

USAID MEDICINES, TECHNOLOGIES, AND PHARMACEUTICAL SERVICES (MTaPS) PROGRAM

Improved Access. Improved Services. Better Health Outcomes.

ADVANCING THE GLOBAL HEALTH SECURITY AGENDA

“Antimicrobial resistance is a global crisis that threatens a century of progress in health and achievement of the Sustainable Development Goals.

There is no time to wait. Unless the world acts urgently, antimicrobial resistance will have disastrous impact within a generation.”

— IACG report to the UN Secretary-General, 2019¹

Controlling the global threat of antimicrobial resistance (AMR) relies on robust pharmaceutical systems worldwide that promote access to and appropriate use of medical products, including antimicrobial medicines, which is the core mission of the US Agency for International Development’s (USAID) Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program. Misuse and overuse of antimicrobials in humans and in animals is one of the leading causes of AMR. Containing and controlling the spread of AMR is particularly difficult in low- and middle-income countries (LMICs) due to weak infection prevention and control (IPC) measures and high rates of inappropriate use of antimicrobials facilitated by weak regulations, standards, systems, and governance.

GLOBAL HEALTH SECURITY AGENDA

The Global Health Security Agenda (GHSA), launched in 2014, is now a network of 69 countries and international, nongovernmental, and private-sector entities working to ensure global health security. The GHSA brings together a range of sectors, including health, agriculture, environment, finance, and defense, to build countries’ capacity to prevent, detect, and respond to infectious disease threats, including AMR. AMR is one of eight Action Packages currently addressed by GHSA members.

USAID supports GHSA goals, including through MTAps work in 13 countries. MTAps technical assistance focuses on strengthening multisectoral coordination (MSC) for AMR containment, systems and practices for IPC, and antimicrobial stewardship (AMS) (i.e., appropriate use) to help countries sustainably build capacity and achieve established targets in containing AMR. Since late 2018, MTAps has supported GHSA/AMR activities in Bangladesh, Burkina Faso, Cameroon, Côte d’Ivoire, Democratic Republic of Congo (DRC), Ethiopia, Kenya, Mali, Senegal, Tanzania, and Uganda, and the results below reflect this work².

¹ IACG. No time to wait: securing the future from drug-resistant infections: Report to the Secretary-General of the United Nations, April 2019. Interagency Coordinating Group on Antimicrobial Resistance

² MTAps recently initiated GHSA support in Mozambique and Nigeria, but those countries are not included in the results presented as part of this report.

MTaPS' TECHNICAL APPROACH

The GHSA uses the World Health Organization (WHO) Joint External Evaluation (JEE) tool to measure country capacity in 19 technical areas, including AMR.³ In 2019, WHO released *Benchmarks for International Health Regulations Capacities*, a complementary tool to help countries identify and implement recommended actions to make progress in the JEE technical areas.⁴ Together, the JEE and WHO benchmarks categorize countries into five capacity levels ranging from 1 (no capacity) to 5 (sustainable capacity).

MTaPS' goal is to help its 13 GHSA countries improve capacity to advance to higher JEE levels in MSC, IPC, and AMS using the WHO benchmarks and JEE tool to measure progress. This enhances the ability to effectively implement their national action plans on AMR (NAP-AMR) (figure 1).

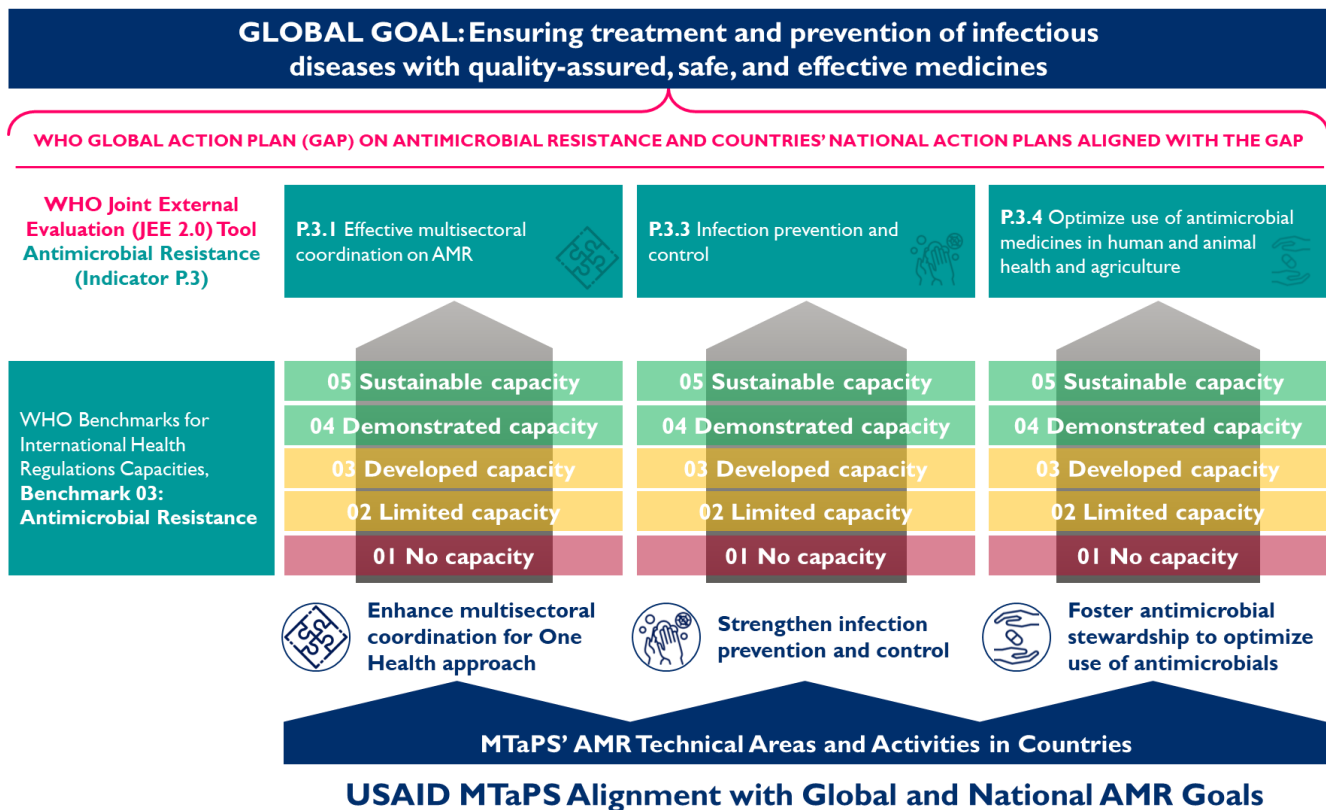


Figure 1. Technical approach alignment with global and national AMR goals

MTaPS' technical approach is to base country implementation plans on the findings from MTAps' scoping visits, the countries' baseline JEEs, and guidance from the WHO benchmarks tool (table 1). The approach also involves collaborating with partners at the global, regional, and country levels and embedding monitoring and knowledge sharing to capture, document, and disseminate experiences and results. Although MTAps' focus is on human health, the program also supports some work in the animal health and agricultural sectors.

³ World Health Organization. 2018. Joint external evaluation tool: International Health Regulations (2005), second edition. Geneva: WHO.

⁴ World Health Organization. 2019. WHO Benchmarks for International Health Regulations (IHR) Capacities. Geneva: WHO.

Table 1. Current JEE capacity levels for 11 MTaPS-supported GHSA countries

#	Country	IPC P.3.3.	AMS P.3.4.	JEE date	MTaPS scoping visit date
1	Bangladesh (BD)	2	2	May 2016	Dec 2019
2	Burkina Faso (BF)	1	1	Dec 2017	Mar 2019
3	Cameroon (CM)	1	1	Sep 2017	Mar 2019
4	Côte d'Ivoire (CI)	1	1	Dec 2016	Jan 2019
5	DRC (DC)	1	1	Mar 2018	Mar 2019
6	Ethiopia (ET)	2	2	Mar 2016	Nov 2018
7	Kenya (KE)	3	2	Feb–Mar 2017	Jan 2019
8	Mali (ML)	2	1	June 2017	Mar 2019
9	Senegal (SE)	3	1	Nov–Dec 2016	Dec 2018
10	Tanzania (TZ)	3	1	Mainland (Feb 2016) Zanzibar (Apr 2017)	Oct 2018
11	Uganda (UG)	3	3	June 2017	Feb 2019

Figure 2 provides a schematic presentation of MTaPS’ technical framework for sustainably strengthening country systems to combat AMR.

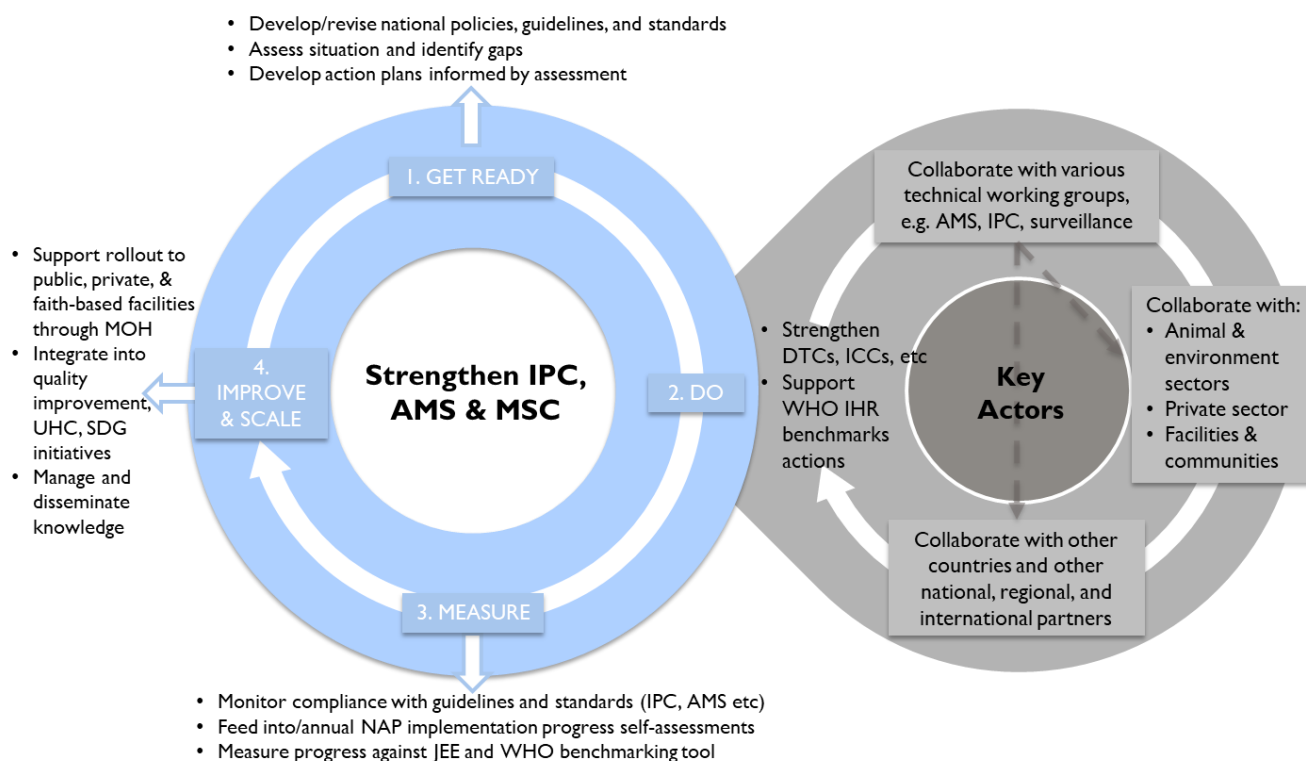


Figure 2. The MTaPS GHSA/AMR technical implementation framework

Although the 11 MTaPS target countries vary in terms of their assessed capacity in the three technical areas, MTaPS uses standardized approaches, including capitalizing on countries’ existing structures, such as MSC mechanisms on AMR; collaborating with partners to leverage their resources; building skills through tested and proven methods (e.g., continuous quality improvement, eLearning); and supporting systems thinking for sustainability. Implementation plans depend on a country's current capacity levels, resources, and priorities.

In addition to working at the national level, as of September 2020, MTaPS is providing direct support to 86 health facilities to strengthen IPC (77 facilities) and AMS (75 facilities) practices. In 64 facilities, MTaPS is strengthening both areas, which is more cost-efficient and produces synergy.

To help supported GHSA countries, MTaPS drafted six ‘how-to’ mini-guides to help standardize planning, jump-starting, and implementing a select set of activities that countries identify as priorities:

- [Classify essential medicines list antibiotics into AWARe \(access, watch, reserve\) categories⁵ per WHO guidance and integrate them in AMS plans and actions](#)
- [Implement a continuous quality improvement approach to strengthen infection prevention and control programs at health facilities in MTaPS Program countries](#)
- [Strengthen/improve function or technical capacity of the multisectoral \(One Health\) coordination body on AMR and associated technical working groups \(TWGs\)](#)
- [Assess IPC status using WHO’s national-level \(IPCAT2\)⁶ and facility-level \(IPCAF\)⁷ tools to inform IPC improvement plans](#)
- [Review/revise pre-service/in-service training/curricula, including the use of eLearning methodologies \(AMS/IPC\)](#)
- [Assess policies, structures, procedures, and regulations for antimicrobial use and stewardship to inform AMS improvement plans](#)

The MTaPS GHSA work supports additional global initiatives, including those to right. Partners in these efforts include government counterparts in both the human and animal sectors and other in-country stakeholders, including professional associations, civil society, nongovernmental organizations, academia, and the private sector. On the global front, collaborations include donors and their implementing partners, UN bodies such as the WHO, the Food and Agriculture Organization, and the World Organization for Animal Health, as well as the Centers for Disease Control and Prevention.

Supported initiatives and agendas

- WHO Global Action Plan on AMR
- GHSA 2024
- GHSA AMR Action Package
- Universal health coverage
- Sustainable Development Goals
- US National Action Plan on Combating Antibiotic-Resistant Bacteria 2020–2025
- Journey to self-reliance
- Health care quality improvement/quality of care
- Patient safety
- Multiple initiatives related to maternal, newborn, and child health; malaria; HIV/AIDS; and TB

MTAPS-SUPPORTED PROGRESS TOWARD MULTISECTORAL COORDINATION

AMR cannot be overcome without addressing all of its drivers, which span the human, animal, plant, and environmental sectors. The One Health approach,⁸ with MSC at its core, provides the mechanisms for countries to successfully implement their multisectoral NAP-AMR, including strengthening IPC and AMS practices in both human and animal health.

MTaPS presented [Effective multisectoral coordination on AMR: a landscape of experiences and lessons from 11 countries at a side event organized around the 6th GHSA Ministerial Meeting on November 4, 2020.](#)

KEY MTAPS ACTIVITIES TO STRENGTHEN MSC

To improve MSC, MTaPS works with country counterparts on:

- Strengthening leadership and governance functions or technical capacity of the multisectoral (One Health) coordination body
- Helping to set up or improve the functioning of technical working groups (TWGs) on IPC and AMS
- Supporting the development and updating of governance documents
- Facilitating collaboration between the animal and human health sectors in IPC and AMS
- Developing a monitoring and evaluation framework and operational/implementation plan for countries’ NAP-AMR

⁵ World Health Organization. Adopt AWARe: Handle antibiotics with care. <https://adoptaware.org/>.

⁶ World Health Organization. 2017. WHO. 2017. National infection prevention and control assessment tool (2) and instructions. Geneva: WHO.

⁷ World Health Organization. 2018. Infection prevention And control assessment framework at the facility level. Geneva: WHO.

⁸ World Health Organization. 2015. The Global Action Plan on Antimicrobial Resistance. Geneva: WHO.

SUMMARY OF SELECT RESULTS

In each GHSA-supported country, MTaPS has helped establish or facilitate meetings of MSC bodies on AMR with representation from organizations involved in the countries' One Health activities. Of the 1,410 participants that attended these meetings between October 2019 and September 2020, 42% (586) were female.⁹ In the same period, a cumulative total of 123 AMR-related in-country meetings or activities were conducted with multisectoral participation. Twenty-five policies, pieces of legislation, regulations, and operational documents related to NAP-AMR implementation were developed, improved, or updated with MTaPS' support in the above one-year period. As of September 2020, MTaPS had helped organize trainings for 771 people on topics relevant to MSC/AMR. MTaPS has also helped to establish or guide IPC and AMS TWGs in nine countries to prioritize, plan, and review activities and to develop national IPC or AMS action plans in eight countries.

As a result of MTaPS' efforts, the 11 GHSA-supported countries have made notable advances in achieving the WHO benchmark actions on MSC (figure 3). Each section shows the percentage of benchmark-recommended actions (supported by MTaPS) completed for that capacity level.



Panel discussion on “The future of antibiotics depends on all of us,” organized by MTaPS/Tanzania in collaboration with the Tanzania Pharmaceutical Students Association–Muhimbili University of Health and Allied Sciences during WAAW 2019. Photo credit: Rayson Mwisemba, Communications Officer, MOHCDGEC

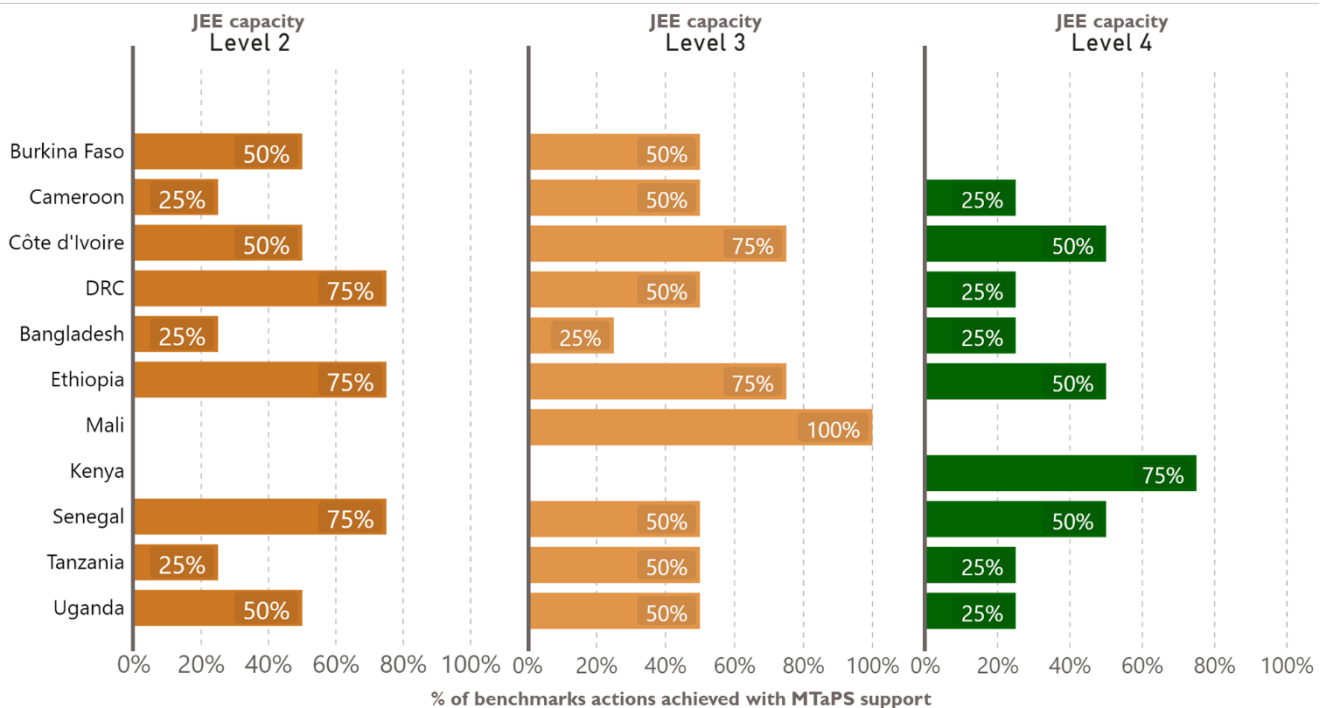


Figure 3. Percentage of WHO benchmark actions on MSC completed with MTaPS' support for each JEE capacity level (September 2020)

⁹ MTaPS' gender considerations aim to contribute to gender equality and female empowerment.

EXAMPLES OF COUNTRY ACCOMPLISHMENTS



Dr. Golam Kaiser from the Bangladesh Directorate General of Health Services welcomes participants to the mapping workshop on the status of implementation of the NAP-AMR on December 9, 2019. Photo credit: Mohan Joshi

Bangladesh. MTaPS organized a mapping workshop with the Communicable Disease Control unit for 32 stakeholders representing 14 multisectoral organizations to determine the status of activities and involvement of stakeholders to implement the NAP-AMR. MTaPS also helped develop a monitoring and evaluation framework to direct the operationalization of the NAP-AMR.

Burkina Faso. MTaPS contributed to drafting the ministerial order that defines the roles, composition, and functioning of the One Health Steering Technical Committee, the One Health Technical Secretariat, the One Health Technical Commissions, and the ministerial focal points. This supports governance and operationalization of the One Health Platform.

Cameroon. MTaPS supported the AMR Technical Secretariat to draft an operational plan for NAP-AMR with 42 participants from the human, animal, agriculture, and environment sectors and partner organizations. The operational plan identified 2020 priority activities for each sector and represents a multisectoral effort to focus resources and improve efficiency.

Côte d'Ivoire: MTaPS facilitated multisectoral collaboration to develop and validate a national AMR policy and establish MSC technical committees to operationalize the NAP-AMR.

DRC: MTaPS collaborated in the tripartite AMR country self-assessment survey. The results of the survey help analyze country progress and contribute to global monitoring of country efforts at containing AMR.

Ethiopia. MTaPS provided technical support to the Pharmaceuticals and Medical Equipment Directorate to develop and finalize a three-tiered structure for the national AMR governance and coordination platform. The platform consists of a national interministerial committee at the top, followed by the national AMR advisory committee, which oversees six multisectoral TWGs, including IPC and AMS.

Senegal. MTaPS supported the One Health platform's revitalization and helped establish all of the required TWGs. The AMR TWG has now been institutionalized, with a chair appointed and a roadmap developed for moving forward. MTaPS also collaborated to develop and submit a concept note for the Tripartite AMR Multipartner Trust Fund.

Tanzania: MTaPS supported the development of AMS policy guidelines for the human and animal sectors and a multisectoral AMR communications strategy with MSC bodies.

Uganda: MTaPS helped develop and operationalize an online information exchange platform, hosted by the Ministry of Health (MOH), for stakeholders in the human, animal, and environmental sectors to support implementation of AMS and IPC activities under the NAP-AMR. Data on the platform include TWG objectives, terms of reference, composition, meeting schedules and minutes, reference documents, tools, and research information.



Participants at a consultative meeting in Ethiopia, January 2020. Photo: MTaPS

Country Spotlight: Multisectoral Coordination in Côte d'Ivoire

In Côte d'Ivoire, surveillance data from the National Reference Center showed worrying levels of antibiotic resistance, and the December 2016 JEE noted that the country needs to strengthen its capacity in AMR control. In response, the Ivorian government created a national One Health platform in April 2019 to institutionalize a national MSC mechanism to address public health threats, including AMR. A TWG AMR was established that is connected to the One Health platform. The TWG AMR is a key body to facilitate implementation of the NAP-AMR.

MTaPS facilitated a multisectoral workshop that produced two important guiding documents: an AMR national policy and a governance manual for AMR containment. The AMR policy lists the various government entities in human and animal health, agriculture, and the environment that are tasked with improving prevention, detection, and surveillance of AMR and describes their roles and responsibilities in a coordinated response across sectors. Recommendations for additional support include a unified multidisciplinary and multisectoral information exchange mechanism, an AMR communication plan, and an information-sharing platform. The governance manual for AMR containment was drafted to facilitate data sharing, joint evaluation of identified issues, and creation of solutions by TWG AMR stakeholders in the public and private sectors. Specifically, the manual aims to strengthen the organizational and operational framework of AMR control efforts; define the guiding principles concerning the roles, responsibilities, and limits of TWG AMR members; frame decision making and guide health security actions that are linked to AMR; and ensure that the TWG AMR's actions and interventions are sustainable and coherent.

The national focal point on AMR from the Ministry of Higher Education, Professor Nathalie Guessenn, said the collaboration was a first for the country and reflected shared goals and commitment. She said, "A few years ago, no one could have imagined that all these sectors could work together."

Click [here](#) to learn more about MSC on AMR in Côte d'Ivoire.



MTaPS-developed IPC eLearning modules for Francophone countries are accessible for free on [LeaderNet.org](#).

MTAPS-SUPPORTED PROGRESS TOWARD INFECTION PREVENTION AND CONTROL

Poor IPC practices have a major effect on AMR, and IPC awareness and systems are generally poor in both the human and animal sectors in LMICs. Less-resourced countries have a high prevalence of health care-associated infections (average 15.5%),¹⁰ but often have underdeveloped IPC programs.¹¹

WHO has published guidance on the core components of IPC¹² and water, sanitation, and hygiene (WASH),¹³ along with assessment and training documents and other tools. But LMICs often face major challenges in implementing recommended IPC, WASH, and waste management practices due to barriers related to resources, standard-setting, training and education, infrastructure, motivation and other behavioral factors, and data availability.

MTaPS has leveraged its IPC work in countries to support USAID's global response to the COVID-19 pandemic, assisting 13 countries with rapid and sustainable approaches to strengthen their IPC capacity. For example, in nine countries, the MSC-AMR bodies or their TWGs or members contributed to their countries' national response to the pandemic such as guidelines development and training.

KEY MTAPS ACTIVITIES TO STRENGTHEN IPC

MTaPS is working at the national and facility levels to strengthen IPC structures and practices. MTAps' activities to help countries increase their JEE score on IPC include:

- Evaluating IPC practices in facilities using the WHO IPC assessment for health facility tool (IPCAF) and national-level IPC programs and activities using the WHO IPC assessment tool version 2 (IPCAT2)

¹⁰ Allegranzi B, et al. Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. *The Lancet*. 2011 377(9761), 228-241.

¹¹ Sastry S et al. The 17th International Congress on Infectious Diseases workshop on developing infection prevention and control resources for low- and middle-income countries. *International Journal of Infectious Diseases*, Volume 57, April 2017, Pages 138-143. Table 1 includes the list.

¹² World Health Organization. 2016. Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: WHO.

¹³ World Health Organization. 2018. Guidelines on sanitation and health. Geneva: WHO.

- Conducting additional and more specific facility assessments, such as facility hand hygiene using the WHO hand hygiene checklist and a facility-level health care-acquired infection point prevalence survey
- Helping to develop or update IPC guidelines and plans at the national and facility levels
- Helping to establish and make functional facility IPC committees
- Incorporating continuous quality improvement approaches for facilities to identify, address, and monitor IPC issues
- Conducting IPC training, including blended training, for facility staff and other categories of health care personnel

SUMMARY OF SELECT RESULTS

In each country where MTaPS is helping to strengthen IPC, a baseline assessment has been completed to guide IPC plans and interventions and to form the basis for monitoring progress (table 2).

Table 2. Summary of MTaPS-supported IPC assessments

Assessment	Countries
National-level assessment using IPCAT2	CM, CI, ET, ML, UG
Facility-level assessment using IPCAF	BD, CM, CI, ET, SE, TZ, UG
Facility-level IPC assessment using another infection control assessment tool	KE
Facility-level hand hygiene self-assessments using hand hygiene compliance observation self-assessment tool	CM, UG
Facility-level hand hygiene observation using WHO observation checklist	UG
Facility-level health care-acquired infection point prevalence survey	UG
Animal sector IPC assessments	CI, ML

Table 3 shows that the hospitals assessed were assigned to one of four WHO-suggested levels based on their IPCAF scores—from inadequate to advanced—with the majority at the basic (48/113) and intermediate (40/113) levels, and only four hospitals, all in Uganda, scoring as advanced. The results are not nationally representative but show the status of the facilities assessed, based on their selection by the national counterparts and/or for MTaPS collaboration.

Table 3. IPCAF assessment results (assigned to one of four levels—inadequate, basic, intermediate, and advanced) by number of facilities in each country

Facility capacity level based on IPCAF assessment	BD Sep 2020	CM Aug-Sep 2019	CI Sep-Oct 2019	ET Oct-Dec 2019	SE Aug-Oct 2019	TZ Oct 2019-Jan 2020	UG Jun 2019
Inadequate (0-200)	0	16 (43%)	0	1 (5%)	1 (33.3%)	0	3 (7%)
Basic (201-400)	1 (50%)	18 (49%)	1 (50%)	9 (43%)	1 (33.3%)	5 (83%)	13 (30%)
Intermediate (401-600)	1 (50%)	3 (8%)	1 (50%)	11 (52%)	1 (33.3%)	1 (2%)	22 (52%)
Advanced (601-800)	0	0	0	0	0	0	4 (6%)
Total # of facilities	2	37	2	21	3	6	42

MTaPS is providing direct support to 77 health facilities in nine countries to strengthen IPC programs and practices. As of September 2020, MTaPS had supported the training/mentoring of 1,539 people in IPC. Table 4 summarizes the IPC training activities.

Table 4. Blended IPC training support provided by MTaPS

Activity	Countries
IPC guidelines revised/developed	CM, CI, ET, KE, ML, SE, TZ
Curricula/training package based on guidelines	CM, CI, ET, KE, ML, SE, TZ
Master trainers trained on how to use curricula to replicate IPC training	CM, CI, ET, KE, ML, SE, TZ
Master trainers use curricula to train health care professionals in facilities	CM, CI, ET, KE, ML, SE, TZ
IPC curricula adapted to eLearning courses	CM, CI, ML, SE, TZ
Country eLearning assessments conducted	CM, CI, ML, SE, TZ
IPC eLearning courses uploaded to local eLearning platforms by MTaPS-oriented local eLearning teams	CM, ML, SE, TZ
eLearning programs implemented	Next step in CM, ML, SE, TZ

“Because I underwent the IPC training supported by USAID MTaPS, I had the courage to be in the frontline at Jaramogi Oginga Odinga Teaching and Referral Hospital managing the COVID-19 cases in Kisumu. Everyone is at risk, let's continue being champions of IPC, stay safe, and observe the new normal.”

—George Okumu, IPC Coordinator Chulaimbo Sub County Hospital



As a result of MTaPS’ efforts, the 11 GHSA target countries have achieved many of the WHO benchmark actions on IPC (figure 4). Each section shows the percentage of benchmark recommended actions (supported by MTaPS) completed for that capacity level.

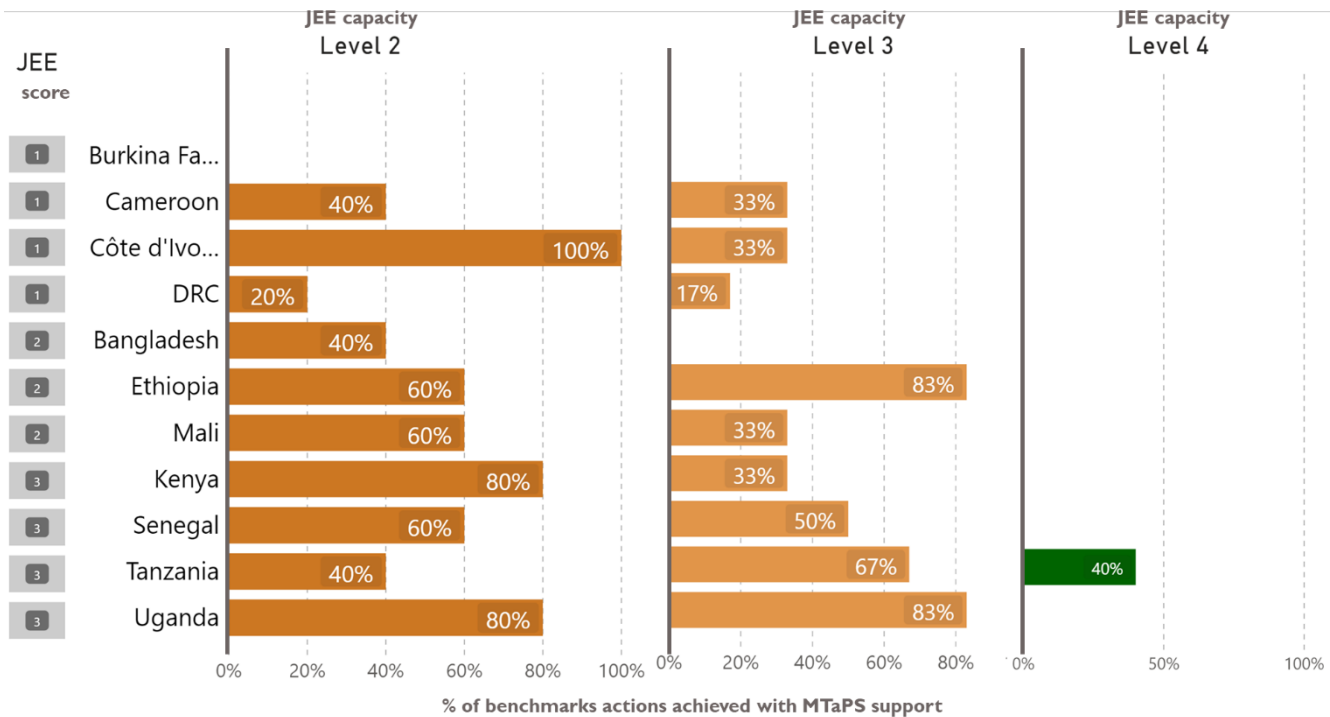


Figure 4. Percentage of WHO benchmark actions on IPC completed with MTaPS’ support for each JEE capacity level (September 2020)

KEY COUNTRY ACCOMPLISHMENTS

Bangladesh: MTaPS helped conduct a baseline IPC assessment at Comilla Medical College Hospital and Munshiganj District Hospital using the WHO IPCAF tool. The score for Comilla Medical College Hospital was 273.5, which puts it at the basic level, and the score for Munshiganj District Hospital was 507.5, which corresponds to the intermediate level.

Cameroon. MTaPS helped develop a national IPC curriculum adapted for adult learning and supported the Ministry of Public Health to train 15 master trainers from the central, regional, and facility levels.

Côte d’Ivoire: MTaPS supported an IPC and hygiene assessment in 10 veterinary practices, 8 slaughterhouses, and 33 poultry farms using modified IPCAF and IPCAT2 tools. The average IPC level in veterinary practices was basic, the average biosecurity level in slaughterhouses was basic, and the average biosecurity level in poultry farms was intermediate.



Planting a commemorative IPC tree, symbolizing collaboration among the National AMR Secretariat of Kenya, the Nyeri County Health Department, and MTaPS. Photo credit: Doris Bota

Ethiopia: MTaPS helped develop, print, and distribute 4,000 sets of standard operating procedures to regional health bureaus and 400 hospitals to build capacity in producing alcohol-based hand rub (ABHR) locally. Production expanded from nine initial hospitals to 147 health facilities producing and using ABHR. Several zonal offices are producing and distributing ABHR to the community to help fight COVID-19. MTaPS also re-assessed IPC practices in four hospitals using the IPCAF to measure progress after MTaPS' interventions. All four hospitals showed improvement in their IPCAF scores, and two progressed to the next level, one from inadequate to basic and the other from basic to intermediate.

Kenya: MTaPS made follow-up visits to 16 hospitals to determine the effect of IPC interventions. In all 16

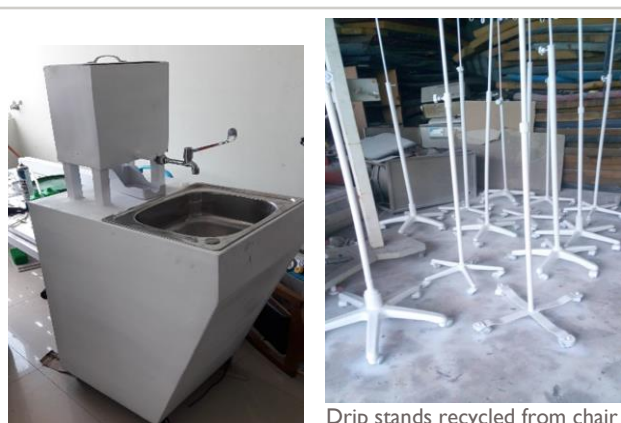
facilities, IPC committees had been established, hand hygiene facilities were available, the use of personal protective equipment by staff was better, and waste disposal and segregation practices had improved. Staff had been vaccinated for hepatitis B in several health facilities.

Mali: MTaPS collaborated with the National Directorate of Veterinary Services and the AMR Secretariat to conduct a nationwide rapid assessment of hygiene and IPC in 13 veterinary clinics and 12 farms. Results showed that IPC practices in the animal health sector scored at the basic level of 287 out of 600. Recommendations were related to disease control and prevention, infrastructure, training, and funding.

Senegal: MTaPS adapted IPC training to an eLearning platform and, with the Directorate of Hospital Quality, Security and Hygiene, supported the development of videos on hand hygiene, bio cleaning, and waste management practices to add to the IPC eLearning platform.

Tanzania: MTaPS led a WASH assessment at four supported hospitals to establish WASH improvement needs. MTaPS oriented staff responsible for WASH and IPC at three hospitals on the guidelines and reviewed the assessment results with them, which had a significant impact. Facilities began to take action immediately, especially on things that did not require resources. For example, hospitals installed elbow-driven handwashing sinks and repurposed unused equipment, and one hospital collaborated with WaterAid to install a water storage tank.

Uganda: MTaPS collaborated with the MOH and other partners to conduct a point prevalence survey of 2,337 cases from 39 facilities.¹⁴ The health care-acquired infection point prevalence was 15.1%. Among hospital types, the highest was 38.5% in private not-for-profit facilities. Surgical wards, at 18.5%, was the highest facility unit. MOH staff were empowered to conduct the surveys regularly to track progress in decreasing health care-acquired infections.



Mobile sink at Benjamin Mkapa Hospital

Drip stands recycled from chair pedestals at Temeke Regional Referral Hospital

Examples of Tanzanian hospital initiatives in WASH. Photo credit: MTaPS

¹⁴ Ministry of Health. 2019. Uganda National IPC Survey Report. Kampala: MOH.

Tanzania Country Spotlight: Hospitals Improve IPCAF Scores

After MTaPS worked with six hospitals to conduct IPCAF baseline assessments between October 2019 and January 2020, follow-up assessments were conducted in May 2020. The results indicate the success of MTaPS-supported interventions that used mentorship to integrate IPC into the practices of every cadre and unit in hand hygiene, budgeting for and using IPC supplies, health care waste management, and using multimodal strategies to implement IPC interventions. Benjamin Mkapa Hospital improved its score by 206.5 points and moved from basic to intermediate, as did Maweni Regional Hospital (figure 5).

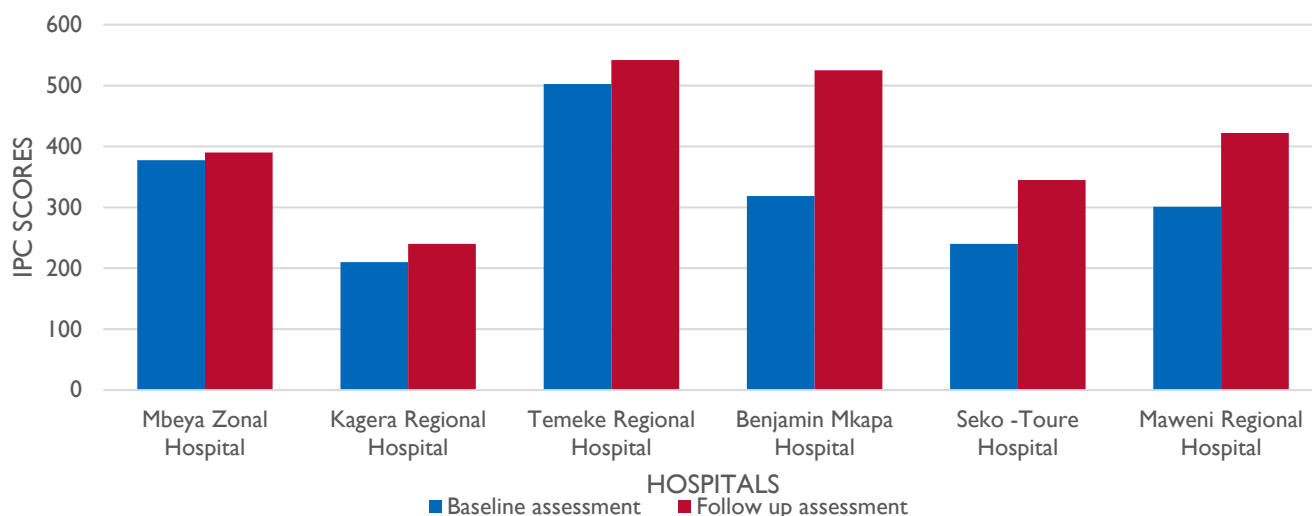


Figure 5. Comparison of IPCAF baseline and follow-up assessments in six hospitals

Focus on Collaboration with Professional Associations in Kenya. Working with professional health associations and councils to determine IPC training needs and co-designing and implementing training were instrumental in building the capacity of health care workers through in-service IPC continuing professional development courses. The MTaPS Kenya team collaborated with the National Nurses Association of Kenya, Kenya Clinical Officer Associations, Association of Kenya Medical Laboratory Scientific Officers, Kenya Society for Physiotherapists, Kenya Pharmaceuticals Association, Kenya Medical Association, and the Pharmaceutical Society of Kenya to develop a continuing professional development and re-licensure-linked course on IPC. Collaboration among the associations led to the development of the training curriculum and modules that were delivered through four of the associations. As of September 2020, 393 health care workers had been trained and awarded continuing professional development credits.

MTAPS-SUPPORTED PROGRESS TOWARD ANTIMICROBIAL STEWARDSHIP

A primary driver of AMR is inappropriate use of antimicrobials—overuse, underuse, and misuse. A multinational survey revealed a 114% increase in antibiotic consumption in LMICs between 2000 and 2015,¹⁵ and a study showed that between 2007 and 2017, children in eight LMICs received, on average, 25 antibiotic prescriptions from birth through five years, which is up to five times higher than the already high levels observed in high-income settings.¹⁶

¹⁵ Klein EY et al. Global increase and geographic convergence in antibiotic consumption between 2000 and 2015. *Proc Natl Acad Sci U S A*. 2018; 115(15): E3463–70.

¹⁶ Fink G et al. 2019. Antibiotic exposure among children younger than 5 years in low-income and middle-income countries: a cross-sectional study of nationally representative facility-based and household-based surveys. *The Lancet Infectious Diseases*, DOI: 10.1016/S1473-3099(19)30572-9.

The concept of AMS encompasses the breadth of actions from the global to individual level to promote appropriate antimicrobial use. AMS is important in the human and animal health, agricultural, and environmental sectors. Barriers to instituting AMS in low-income countries include lax regulation and enforcement of antimicrobial use in humans and animals, limitations in the laboratory capacity to detect drug-resistant microorganisms, and lack of clinician training in these issues. Enhancing stewardship improves awareness, understanding, systems, and tools to optimize both access to and use of antimicrobials.

KEY MTAPS ACTIVITIES TO STRENGTHEN AMS

MTaPS supports the following core elements of AMS depending on the country's context—primarily in the human health sector, but also in animal health and agriculture:

- Incorporating the WHO AWaRe (access, watch, reserve) classification in national essential medicines lists
- Promoting the creation and function of national AMS committees
- Supporting the development of AMS documents such as national plans and guidelines
- Conducting rapid assessments of country laws, regulations, and guidelines related to AMS
- Supporting the establishment and strengthening of drug and therapeutics committees (DTCs)
- Building the capacity of DTCs to lead/conduct prescription audits, drug use evaluations, etc., and to use the data to carry out interventions and monitor progress
- Developing facility AMS action plans and helping to determine priority areas
- Supporting inclusion of appropriate medicine use training in preservice curricula or standalone courses

SUMMARY OF SELECT RESULTS

MTaPS teams helped conduct country situational analyses of AMS policies, guidelines, and regulations in five countries, including the animal sector. Such analyses help inform the design and implementation of AMS strategies and plans in a more evidence-based and locally appropriate manner.

In seven countries, MTAps facilitated the development or review of national guidelines or action plans on AMS—three also included work on animal sector guidance. A recommended benchmark action for GHSA countries is to update essential medicines lists and/or standard treatment guidelines to reflect the WHO AWaRe classification of antimicrobials, which enables the preservation of important existing treatments. MTAps is supporting that process in eight countries. The Kenya MOH, for example, launched its [revised essential medicines list](#) and national AMS guidelines at an event attended by more than 300 participants from various sectors and counties.

To fill an identified gap, MTAps developed a generic three-day AMS training course for health facility workers that countries can adapt for their own contexts based on WHO's Antimicrobial Stewardship Programmes in Health-care Facilities in Low- and Middle-income Countries: a WHO Practical Toolkit and the US Centers for Disease Control and Prevention's Core Elements of Human Antibiotic Stewardship Programs in Resource-Limited Settings. The course, initially piloted in Mozambique, covers AMR and its global/country impact, AWaRe classification, quantity and quality of antibiotic use, implementing AMS interventions in a health care facility, and developing a health facility AMS action plan.

MTaPS supports AMS activities in 75 facilities across eight countries. MTaPS also helped conduct facility-level AMS assessments in four countries and used the findings to develop facility action plans. Target facilities in seven countries were supported to establish or strengthen facility DTCs, and those committees were assisted to develop action plans.

The 11 MTaPS partner countries receiving GHSA support have made progress in achieving the WHO benchmark actions on AMS (figure 6). Each section shows the percentage of benchmark recommended actions (supported by MTaPS) completed for that capacity level.



Handwashing training for DTC members in DRC. Photo credit: MTaPS

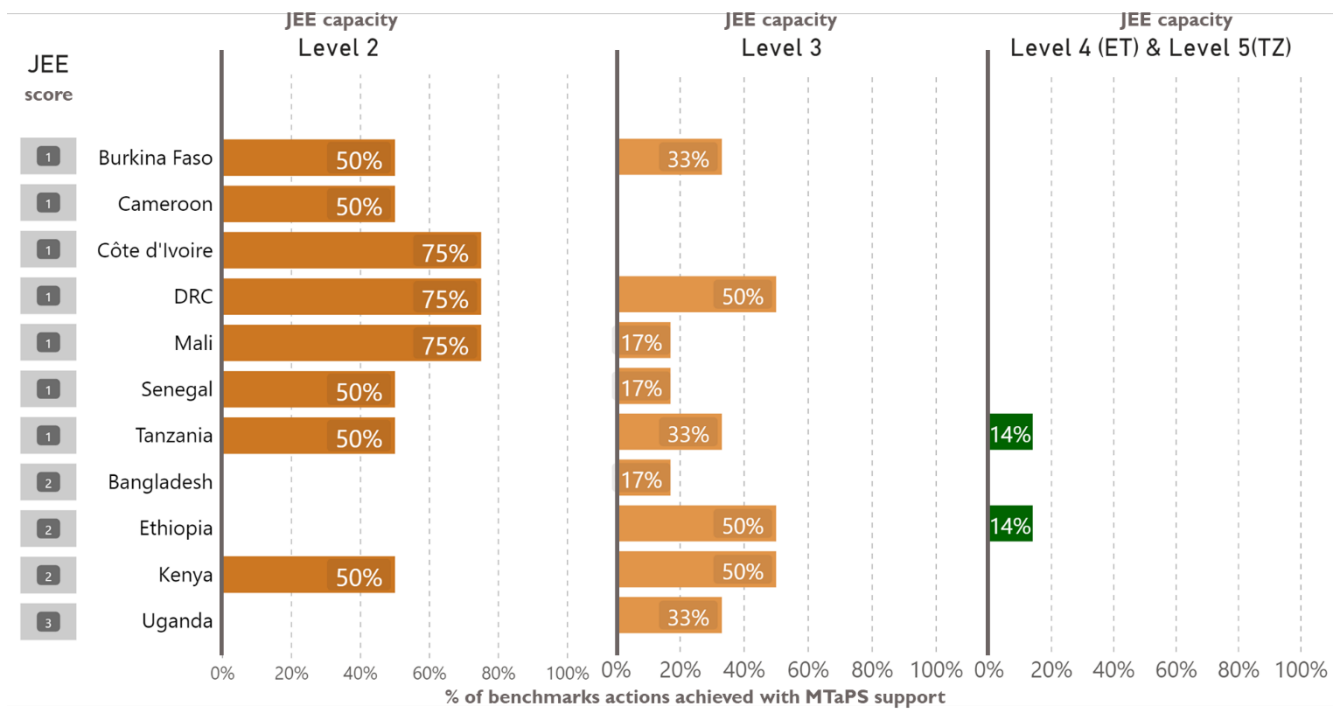


Figure 6. Percentage of WHO benchmark actions on AMS completed with MTaPS' support for each JEE capacity level

KEY COUNTRY ACCOMPLISHMENTS

Bangladesh: MTaPS collaborated with national counterparts to support facility-level AMS assessments in two hospitals and develop and distribute a poster and leaflet for World Antibiotic Awareness Week (WAAW) 2020.

Burkina Faso: MTaPS supported the creation of the national AMS regulatory framework for both the human and animal health sectors and the first-ever national guidelines for using antibiotics in the animal sector and helped update the national antibiotic prescription guide, which maps the country's most common pathogenic bacteria and infectious diseases.



Poster on rational use of antibiotics in Bangladesh distributed during WAAW, November 18–24, 2020

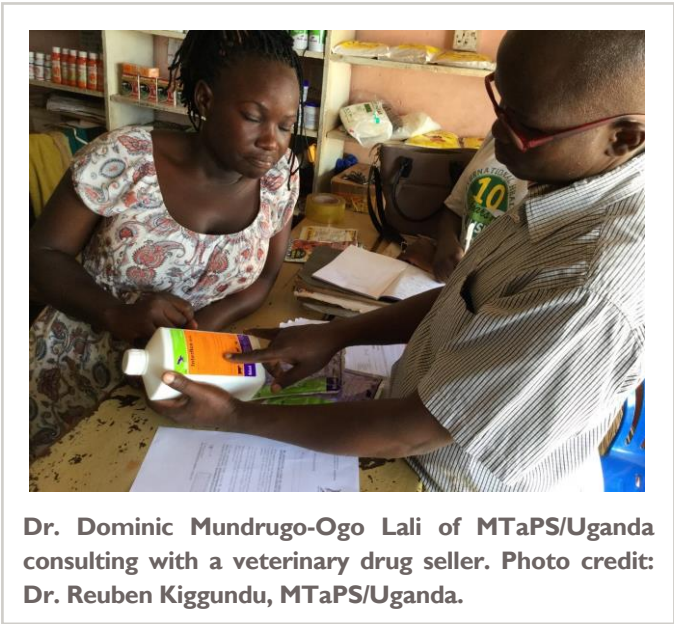
DRC: MTaPS worked with the drug regulatory authority and the AMR TWG to conduct multisectoral field support visits to animal clinics and farms to learn more about the use of antimicrobials in the animal and environmental sectors, identify bottlenecks that hinder appropriate use, and provide recommendations. Findings included uncontrolled use of antimicrobials, a lack of understanding of AMR by most actors, no legal provisions to coordinate the management and the use of antimicrobials among sectors, and an undefined supply chain.

Mali: MTaPS collaborated with the national Multisectoral Coordination Committee, Directorate of Pharmacy and Medicine, and *Agence Nationale d’Evaluation des Hôpitaux* to establish DTCs by facilitating the validation of DTC terms of reference; selecting DTC members in five hospitals (national, regional, and district); and developing eight DTC training modules.

Uganda: MTaPS worked with the Ministry of Agriculture, Animal Industries, and Fisheries to draft, solicit stakeholder feedback on, and finalize six documents that contribute to AMR control in the animal sector—the Uganda Veterinary Essential Medicines List 2020–2025 and five sets of guidelines for infection prevention and appropriate antimicrobial use in the animal sector for poultry, pig, goat and sheep, fish, and cattle farming.

“Colleagues from the Ministry and other sectors join me in thanking USAID MTaPS for taking leadership in the development of this key policy document. For long we have struggled with the use of antibiotics and availability of medicines and control of their access in the agricultural sector. We now have a basis for implementing the changes.” —Dr. Anna Rose Ademun, Chief Veterinary Officer and Commissioner, Animal Health, Ministry of Agriculture, Animal Industry and Fisheries

Tanzania: MTaPS collaborated with the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC); the University of Washington; and local experts from Catholic University of Health and Allied Sciences-Bugando and St. John’s University to conduct two studies to characterize antimicrobial consumption and use: a facility-based use study based on WHO’s point prevalence survey tool and a national medicine consumption study. Regular calls with MOHCDGEC staff allowed for real-time collaboration and capacity building in data analysis and interpretation and for conducting such surveys routinely to compare performance against other countries. The MOHCDGEC and MTaPS published the findings of the national antimicrobial consumption analysis in [Frontiers in Pharmacology](#).



Dr. Dominic Mundrugo-Ogo Lali of MTaPS/Uganda consulting with a veterinary drug seller. Photo credit: Dr. Reuben Kiggundu, MTaPS/Uganda.

Kenya Country Spotlight: Promoting AMS in Hospitals in Two Counties

In Othaya Referral Hospital in Nyeri county, MTaPS worked with the AMS team to develop and issue guidelines to clinicians on antibiotic use in pneumonia, pharyngitis, otitis media, and surgical prophylaxis to enhance prescribing of antimicrobials. The team also conducted prescription audits to determine outpatient prescribing practices. WHO recommends that no more than 20.0–26.8% of encounters in a typical outpatient setting include an antibiotic prescription.¹⁷

The results of the audits at Othaya are below. Although there has been a steady decline in antimicrobial use for children, more attention is required to meet the target range.

Prescriptions	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	June 2020
	n = 3,014	n = 2,794	n = 2,711	n = 2,665	n = 2,657	n = 2,282
Adults	40.11%	25.30%	29.83%	23.71%	18.59%	20.03%
	n = 455	n = 510	n = 445			
Children	73.18%	65.29%	54.38%	N/A	N/A	N/A

At St. Elizabeth Hospital in Kisumu, the AMS team conducted prescription audits covering April and May 2020 prescriptions from the outpatient department. In April, of 103 patient encounters, 35% included an antibiotic, while 40% of 105 encounters in May included an antibiotic. In addition, an assessment of polypharmacy from March to May revealed that of 125 encounters in March, 18% of prescriptions included more than the average of two medicines recommended by WHO: 13% of 103 prescriptions in April and 35% of 105 prescriptions in May included more than two medicines. The AMS team noted that clinicians at the hospital lacked experience with the Kenyan guidelines on antibiotic prescribing; therefore, the MTaPS team is sharing results with prescribers, investigating contributing factors, and generating approaches to improve antibiotic prescribing.

At Outspan Hospital in Nyeri, the AMS team investigated adherence to AWARe guidelines in prescribing. They noted that culture and sensitivity tests were being ordered before prescribing Reserve antibiotics, but that in some cases, the antibiotics were being prescribed, dispensed, and administered before the results were even released from the laboratory.

MTAPS' ENGAGEMENT OF THE PRIVATE SECTOR, PROFESSIONAL ASSOCIATIONS, AND CIVIL SOCIETY

Following are examples of how MTaPS has incorporated private-sector entities, health care professional associations and councils, and civil society organizations into activities in multiple countries.

PRIVATE SECTOR

Multiple countries. Of the 77 facilities MTaPS is currently supporting for IPC in nine countries, 19 (25%) are private facilities. Similarly, of the 75 facilities being supported for AMS in eight countries, 21 (28%) are private.

Cameroon. IPC baseline surveys were carried out in public and private hospitals; additionally, MTaPS is directly supporting five public hospitals and one private hospital to improve IPC and DTC programs.

DRC. In collaboration with WHO Geneva and Brazzaville, MTaPS supported the drug regulatory authority to collect data from private sector and other suppliers to assess the national consumption of antimicrobials.

Ethiopia. Baseline assessments of IPC, DTC functionality, and AMS programs included both public and private hospitals. Training in IPC, prospective audit/feedback, and AWARe grouping of antibiotics was given to health care professionals from both public and private facilities. In addition, more than 50 professionals from public and private electronic media outlets attended an AMR sensitization workshop. An AMR course will be offered to journalists and communication professionals working in the public and private sectors.

Kenya. Private-sector organizations, including nongovernmental organizations, were involved in the National IPC Advisory Committee meeting in September 2019.

Senegal. Representatives from government agencies for human, animal, and environmental health as well as the private sector validated the results of the rapid situational analysis of antimicrobial use, legislation, and control in the human, animal, and environmental health sectors. In addition, one of the three hospitals included for IPCAF-based IPC baseline survey was from the private sector.

¹⁷ World Health Organization. 1993. How to investigate drug use in health facilities: selected drug use indicators. Geneva: WHO.

Tanzania. As part of a national consumption survey, data were collected from local pharmaceutical manufacturers to estimate antimicrobial consumption in the private sector. MTaPS also engaged private hospitals while developing training materials based on the latest national IPC guidelines.

PROFESSIONAL ASSOCIATIONS

Burkina Faso. Stakeholders from the private sector (private veterinarians, pharmacists, and clinicians) and representatives of the National Council of Veterinarians and the Association of Private Veterinarians joined public-sector stakeholders to finalize the national regulatory framework for AMS for the animal sector.

Côte d'Ivoire. Representatives from the AMR and IPC TWGs and experts from the Directorate of Veterinary Services, Ministry of Animal and Fisheries Resources, and the Association of Private Veterinarians validated the final report of the hygiene and IPC rapid assessment in animal health facilities. Participants from various organizations, including health professional associations, validated the newly updated National AMS Plan 2021–2025.

Kenya. MTaPS collaborated with the Pharmaceutical Society of Kenya and representatives of other health professional associations to develop continuing professional development and re-licensure-linked AMS and IPC courses that the associations will deliver to their members working in both the public and private sectors.

CIVIL SOCIETY

Burkina Faso. The Minister of Animal Resources and Fisheries invited civil society to select representatives for the One Health platform.

Côte d'Ivoire: The MSC-AMR body included civil society and journalist representatives.

DRC. MTaPS supported the drug regulatory authority and the national commission on AMR to organize a multisectoral meeting with participation from the civil society health coordination group. The civil society group contributed to analyzing AMS and IPC issues and identifying priority actions.

Ethiopia. MTaPS partnered with the MOH to train and support the Ethiopian Youth and Women Federations to sensitize the public on AMR during their primary work promoting hygiene and maternal and child health in their communities. The 21 trained female volunteers, with technical support from MTaPS, conducted educational sessions on the rational use of antimicrobials for 520 female members of the Addis Ababa Women Federation.

CONCLUSION

MTaPS has worked in 11 countries on GHSA-AMR beginning in late 2018. Through its capacity-building activities, MTaPS supports countries to implement their NAP-AMR and reach their AMR containment goals by strengthening systems for MSC, IPC, and AMS. MTaPS takes a health systems strengthening approach so that achievements are sustainable, for example, ensuring that strategies and reforms are coordinated, institutionalized, endorsed, and resourced by country counterparts and that activities are monitored through locally developed monitoring and evaluation frameworks. Most of the 11 countries were benchmarked with no or limited capacity in IPC and AMS in their JEE assessments. With MTaPS' support, countries are achieving the milestones needed to advance to the next levels in IPC and AMS and are strengthening MSC—applying a One Health approach. MTaPS is compiling country experiences and lessons learned and gleaming promising practices from this work. Continuing collaboration with the MTaPS GHSA partner countries in the coming years will produce additional updates and lessons to share.

The USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program enables low- and middle-income countries to strengthen their pharmaceutical systems, which is pivotal to better health outcomes and higher-performing health systems. The program is implemented by a consortium of global and local partners, led by Management Sciences for Health (MSH), a global health nonprofit.

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