

Antimicrobial resistance national action plan – [call for evidence](#)

Response from the Royal College of Pathologists, November 2022.

The threat of AMR

The threat of AMR and our ability to respond to it is affected by several factors. These include: population size and demographics; trade patterns; and major global events, for example the coronavirus 'COVID-19' pandemic and the war in Ukraine.

The first 2 questions are about the scale and nature of the threat of AMR. The other questions are about our efforts to respond to AMR.

Question

From your experience, how has the scale of the threat of AMR changed since the national action plan was published in 2019?

a) the threat of AMR has increased since 2019

There are several drivers of AMR, which may differ between sectors. The [national action plan for 2019 to 2024](#) states that the 3 biggest drivers of AMR for infections in humans in the UK are:

1. a rise in the incidence of infections, particularly Gram-negative bloodstream infections (including *E. coli*)
2. the importance of resistant infections through international travel
3. antimicrobial use

Question

In your opinion, what are the top 3 drivers of AMR?

Please give 3 short answers.

1. Inappropriate and indiscriminate use of antimicrobials, including antifungal, antiviral and antiparasitic antimicrobials in humans.
2. In appropriate use of antimicrobials in animals (particularly livestock, aquaculture and poultry) across the globe – Although in the UK (and many other countries) significant progress has been made to reduce antibiotic sales and usage – See VMD report.
3. Lack of access to antimicrobials through supply issues and lack of development of newer antimicrobials and alternatives.

Priority interventions for tackling AMR

The current [national action plan](#) focuses on 3 key ways of tackling AMR:

- reducing the need for, and unintentional exposure to, antimicrobials (including preventing and controlling the occurrence of infections, vaccination and limiting exposure to antimicrobials through food and the environment)
- optimising the use of antimicrobials (including ensuring that the right drug, time, dose, duration, patient/animal and route are taken)
- investing in innovation, supply and access (including supporting the development, supply, and access to old and new antimicrobials, vaccines and diagnostics)

We would like your view on which of these areas requires the most focus over the next 5 years. Through ongoing stakeholder engagement in 2023, we will further prioritise the specific actions that fall within each of these areas.

Question

Which of these areas would you most like to see prioritised over the next 5 years?

1. reducing the need for, and unintentional exposure to, antimicrobials
2. optimising the use of antimicrobials
3. investing in innovation, supply and access

All three are equally important and work in synergy with each other. There needs to be a co-ordinated and global response to address all of these issues.

Question

Are there any actions you think are required to tackle AMR that do not fall within one of these categories?

- yes (please specify).
- More research into other/novel options for treatment and diagnosis of infections e.g. phage therapy, rapid POC diagnostics, predictive MIC's etc.
- Greater investment in diagnostic testing capacity and strategies to better support antimicrobial prescribing
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Learning from previous action to tackle AMR

We would like to learn from current and previous government action on AMR. Since the publication of the [national action plan](#), the UK has made significant progress in tackling AMR. For example, the UK has:

- reduced the use of antibiotics in food-producing animals
- piloted novel and innovative ways of evaluating and paying for antibiotics on the NHS
- published the national infection prevention and control manuals in England and Wales

- advocated for more action on AMR on the global stage, including through the UK's G7 presidency

Question

Within the UK, what are the key successes we should look to maintain or build on in responding to AMR?

Please include up to 3 examples in no more than 250 words.

Whilst the above examples are good starting points, they do not go far enough in helping to stop the predicted rise in antimicrobial resistance. The recent pandemic highlighted the need to collaborate on a global level to address healthcare crises related to infection, of which AMR is one.

1. There needs to be a greater, co-ordinated global response to AMR, with support to developing nations in terms of access to antimicrobials and support with antimicrobial stewardship programmes
2. There needs to be an ongoing review of the use of antimicrobials in food-producing animals and indeed companion animals with the use of targets to reduce unnecessary use. Moreover, the development of alternatives (vaccines, probiotics etc.) are essential. Need to also monitor co-resistance (copper/zinc supplementation in livestock) and the use of antibiotics in plants.
3. Infection prevention and control manuals mainly focus on containing infection once it has been detected. We would like to see more infection prevention and control education in schools and to the public, specifically on the role of antimicrobial stewardship and how they can help halt the development of AMR through being aware of when there is no need for antimicrobials. This needs to be co-ordinated with social and general media. The current media storm over group A streptococcal infections demonstrates how they influence, often adversely, the general public, placing strain on antimicrobial supplies and potentially resulting in the development of AMR through inappropriate antimicrobial prescribing.

Despite the substantial progress made on AMR in the past decade, we know there is much more to do. There are some areas where we have struggled to make the progress we envisaged. This includes failing to reduce the incidence of some specific drug-resistant infections in people. It also includes other areas where we think we could focus more government action, such as understanding and minimising the transmission of AMR in the environment. Given financial pressures and limited resources both within and outside of government, we are seeking views on the most important, realistic and tangible actions we can take to have the most impact on AMR.

Question

Within the UK, what are the areas that require more focus or development to address AMR?

1. Whilst the use of local pharmacies to help deal with common ailments such as the common cold is welcome, the ability to prescribe antimicrobials "over the counter" is a worrying initiative. Pharmacists cannot take samples and may not be aware of local resistance patterns which the government has not taken into account when starting this initiative. Without samples, there is no way of knowing if the right antimicrobial has been prescribed. For example, pharmacies can now prescribe three days of trimethoprim for uncomplicated urinary tract infections. This places a burden on

pharmacists to ascertain clinical severity and in some areas local resistance to trimethoprim is 40% or higher. The government needs to re-think this strategy to make it more applicable to local populations and support local pharmacists.

2. As above, there needs to be an ongoing review of the use of antimicrobial use in food-producing animals with the use of targets to reduce unnecessary use.
3. The UK needs to look at funding more research into development of newer/alternative antimicrobial agents and better diagnostics.

Please include up to 3 examples using no more than 250 words in total.

The national action plan includes several commitments to improve the professional capacity and capability for tackling AMR. We would like to understand whether we have the required workforce and skillsets to best tackle AMR.

Question

Within your sector, do you think the UK has sufficient capacity and capability to tackle AMR?

- No. the healthcare workforce is understaffed and constant supply issues pose a huge challenge to appropriate antimicrobial prescribing. Similar issues can exist in the veterinary field.

Since 2019, several capabilities required to tackle AMR have changed. This includes our sequencing capability, surveillance capabilities, diagnostic lab capability, and antimicrobial stewardship activity.

Question

What additional capacity and capability is needed in your sector to effectively tackle AMR?

1. There needs to be an increase in the number of centres that have the diagnostic capability to sequence and undertake surveillance. Due to increased demand, there is often a significant delay in receiving results which can impact on the ability to treat and manage patients effectively and appropriately in terms of antimicrobial prescribing and outbreaks.
2. There needs to be a national directive associated with funding and a framework for antimicrobial stewardship within trusts/health boards. The current national guidance "start smart then focus" is a start but without appropriate resources, in particular with regards to workforce, there is often an inability to meet this guidance.
3. There needs to be funding for local surveillance within trusts using infection prevention and control doctors and nurses and data analysts. Again, a shortage of workforce is massively impeding on the ability to undertake surveillance and implement local initiatives. There also needs to be continued support for medical and veterinary professions to work together to tackle AMR.

Please give up to 3 examples using no more than 250 words in total.

Question

In your opinion, what are the key barriers to making progress on tackling AMR in your sector?

Please give up to 3 examples using no more than 250 words in total.

1. Lack of funding for AMS; inability to undertake surveillance and ASM ward rounds due to staff shortages. There is a shortage of microbiology consultants in an already under-resourced workforce. There needs to be an expansion of the medical microbiology and virology workforce, as well as looking at expansion of specialist services in antifungal and antiparasitic stewardship.
2. Many hospitals are old and not fit for purpose in terms of isolation room capacity. Increasing the number of isolation rooms means that the number of nurses and allied healthcare professionals also needs to be increased. Failure to isolate patients with AMR appropriately in an understaffed an over-capacity healthcare environment negatively impacts the ability to contain AMR in the healthcare environment.
3. Lack of advances and funding in social care mean that the ability to move patients with AMR who are ready to be discharged is significantly reduced. There needs to be a greater educational package and support for social care to ensure that residential and nursing institutions are more able to accept patients with AMR and care for them appropriately and prevent ongoing transmission.

International efforts to tackle AMR

AMR is a global challenge, and no one country can tackle it alone. The UK plays a leading role advocating for and taking action to tackle AMR in several multilateral arenas. As part of our leading international role, we helped secure the Political Declaration on AMR at United Nations General Assembly in 2016. We also recently secured G7 commitments on AMR on a number of ministerial tracks. We will continue to deliver our domestic commitments on AMR, as well as pushing forward international commitments. Through our global engagement, we recognise there is also much to learn from other countries' efforts, both successes and challenges.

Question

What, if anything, do you think we can learn from other countries' responses to AMR?

Please be specific about which countries you are referring to in your answer.

According to the IDSA AMR preparedness report 2021 [/globalcoalitiononaging.AMR-Preparedness-Index_FINAL.pdf](#)

1. Australia has engaged a coalition of nonprofit, public policy, and industry leaders to tackle a range of issues head on. This co-ordinated response is something we can learn from.
2. Sweden's PHAS (Public Health Agency Service) is piloting a new Reimbursement Program from 2018-2022 that will establish clear benchmarks for access and antimicrobial stewardship initiatives. The UK is adopting a similar programme but there needs to be sufficient resources to implement this.
3. Pre-war with Ukraine, Russia was collaborating with other countries to tackle AMR. This reinforces the need for a co-ordinated and collaborative global approach to AMR.

Please give up to 3 examples using a maximum of 250 words in total.

Opportunities from COVID-19

We saw an unprecedented level of cross-disciplinary working during the COVID-19 pandemic with government, industry and researchers collaborating to respond to a significant public health challenge. The toolbox we used to tackle COVID-19 will be similar for AMR. As [reported by the Academy of Medical Sciences](#), diagnostics, surveillance, therapeutics and vaccines are crucial aspects of the AMR response and can draw on the COVID-19 experience.

Question

In your opinion, which of these tools should be prioritised for adapting to use in tackling AMR?

1. diagnostics
2. surveillance
3. therapeutics
4. vaccines

All of the above are critical to tackle AMR. They are interdependent of each other. Focusing on just one or two will not be successful as success requires a co-ordinated approach using all of these tools.

Question

In your opinion, are there any other tools that should be adapted from use during the COVID-19 pandemic for tackling AMR?

- yes (please specify). The ability to introduce a new and novel vaccine at speed was down to a globally co-ordinated response with funding. This shows that global collaboration can be successful and a similar approach should be adopted for AMR and antimicrobial stewardship, in particular with the development of newer/novel antimicrobials. The development of better diagnostics and the use of AI for predicting and identifying AMR (use of WGS to predict MICs).

COVID-19 has also delayed progress in tackling AMR, putting severe strain on healthcare services and diverting resources from the 'silent pandemic' of AMR to the urgent COVID-19 response.

We think it has also altered the risk landscape. For example, different patterns of healthcare use during COVID-19 restrictions led to increased prescribing of antimicrobials in certain settings (such as dentistry). Also, COVID-19 potentially made patients more vulnerable to hospital acquired infections.

Question

Do you believe the changes in ways of working within your organisation due to the COVID-19 pandemic have affected efforts to respond to AMR, such as delivery of the current national action plan (NAP)?

I think this will depend on the organisation and in particular those working within Pathology networks.

Question

In what way have they affected the response to AMR or delivery of the NAP?

1. There is a greater dependence on working remotely which could impact on AMS ward rounds etc.
2. The shortages of antimicrobials during the pandemic have led in some circumstances to using alternative agents and it has required a lot of re-education to change prescribers' mindsets back to appropriate prescribing. In some areas of veterinary medicine there are limited licenced antibiotic available.
3. Greater reliance on giving antimicrobials for chest infections where a virus is the most likely cause "just in case".

Please give up to 3 examples using no more than 250 words in total.

Question

Are there other ways in which the COVID-19 pandemic has altered the AMR risk landscape?

1. Reallocation of resources to COVID-19 response, which negatively impacted on the ability to deliver AMS
2. The increased use of broad spectrum antimicrobials may have led to a rise in AMR
3. Trusts were massively over-capacity with under-resourced staffing levels and an over-reliance on PPE which led to many outbreaks of AMR organisms.

Please give up to 3 examples in no more than 250 words in total.

Question

Are there other global events, such as supply chain disruption or the conflict in Ukraine, that have changed the UK's ability to respond to AMR?

- yes

If yes, how have other global events changed the UK's ability to respond to AMR?

Please specify which global event you're referring to.

COVID-19, Brexit, earthquake/fire in China in the laboratory producing ingredients for piperacillin-tazobactam : supply chain of antimicrobials meaning alternative/second line agents had to be used.

Conflict in Ukraine: disruptions to supply chain

Measures of success

The national action plan includes measurable ambitions and targets including to:

- reduce the number of resistant infections
- reduce antimicrobial use in humans and animals
- ensure prescriptions state whether they were supported by a diagnostic test

Question

In your opinion, what are the best measures of success in tackling AMR?

Please give up to 3 suggestions.

As above:

1. reducing the need for, and unintentional exposure to, antimicrobials e.g. in animal husbandry
2. optimising the use of antimicrobials with a fully resource AMS programme in secondary care and the community
3. investing in innovation, supply and access to new/novel antimicrobials

During the COVID-19 pandemic, public awareness of infection spread increased, along with prevention and control measures and acceptability of point of care diagnostics.

Question

Do you believe that there is sufficient public and professional awareness of AMR?

- no

If no, what should be done to increase awareness of AMR?

As discussed above, there needs to be more infection prevention and control education in schools and to the public, specifically on the role of antimicrobial stewardship and how they can help halt the development of AMR through being aware of when there is no need for antimicrobials. This needs to be co-ordinated with social and general media. The current media storm over group A streptococcal infections demonstrates how they influence, often adversely, the general public, placing strain on antimicrobial supplies and potentially resulting in the development of AMR through inappropriate antimicrobial prescribing.

Use of community leaders will help spread the message to the community e.g. local Imam, priest, third sector etc using the Australian model will help. Globally there needs to be more work done with WHO to spread a consistent message.

G7 countries could collaborate to help developing countries spread awareness of AMR as globalisation means that we are all affected by AMR in any part of the world.

Please tell us in a maximum of 250 words.

Further information

Question

Is there any other evidence you would like to tell us as we develop the 2024 to 2029 national action plan?

Please tell us using no more than 250 words.

The RCPATH/BIA “Best practice standards for the delivery of NHS infection services in the United Kingdom” [Best practice standards for Infection services in the UK](#) recommends 4-6 PAs per trust for AMS alone. A full time consultant microbiologist post is 10 PAs, demonstrating the importance of this role. However, as The RCPATH/BIA publication “The State of Hospital Infection Services in the UK: National Workforce Survey 2021” [The State of Hospital Infection Services in the UK: National Workforce](#) demonstrates, there is a 20.3% and 14.6% shortfall in consultant medical microbiologists and medical virologists respectively. This shortfall impedes the ability to implement a robust AMS programme within secondary care and the community. Hence there is an urgent need to address this.

Global Action for Fungal Infections (GAFFI) has published a set of briefings to cover policy in five topic areas (below). GAFFI’s overall primary goals are to improve access to diagnostic for fungal disease linked to appropriate antifungal therapy. The approach for different conditions varies, as does the optimal laboratory approach.

- Minimising deaths from AIDS due to fungal disease
- TB-like fungal lung disease – getting the diagnosis right
- Fungal Neglected tropical Diseases
- Laboratory Services for Fungal Disease diagnosis
- Antifungal resistance

The policy brief recommendations can be read [on their website](#).

Question

Are you content for the DHSC AMR policy team to contact you to take part in further stakeholder engagement as we develop the 2024 to 2029 national action plan?

- yes