



SIAPS TECHNICAL BRIEF

Strengthening Drug and Therapeutics Committees to Promote Rational Medicine Use in Mozambique



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INTRODUCTION

Mozambique is one of the poorest countries in the world, with approximately 70% of the population living below the poverty line. Many women and children are unable to access essential health services and medicine due to inadequate geographic coverage, financing, and available health professionals. Neonatal mortality is 30 deaths per 1,000, and under-five mortality is 90/1,000. Malaria accounts for approximately 26% of hospital deaths. Dual infections of tuberculosis (TB) and HIV and the threat of increasing multidrug-resistant TB complicate the national TB program response.

To support priority programs such as HIV prevention and treatment and maternal and child health, Mozambique's Ministry of Health began working with the US Agency for International Development (USAID)-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, implemented by Management Sciences for Health (MSH), in 2011. The Ministry of Health and SIAPS are establishing Drug and Therapeutics Committees (DTCs) and training committee members to improve medicine management and use, thereby helping to achieve good health outcomes.

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SIAPS helped the DHP and hospitals develop the capacity of their DTCs to effectively and sustainably monitor and identify medicine use problems and to implement interventions in each facility.

PROBLEM STATEMENT

Mozambique lacks the institutional mechanisms to address prescription problems, including protocols and training of hospital staff. Communication between medical and pharmaceutical staff is poor, and there are too few hospital staff overall.

The country also has difficulty complying with prescription standards, a common issue worldwide in both developing and developed nations. Irrational use behaviors include polypharmacy (the use of too many medicines per patient); the use of incorrect medicine(s) for a particular indication; the use of medicines with uncertain or unproven efficacy; inappropriate self-medication, particularly with prescription-only medicines; and taking medicines in incorrect dosages or for an improper duration. That can lead to increased mortality and morbidity, higher numbers of adverse medical events, rising rates of antimicrobial resistance, and expanding health care costs.

One way to stem inappropriate medicine use is to promote sound management among health care professionals involved in determining best practices. DTCs manage the selection of medicines, evaluate medicine use, and implement strategies to improve that use throughout the health care system. SIAPS has provided support to DTCs in DRC, Ethiopia, Jordan, Mozambique, South Africa, and Swaziland.

In April 2013, Mozambique’s Ministry of Health had requested that hospitals establish DTCs. By August of that year, the Ministry’s Departamento de Farmacia Hospitalar (Department of Hospital Pharmacy, DHP) had helped 13 hospitals establish such committees. Although committee members were motivated to address the safety and rational use of medications, the DTCs lacked the infrastructure, finances, staff, processes, tools, and monitoring capability to begin working.

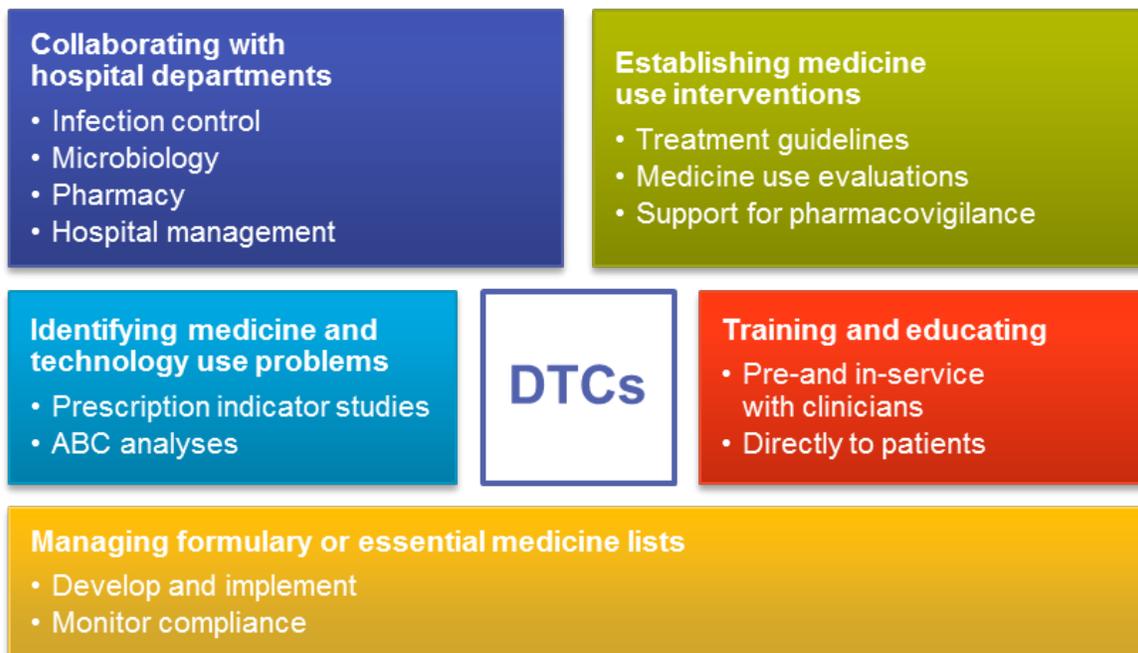


Figure 1. Drug and therapeutics committees help improve rational medicine use

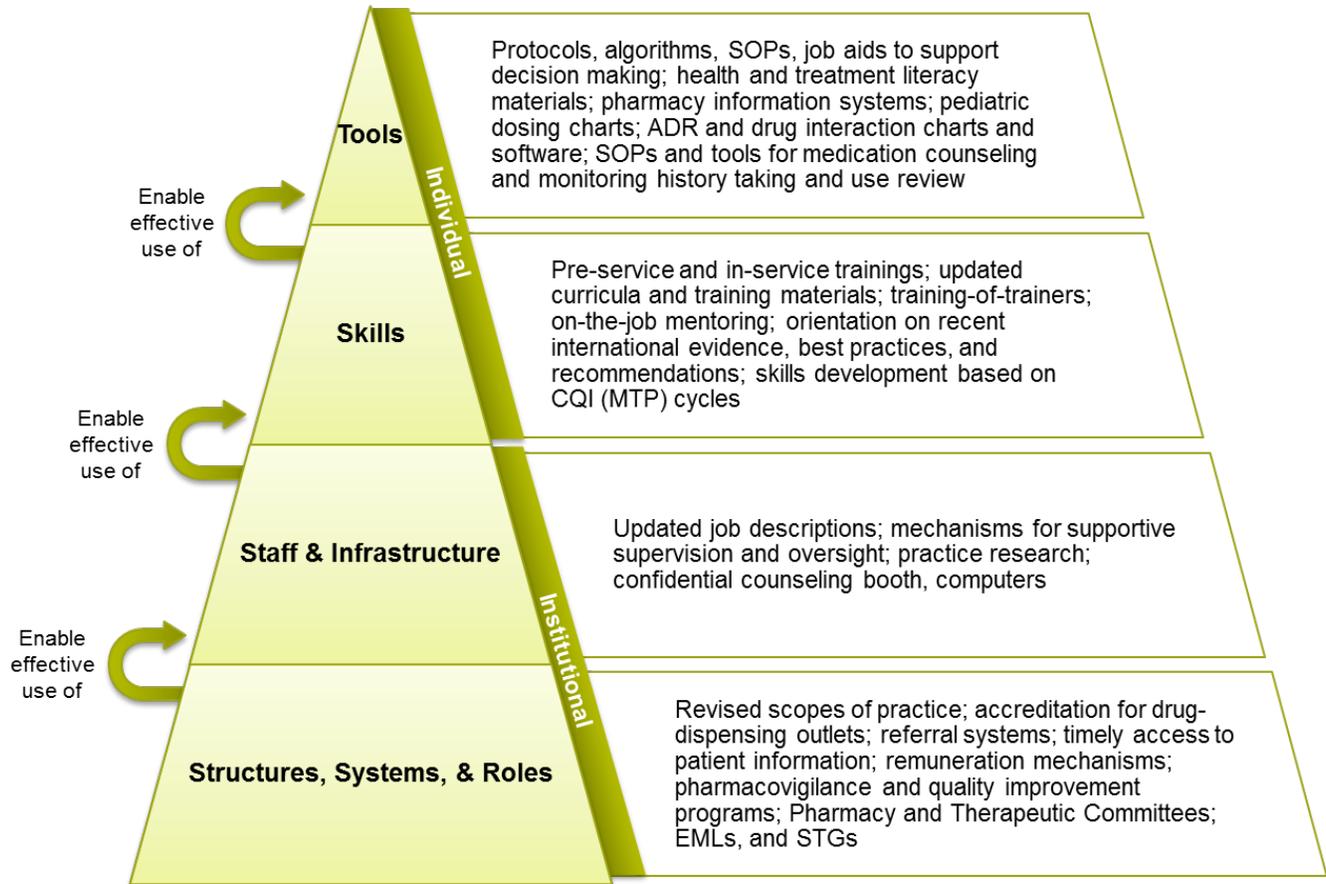


Figure 2. The SIAPS approach to building DTC capacity

STRATEGIC APPROACH

SIAPS used the MSH Pharmaceuticals and Health Technologies Group framework for capacity building—a critical aspect of SIAPS’ technical assistance—to help the DHP develop and implement a system for DTCs. SIAPS aims to increase capacity incrementally across the lifetime of a project with the ultimate goal of sustainability.

INTERVENTION

SIAPS helped the DHP and hospitals develop the capacity of their DTCs to effectively and sustainably monitor and identify medicine use problems and to implement interventions in each facility.

IMPLEMENTATION

SIAPS took the following actions to implement its capacity-building approach:

Defining Roles and Systems

In August 2013, SIAPS supported the DHP in conducting a two-day orientation workshop to explain a DTC’s primary functions, roles, and responsibilities; how to monitor and identify medicine use problems; and procedures for implement corrective interventions and strategies. The orientation was attended by 49 health professionals, including physicians, pharmacists, dentists, laboratory technicians, and hospital administrators, from 11 hospital DTCs, the Ministry of Health, and nongovernmental organizations that support clinical services and supply chain

operations. In 2016 SIAPS also provided a consultant to train DTC members on standard treatment guidelines for anemia, upper respiratory infections, and gastrointestinal infections.

Training Staff

Based on findings from the orientation, SIAPS collaborated with the DHP on an action plan for strengthening the committees’ supervisory capacity. The SIAPS team provided support to DHP staff in training hospital pharmacists on collecting, analyzing, and reporting prescription indicators, medication errors, and aggregate consumption studies. Through August 2016, DFH, supported by SIAPS, conducted training for 461 DTC members in 11 provincial and two central hospitals on how to conduct medicine use studies, identify problems and root causes, and implement and monitor solutions.

Trainees were taught the Examine, Diagnose, Treat, and Evaluate approach to addressing a medicine use problem, which was developed by MSH’s Rational Pharmaceutical Management Plus Program with support from USAID and the World Health Organizationⁱ. At the end of the orientation workshops on supervisory visits, nine DTCs had developed implementation action plans.

Step 1: Examine (*identify the problem and recognize the need for action*)

In this step, hospital pharmacists analyze medicine use in the hospital by conducting prescription indicator studies, clinical chart analyses, and aggregate consumption studies. Results are discussed at DTC meetings.

Step 2: Diagnose (*identify underlying causes and motivating factors*)

At DTC meetings, the head of pharmaceutical services typically presents the results of the facility’s studies on aggregate medicine use, prescribing, and medical charts. The DTC identifies priority issues and areas to address. The next step is to brainstorm the main causes of each priority issue. Attendees then determine root causes using the “5 Whys” technique, an interrogative method used to explore cause-and-effect relationships.ⁱⁱ

Step 3: Treat (*list possible interventions, assess resources, select an intervention*)

After identifying root causes, a DTC identifies underlying influences for the identified problems and determines which activities or circumstances directly control outcomes. These are divided into three categories:

- Those that directly control outcomes
- Those that influence but do not control outcomes
- Those that do not influence outcomes

The next step is to determine interventions for root causes that control or influence outcomes; design implementations; and set input, output, and outcome indicators.

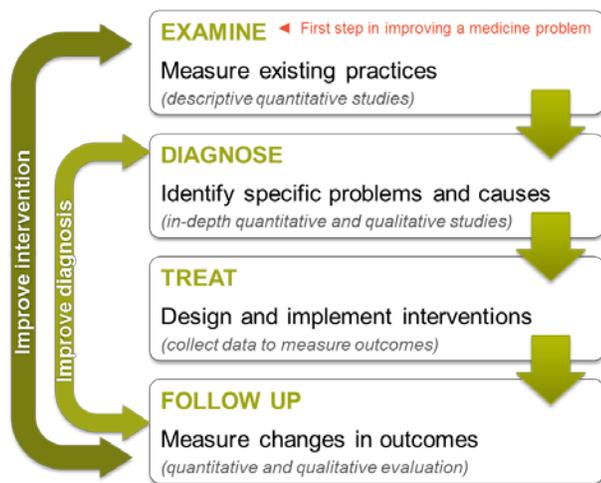


Figure 3. How DTCs survey and improve prescribing and treatment practices

Step 4: Follow up (*monitor impact and restructure intervention*)

In this step, results are evaluated monthly against planned targets and discussed in DTC meetings. Results are intended for teaching, advocating for support (internally and externally), and adjusting interventions.

Standardizing Operating Procedures

SIAPS helped the DHP develop hospital pharmacy guidelines and standard operating procedures for pharmaceutical management and medicine use studies on prescribing indicators, medicine errors, and aggregate consumption (ABC/VEN and Therapeutic categories). SIAPS also taught DFH staff basic clinical pharmacy and computer skills.

Helping Launch Pilot Sites

During field visits conducted between August 2013 and July 2014, SIAPS worked closely with two pilot DTCs in Maputo City to gather staff, define their roles, devise information and decision making processes, and secure stable funding sources. In 2015, 11 other DTCs began to receive direct support from SIAPS.

Monitoring Outcomes

DTCs use the following indicators to monitor their performance:

- Average number of medicines per prescription
- Percentage of medicines prescribed by generic name
- Percentage of prescriptions with one or more antibiotic prescribed
- Percentage of prescriptions with one or more injections prescribed
- Percentage of medicines prescribed from the essential medicines list
- Percentage of medicines actually dispensed
- Number of medication errors

RESULTS

As of August 2016, DTCs had been piloted in 13 health facilities and had conducted 70 medication error studies, 13 ABC/VEN analyses, and 28 prescribing studies. Five DTCs developed or implemented treatment/prophylaxis guidelines and formularies, four developed rational medicine use policies, and three conducted in-service trainings on rational medicine use or DTC responsibilities.

Seven hospitals were able to design, implement, and evaluate interventions to address low levels of compliance with national prescribing guidelines.

In **Quelimane Provincial Hospital**, the DTC provided on-the-job training to hospital health technicians working in emergency care on how to manage the facility's most frequently diagnosed diseases. The committee also placed supportive supervisors on pharmacies and wards; reinforced pharmacy staff compliance with terms of reference; and designed and implemented a communications procedure among pharmacists, nurses, and prescribers. An analysis showed that staff turnover in May had led to a 33% increase in consultations that resulted in an antibiotic prescription. In response, the hospital trained new staff on national prescribing guidelines. One month later, there was a 62% decrease in consultations resulting in antibiotic prescriptions.

Interventions at **Lichinga Provincial Hospital** comprised on-the-job training on clinical chart documentation guidelines; monitoring clinical chart documentation, including correct transcription of therapeutics from clinical diaries to therapeutic charts; compliance with standard treatment guidelines; and discussion of the main problems identified in regular DTC meetings. As a result, from May to July 2016, the rate at which therapeutics were correctly transcribed from clinical diaries to therapeutic charts improved from 34.25% to

49.07%, and compliance with standard treatment guidelines for all patient encounters increased from 25.92% to 45.37%.

Polana Caniço General Hospital provided prescribing guidelines and a list of available and approved medicines to all hospital departments and created a sub-committee to develop strategies for helping to prevent antibiotic resistance. Average completeness of relevant information in prescribing-related paperwork rose from 10% to 27%.

Tete Provincial Hospital posted job aids displaying prescribing indicators. The DTC discussed prescribing indicator status monthly and advocated for prescribing medicines from the hospital medicine list at daily morning meetings. However, administrative measures without training and mentoring were not enough for improvement. The percentage of prescribed medicines that were dispensed decreased from 87% in May 2015 to 76% in July 2015. The percentage of encounters resulting in an antibiotic prescription increased from 54% in May to 75% in July of that year.

Jose Macamo General Hospital presented prescribing indicator status in regular clinical sessions, informed health workers of the importance of complying with good prescription practices, and issued a hospital policy for prescribing and dispensing procedures. Its emergency pharmacy started to return non-compliant prescriptions. As a result, average completeness of relevant information in prescriptions improved from 51% in January 2016 to 72% in June 2016.

Mavalane General Hospital gave prescribers feedback regarding prescribing that deviated from standard procedures, provided in-service training to promote adherence to the standard treatment guidelines, and discussed current problems in clinical sessions. As a result, average completeness

of relevant information in prescriptions improved from 18% to 20% after a two-month intervention.

After conducting aggregate consumption studies (VEN/ABC/DDD) in May 2016, **Chimoio Provincial Hospital** discovered that ferrous sulfate with folic acid was the one of the most widely consumed medicines in the hospital, even though it is normally prescribed only for prevention and management of anemia in pregnant women. The medicine was systematically prescribed for children and men to treat different forms of anemia, which is an incorrect indication that would not improve health status. The DTC regulated the use of the medicine in the hospital, trained prescribers how to treat anemia, and closely monitored the prescription and consumption of ferrous sulfate with folic acid. After three months, consumption of the medication decreased by 10%.

CHALLENGES

Widespread knowledge about the specific functions of a DTC is lacking. SIAPS trainings have helped share such information, but much more work is needed to fully orient and train DTC members. Standards and protocols for medicine management are limited in Mozambique and have not been widely distributed or used in hospitals. Central support is not guaranteed for sufficient material, financial, or technical assistance going forward.

NEXT STEPS

Mozambique's DTCs are in the very early stages of development and need strong central support. Although the government has taken ownership of most SIAPS-supported interventions, there is still much to be done to ensure that gains will be sustained and improved. It is also time to begin developing more committees at the provincial level.

DTCs should focus on important and emerging health areas over the next five years, including antimicrobial resistance; patient-centered clinical pharmacy; medication adherence; developing and updating standard treatment guidelines; and public education, advocacy, and awareness.

Endnotes

ⁱ Management Sciences for Health and World Health Organization. 2007. Drug and Therapeutics Committee Training Course. Submitted to the US Agency for International Development by the Rational Pharmaceutical Management Plus Program. Arlington, VA: Management Sciences for Health. Available at: http://www.who.int/medicines/technical_briefing/tbs/Participant-s-Guide-All-Sessions.pdf.

ⁱⁱ Serrat O. 2009. *The Five Whys Technique*. Cornell University ILR School. Available at: <http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1200&context=intl/>.

Further Reading

Phulu B. January 2015. Medicine Use Evaluations: A strategy for therapeutic committees to monitor the use of antiretroviral medicines and medicines for opportunistic infections. Submitted to the US Agency for International Development by the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program. Arlington, VA: Management Sciences for Health. Available at: <http://apps.who.int/medicinedocs/en/d/Js22113en/>.

World Health Organization. March 2012. The Pursuit of Responsible Use of Medicines: Sharing and Learning from Country Experiences. Technical Report prepared for the Ministers Summit on The benefits of responsible use of medicines: Setting policies for better and cost-effective health care. Available at: http://www.who.int/medicines/areas/rational_use/en/.

ABOUT SIAPS | The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program works to assure access to quality pharmaceutical products and effective pharmaceutical services through systems-strengthening approaches to achieve positive and lasting health outcomes. SIAPS is funded by the US Agency for International Development (USAID) and is implemented by Management Sciences for Health.

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