



Community-focused
One-health Approach
to AMR

A CALL TO ACTION



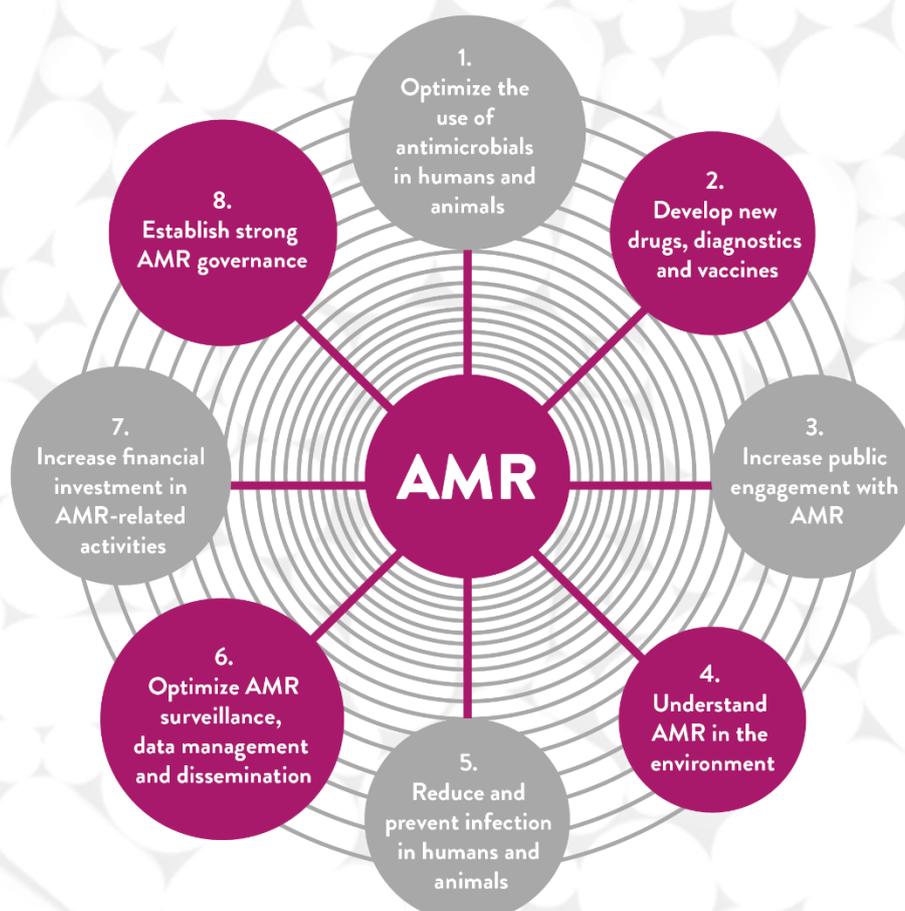
UK Research
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Call to Action for a Community-Focused One-Health Approach to Addressing AMR

Antimicrobial Resistance (AMR) has been declared one of the top ten global public health threats by the World Health Organisation. If current trends continue, we may face a scenario in which antibiotics, and other antimicrobials, no-longer work effectively, undermining ‘the foundation of a good deal of modern medicine and public health This will have significant implications for the food chain, the environment, and the global economy, as well as for human and animal health. AMR is a highly complex challenge and much remains unknown. We believe that it is crucial to adopt a holistic approach to address AMR, considering it, on the one hand, as an interconnected ‘One-Health’ problem in which its human, animal and environmental dimensions must be addressed collectively. On the other hand, dialogue between multiple AMR stakeholders at all levels is essential. In particular, community-level stakeholders need to be engaged more effectively, not simply as the recipients of public-health messaging, but as repositories of untapped knowledge that supports wider approaches to AMR across the entire research spectrum. In so doing, we seek to maximise the research resources we can bring to bear on this issue.

An analysis of current global AMR guidance reveals 8 key areas for AMR action:



Community engagement is often regarded as a mechanism for engagement with the public in order to improve end users' understanding of AMR. However, working in equitable partnerships with community stakeholders can not only improve the ways in which public engagement messaging works (Area 3), it can also help to inform all the other areas identified here. Moreover, we suggest that community engagement-focussed approaches can further help to 'de-silo' these 8 areas, again underlining the need, and potential, of emphasising a holistic approach to this global public health problem.



Image credit: ARK Foundation, Bangladesh

► **Optimal use of current antimicrobials:** Medicine optimisation ensures that patients receive safe and effective medicines, resulting in the best possible outcomes. Key to achieving this is understanding the demand for antimicrobials together with the need to support behaviour change in community-level health seeking behaviour. Community engagement can play an integral role in unpacking this information as well as engaging with the supply of medicines, for example by working with health professionals to co-create context-specific strategies to improve appropriate antibiotic prescribing, and by



Image credit: CARAN

understanding barriers and solutions to increase the use and impact of point-of-care diagnostic tests for antibiotic prescribing. This requires a better understanding of how community and health-care professionals interact and how to close the gap between uptake and adherence for such point-of-care tests. It is crucial that we have a better understanding of the current use of antimicrobials before we can establish what 'optimal use' might look like.

► **Development of new drugs, diagnostics, and vaccines:** Community Engagement has a particular role to play in the uptake of new drugs, diagnostics and vaccines, as we have seen, for example, in the role out of COVID-19 vaccines. Engagement with communities directly to maximise the acceptance of, and trust in, new treatments accounting for local and cultural traditions will support the delivery of successful medicine programmes.

A more nuanced understanding of what public engagement might mean: This is at the heart of how we understand community engagement and informs our approach to each of these strands. Public engagement is often conceptualised as a form of dissemination of important knowledge. However, research has shown that community-level behaviour does not change on the basis of knowledge alone. Consequently, straightforwardly pedagogical, 'knowledge-deficit'-type approaches to community-level public engagement tend to have limited impact on behaviour change. Thus, we consider community engagement to be better conceived of as a tool that draws on community-level knowledge to affect the wider social context and have more far-reaching and sustainable effects on, and beyond, the particular issue of AMR.



Image credit: the 'Supporting evidence-based policy: A longitudinal study of AMR' project

Understanding AMR in the environment: Knowledge generated through community engagement has the potential to guide targeted monitoring campaigns to understand, for example, the prevalence of AMR-drivers in the environment by informing which chemicals are routinely used, how agricultural and human waste are managed, and how these are inadvertently introduced



Image credit: the 'Supporting evidence-based policy: A longitudinal study of AMR' project

into our soils and waters, as well as how people interact with potential contaminants and bacteria in the environment. Of all the One-Health areas, our understanding of AMR in the environment is arguably the most limited. In turn, the potential for community engagement approaches to addressing gaps in the research might well have the greatest potential.

🔊 **Infection prevention:** One way to minimize the development and spread of AMR is to minimize infections in the first place. Community Engagement approaches have great potential to unlock knowledges around infection prevention strategies and barriers to good hygiene. Additionally, there is scope for AMR researchers to collaborate with other sectors to address broader global health issues aimed at improving the overall health outcomes of a community. Here we might mention, for example, the water, sanitation and hygiene (WASH) sector. It is crucial that the AMR community builds coalitions with colleagues working in WASH and other sectors to address these issues. However, infection prevention also links to optimal use of antimicrobials. Antibiotics specifically, and antimicrobials more broadly, are ‘precision tools’ that need to be carefully and professionally administered.



Image credit: Nichola Jones

However, in many contexts they are instead used as a diagnostic shortcut being seen as a medical or veterinary cure-all. This over-use of antimicrobials drives AMR whilst also failing to manage infections in the first place. community engagement could be a useful approach to unpick the nuances of antimicrobial usage within a specific community and enable more effective infection management at community level.

🔊 **Surveillance:** community engagement can be used as a research tool to collect data; can we, for example, use a ‘citizen-science’ approach to collect new surveillance data



Image credit: Anand Agricultural University and One Health Poultry Hub

within communities? Community-focused participatory approaches consider all actors to have knowledge that can contribute to understanding of this issue. Again, in terms of surveillance, the research community has a lot to learn from other communities with regard to, for example, what is happening where (e.g. with regard to waste disposal or water usage). There will, moreover, always need to be a situated approach to addressing this issue.

Different communities will have different experiences and pressures impacting their use of antimicrobials. community engagement can be a useful tool in collecting nuanced community-level data and ensuring that this data is fed back to the community to help co-develop appropriate interventions.

🔊 **Financing:** The development of resistance may lead to serious financial as well as clinical and environmental consequences. Finance also holds the key to managing AMR. Community engagement will help inform the supply side of antimicrobial production by understanding who is funding the development of new drugs and learning how these are promoted and to whom. Does this lead to accessible and/or excessive availability of antimicrobials? This issue directly relates to the 'optimal use' or antimicrobials discussed above.



Image credit: HERD International. HERD International and University of Leeds' joint meeting on AMR, Kathmandu 2019



Image credit: Dust Bunny

🔊 **Governance:** How can we actively engage communities in governance? There are clear legislative frameworks in most countries globally for the use of antimicrobials. However, there is often a gap between policy and practice. This gap frequently relates to a gap between a community's understanding and 'ownership' of governance. Community engagement has the potential to re-distribute power in these situations so that policy objectives genuinely and directly involve those who are intended to benefit.

Community engagement can also reframe how we look at the political economy of AMR and how power works across the AMR landscape. This relates back to themes such as surveillance and AMR in the environment where community-held knowledge will be integral to understanding problems and generating solutions. Additionally, community engagement in and of itself allows us to question what 'community' even means in context. community engagement can allow reflection on the power dynamics around and within communities and how these could be balanced to address AMR through meaningful, sustainable and holistic One Health approaches.



Image credit: Poultry Hub; Karine Gatellier

We consider **AMR to be a ‘turn key’ issue**. It impacts, and is impacted by, so many other critical One Health and Planetary Health challenges as well as the Sustainable Development Goals. However, the current global guidance and national policies on AMR appear to view it as a more siloed issue. Community engagement alone will not solve the issue of AMR. Long-term, sustained funding across the entire research landscape is needed if we are to turn the tide on AMR. But, at the same time, we believe that we require a fundamentally new approach to research, drawing on the untapped potential of community-level knowledge in order to make rapid progress in avoiding an impending global health and environmental crisis.

