers of infectious disease emergence, transmission and spread (eg urbanisation, population growth, migration and climate change) are set to grow in intensity. As a consequence, infectious diseases will continue to present a significant threat to the UK and the wider world. However, there is potential to mitigate these threats now, and

[21] http://bsac.org.uk/dh-advises-on-piperacillin-taxobactam-injection-supply-problems/
[22] https://www.unicef.org/supply/files/Diphtheria_Antitoxin_Market_Update.pdf
[23] http://www.who.int/mediacentre/factsheets/fs275/en/
[24] **TO ADD - data**

to continue to invest in the systems and research that are needed to do so ever more effectively in the future.

4. UK Strategy

Commented [c3]: Feels long and a lack of punch. Suggest a clear reference also to the UK beign ready for such risks and suitably investing in: public health systems here, the pandemic flu programme, the biosecurity strategy

1. Enhance UK leadership and influence in GHS

The UK will continue to champion GHS as a major contributor to global safety, stability, prosperity and inclusive development. To do this, we will:

- **Continue our efforts to advocate for and support other countries to undertake the WHO JEE and to develop costed national action plans**. In addition, as a clear statement of the value the UK places on the WHO's IHR Monitoring and Evaluation process, the UK should lead by example by itself undertaking a full JEE.
- **Explore new regulatory[25] and legal frameworks to speed up licensing and safe use of new products**, in order to address the challenge of security of supply for quality vaccines (xx[26]), medicines and diagnostics, globally and for the UK.
- **Continue to prioritise thought leadership and research investment**, such as new evidence based approaches to incentivise AMR prevention[27]. We will invest more in research and other work on bio-threats, previously funded through MoD/DSTL. This will also foster more influence with others, for example US, Canada and Australia.
- **Ensure greater foreign policy coherence across Government**, linking GHS with bio-threats and counter terrorism priorities and recognising that biological risks apply to the UK and to UK armed forces and other UK personnel and interests overseas. This will require close coordination within HMG and with major partners such as the US and Canadian governments, with potential for the UK to play a stronger role as influencers and arbitrators.
- **Support the Biological and Toxin Weapons Convention** (BTWC), increasing its effectiveness so that it remains relevant in light of rapid scientific and technological developments; and encouraging more States to sign, ratify and implement it. This includes providing concrete support to the UN Secretary General's Mechanism to allow it to effectively investigate and respond to allegations of use of biological weapons. We will also continue to play a leading role in the Australia Group, ensuring that its lists are up to date and fit for purpose.
- **Ensure that we maintain effective health protection and security following the UK's exit from the EU**, through thorough planning for both our preferred and contingency options, and by addressing and integrating health security, public safety and international development policy objectives into the UK's strategy for leaving the European Union. The UK's substantial contribution in terms of expertise, data, surveillance, preparedness and response is valued by EU member states and should help to put us in a strong negotiating position. Nevertheless we are confident that in the event of a 'no deal' exit scenario, the UK's access to other (non-EU) international information-sharing systems, combined with our proposed mitigating actions, will be sufficient although it may not be possible to fully replicate the benefits of our current level of collaboration at EU level[28].
- **Continue to actively pursue GHS and AMR in G7/G20 in 2018** in order to boost the UK's foreign policy influence and promote the contribution of our industry and research institutions in these domains. Through this we will:

[25] TO CHECK - if possible to make this commitment
[26] TO ADD - examples
[27] DFID and DH research leads to input into this para
[28] TO CHECK - DH EU team

- xx[29]
- Support further commitments to AMR in the G20, in particular through an eminent persons group to advise the G20 leaders on market incentive schemes for the development of new antibiotics, vaccines and diagnostic tools.
- Secure stronger leadership for reforming WHO and for mobilising additional political and financial support for WHO, its Health Emergencies Programme and the Contingency Fund for Emergencies.
- Secure continued investment in the considerable assets of the Global Polio Eradication Initiative, ensuring the value of these for other disease threats is not lost, and to prevent polio resurgence.

2. Ensure the UK takes a One Health approach to GHS

Despite the UK's achievements internationally, the recent ICAI report highlights the need for a more coherent, shared narrative for our activities to address the challenges of GHS. To ensure we deliver the mutually reinforcing national security objectives set out in 2015 it is vital that we take a One Health approach to GHS across the UK Government. To do this we will:

- **Reinvigorate the 'whole of government' response to GHS**, mobilising government departments that have so far been less engaged in GHS in order to address the risks and potential economic impact of global health threats and AMR[30]. This includes:
  - DEFRA leading on the use of antimicrobials in agriculture;
  - BEIS leading on GHS implications for industry and research;
  - Home Office leading on homeland CT biological deliverables (this will in part be set out in the UK Biological Security Strategy);
  - MOD supporting domestically (on biosecurity priorities) and internationally (through the deployment of military medical and other expertise and through the International Biological Security Programme).
- **Maximise opportunities for the UK to develop new medicines** through the new Life Sciences Strategy and research funding, with BEIS and UK Research and Innovation. This will accelerate the development, commercialisation and introduction of affordable new and effective medicines and vaccines, in partnership with both research-based and generic industry. An initiative to develop market incentives for new antibiotics is on the G20 2018 agenda, which the UK is well placed to both contribute to and benefit from.

3. Investments for development, health systems and the Global Goals

UK health security is dependent on other countries having effective health systems with capability to comply with the IHR. These mechanisms reduce the likelihood of disease outbreaks, thereby saving lives and providing secondary benefits for movement, trade and economic development. Through our existing programme of investment we are contributing effectively to improving public health capacity to prevent, prepare for, detect and respond to outbreaks, resulting in resilient health systems.

Commented [c4]: Be good to hear more here about efforts to include animal health in this – its more than just issues around anitmicrobials in agriculture

[29] **Consider adding reference to G7 and biosecurity/biosafety - MOD/Home Office?**

[30] The NSS 2015 and ICAI's draft report include recommendations that the UK undertake a GHS simulation exercise, and we will use this exercise to bring departments and officials together [check].

The new NSC sub-Saharan Africa strategy includes additional funding to enhance health security in the region, with potential to expand existing efforts to other countries and to provide more UK support for IHR capacity building. To deliver this, the strategy proposes that the UK:

- Works with partners (including the US, China, Japan, and the Africa Union) through diplomacy, funding and expertise, in order to strengthen health systems, enhance national leadership, governance and accountability, and further improve WHO performance.
- Works with the international system and other leading donors to ensure that ODA resources are mapped to risks, through better data sharing and systems, horizon scanning, and funding outside of traditional geographies.
- Maintains our high-level commitment for development financing to strengthen health systems and public health functions in vulnerable countries, and to promote long-term population resilience through women's empowerment, early childhood development, education, nutrition and WASH.

5. UK catalytic contribution

As a global leader with international credibility, the UK has great potential to boost further international commitment and funding and to strengthen capacity in developing regions and countries, while at the same time enhancing the UK's national security. It can fulfil this potential through:

- **International diplomacy** – Renewed leadership and full integration of GHS into the UK's national security objectives will boost our influence on the global stage and mobilise more international commitment and action for a world safe from health threats.
- **Leadership, expertise and partnerships for national security** – Including stronger partnerships with the US, Canada and others on CT and biological security.
- **Global expertise in development and public health** – The UK has a world-leading reputation which will enable us to deliver and expand our ambitious portfolio of research and project investments, including through the additional funding proposed in the NSC sub-Saharan Africa strategy.
- **Industry and R&D** - The UK is home to leading pharmaceutical, biotech and new technology companies, and has a track record in addressing market failures through public-private partnerships for new products and through innovative market shaping. This puts the UK in a position to offer speedy, smart solutions. We can invigorate the global effort, increasing the share of research investment for GHS (eg through the Global Challenges Research Fund).

Fulfilment of this potential requires stepping up the UK's international role in addressing global health threats and AMR, including through new initiatives with like-minded partners. Success requires political buy-in, partner commitments, and successful reform of WHO's. The risks of pursuing a higher level of ambition are that additional investments and initiatives exceed absorptive capacity, and crowd out other partners. However, the risks of not pursuing a higher level of ambition are disease epidemics with human and financial costs far exceeding prevention, and serious implications for the UK's security. Failure to prioritise GHS may also mean missed opportunities to strengthen the UK's international leadership and influence, in an area where we have strong comparative advantage.

6. Questions/decisions for Ministers[31]

1. Given the importance of GHS to the UK and as a global public good, **do you support the current and planned efforts to prioritise it internationally**, including through diplomatic leadership at high-level fora, and through financial support for WHO and for developing countries to strengthen their health systems and IHR capability?

2. **Do you support the integration of GHS into the wider UK security agenda**, as part of the NSCR and the EU exit strategy (including agreeing the continued sharing of disease surveillance data and UK participation in/membership of in the ECDC and other relevant networks)?

3. Given the importance of co-ordinated action to address global health threats, **do you support a reinvigorated, high profile cross-Government One Health approach to GHS**, which would include (i) undertaking a full JEE of the UK's capability to comply with the IHRs, (ii) a cross-Government simulation exercise and (iii) an explicit prioritisation for GHS and AMR investment in the Life Sciences Strategy and wider research funding?

4. Do you support further cross departmental work on **strategies to ensure essential medicines and commodities security** (supply, quality, innovation, regulation)?

Annex

Lessons from the Ebola response[32]

- ***Weaknesses in international public health organisations*** *and their capacity to support country preparedness and response, particularly the World Health Organisation.*
- ***Weaknesses in national health governance and systems:*** *National health systems in Sierra Leone, Liberia and Guinea were amongst the weakest in the world. Countries at risk may be reluctant to report potential threats due to fear of economic consequences. A resilient health system with well-functioning health services and public health programmes has capacity to prevent, recognise and contain outbreaks.*
- ***Lack of research readiness:*** *Ebola had not been identified as a priority disease. While the UK and the global health research community rapidly responded to the outbreak with clinical trials for vaccines, treatments and diagnostics, they were not 'research ready' at the outset. Legal and regulatory provisions to accelerate access were not reliably in place.*
- ***Low community awareness and weak communications:*** *Community engagement and information campaigns were weak early on, due to limited knowledge of community norms and beliefs and lack of social science research, and compounded by low literacy and public health awareness.*
- ***Lack of expert readiness and poor early coordination:*** *The speed and scale of the international response was limited by ad hoc coordination structures, and lack of sufficient and experienced human resource. The non-health aspects of the crisis response were poorly coordinated, particularly in the early stages.*

[31] **TO BE REFINED**

[32] Sources: to add, plus draft ICAI report (Dec 2017)