

Learning Question 1: What are the contributions of systems thinking approaches and tools to changes in health system outcomes? How do systems thinking approaches affect health system outcomes?

Championing multistakeholder engagement for capacity strengthening toward AMR containment in Nepal

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Context: Describe the context in which the activity takes place. What is the health problem that you are trying to solve? What health system challenges contribute to this problem? Why did you decide to apply a health systems approach to this problem? Why did you choose this approach over others?

Antimicrobial resistance (AMR) is an emerging public health threat that requires urgent action with multi-sectoral engagement through the One Health approach. The irrational use of antimicrobials in humans, animals, and food/agriculture is one of the key drivers for the emergence and spread of antimicrobial-resistant pathogens, making infections more difficult to treat and increasing public health risks. AMR is one of the top 10 global public health threats and can lead to prolonged illnesses, adverse outcomes, and financial hardships. Moreover, the emergence of resistance in organisms is increasing at an alarming rate, and the ability to resist previously effective treatments can easily transfer from one illness-causing pathogen to another. New drugs take time to develop, which gives pathogens resistant to multiple drugs the opportunity to have a major global impact.

Several health system challenges contribute to this problem, including a limited awareness of AMR among health care providers, policymakers, and the general public; inadequate surveillance systems for monitoring and reporting AMR patterns and trends; inconsistent adherence to infection prevention and control practices in health care facilities; failure to enforce laws and regulations controlling the sale and use of antibiotics; and weak coordination and collaboration among the different sectors, such as health care, agriculture, and veterinary services, in addressing AMR.

One way to contain the rapid spread of AMR is by making the public aware of the risks of resistant pathogens and providing education on the prudent use of antimicrobials. The media can play a significant role in the fight against the misuse/overuse of antimicrobials by providing accurate information about the risks and benefits of antimicrobials. Sensitizing television, radio, and print media personnel about AMR therefore can help shape public opinion and behavior and empower individuals to both make appropriate decisions about their antimicrobial use and demand more responsible prescribing practices from their health care providers.

A health system strengthening approach was chosen to tackle AMR in Nepal because it recognizes that addressing the problem requires a comprehensive and multisectoral response. The approach considers not only the clinical aspects of AMR but also the underlying health system factors that contribute to its emergence and spread. By strengthening the health system, the focus is not solely on treating patients but also on addressing the challenges that perpetuate AMR. This includes improving surveillance systems, promoting the responsible use of antibiotics, enhancing infection prevention and control measures, fostering intersectoral collaboration, and raising awareness among One Health stakeholders.

Bridging existing knowledge gaps at the grassroots level can lead to the formulation of the policies, guidelines, and interventions required for health system strengthening more broadly. Hence, to lay the foundation for the evidence-based activities needed to lessen the impact of AMR, preserve the efficacy of existing antimicrobials, and safeguard public health, undertaking multistakeholder engagement using a One Health approach that incorporates media involvement is paramount.

Activity Description: Please describe what you are doing to address this health system challenge. What steps did you take to implement this activity? What government agencies or other stakeholders did you work with and how did you engage them? Did you make any changes to your approach as you went along and if so, why? Have you scaled up or do you have plans to scale up?

To address the rising health, social, and economic problems associated with antimicrobial resistance, we decided to systematically work on the first strategic area of the draft National Action Plan on AMR 2021–2026—i.e., “Improve awareness and understanding of AMR through effective communication, education, and training.” In active collaboration with the Ministry of Health and Population (MoHP) of the Government of Nepal and other One Health stakeholders, we supported the “Go Blue for AMR” campaign and raised AMR awareness through various programs and activities. In addition, AMR partner mapping was successfully conducted via a workshop in which 49 individuals from 27 AMR organizations/partners, representing government and private sectors as well as academia and industry, were actively involved. Through 21 oral presentations, partners shared their areas of focus and activities, achievements to date, and challenges faced on the frontiers of AMR. The event provided the MoHP with the opportunity to identify any duplication of activities and promote the One Health approach, which is crucial for fighting AMR.



Multistakeholder participants from the partners' mapping AMR workshop, held in Kathmandu, on November 13, 2022. Photo credit: USAID MTAps Nepal

A comprehensive understanding of the baseline data on antimicrobial resistance in Nepal must be established in order to counter the growing threat posed by AMR. A lack of accurate and up-to-date data inhibits the ability to assess the magnitude of the problem, identify key contributing factors, and design evidence-based interventions to lessen the impact of AMR. Hence, a survey on baseline awareness of AMR was conducted among 114 media personnel from all seven provinces of Nepal using the convenient sampling method. The baseline data was collected using 15 closed-ended structured questionnaires—addressing subjects such as awareness, practices, infection prevention and control, global and national responses to antimicrobial stewardship, and impacts of gender on AMR—using virtual (official email) and physical (face-to-face interview) techniques. Crucial findings from this survey suggest that media personnel, even health journalists, lack knowledge about AMR. Systematic sensitization, education, and awareness campaigns therefore are urgently needed to increase knowledge and promote motivated and accurate public education and information practices about AMR among media personnel across age, genders, and provinces in Nepal. An AMR sensitization workshop package for media accordingly was planned for roll out in all seven provinces of Nepal, as recommended by the MoHP. Meetings and discussions were held with various members of the Health Journalist Forum Nepal. Those conversations were fruitful, and the journalists' insights and recommendations were addressed in the final workshop package. During the interactions, the importance of exploratory and investigative journalism was stressed, and the need for case-specific discussions and training on writing evidence-based AMR-related articles based on local contextualization was acknowledged.

In developing the sensitization workshop package, we worked hand-in-hand with multiple stakeholders, including representatives from the MoHP's Quality Standard and Regulation Division and National Health Education, Information, and Communication Center; the Ministry of Agriculture and Livestock Development's Department of Food Technology and Quality Control and Central Veterinary Laboratory; and the Nepal Agriculture and Research Council. Thanks to the active engagement of, and invaluable input from, those individuals, the package was successfully developed and subsequently translated into the Nepali language and approved.

The workshops for the media were successfully conducted in Koshi (Biratnagar), Madhesh (Janakpur), Bagmati (Chitwan), Karnali (Surkhet) and Lumbini (Dang) provinces and provided sensitization on AMR to 233 media personnel from various platforms. Since then, media personnel developed and covered 42 news articles and visual contents on the issue of AMR through their media channels, which further sensitized the personnel themselves and offered much needed public awareness to prescribers, dispensers, and consumers.

Additional workshops to cover the remaining two provinces are ongoing and will be implemented by June 2023, and efforts to draw attention to AMR will be scaled up to reach Nepal's rural communities. The resulting evidence-based/investigative media coverage on AMR should help increase awareness about the rational use of antimicrobials, enhance support for establishing and enforcing policies, laws, and regulations to contain AMR, and, ultimately, contribute to prudent health-seeking behavioral changes.



Participants from different media channels in AMR sensitization workshop implemented in Surkhet of Karnali Province, on June 14, 2023. Photo credit: USAID MTAps Nepal

Activity Impact: How did this activity strengthen the health system? Which components of the health system did you act on (for example, did you support improvements in financing, cross-sectoral coordination, governance, local ownership, information, human resources, behavior of health system actors, service delivery or medical products, vaccines, or technologies)? How did the pieces of your activity come together to impact equity, quality, and/or resource optimization in the health system? How did these improvements in equity, quality, and/or resource optimization lead to better health outcomes? How does this activity contribute to health system resiliency and/or sustainability?

Multisectoral engagement to raise awareness on antimicrobial resistance: Our multisectoral partnership and engagement with stakeholders using the One Health approach have already contributed to the much-needed awareness campaigns and, through various activities conducted during World Antimicrobial Awareness Week (WAAW2022), helped raise awareness on AMR at the national and global level. (See our blog, “Strengthening One Health Initiative for Antimicrobial Resistance Containment in Nepal,” published on the official website of the USAID MTAps Program at <https://www.mtapsprogram.org/news-blog/strengthening-one-health-initiative-for-antimicrobial-resistance-containment-in-nepal/>)

AMR baseline mapping of media personnel: The survey assessed the present knowledge level of media personnel on AMR using data that were collected scientifically and analyzed statistically. The knowledge gaps uncovered by the survey highlight the need for increased AMR awareness and education, especially considering the power media personnel have to disseminate information to the public. The survey also underscored that although AMR is a critical global public health concern, media personnel were unable to affectively promote the responsible use of antibiotics or advocate for the strengthening of laws and regulations related to antimicrobials due to their lack of both knowledge about and appreciation of the grave public health risk AMR poses. The survey accordingly helped determine what types of information, education, and communication materials and training modules are needed to conduct AMR sensitization workshops for the media. In the future, the results of the baseline survey also will serve as benchmark information in the frontiers of engaging media personnel as crucial allies in tackling AMR.

AMR sensitization workshop package for media: The package contributes to strengthening the health system using a multipronged approach:

- **Cross-sectional partnership and coordination:** The workshop package brings together concerned stakeholders from various One Health sectors, including the health care, agriculture, veterinary services, and media industries, and will foster collaboration and facilitate the sharing of knowledge and strategies for containing AMR.
- **Information and education:** The workshop package enhances the knowledge and understanding of AMR among media personnel. The accurate and up-to-date information provided by the workshop will equip media personnel with the skills and tools they need to effectively communicate evidence-based AMR-related messages to the public.
- **Behavior of health system actors:** The workshop package positively influences the behavior of media personnel, who are part of the health system, by raising awareness and encouraging responsible reporting on AMR-related issues, such as appropriate antibiotic use and infection prevention and control measures, which in turn has a positive impact on the behavior of health system actors.
- **Local ownership and governance:** The workshop package promotes local ownership by engaging media personnel from the provinces. By involving them in the awareness campaign and supporting them in disseminating information at the sub-national and grassroots level, it strengthens local governance and ownership of AMR-related initiatives.

The combined impact of these components on equity, quality, and resource optimization in the health system can be observed as follows:

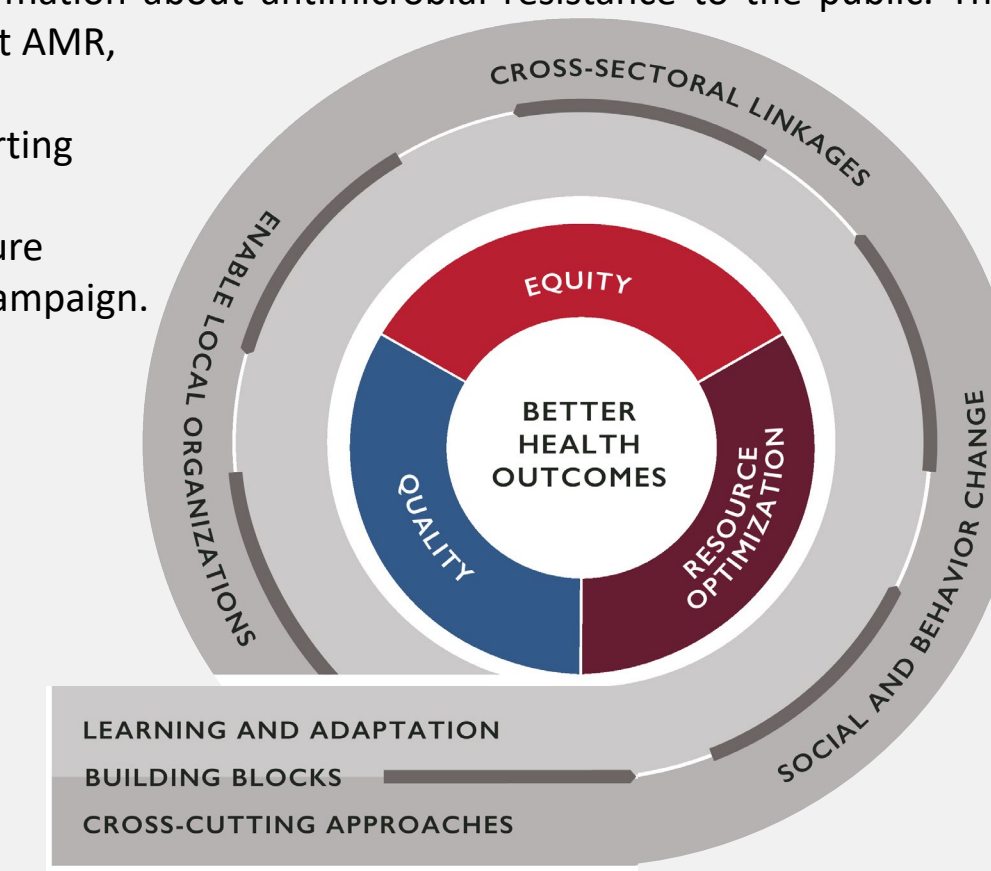
- **Equity:** The workshop helps to bridge the information gap among media personnel, enabling them to disseminate accurate information about antimicrobial resistance to the public. This contributes to reducing disparities in access to information and ensures that all segments of society can become knowledgeable about AMR, thereby promoting equity in health education.
- **Quality:** By providing media personnel with accurate and up-to-date information on AMR, the workshop improves the quality of reporting and communication. This ensures that the information reaching the public is reliable, evidence-based, and of high quality.
- **Resource optimization:** The workshop leverages the reach and influence of the media by using its existing communication infrastructure to disseminate AMR-related messages. This ensures that resources are used efficiently and maximizes the impact of the awareness campaign.

These improvements in equity, quality, and resource optimization contribute to better health outcomes by:

- Increasing public awareness and understanding of AMR, leading to improved antibiotic use practices and infection prevention measures.
- Reducing the incidence of drug-resistant infections through responsible reporting and promoting behavioral change.
- Strengthening public trust in the health care system by providing reliable and accurate information through media channels.

The AMR awareness workshops also contribute to health system resiliency and sustainability by:

- Strengthening collaboration and coordination across One Health sectors, which improves the overall approach and effectiveness in preventing AMR and the ability to respond early when it occurs.
- Building local ownership and capacity to sustain AMR awareness initiatives in the long term.
- Enhancing the health system's ability to adapt and respond to emerging challenges related to AMR through improved information sharing and behavior change.



Evidence: What evidence do you have of your activity's impact on health system or health outcomes? How can you best show what your activity accomplished? How do you know that you met your goals? Is the evidence able to be measured? Graphs or charts may be useful here to show this evidence.

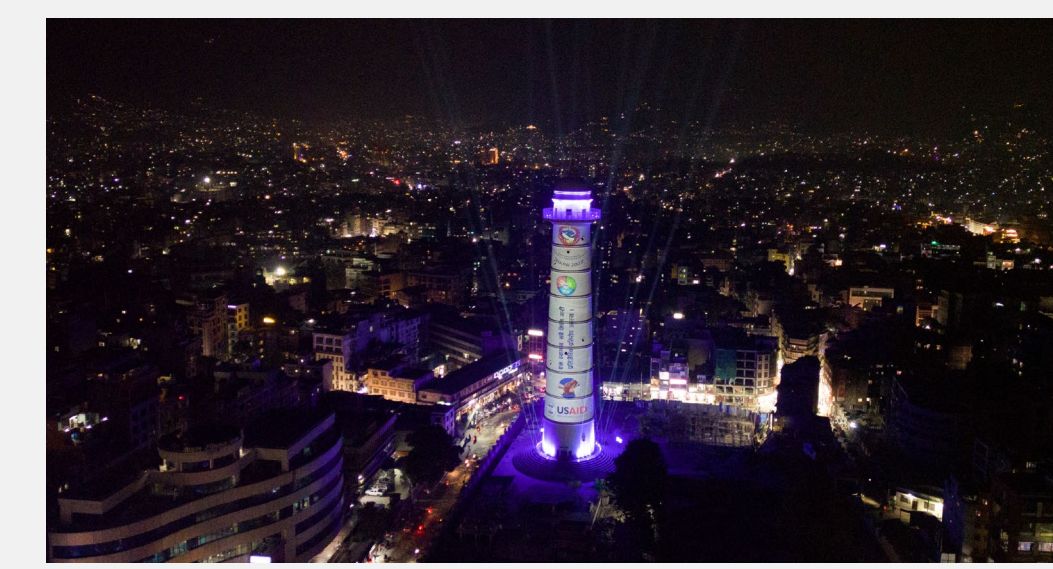
Multisectoral engagement to raise AMR public awareness:



Multistakeholder engagement from the partners' mapping AMR workshop, held in Kathmandu, on November 13, 2022. Photo credit: USAID MTAps Nepal

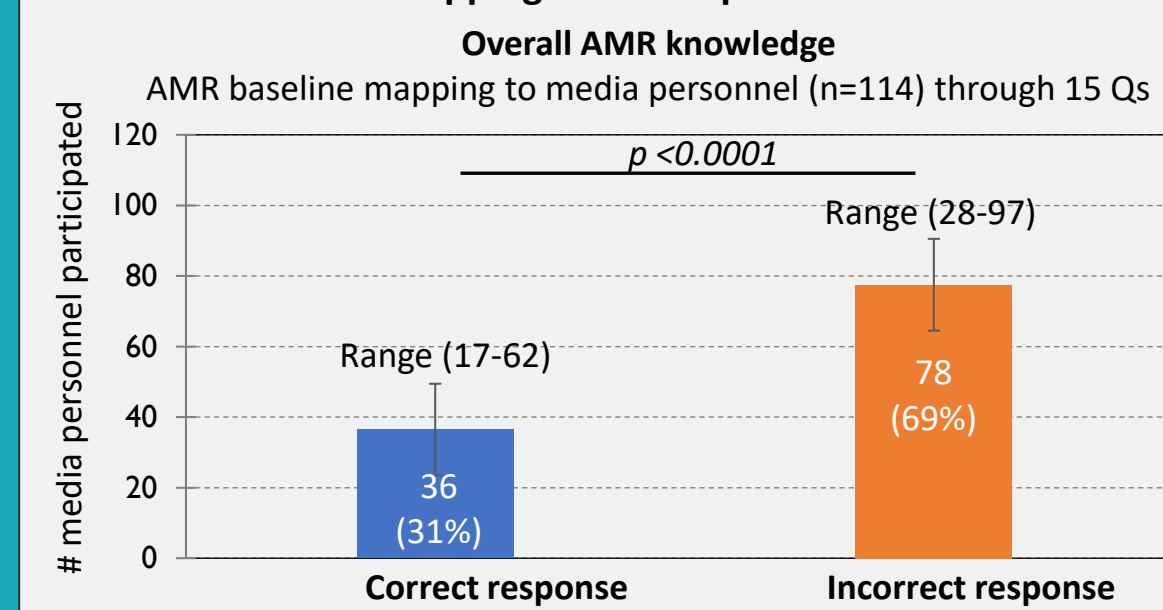


The World Antimicrobial Awareness Week (WAAW) 2022 Walkathon organized by MoHP with multisectoral engagement displaying placards with key AMR awareness messages in native Nepali language. Photo credit: USAID MTAps Nepal



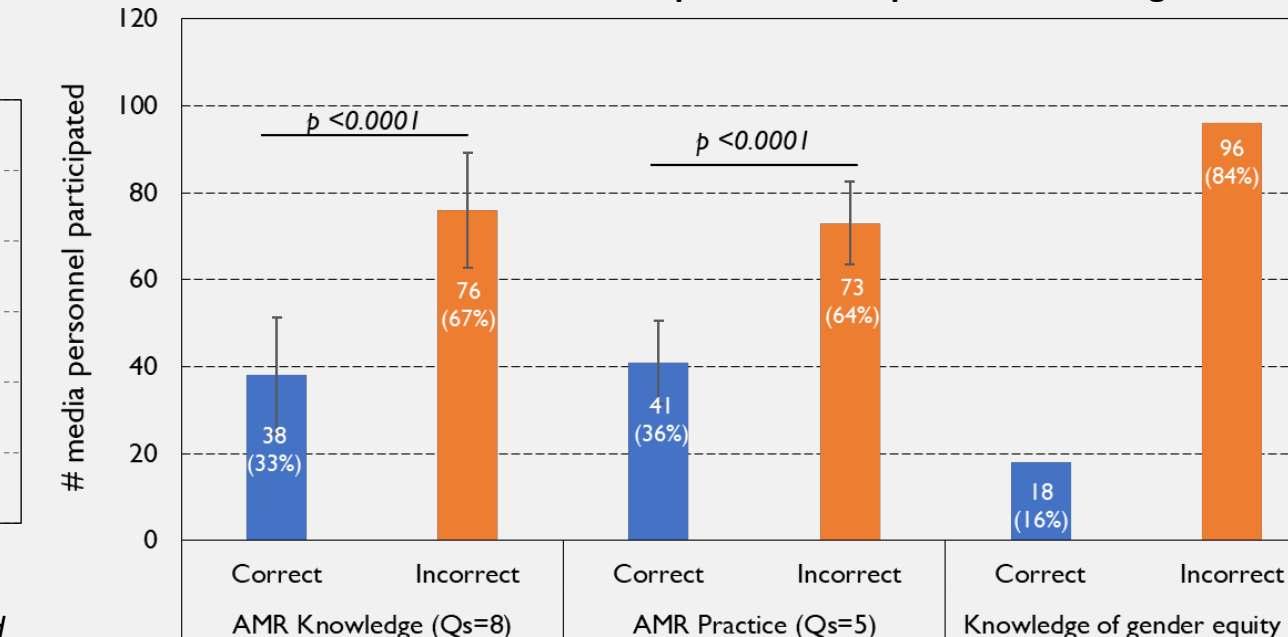
WAAW “Go Blue for AMR” campaign at the historical Dharahara Tower in Kathmandu on November 24, 2022, displaying key AMR awareness messages during WAAW 2022. Photo credit: USAID MTAps Nepal

AMR baseline mapping to media personnel



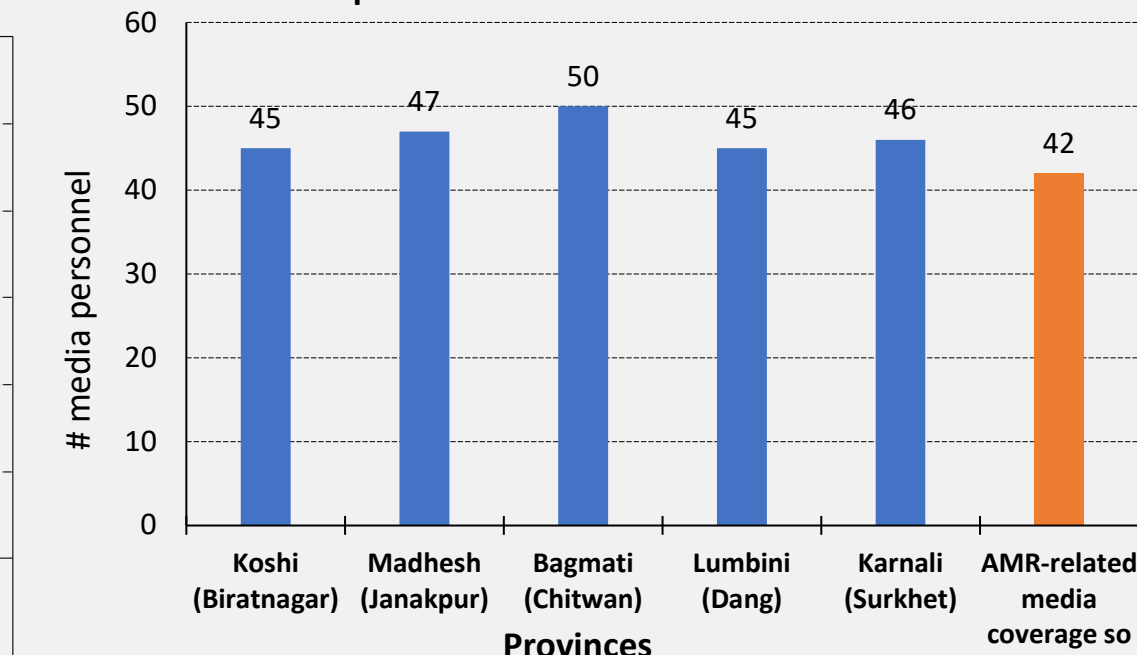
The AMR baseline mapping was assessed through 15 close-ended questionnaires where the result revealed the average incorrect responses of participants were significantly higher than the participants who responded correctly. Additionally, the range of participants who had responded to incorrect answers was 28-97 (Finding from AMR baseline mapping to media in Nepal).

Baseline information of media personnel in specific AMR categories



AMR Baseline mapping analyzed via; AMR knowledge, practice, and gender equity in AMR. As shown, correct responses were comparatively lower than the respective headings. Statistical analysis (Two Tail T-TEST) revealed a significant difference (p-value <0.0001) correct vs incorrect responses among knowledge (36:78) and practice (41:72) vs 18:96 of AMR.

#Media personnel who have been sensitized on AMR



AMR Sensitization Workshop Package to Media were effectively implemented in five provinces until June 16, 2023. Total 233 media personnel from different media platforms received training on AMR. Those who have been sensitized, developed and covered 42 AMR-related news, and visual documents from their media channels so far.

Facilitators: What aspects of the health system, context, or external partner support helped make this successful? For example, were there existing working groups in place that enabled efficient coordination between stakeholders on this activity? Did you use a tool or knowledge resource from a global partner like WHO or UNICEF to help inform your activity?

By engaging various departments, divisions, organizations, private institutions, and academia—and by seeking their continued efforts, support, and contributions—USAID MTAps Nepal has been able to create multi-sectoral and multi-disciplinary programs and undertake multipronged approaches and actions aimed at containing antimicrobial resistance in Nepal.

For the awareness campaigns, vital stakeholders from One Health have been instrumental, including the MoHP's Quality Standard and Regulation Division and National Health Education, Information, and Communication Center; the Ministry of Agriculture and Livestock Development's Department of Food Technology and Quality Control and Central Veterinary Laboratory; and the Nepal Agriculture and Research Council.

The active participation, collaboration, and engagement of Health Journalist Forum Nepal and other media personnel harnessed the value of an interactive engagement of the target audience and ensured that media perspectives and expertise were incorporated in the very process of designing and developing the AMR sensitization workshop package. Such an approach helps enhance acceptability and ownership by the media personnel and the long-term sustainability of efforts at creating public and community awareness, policy, and advocacy on AMR issues. This type of participant collaboration and co-creation model for designing and rolling out effective awareness campaigns can be emulated by other health system strengthening programs in resource constraint settings. Additionally, participation of One Health experts from different sectors ensures that the workshop package resonates with all the sectors related to AMR and addresses their needs and that the campaign is comprehensively effective.

Challenges: What were some problems or challenges that you faced during your activity implementation? Did you expect these challenges or were they unanticipated? How did you respond to these challenges?

Some of the major challenges faced during the programs are:

- The National Action Plan for AMR 2021–2026 has not yet been systematically endorsed and implemented.
- Evidence-based AMR information generation is inadequate and not comprehensive, posing challenges in developing data-based awareness messages and packages.
- One Health stakeholder engagement in the agriculture/environment sector is weak.
- Awareness campaigns on AMR are unstructured and only focused on World Antimicrobial Awareness Week.
- Most media personnel in the country are unaware of the gravity of the AMR situation.
- Most health journalists in the country have not produced and disseminated any evidence-based AMR-related news coverage so far.
- Resources and other information, education, and communication materials on AMR printed in the local language are lacking.
- Laws and regulations against inappropriate practices with respect to antimicrobials must be implemented and enforced.

Yes, most of the challenges were expected. That's why we aimed to conduct our program and activities from the ground up. Partner mapping, baseline data collection, and implementation of the AMR sensitizing workshop package to media all work together to enhance awareness and understanding of AMR through effective communication, education, and training, ultimately leading to health system strengthening in Nepal.

Lessons Learned: What lessons have you learned while you implemented this activity? How will this impact future activities or approaches? What advice would you give to other implementers and health systems actors in other countries that might want to adapt your approach?

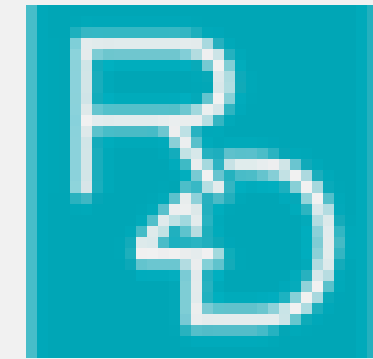
The following lessons were learned by implementing these activities and programs:

- While media personnel are a key ally in containing AMR, they are often not adequately engaged. Efforts should be made to educate them on AMR, as they are in a unique position to raise public and community awareness and ensure that policymakers are held accountable for implementing and enforcing laws and regulations against the improper use of antimicrobials and other actions that contribute to the emergence of AMR.
- Media personnel can also play a vital role in making concerned stakeholders aware of the need for timely monitoring and evaluation of AMR activities (awareness, surveillance, infection prevention and control, stewardship and research innovation, and sustainability).
- Gender equity should be augmented in AMR education and awareness campaigns to ensure that everyone is included and has equal access to education and resources on AMR.
- Public awareness campaigns and sensitization programs should be held in all provinces to ensure that everyone, regardless of their location, has access to education and resources on AMR.
- One Health engagement of multiple stakeholders responsible for AMR is vital for developing multipronged strategies to address knowledge gaps and promote the prudent use of antimicrobials.

In the future, this awareness can serve as a foundation to facilitate collaboration among various stakeholders, including health care professionals, policymakers, media personnel, and global partners. This knowledge sharing will help disseminate best practices and encourage other countries or regions to adopt similar approaches. It will also encourage the government to endorse and systematically implement the National Action Plan for AMR 2021–2026 in Nepal. Further, it will create opportunities for other implementers and health systems actors to adapt this cross-cutting approach for awareness campaigns to other health system strengthening activities.

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RESULTS FOR DEVELOPMENT



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