

Time for action: Positive steps to combat antimicrobial resistance at a national level

Briefing from an international policymaker–scientist summit on antimicrobial resistance held at the Wellcome Trust, 26–27 April 2016

Summit themes:

- **Antimicrobial resistance (AMR) is a problem not just of health systems but also of food systems, with important social, economic and environmental dimensions.**
- **All countries can take meaningful actions now to address AMR: there is already sufficient evidence to support immediate action on a raft of measures to combat AMR.**
- **Actions should be tailored to the circumstances of individual countries.**

Context: The spread of antimicrobial resistance¹ threatens to return us to the pre-antibiotic era of untreatable infections, while undoing many of modern medicine's greatest advances. Antibiotics are a precious, life-saving resource whose loss is being accelerated through overuse and misuse. There is an urgent need for new antibiotics, but this is only part of the solution: we also need to preserve those that we have.

This calls for more appropriate use of our existing pool of antibiotics, as well as strengthened measures to prevent infection, to reduce the need for antibiotic use, and strategies to make best use of new antibiotics when they become available.

AMR is a multidimensional challenge. The social, economic and environmental dimensions of AMR encompass food systems as well as health systems. Public attitudes and behaviours have a major impact on antibiotic use in healthcare. In many countries agricultural use of antibiotics exceeds medical use. The solutions to AMR must therefore be similarly broad in scope – as captured by the 'One Health' concept, which recognises the interdependence of human health, agriculture and animal health, and the environment.

There are multiple tools and growing knowledge to enable national decision-makers to directly address this global challenge. The World Health Organisation (WHO) has developed a Global Action Plan for AMR, and individual countries are now developing National Action Plans. In order to accelerate and sustain this effort, the Summit brought together policymakers and scientists from more than 30 countries to review and debate a set of 25 specific policy options.

Three areas for immediate action were identified at the Summit (see over). Although evidence gaps have been cited as barriers to action, Summit participants' concluded that gaps will always exist and that the current evidence justified immediate action in many areas.

AMR affects every nation but countries have varying needs and different capacities to address this challenge in the face of a multitude of competing health priorities. The Summit recognised the importance of resourcing and of effective local implementation. Yet it also concluded that every country can take actions that will directly benefit their own citizens – as well as contributing to the preservation of our global antibiotic reserve.

Conclusion: AMR is a profound threat to human and animal health that will require transformational change across medicine, agriculture and the environment. Summit participants identified a range of practical policy interventions to inform the development of National Action Plans for AMR. Different countries are at different stages in the journey towards effective response strategies, and should select policy interventions most appropriate to their circumstances, while building their capabilities over time.

The changes necessary to overcome AMR are well within the global community's grasp – with the potential to deliver a safer and healthier world for all.

¹ The term 'antimicrobial resistance' covers resistance to drugs used to treat bacteria, viruses, parasites and fungi. The workshop primarily focused on bacteria and antibiotic resistance but the principles identified are equally applicable to other antimicrobial treatments.

Areas for Immediate Action

Antibiotic use in agriculture must be reduced, without compromising the food system's capacity to meet increasing global demand

- **Growth promoters:** Use of antibiotics for growth promotion and disease prevention should be replaced by improved animal husbandry practices
- **Insurance:** Innovative insurance schemes should be developed to mitigate the risk of income loss among producers during this transition.
- **Food production:** Food production systems should do more to limit consumer exposure to drug-resistant microbes (e.g. through increased use of surface cleansing).
- **Alternatives:** Alternative treatments and husbandry practices should be investigated to support reduced antibiotic use in agriculture.

There is an urgent need to develop better local understanding of antibiotic use and resistance levels, in human and animal medicine

- **Surveillance systems:** Surveillance and monitoring are essential to provide a clear picture of local situations and to assess the impact of interventions; expanded data are required on both antibiotic usage and resistance (in humans and animals).
- **Targets:** Quantitative data will enable policymakers to track progress over time, increase accountability and set targets to motivate changes in behaviour.
- **Labelling:** Labelling has a potentially important role to play in emphasising the 'protected' status of antibiotics, supporting tracking mechanisms, and ensuring drug quality.
- **Education:** Community-level education is necessary to ensure that all people, from parents of ill children to farmers, understand what antibiotics can and cannot do and why minimising use is in the interest of all.

Public health and food production systems need to optimise antibiotic use

- **Public health:** Consistent with the Sustainable Development Goals, emphasis should be placed on improved sanitation and access to clean water, and in promotion of public health measures such as good hand hygiene practices and enhanced infection prevention and control in hospitals; such moves would address AMR as well as deliver direct public health benefits.
- **Development assistance:** International development agencies need to integrate AMR prevention as a core aspect of their work.
- **Education:** Healthcare worker education and professional development should have a stronger emphasis on antibiotic stewardship.
- **Economics:** Financial incentives that link rewards to volumes of antibiotic sales need to be eliminated.
- **Guiding use:** Enhanced 'gating' of antibiotics is required, so more use is routed through healthcare professionals and over-the-counter use is minimised, with due consideration for the need to enhance access to antibiotics in many countries of the global South. Limits should be placed on international internet sales of antibiotics.