Community engagement to mitigate antimicrobial resistance in low-and middle-income countries – an essential strategy for implementation of national action plans on AMR

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Antimicrobial Resistance (AMR) is a significant cause of mortality and morbidity, responsible for 1.27 million deaths worldwide in 2019 alone.[1] The impact of AMR is multi-dimensional, resulting in poor health outcomes, increased healthcare expenditure, and affecting food production.[2] The drivers of AMR are diverse and multisectoral. Inappropriate use of antimicrobials in human health, veterinary sector, and agricultural production can escalate AMR. Poor Water, Sanitation & Hygiene (WASH) and sub-optimal infection control may increase antimicrobial use, whilst improper waste disposal can spread resistance in the environment. Therefore, AMR requires a whole-of-society and one-health approach for prevention and mitigation.[3]

Drivers of AMR, especially in low-and middle-income country (LMIC) contexts, are often associated with individual and community behavior, such as health-seeking behavior, WASH practices in households & communities, and farming techniques used for food animal production.[4] To ensure optimal policy implementation, community engagement should therefore be a priority for AMR action. Community engagement and mobilization played a significant role in improving the reach of vertical programs for Tuberculosis and Human Immunodeficiency Virus (HIV).[5] We need to learn from such experiences. Global and national AMR mitigation efforts have been largely top-down with sub-optimal impact downstream, necessitating a complementary bottom-up approach where community engagement is prioritized.

AMR also presents a 'framing challenge', with narratives around the issue suffering a lack of clarity and inconsistent terminologies.[6] The technical nature and complexity of the issue results in low awareness and understanding among the public. Community engagement can be a strong strategy to overcome this framing challenge.[7] Initially in HIV, there was a similar issue in framing and overcoming the myths around transmission. This was addressed through wider engagement of stakeholder groups, understanding the reasons for specific individual and community behavior, and co-developing solutions.[8]

To truly engage with the community in a meaningful, sustainable, and resource-effective manner, it is important to consider existing engagement models or develop new ones if required.[9] These models should broadly cover strategies for establishing a dialogue with the community on AMR issues; influencing key stakeholder groups; advancing the conversation into robust AMR interventions; and local resource mobilization and sustainability. At present, there are some pilot projects to explore the community engagement dimension of AMR.[10] One such example is the 'Antibiotic Smart Communities' project in Kerala, a state in India.

Launched by ReAct, an international network working on AMR issues, the project was a four-year exercise to develop a model for community engagement. This model aimed to understand the perceptions around AMR in various community stakeholder groups and develop a set of interventions to contain the impact of AMR, in partnership with the community itself. This was done in Mallappuzhaserry, Kerala, India, a panchayat (the smallest administrative unit in the three-tier local governance system in the state) with a population of 11,000. After the initial dialogue, data collection, and community asset mapping, all of which contributed to the community engagement process, a set of 12 interventions was developed. These included training farmers on the value-addition of their products, demonstration of compost & soakage pits for waste disposal, and even a local campaign against non-prescription use of antimicrobials. These interventions were developed after identifying the needs of the community through a 15-point indicator framework. The indicators were from different sectors, such as human health, animal health, environment management, and WASH. This framework was developed, validated and used in the community to also evaluate the impact of the interventions.[11] The project was fruitful in engaging the community by way of introducing the AMR theme, understanding the needs and gaps in the community in efforts to contain AMR, and for co-developing the interventions. Such a multi-dimensional continuous engagement, with the additional advantage of being able to periodically assess the status through the indicator framework, will hopefully facilitate sustainability of the interventions.

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There is a need to invest in such models of community engagement to understand how to 'unpack' AMR for the public and co-opt them into the process of designing interventions. Learning from other domains, using social science expertise, and dedicated funding may be the critical prerequisites for developing these models. Such efforts will be crucial to optimize policy implementation for National Action Plans on AMR and thereby move towards an 'Antibiotic Smart' community!

Contributors

Philip Mathew–conceptualization and preparation of the first draft.

Sujith J Chandy–conceptualization, critical inputs, and revising of the draft.

Jaya Ranjalkar–critical inputs and revising the draft

Finalization of the manuscript-all authors.

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