



IMPROVING APPROPRIATE MEDICINE USE THROUGH HOSPITAL MEDICINES AND THERAPEUTICS COMMITTEES

BACKGROUND

Access to appropriate, high-quality medicines where and when they are needed is the overall goal of a well-functioning supply chain and responsive health system. But what happens next? Appropriate use of medicines requires that patients receive medicines appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community (WHO 2002).

According to WHO estimates (WHO 2002), up to half of medicines may be inappropriately used and administered, causing ineffective treatment, as well as significant adverse events, waste of resources, and high opportunity cost. What is wasted is at the cost of potentially useful interventions. Considering that medicines are the second highest expenditure in health care, the negative impact is massive.

Inappropriate use has many dimensions—from missing the diagnosis, to not using more appropriate medicines (more cost effective, safe, and available), to using the wrong route or dose, to wrong administration or dispensing, to inappropriate compliance at patients' level. The causes of inappropriate use also vary, including lack of diagnostic means, inadequate staff and resources, lack of guidelines, lack of knowledge, poor attitudes, and external pressures.

STRATEGIC APPROACH

Addressing inappropriate use requires a multidisciplinary approach grounded in continuous quality improvement methods. Medicines and Therapeutics Committees (MTCs) are an important platform for implementing quality improvement initiatives at the hospital level in the area of therapeutics. MTCs were introduced into the Ugandan health sector in the early 2000s. However, the 2002 National Medicines Policy (NMP) did not provide adequate strategies to enable MTCs to function well. When the National Medicines Policy 2015 was reviewed



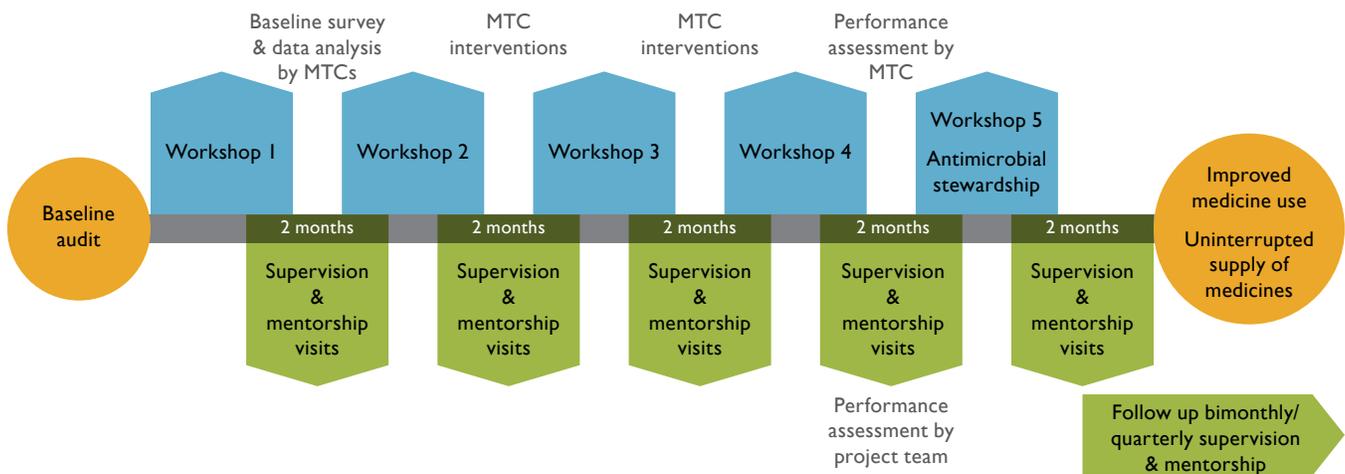
MTC meeting at the Soroti regional referral hospital.

(MoH 2015), the Uganda Ministry of Health (MoH) committed to establishing functioning MTCs in all hospitals and districts and listed strategies for sensible spending of resources through appropriate prescribing, dispensing, and administration of medicines by health workers.

Despite the presence of MTCs in the national quality improvement framework and trainings implemented across the country, in practice, most health facilities have experienced challenges in sustaining active and well-performing MTCs.

Together with the MoH's Pharmacy Department, Management Sciences for Health (MSH), through the USAID-funded Uganda Health Supply Chain (UHSC) project conducted a study to understand why MTCs are non-functional or low performing (MoH 2016). The study included interviews with hospital directors and focus group discussions with pharmacists and nurses from regional and district hospitals, as well as a literature review about MTCs in other countries.

Figure 1. MTC study design



According to the study findings, non-functioning or low-performing MTCs in Uganda resulted from lack of motivation and institutional support (e.g., no budget for MTC activities), unclear roles and responsibilities of MTC members, the absence of clear guidelines and standard operating procedures (SOPs) for MTCs, and a lack of training and technical support from the MoH. Limited or no access to data were also noted as a significant obstacle, particularly for data-informed decision making.

Based on the study findings, a pilot intervention was designed to improve the functionality of seven selected MTCs in regional referral hospitals in Moroto, Lira, Naguru, Soroti, Arua, Mbarara, and Masaka. The hospitals were organized into two cohorts that started at different times from May 2017 to October 2018.

The intervention was designed as a participatory learning and action research project that consisted of a cycle of 4 or 5 short trainings delivered to a small collaborative of 3 or 4 MTCs over 12 to 15 months, with periodic supervision, technical support, and minimal logistical support for the MTCs' operational costs (figure 1). The trainings were designed to be highly interactive and included exercises and analysis of real data from facilities. MTC staff were oriented on the principles of appropriate medicine use and quality improvement, practiced different methods for investigating medicine management (e.g., drug indicator survey, a, b, c/ vital, essential, and necessary [VEN] analysis, medicine use evaluations, tracking and accountability studies), and learned different strategies to modify practices. Pharmacovigilance and the principles of antimicrobial stewardship were also included, as well as a focus on data collection, analysis, and interpretation.

Figure 2. Drug indicator surveys (prescribing indicators) in five regional referral hospitals

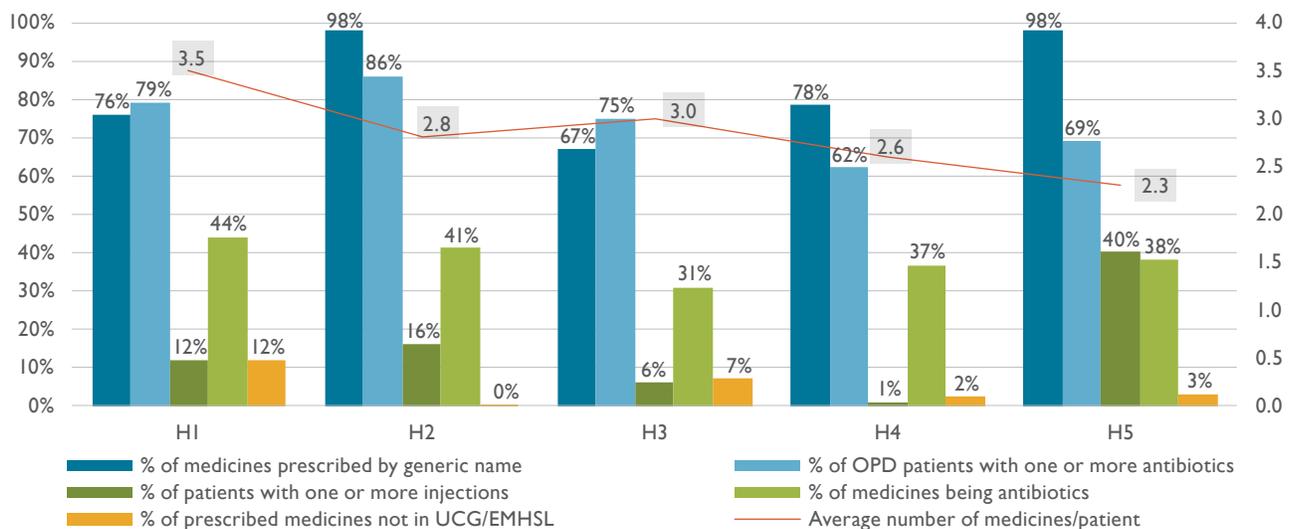
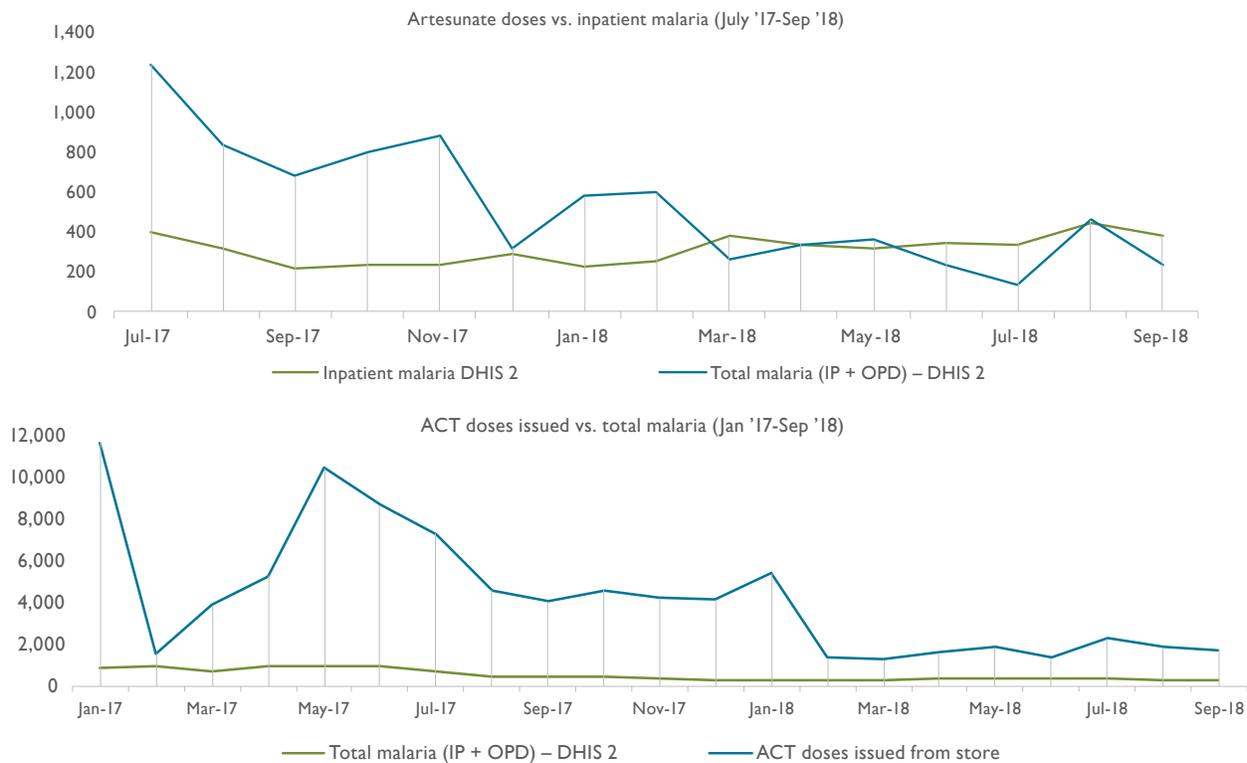


Figure 3. Decrease in discrepancy between morbidity data (malaria cases) and commodity consumption (artesunate and ACT) in two regional referral hospitals



RESULTS & ACHIEVEMENTS

All seven MTCs were reactivated; they held regular meetings, conducted several surveys and investigations, and designed and implemented multi-strategy interventions to improve practices, combining educational, managerial, and regulatory approaches. All five hospitals analyzed their outpatient department (OPD) prescription practices through a drug indicator survey (showing high antibiotic prescriptions [figure 2]), management of malaria through a prescription audit or medicine use evaluation, and management of antimalarial commodities (artesunate and artemisinin-based combination therapy [ACT]) by tracking and accountabilities studies.

Each hospital chose its own priorities, but all of them focused initially on managing malaria and antimalarial commodities because it was identified as a priority issue in terms of morbidity and use of resources and was considered a relatively easy issue to address.

Each hospital had at least one of the following problems:

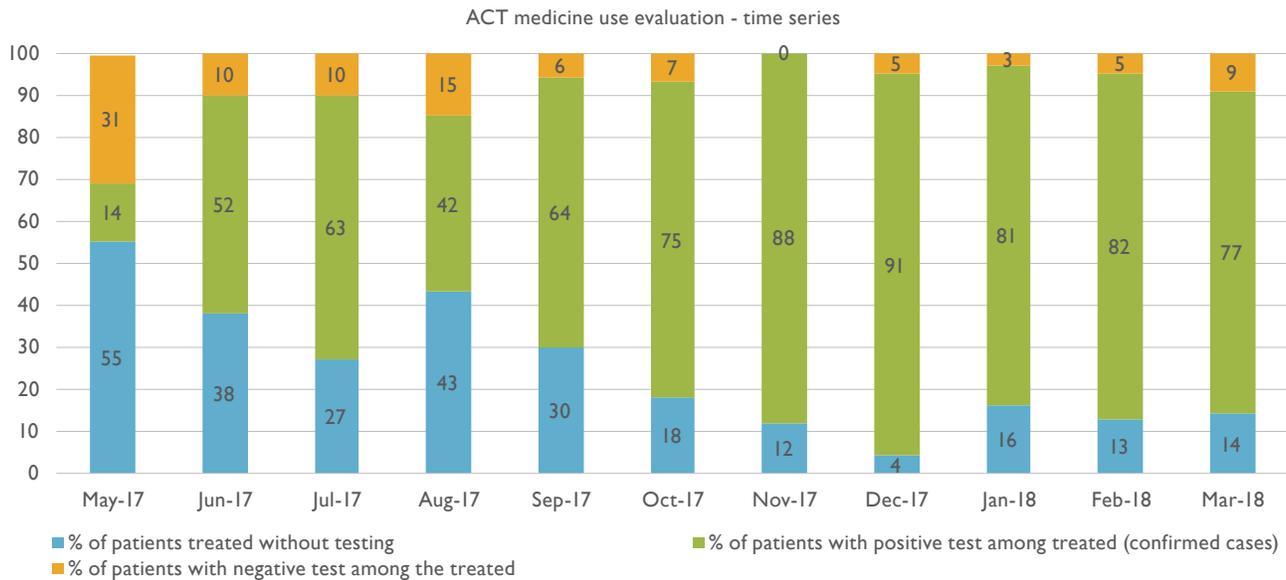
- Diagnosis and treatment of malaria cases without a confirmatory test
- High use of injectable artesunate in the OPD for uncomplicated malaria

- Discrepancy between consumption of antimalarials and cases reported due to a varying combination of factors (misuse and abuse, poor documentation, poor supply chain management)

Each hospital implemented its own improvement plan to address one or more of the problems and conducted follow-up surveys to assess results. Examples from some hospitals are described below:

- Figure 3 shows a significant decrease in the discrepancy between the number of malaria cases reported and the consumption of antimalarial commodities over the course of the intervention. The improved accountability of the commodity is linked to improved use with interventions, such as limited inappropriate use of artesunate in the OPD and ACT prescription restricted to tested patients and stricter supply chain controls.
- Figure 4 shows a gradual and sustained improvement of management of malaria patients, with decrease in the percentage of patients treated with ACT without testing or in spite of a negative test in one regional hospital.

Figure 4. Improved use of antimalarial medicines in a regional referral hospital



The experience gained from this study led to the development of a national MTC manual (MoH 2018) modelled on the WHO manuals. However, the manual was customized and adapted through a bottom-up approach to the local setting and featured case studies and examples from the study interventions. The manual is accompanied by training packages and a revitalization strategy to guide implementation.

LESSONS LEARNED

The study demonstrated that MTCs can be successfully reactivated and can implement effective quality improvement interventions in hospital settings. The participatory, collaborative, and practical approach with high-frequency, low-dose training design and continuous mentoring and technical support were important factors that contributed to the results. The MTCs faced the following challenges:

- **High staff turnover:** Building a library of MTC guidelines as reference documents for induction of new members, as well as references for the MTC, helps when there is a high turnover of trained staff. Members are also encouraged to share the knowledge gained from training with other facility staff.
- **Data analysis mentoring sessions:** We learned that members found data analysis very cumbersome and not easy to understand, especially the supply chain ABC analysis. This was due in part to the limited use

and functionality of RxSolution,¹ a computerized store management system. Based on this feedback, UHSC provided additional coaching in data collection, root cause analysis, data analysis, and interpretation of results.

- **Sustaining improvements over time:** A hospital-driven quality improvement plan, rather than an externally driven plan, will ensure sustainable gains.
- **Limited funds:** Including the MTC work plan in the health facility work plan budget and lobbying for support from implementing partners can help mobilize funds for operating the MTC.

Like all quality improvement initiatives, MTCs require constant support and monitoring to sustain momentum and motivation in a quite challenging environment.

WAY FORWARD

The success of this study and the development of a locally adapted MTC manual provides a strong foundation for hospital management, MOH officials, and implementing partners to support existing MTCs and to roll out the intervention across the country, particularly in the context of the fight against antimicrobial resistance. To sustain this progress, in 2019, the Medicines, Technologies, and Pharmaceutical Services (MTAPS) Project, implemented by MSH, started to provide technical assistance to four of the regional referral hospitals (Masaka, Soroti, Moroto,

¹ RxSolution Integrated Pharmaceutical Management Software eLearning Courses available at www.LeaderNet.org/rxsolution.

and Lira). The technical assistance is focused on implementing antimicrobial stewardship and infection prevention and control (an IPC committee) and supporting the regional referral hospitals to set up and operationalize MTCs and IPC committees in the lower-level health facilities they supervise. This contributes to ensuring sustained appropriate medicine use and commodity security.

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