Antimicrobial resistance – key emerging themes from the BMA Board of Science Symposium
Introduction

Doctors have expressed significant concern about the threat of a ‘post-antimicrobial age’, where current antimicrobials will be ineffective due to increasing levels of resistance. This represents a major public health issue: Drug resistant infections are already responsible for an estimated 700,000 deaths globally, per year. Without action to stop the spread of resistance it has been estimated this figure could reach 10 million by 2050. Resistance also has the potential to severely limit the ability to carry out many routine and complex medical treatments, where antimicrobials are necessary to prevent infection.

In May 2018 the BMA Board of Science hosted a symposium to discuss the opportunities for different sectors to combat antimicrobial resistance (AMR) and to inform the current development of the UK Government’s next AMR Strategy. The Symposium participants included representatives from organisations across the health, medicines, veterinary and farming sectors (see Appendix 1) and a number of organisations also hosted individual themed round table discussions (see Appendix 2). In addition there were representatives from a wide range of BMA branch of practice committees, specialty committees and council committees in the devolved nations. To set the scene at the start of the symposium there were a series of presentations from Professor Jonathan Van-Tam, Deputy Chief Medical Officer, Professor Mike Sharland, Chair of the Government’s Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection and Christine Middlemiss, Chief Veterinary Officer.
Key themes that emerged during the symposium discussion

Improved prescribing

– A significant theme raised during the discussions was the need for improved quality of information for prescribers. Prescribing can often be carried out in the absence of adequate information about the nature of the infection or before the results of diagnostic testing are available. To support improvements in antimicrobial use it was suggested that there needs to be a continued focus on improving the quality of information available to prescribers, including timely diagnosis (and adequate medical microbiology services).

– The symposium participants also felt that it was important to recognise the wider pressures under which doctors and other healthcare staff are currently working, both in primary and secondary care. To reduce the inappropriate use of antimicrobials it is essential doctors have adequate time with patients for conversations and decision-making about antimicrobial prescribing to take place.

– It was acknowledged that there can be significant variation between GP practices on AMR prescribing. This can often be related to the local practice/patient population, and the most appropriate strategy was to focus on those practices with high AMR prescribing rates to low-risk patients.

– Another key emerging theme was that any monitoring and feedback on prescribing should be delivered in a supportive and positive manner rather than through a system of penalties and sanctions. Issues were also raised around having effective medico-legal protections for doctors who had taken a clinical and evidenced-based decision not to prescribe antibiotics.

– Concerns were expressed about antibiotics being available for purchase online without the appropriate clinical assessment/oversight by prescribers. There currently appears to be little or no regulation and most companies supplying these appear to be registered abroad.

– Other solutions discussed included peer review of prescribing through GP networks, particularly for high-risk groups including the elderly and those with multiple long-term conditions where there are significant pressures in prescribing and high risk of adverse outcomes. It was acknowledged that there was a huge variation between practices on AMR prescribing, many of these were related to the local practice/patient population, and best strategy was to focus on those practices with high AMR prescribing rates to low-risk patients.

– Although recognising the issues as more of a problem for certain resistance genes than others, many expressed significant concern around the way in which antimicrobials are used in animals, particularly within agriculture, and the contribution this has to the development and spread of antimicrobial resistance. This particularly surrounds the prophylactic (routine preventative) use of antimicrobials, and the use of critically important antimicrobials.
Improved education and training

– Despite AMR education and training being included within a range of guidance for doctors, it was suggested that there are **low levels of completion of antibiotic prescribing training**. In contrast, it was suggested that infection control training is more often perceived as a core part of the education requirements for medical students and also veterinary schools students. It was suggested that there could be a system of combined training for health professionals on a range of relevant issues including infection control, sepsis, antibiotic prescribing and stewardship, delivered at the same time in one training module.

– Some participants felt that **the introduction of a more transparent risk based scoring methodology might help in the assessment of patients to decide whether antibiotics are needed or not**.

– There was also a call for the **introduction of ‘Near-patient testing’ (NPT) for patients** as advances in technology have led to the development of instruments and kits that enable a more rapid identification of viral and bacterial infections. Primary care is probably best placed to ensure this vision was realised but appropriate funding is needed to ensure that prescribers are able to use the data available in a more proactive way.

– There was a discussion that **doctors in the UK can qualify with a relatively limited knowledge of antimicrobials** and this could be due to a ‘crowded’ curriculum for students in medical school. The potential for **mandating training** for AMR prescribing on the curriculum for medical students was discussed. It was felt that a change in emphasis is required to put forward a more holistic approach by combining infection control, sepsis, antibiotics prescribing and stewardship into one mandatory training module and therefore avoid silo working. This is relevant for veterinary sector as well. A series of resources for training including online modules, workbooks and toolkits are widely available but these are not consistent and do not have a sufficiently broad perspective in their approach.

– It was suggested that **more could be done to share information between different sectors** so that all health and veterinary professionals are aware of best practice, and learning is shared as part of continuing education and silo working is minimised.

– Participants from a facilities background highlighted the **need to educate facilities staff who are sometimes confused by the terminology of words that are used within the AMR area**. There is a lack of investment in training of support teams that needed to be addressed.
Improved public awareness

Participants felt that was critical to have a continued focus on raising awareness among the public of the harmful consequences of overuse and misuse of antibiotics. This could, for example, be supported through the introduction of national targets to raise public awareness. Specific suggestions for raising awareness included through greater use of social media, introducing AMR issues through popular TV storylines, through school, mobile apps, at museums through interactive and fun exhibitions for children as well as local campaigns that work in collaboration with local authorities and with the support of community champions.

It was felt that better targeted public health campaigns are needed for different patient groups. Social messages and campaigns take a long time to permeate into the public consciousness, like the smoking campaigns from the 1960 that slowly changed behaviour.

Some participants felt that any public campaign activity should be risk-based and focused on changing the attitudes of the patients before they are assessed by medical practitioners.

The perception of patients towards their local healthcare providers was discussed. There was a need to retain a balance between those who continually expected to be prescribed antibiotics and the people who did want to disturb their doctor and potentially had conditions that required antibiotic treatment.

The critical role of school nurses was discussed with concern that the significant reduction in numbers of nurses providing advice in schools could have an adverse effect on awareness of AMR. This was a critical area that the Government should be focusing on.

It was suggested that the public is developing more awareness of antibiotics that do not work as effectively as before, but may still expect these to be prescribed on an individual basis. If patients have taken antibiotics when they already have a virus and they then feel improved, it can be challenging to convince them that the virus would have gone anyway without the need for medication. There was a need to change a perception that this is for the clinical professionals benefit rather than the patients and to also change perception. The cultural ‘psyche’ of patient is an important factor. For example if there are illnesses on TV programmes such Coronation Street some individuals will visit GP the next week with some aspects of the symptoms!

Some participants highlighted that the devolved nations also have different approaches and different approaches to the surveillance of antimicrobial use and resistance which presents further difficulties.
Improved research and learning for other countries tackling AMR

– Many highlighted it was important to prioritise the research agenda on AMR and that lack of progress would result in significant costs in terms of lost opportunities, that will impact on human health. Research was critical for the development of effective treatment guidelines including using data from surveillance in both the secondary and primary care sectors.

– A further issue highlighted was the lack of current research evidence in some areas on the value of behavioural incentives. On the behavioural aspects the research should address in detail our understanding of what we currently know about the role of drivers and how far patients perceive antibiotics and as part of the ‘care’ system that they have entitlement to access.

– Participants felt that there is a need to consider the most advantageous areas for global collaborative research. The challenge is that we are learning more on AMR each day in the UK and this can be exported worldwide. AMR is a global problem that requires global solutions.

– When looking at the international context it was noted that procurement procedures for antibiotics varied significantly amongst different countries, especially in some nations where they are easily accessible over the counter. It was felt that there needs to be more universal international standards in place when tackling AMR challenges.

– It was suggested that many healthcare workers worldwide are also not fully engaged in the AMR challenge and there is significant potential for further action from international agencies as well as from national Governments to raise consciousness and share learning.

– Some participants proposed the introduction of an international barometer that can track the effectiveness of AMR policies in the different countries and assess where the gaps are. In addition, more cross border agreements could enable the collection of evidence on the impact of individual initiatives and whether national targets are resulting in real benefits.
Perspectives from the Chair of the BMA Board of Science

“Antimicrobial resistance threatens the effective treatment of an increasing range of infections and therefore an issue of critical importance. We were therefore delighted that the BMA Board of Science symposium provided an opportunity to bring together key stakeholders to discuss key issues, hear from leaders, network, share experiences and look for areas of consensus on tackling AMR challenges. We felt the event assisted in the process of dialogue going forward and provided a useful platform to inform decision makers developing AMR strategy in the UK and internationally”.

The BMA would like to thank all the individuals who participated in this symposium.

*The BMA has a [hub page](#) on its website highlighting concerns about antimicrobial resistance and the barriers to reducing inappropriate prescribing*
Appendix 1

Organisations represented at the BMA symposium on AMR held on 17th May 2018

– Academy of Medical Sciences
– Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection (APRHAI)
– British Dental Association
– British Society for Antimicrobial Chemotherapy
– British Veterinary Association
– Department for Health and Social Care (DHSC)
– Department for Environment, Food and Rural Affairs (DEFRA)
– European Network to Promote Infection Prevention for Patient Safety (EUNETIPS)
– European Public Health Alliance
– Genomics England
– National Farmers’ Union
– NICE
– London School of Hygiene and Tropical Medicine
– Patients Association
– Public Health England
– Responsible Use of Medicines in Agriculture Alliance
– Royal College of General Practitioners
– Royal College of Nursing
– Royal College of Pathologists
– Royal College of Physicians
– Royal Society of Medicine
– The Bella Moss Foundation
– Wellcome Trust
– University College London
Appendix 2

External organisations involved with hosting individual themed table discussions on AMR on 17th May 2018

– Academy of Medical Sciences
– British Society for Antimicrobial Chemotherapy
– Department of Health and Social Care (DHSC)
– European Public Health Alliance (EPHA)
– Royal College of Nursing (RCN)

BMA committees involved with hosting individual themed table discussions on AMR on 17th May 2018

– BMA Committee on Community Care
– BMA General Practitioners Committee
– BMA International Committee
– BMA Patient Liaison Group (PLG)
– BMA Public Health Medicine Committee (PHMC)

The Board of science is a standing committee of the BMA that promotes the medical and allied sciences, contributes to the development of effective public health policies, and supports medical research.

The membership for 2017/18 is as follows:
– Professor Dame Parveen Kumar (Chair)
– Jacquelyn Adams
– Professor Dame Sue Bailey
– Dr JS Bamrah
– Professor Peter Dangerfield
– Dr Shreelata T Datta (deputy for Professor Michael Rees)
– Dr Eleanor Draeger
– Dr Peter English
– Professor Gerard Hastings
– Dr Kitty Mohan
– Mr Ram Moorthy
– Dr Melody Redman
– Professor Michael Rees
– Professor Wendy Savage
– Dr Phil Steadman
– Dr Ian Wilson