

# USAID MEDICINES, TECHNOLOGIES, AND PHARMACEUTICAL SERVICES (MTAPS) PROGRAM

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MOH and Regional Health Bureau heads during launch of the National IPC reference manual, October 2019. Photo Credit: USAID MTaPS Ethiopia.

## Strengthening Infection Prevention and Control at the National and Healthcare Facility Levels in Ethiopia

Technical Brief | December 2022 | ETHIOPIA

### Critical Success Factors for an Effective National IPC Program in Ethiopia

#### Background

Health care-associated infections (HAI) are a global patient-safety problem that results in prolonged hospital stays, increased antimicrobial resistance (AMR), and a greater financial burden on health systems and patients. Infection prevention and control (IPC) can prevent the transmission of infections among patients during or following health care as well as occupational infections among health care workers (HCWs).<sup>1,2</sup> The notable

contribution made to IPC program strengthening by the US Agency for International Development (USAID) Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program's engagement in Ethiopia since September 2018,<sup>3</sup> followed by the COVID-19 pandemic that began in 2020, helped make IPC a top priority for the government. Reduction of HAI through IPC is now a component of the Ethiopia Ministry of Health (MOH) Health Sector Transformation Plan II (HSTP II).<sup>4</sup> The goal of MTaPS in Ethiopia is to support the Global

<sup>1</sup> World Health Organization. Report on the Burden of Endemic Health Care-Associated Infection Worldwide: [https://apps.who.int/iris/bitstream/handle/10665/80135/9789241501507\\_eng.pdf?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/80135/9789241501507_eng.pdf?sequence=1)

<sup>2</sup> World Health Organization. Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level: <https://apps.who.int/iris/handle/10665/251730>. License: CC BY-NC-SA 3.0 IGO

<sup>3</sup> MTaPS started operations in Ethiopia September 20, 2018, but had a one-year hiatus starting December 2020, before returning in December 2021.

<sup>4</sup> Health Sector Transformation Plan II HSTP II 2020/21–2024/25. <https://e-library.moh.gov.et/library/wp-content/uploads/2021/07/HSTP-II.pdf>

Health Security Agenda (GHSA) through AMR prevention and containment in the country. MTaPS provides support to government stakeholders and institutions for multisectoral coordination (MSC), IPC, and optimizing the use of antimicrobial medicines.

## Problem Statement

IPC has historically been an underdeveloped area of health care in Ethiopia. The IPC program at the national level was inadequate due to a weak IPC coordinating body and lack of up-to-date IPC guidance documents. Even though most hospitals had IPC committees in place, many of those committees were not active or functional. In 2016, the country received a level 2 score for IPC (P.3.3) on the World Health Organization (WHO) Joint External Evaluation (JEE). The JEE also noted that not all health care facilities (HCFs) in Ethiopia were implementing IPC.

In addition to the JEE, an assessment of the national IPC program using WHO's Infection Prevention and Control Assessment Tool 2 (IPCAT-2) resulted in a score of 44%, revealing a significant gap in the implementation of core components of the IPC program. Part of the issue was a lack of awareness at national and lower levels regarding the critical importance of IPC. Several factors were identified for the poor results, including insufficient coordination at the national level; not using standardized tools to identify gaps and improve IPC practices; use of outdated IPC guidelines; and lack, or suboptimal functioning, of IPC committees. Also, IPC is resource intensive, and Ethiopia faces human, financial, logistical, and infrastructural resource gaps. Fully implementing IPC practices at the regional and HCF levels in particular requires more resources and engagement, as those levels are where resource gaps are most severe. The COVID-19 pandemic further revealed the major weaknesses in the IPC program.

## Technical Approach

MTaPS takes a health system strengthening approach to the design and implementation of interventions, which provides an opportunity to holistically address complex challenges by considering all health system components.

MTaPS builds the capacity of government stakeholders to effectively combat the development and spread of AMR through MSC and IPC as well as by optimizing the use of antimicrobial medicines through the effective implementation of antimicrobial stewardship (AMS) programs. These interventions are meant to support Ethiopia on its path to improving its JEE IPC component score, relative to the baseline WHO JEE done in 2016, to meet the priorities of the GHSA.

## Intervention

Following the 2016 JEE assessment, MTaPS reviewed Ethiopia's IPC benchmark actions and developed an action plan to collaborate with national stakeholders to help improve Ethiopia's IPC JEE score from level 2 to level 3 and above during its five-year program. WHO Benchmarks for International Health Regulations (IHR) Capacities<sup>5</sup> are used to help develop priority recommendations during the JEE to help track incremental progress made from one level to the next. As a strategy to reinforce the IPC program nationally, MTaPS assisted the MOH in establishing a national IPC technical working group (TWG) and has served as its secretary.

To lay a foundation for the planned IPC improvement activities, MTaPS focused its support by promoting an evidence-based approach to identifying IPC gaps at the national and HCF levels. MTaPS supported the MOH to conduct an IPC baseline assessment using WHO's IPCAT-2 and supported 21 hospitals to identify their IPC gaps by conducting baseline assessments using WHO's Infection Prevention and Control Assessment Framework (IPCAF). Based on these assessment findings, MTaPS continued its support to the MOH by developing IPC improvement plans for the national IPC program and targeted hospitals and providing technical support and mentorship during implementation of the planned IPC improvement practices.

To ensure application of up-to-date IPC recommendations, MTaPS helped revise the outdated national IPC guidelines contained in the IPC reference manual. The revised IPC reference manual was launched in October 2019. MTaPS supported the MOH, regional health bureaus (RHBs), and selected hospitals to

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<sup>5</sup> WHO Benchmarks for International Health Regulations (IHR) Capacities.  
<https://apps.who.int/iris/bitstream/handle/10665/311158/9789241515429-eng.pdf?sequence=1&isAllowed=y>



Yekatit 12 hospital medical college IPC committee members and IPC experts from Addis Ababa Health Bureau and USAID MTaPS conducting IPCAF assessment, Feb. 5, 2020. Photo credit: USAID MTaPS Ethiopia.

implement IPC recommendations based on the revised guidelines by providing IPC training using a training-of-trainers (TOT) approach to quickly roll out the training and reach more healthcare professionals at lower levels.

Another major activity MTaPS planned was to provide technical support to the MOH in developing a method for monitoring IPC activities. Accordingly, MTaPS drafted an assessment tool for HCFs, Infection Prevention and Control Facility Level Assessment Tool (IPC-FLAT), to use to measure improvement in IPC based on the revised national IPC guidelines and WHO's guidelines on implementing the eight core components of IPC at the HCF level.

These efforts laid the groundwork for several subsequent government initiatives. The IPC TWG now spearheads national IPC efforts, providing guidance in developing annual operational and strategic plans and programmatic focus areas and supporting monitoring and evaluation (M&E) of IPC interventions. Also, based on findings from the IPCAT-2 self-assessment, the Clinical Services Directorate (CSD) of the MOH, with MTaPS' support, developed a national IPC implementation plan. That plan includes providing IPC training based on the revised IPC guidelines, monitoring IPC practices using a customized IPC-FLAT tool,<sup>6</sup> and strengthening continuous quality improvement on IPC. MTaPS has been supporting several aspects of the national IPC implementation plan, including the

provision of technical support to develop the national IPC M&E plan, launched in July 2022.

Support provided by MTaPS to the lower levels of the health system also contributed to the effectiveness of the national IPC program in Ethiopia. In consultation with the CSD, MTaPS in 2019 identified 25 public and 5 private hospitals for IPC implementation support. Of those 30 HCFs, 21 (19 public, 2 private) conducted self-assessments using the WHO IPCAF tool with support from MTaPS (October–December 2019).<sup>7</sup> The IPCAF baseline assessment showed 9 (43%) of the hospitals were at a basic level, 11 (52%) were at an intermediate level, and 1 (5%) was rated inadequate. Based on those findings, 15 of the 21 HCFs subsequently developed and implemented IPC action plans, with guidance and technical assistance provided by MTaPS.

To address the gaps identified in the HCF self-assessments, MTaPS supported implementation of the revised national IPC guidelines by cascading training to staff at the HCFs. In collaboration with the MOH, MTaPS supported three rounds of IPC TOT for, and cascaded basic IPC training to, 92 (20 female, 72 male) HCWs in 2020. Participants came from MTaPS-supported HCFs, RHBs, and other hospitals selected by the MOH. In 2022, MTaPS Ethiopia supported IPC TOT for 28 (4 female, 24 male) HCWs, some of whom were IPC focal persons at the MOH, RHBs, and zonal health bureaus. The effort created a pool of professionals able to cascade basic IPC

<sup>6</sup> IPC-FLAT tool is a customized WHO IPCAF tool for the Ethiopian context. The tool was customized due to the need to integrate what is in the revised Ethiopian IPC guideline (those elements that are not covered in the standard IPCAF).

<sup>7</sup> Nine of the 30 HCFs were not ready for the self-assessments due to their failure to comply with MTaPS' recommended improvements or lack of management support.



trainings to other HCWs. The trainers are also focal points to support IPC program implementation at regional and zonal levels.

MTaPS has also assisted the MOH in improving the tools for IPC. In 2019, MTAps began to help adapt the WHO IPCAF to fit Ethiopia’s health care environment. The National IPC-FLAT, which was intended to help Ethiopia’s HCFs assess their IPC practices’ alignment with WHO guidelines, was finalized in early 2022. The tool is nationally endorsed to assess IPC practices at the HCF level, including in MTAps-supported HCFs. Moreover, the MOH plans to incorporate the tool in the National DHIS2 database.

In addition to helping revise the national IPC reference manual, which was in use for over eight years, MTAps’ support also included revising the corresponding IPC training materials. In 2022, MTAps helped finalize IPC training packages, which include a participant manual, facilitator guide, and course syllabus, as well as assessment questions for participants and training slides. Furthermore, MTAps, in collaboration with the MOH Pharmaceutical and Medical Equipment Directorate (PMED), developed standard operating procedures (SOPs) for Alcohol Based Hand Rub (ABHR), built the capacities of MTAps-supported hospitals and additional hospitals on how to locally produce ABHR using the SOPs, printed and distributed 5000 copies of the SOPs, and provided mentorship to aid the local production of the ABHR.

## Stakeholder Engagement

MTaPS has worked closely with the PMED-MOH, CSD, the National AMR Advisory Committee (NAMRAC), and, especially, the IPC TWG as key partners, as well as with RHBs and selected HCFs. MTAps also coordinates its efforts with other partners/stakeholders contributing to IPC in Ethiopia.

## Results and Achievements

- MTAps contributed towards Ethiopia’s progress in achieving higher JEE scores in IPC by supporting 4 out of 5 (80%) of level 2, 6 out of 6 (100%) of level 3, and 4 out of 5 (80%) of level 4 GHSA benchmark actions.
- Ethiopia now has up-to-date national IPC policies and guidelines, along with improved IPC systems at national and sub-national levels. At the national level, the IPC program has more than four technical experts (government and seconded staff from partner organizations) rather than a single focal person as it has in the past.
- Facility-level improvements include having an assigned IPC focal person at each MTAps-supported HCF, functional IPC committees with well-defined terms of reference (TOR), and better training and education of committee members on IPC. Also, 21 MTAps-supported hospitals used the WHO’s IPCAF tool to identify gaps in IPC, and 15 (71%) of them have developed and implemented facility IPC action plans.
- An August 2020 evaluation of four HCFs randomly selected from the pool receiving MTAps technical assistance showed improvement in their IPCAF scores relative to their baseline assessments (table 1). AaBET Hospital progressed from having an inadequate IPC score to being rated at the higher end of the basic level score range, while Felege Hiwot Hospital progressed from basic to intermediate level. Hawassa University Hospital and Debre Berhan Comprehensive Specialized Hospital maintained their intermediate levels but improved their IPC scores by 20%–25%.
- The number of trained HCWs at the regional and HCF levels has also increased. MTAps built the capacity of IPC focal persons at the national, regional, and facility levels by using TOT and more traditional training approaches to reach HCWs. Over 2,500 HCWs, of which 893 (35.7%) were female, were trained with direct support from MTAps, and 3,196

**Table 1. IPCAF monitoring assessment results of four MTAps-supported hospitals**

Hospital	IPCAF score (out of 800) before technical support from MTAps (baseline assessment done in late 2019)	Classification of IPC practice	IPCAF score (out of 800) after technical support from MTAps (evaluation assessment done in August 2020)	Classification of IPC practice
AaBET Hospital	183.5	Inadequate	382.5	Basic
Hawassa University Hospital	452.5	Intermediate	565	Intermediate
Felege Hiwot Hospital	385	Basic	527.5	Intermediate
Debre Berhan Comprehensive Specialized Hospital	410	Intermediate	500	Intermediate

Source: MTAps Ethiopia

more HCWs were trained indirectly by MTaPS-trained IPC professionals and HCFs. A total of 5,196 HCWs were trained in IPC, including the prevention of COVID-19, in 12 regions (June 2019–December 2020).

- Ethiopia's improvements in IPC also helped better prepare the country to respond early to the COVID-19 pandemic. MTaPS' work strengthened IPC activities as a pillar of the outbreak response effort by the MOH, which significantly contributed to the COVID-19 response. The pool of IPC-trained trainers and training materials were also used by the government as part of its COVID-19 response. Additionally, 147 HCFs were able to produce and use ABHR in 2020, during the active phase of the COVID-19 pandemic. This helped relieve critical shortages in ABHR supplies at HCFs and in the community.

## Lessons Learned

- IPC and AMR are interrelated issues that benefit from cross-collaboration. MOH staff working on IPC also collaborate with MOH staff working on AMR because IPC contributes to effective and sustainable AMR. The national AMR TWG and IPC TWG must work together to lead and coordinate implementation of the national AMR strategic plan and collaboration on COVID-19 response efforts.
- The importance of mentoring in IPC program implementation: For various reasons (e.g., work overload, lack of commitment, or insufficient technical knowledge/skills), HCFs seldom deliver on promises made during trainings or workshops. Close follow-up, coupled with mentoring, was instrumental in advancing planned activities. During the COVID-19 pandemic, mentorship through alternative means (telephone and email) using standardized tools helped ensure the execution of planned activities.
- Country capacity/resources are limited, so strategic deployment of effort is critical. While MTaPS was the government's prime partner for IPC, collaborating with other major partners (e.g., ICAP) and aligning MTaPS' activities with MOH's IPC strategy ensured that efforts were complementary and worked toward the same objectives.
- Constant communication with government leadership offers opportunities to share recommendations and best practices. With better information and

knowledge, leadership can help mobilize change. The MOH Director General of Medical Service, for instance, advocated for a national advisory AMR committee and engaged stakeholders from the animal health and environment sectors in that effort.

- Public health crises such as COVID-19 highlight IPC's importance. IPC in Ethiopia's response to the COVID-19 pandemic helped overcome attitudinal barriers and spark momentum for a national IPC plan and inclusion of IPC in the MOH's HSTP II.
- Strengthening the national IPC coordination body, at both the national and the subnational levels, is key to strengthening the IPC program in low- and middle-income countries like Ethiopia. Also, establishing an effective national IPC TWG helped the MOH improve its IPC program through continuous support from IPC experts.
- Use of standardized IPC self-assessment tools, such as the WHO IPCAF tool, is essential for identifying core IPC gaps, guiding IPC improvement activities by developing targeted IPC action plans, and objectively monitoring IPC improvement using a continuous quality improvement approach.

## Pathway to Sustainability

MTaPS' workplan and its implementation are well-aligned with the national IPC strategy and coordinated with other implementing partners to avoid duplication of effort and optimize use of available resources. MTaPS ensures that the MOH is in the driver's seat during implementation of all activities. Moreover, efforts were made to institutionalize IPC through its incorporation into key policy documents of the MOH, including HSTP and DHIS2. However, given the large resource needs in Ethiopia, a financial strategy and strong budget are critical for the system's resilience and sustainability. The MOH has a roadmap for the next five years that is expected to cost nearly USD 1 billion. While the national budget now has a line item for IPC, the MOH will need to assign regional-level budgets that support implementation of key IPC activities outlined in the MOH roadmap. Among the identified gaps in IPC, surveillance of HAI needs major attention for continuous improvement based on the WHO IPCAT-2 assessment. Also, funding for IPC activities at the regional and HCF levels, such as capacity-strengthening and basic IPC infrastructure (e.g., hand hygiene and waste management facilities), is needed to support IPC improvement activities.

As well-trained professionals are needed to support IPC compliance and adherence at the HCF level, continuous capacity building is vital for health care partners, both in-service and pre-service. Ethiopia now has a pool of health care partners trained in IPC in different regions and levels of the health system that it can continue to add to the IPC work force. Moreover, following the inclusion of IPC training as a continuing professional development accredited course, the desire of health professionals to enroll in IPC training has improved.

## Conclusions

- **MTaPS Support:** In the past few years, the MOH has focused mainly on developing national policy documents and guidelines. The national IPC strategy has only begun to be implemented, and the IPC M&E policy and surveillance guidelines are still being developed. MTAps' support of these initiatives can help ensure their successful implementation.
- **Key MTAps Results:** MTAps' capacity-strengthening support through refresher training, supportive supervision and mentoring, and effective IPC governance (strong and committed hospital leadership, accountability linked to IPC practice, and allocation of adequate budget) can continue to bring behavioral change regarding IPC, which in turn will contribute to sustaining IPC improvement in Ethiopia.
- **The Way Forward:** Support on IPC and AMR can advance progress on both issues. Complementary activities (e.g., including IPC in AMR training materials and vice versa) may become more important if WHO begins to specify new AMR reporting requirements for countries.



*This document is made possible by the generous support of the American people through the US Agency for International Development (USAID) contract no. 7200AA18C00074. The contents are the responsibility of Management Sciences for Health and do not necessarily reflect the views of USAID or the United States Government.*

## Acknowledgement

Thank you to the staff from MTAps Ethiopia for their support in the development of this technical brief.

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## About USAID MTAps:

The USAID Medicines, Technologies, and Pharmaceutical Services (MTaPS) Program (2018–2023) 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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