

Building Pharmaceutical Management Skills in Northern Uganda: The Monitoring, Training, and Planning (MTP) Approach

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About SPS

The Strengthening Pharmaceutical Systems (SPS) Program strives to build capacity within developing countries to effectively manage all aspects of pharmaceutical systems and services. SPS focuses on improving governance in the pharmaceutical sector, strengthening pharmaceutical management systems and financing mechanisms, containing antimicrobial resistance, and enhancing access to and appropriate use of medicines.

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ACRONYMS AND ABBREVIATIONS

ACT	artemisinin-based combination therapy
AMC	average monthly consumption
CMEs	Continuing Medical Education sessions
DADIs	District Assistant Drug Inspectors
DHO	District Health Officer
FEFO	first expiry, first out
HSD	health subdistrict
IC	In-charge
IPT	intermittent preventive treatment
IRS	indoor residual spraying [with insecticides]
ITNs	insecticide-treated nets
JMS	Joint Medical Store
MoH	Ministry of Health
MSH	Management Sciences for Health
MTP	monitoring, training, and planning
NA	not applicable
NDA	National Drug Authority
NMCP	National Malaria Control Program
NMS	National Medical Stores
ORS	oral rehydration salts
PHC	primary health care
PLWA	people living with HIV/AIDS
PMI	President's Malaria Initiative
RBM	Roll Back Malaria
SOP	standard operating procedure
SPS	Strengthening Pharmaceutical Systems
TOT	training of trainers
USAID	U. S. Agency for International Development
USG	United States Government

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BACKGROUND AND RATIONALE

Uganda is one of the high-burden malaria countries in sub-Saharan Africa that was selected by the United States Government (USG) in May 2005 to benefit from the President's Malaria Initiative (PMI). The overall five-year \$1.2 billion initiative intends to rapidly scale up malaria prevention and treatment interventions with the goal of reducing malaria-related mortality by 50 percent through the achievement of 85 percent coverage of at-risk groups with four key interventions: artemisinin-based combination therapy (ACT), intermittent preventive treatment (IPT) for malaria in pregnancy, insecticide-treated mosquito nets (ITNs), and indoor residual spraying with insecticides (IRS).

In Uganda, malaria is a leading cause of morbidity and mortality and accounts for 25–40 percent of outpatient visits, 20 percent of hospital admissions, and 9–14 percent of hospital deaths (Malaria Control Programme, 2001/2-2004/5¹). The burden of the disease is greatest among children under 5 years of age and pregnant women. In 2001, 44.4 percent of children under 5 years who presented at the outpatient had malaria (MoH Roll Back Malaria [RBM] baseline 2001). People living with HIV/AIDS (PLWA) are becoming a third vulnerable group.

The fight against malaria is part of an overall effort of the Government of Uganda to improve health as documented in the Second Health Sector Strategic plan. This multisectoral effort involves a broad partnership that forms the Roll Back Malaria Country Partnership.

The national RBM strategic plan (2005–06 through 2009–10) currently guides malaria control activities in Uganda and supports the use of (a) prompt and effective treatments, including home-based management; (b) vector control, including ITNs and IRS; (c) IPT during pregnancy; and (d) epidemic preparedness and response.

Although some progress has been made in treatment and prevention efforts led by the MoH National Malaria Control Program (NMCP), achieving the Abuja targets² still requires tackling several unmet needs. Implementation of the PMI Five-Year Strategy and Plan will address these needs. In implementing the PMI, the U.S. Agency for International Development (USAID) Uganda mission works closely with MoH and within the existing national malaria control plans.

The Management Sciences for Health (MSH) Strengthening Pharmaceutical Systems (SPS) program's strategy to support the PMI implementation is based on a pharmaceutical management systems strengthening approach. SPS works with other partners to support and strengthen the Uganda NMCP in the implementation of the national malaria plan and its roll out in the country. SPS also supports the Uganda National Medical Stores (NMS), the Pharmacy Division of the MoH, Joint Medical Store (JMS), and the National Drug Authority (NDA) in reviewing, updating, and implementing policies and activities related to the management of pharmaceuticals, with special focus on antimalarial medicines.

¹See www.health.go.ug/mcp/umscp.pdf for Malaria Control Strategic Plan 2001/2-2004/5, Malaria Control Program

² See www.usaid.gov/our_work/global_health/id/malaria/publications/docs/abuja.pdf for a summary of the targets, which were outlined at the April 25, 2000, African Summit on Roll Back Malaria, Abuja, Nigeria.

Based on this background, SPS has supported the improvement of pharmaceutical management practices in Ugandan public health facilities as a means of ensuring the availability of the right quantities and quality of essential medicines, including antimalarials, for the Ugandan people. The need for this support arose as a result of assessments of medicine supply management carried out in health facilities of six districts. The assessments revealed that these facilities frequently lacked stocks of medicines, even when the medicines were freely available at the medical stores.

NMS operates on a pull system. According to this system, customers order for what they need from NMS. The system is based on the assumption that the customers are able to quantify their needs and make timely orders. The management of NMS, however, observed among its customers a lack of understanding of how NMS operates. Order processing at NMS often stalled either because the customers delayed putting in their orders or because they placed incorrect orders. Furthermore, storage practices are poor, so medicines frequently expire at the districts. The challenge was to equip the customers with the necessary skills to manage the supply chain and ensure timely and correct ordering of medicines. This challenge created the need to provide district and health facility staffs with knowledge on quantification of needs, receipt, storage, and distribution of medicines and on the operations of NMS.

Traditional training methods alone are ineffective as skills-building interventions because these approaches are usually centralized trainings, which remove employees from their workplaces and, thus, cannot help them identify or solve work-related problems. In addition, these approaches do not follow up on the trainings conducted and therefore workplans, if any, may not be implemented and so produce little or no impact. In contrast, MTP is an innovative approach to skills building that places training tools and responsibility in the hands of local staff. The approach uses defined indicators to (a) measure the magnitude of the problem (monitoring component), (b) discuss the underlying factors for problems and how to improve the situation (training component), and (c) set the improvement target (planning component)³. MTP empowers its users to take immediate action in response to a problem while building the required skills and structures that improve long-term efficiency and quality. In addition, MTP is easy to understand and practical to use for building the skills of the nurses, technicians, dispensers, and clinical officers who manage and dispense medicines. The MTP process is cyclical and ongoing, which leads to sustainability. Unlike traditional training methods, which draw participants away from their places of work, MTP seeks to capacitate health care workers at their own work sites.

MSH's SPS program worked with NMS, NMCP, and the Pharmacy Division of MoH to build the medicines management skills of trainers who, in turn, have been involved in building the skills of district staff in northern Uganda. The trainings used a decentralized MTP approach in which trained health unit persons visit the health facilities to work out solutions to identified problems and monitor implementation. Next steps are planned during implementation. The trainees included district stores persons, District Assistant Drug Inspectors (DADIs), Health sub-District (HSD) and health facility heads, and their respective storekeepers. This document reports the activities undertaken by SPS under this scheme.

³ MSH. 2009. *A Guide for Implementing the Monitoring-Training-Planning (MTP) Approach to Build Skills for Pharmaceutical Management*. Arlington, VA: MSH Rational Pharmaceutical Management Plus Program.

GOAL OF THE MTP INTERVENTION FOR PHARMACEUTICAL MANAGEMENT CAPACITY BUILDING

The overall goal of the intervention was to improve pharmaceutical management practices and indicators sustainably in order to promote the availability of antimalarial medicines. The specific objectives were to—

1. Enhance the facility staff's knowledge of pharmaceutical management
2. Develop specific work plans to improve pharmaceutical management in target districts, HSDs, and facilities
3. Establish adequate standards, tools, procedures, and approaches to pharmaceutical management in target districts
4. Improve supervision skills for pharmaceutical management in the target districts

DESCRIPTION OF THE MTP APPROACH AND ITS APPLICATION

The process began with a training of trainers (TOT) in which the presentation and pharmaceutical management skills of the proposed trainers were updated through facilitator presentations, group work, group discussions, and individual exercises. This update was followed by decentralized district trainings in which selected district, health unit, and HSD staffs were drawn from their workplaces into a venue in their districts or neighboring districts for a three-day training workshop in pharmaceutical management. During the training, participants identified medicines management problems that they encountered in their workplaces, and the training in each district then culminated into development of work plans aimed at solving the problems identified during the sessions.

At the end of the training, a small team of between 5 and 15 people per district was chosen and equipped with supervisory skills to monitor and supervise the problem-solving activities at the health facilities, while training and planning for the next steps. Each team comprised people at the district and HSDs who were involved in support supervision of the health facilities. In some districts, selected health facility in-charges were also co-opted to support the teams. These district teams collected data related to medicines management, analyzed the data, and made periodic reports to MSH on the progress of the activities while at the same time facilitating skills building at the health facilities. The team worked within the framework of the existing support supervision at the districts and, therefore, strengthened its pharmaceutical management component. Teams conducted quarterly visits to the facilities and, during each visit, made an assessment to determine progress. (Appendix 1 contains the support supervision checklist used during the support supervision visits.

The following partnerships assisted with the training and application of the MTP approach—

- NMCP—The NMCP provided guidance on the malaria control policy, the use of ACTs in the community, and the roll-out procedures; they also facilitated the training sessions.
- Pharmacy Division—The MoH Pharmacy Division provided technical guidance to SPS with regard to the training, supported the development of training tools, identified trainers who had been involved in supply chain management at the districts for inclusion in TOT, and gave overall guidance and leadership in selecting the districts to be trained; they also participated in monitoring the support supervision activities in the districts.
- District staff—The district health teams sent out invitations to the selected participants and followed up with constant reminders to them to attend this training. They also provided leadership during the review meetings after the support supervision visits; this commitment gave the project mileage in achieving the required results. The district health team also provided the vehicles that were used in support supervision of the lower units.
- Facility staff—Health facility staff attended the trainings, developed and implemented improvement plans for their individual units, and participated in training other facility staff who were not trained by SPS.

- HSD supervisors—HSD supervisors conducted regular support supervision activities to the facilities, monitored progress in achieving the set targets, proposed solutions together with the facility staff, trained the staffs where appropriate, and planned the next implementation steps. They were also responsible for documenting the activities conducted and for collecting, analyzing, and reporting facility data on pharmaceutical management indicators to the district and SPS. They coordinated the whole support supervision process.

ACTIVITIES

Training of Trainers

In total, 24 trainees were trained in the TOT workshop. These participants were drawn from NMS, the Pharmacology Department of Makerere University, and from regional and the national referral hospitals in Uganda. Participants included medical doctors, pharmacists, and dispensers who have been involved in MTP training, were involved in supply chain management of medicines, or were part of the sales and marketing team of NMS.

District Trainings

The training of trainers was followed by centralized district training workshops in 14 districts: Adjumani, Amolatar, Amuru, Apac, Arua, Bushenyi, Dokolo, Gulu, Kitgum, Lira, Moyo, Nebbi, Oyam, and Pader. In total, 357 health workers from all the districts were trained. Table 1 shows the health workers trained from the various districts.

At the end of the trainings, workplans for each facility in each district were developed that aimed at addressing the constraints each district facility was facing in its supply chain. Appendix 2 is a compilation of the workplans merged into one template. Among the health workers trained, 119 persons (table 1) were actively involved in support supervision in their districts and HSDs, and they were equipped with extra skills to enable them in the implementation of the improvement plans in the facilities. In the districts of Amolatar, Apac, Bushenyi, Dokolo, Lira, and Pader, the participants included only health facility personnel who were involved in support supervision of lower health units. Therefore, these districts received only support supervision training, so the numbers of people trained are smaller.

The supervision teams conducted visits to the facilities to follow up on implementation of the workplans, and in facilities where the health workers were not part of the trainings, the teams were expected to support the development and implementation of the workplans. As shown in table 2, SPS supported supervisory visits in eight districts—Adjumani, Amuru, Arua, Gulu, Kitgum, Moyo, Nebbi, and Oyam. The rest of the districts did not receive any SPS-supported supervisory visits, although their teams received supervisory training. The difference in the number of visits and number of health workers trained by district was the result of a reduction in funding to SPS as the project in Uganda came to an end.

Table 1. Number of Facility Persons and Supervisors Trained in Pharmaceutical Management in the Districts Visited

District	Number of Persons Trained			Number of Supervisors Trained per District
	Total	Male	Female	
Adjumani	35	15	20	4
Amolatar	2	2	—	2
Amuru	34	29	5	10
Apac	4	4	—	4
Arua	44	28	16	14
Bushenyi	32	17	15	32
Dokolo	5	5	—	5
Gulu	37	18	19	4
Kitgum	30	19	11	9
Lira	3	3	—	3
Moyo	41	27	14	7
Nebbi	61	34	27	14
Oyam	22	12	10	4
Pader	7	5	2	7
Total	357	218	139	119

Table 2. Number of Facilities Supervised in Pharmaceutical Management among the Eight Districts Visited

District	Number of Facilities Supervised	Number of Visits per Facility
Adjumani	18	4
Amuru	20	1
Arua	41	2
Gulu	23	1
Kitgum	25	1
Moyo	37	4
Nebbi	57	2
Oyam	16	1
Total	237	16

During the trainings, the role of the existing district focal person on medicines, usually the stores person at the district or the DADIs, were clearly spelled out because this role usually had not been well defined. The role of this person was to avail the tools to the facilities, collect filled order forms from the facilities, and follow up the whole ordering process until the medicines are

delivered to the health units. This person also must ensure that the health facilities have all the information related to their medicine budgetary allocation before they order the medicines.

The MTP Process at the Health Facility

The support supervision teams made quarterly visits to the health facilities. For each facility, on each visit, assessments of the level of pharmaceutical management were made using a set of indicators. These indicators were included in the supervision checklist that was developed together with the MoH Pharmacy Division and is included in this document as appendix 1. The indicators were measured, and the results were compiled for a HSD or district and presented at review meetings held every after completion of the quarterly supervision visits for all the facilities within a district. These meetings were chaired by the District Health Officer (DHO) or his or her representative.

Figure 1 provides some of the measurements of the indicators at the successive supervision visits in each district. Comparative results were available only for the districts visited more than once. In all four districts with comparative data, the supervision team observed a significant increase in recording of dispensed medicines as indicated in figure 1.

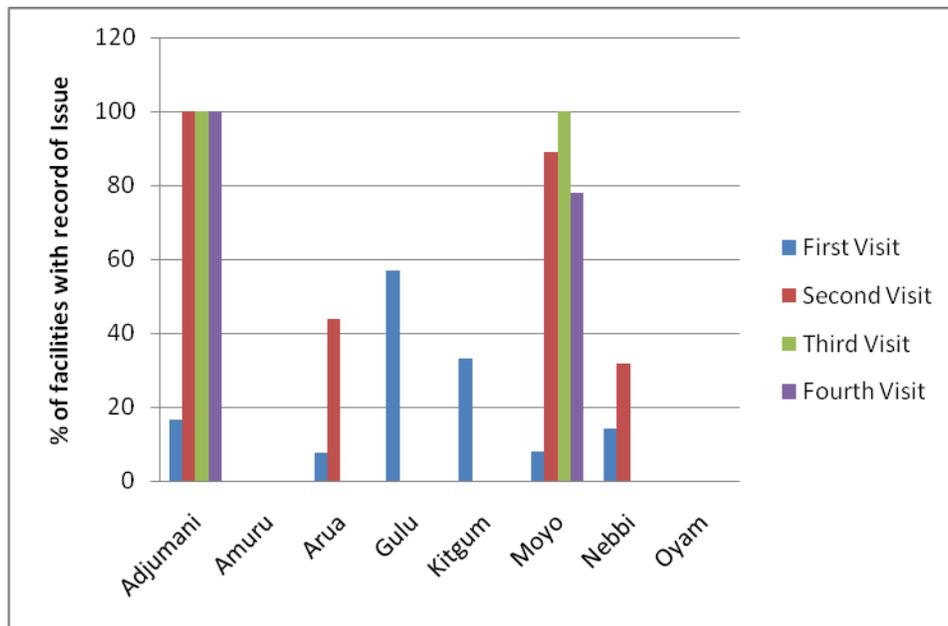


Figure 1. Facilities with records of dispensed tracer medicines per visit by district

Having up-to-date stock cards was one of the other indicators of good medicines management, and as shown in figure 2, the supervision team noted successive improvements per visit in the proportion of health facilities with updated stock cards. An updated stock card was defined as one that shows a balance in stock equal to the stock on hand.

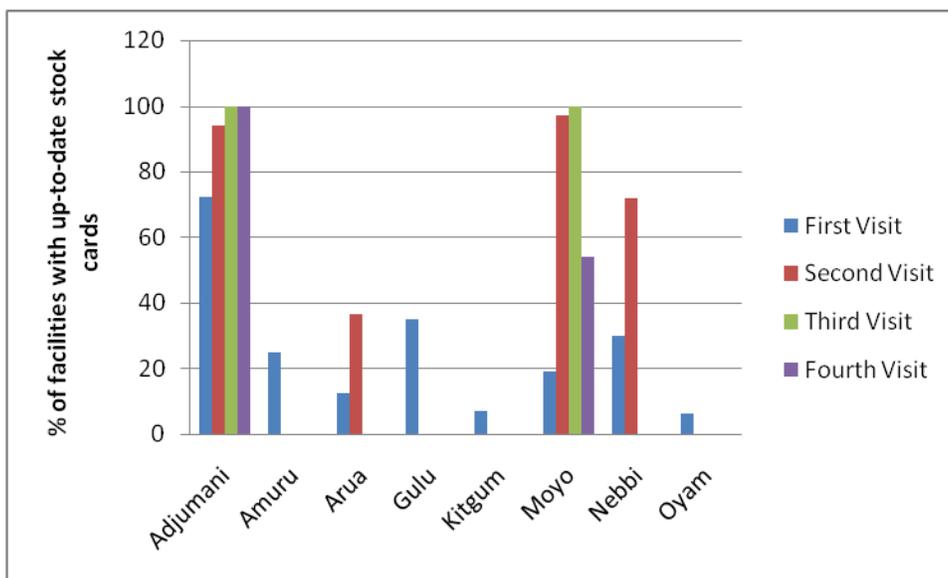


Figure 2. Health facilities with up-to-date stock records on the day of the supervision visit

Having average monthly consumption (AMC) on the stock card was one of the interventions undertaken to ensure that this measurement is used when ordering medicines to give better estimates of the quantity to order. In all the districts, the proportion of facilities with AMC on their stock cards for six tracer items gradually increased per visit as shown in figure 3. Figure 4 shows the percentage of facilities that had all tracer items in stock on the day of the visit.

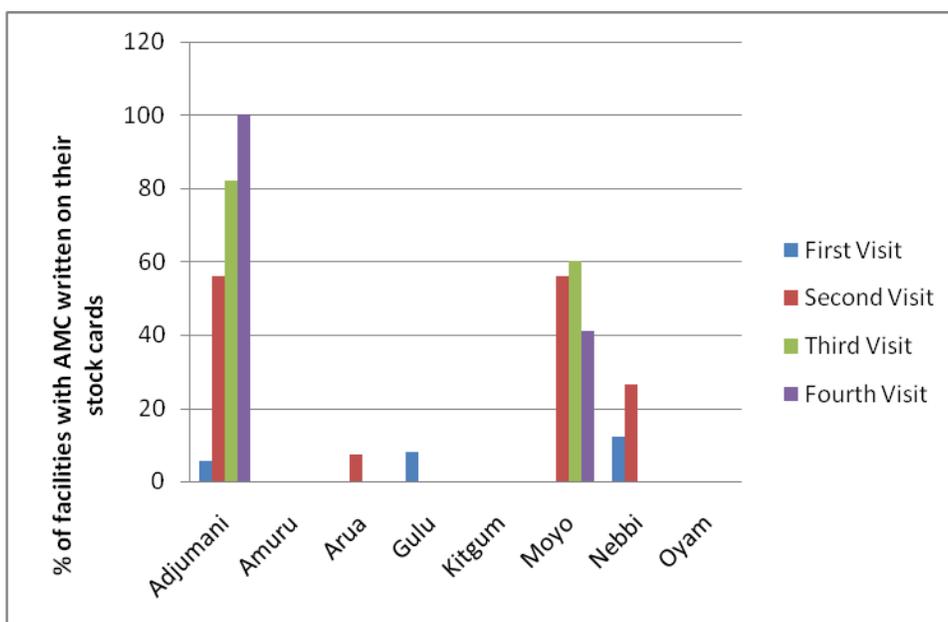


Figure 3. Facilities that computed AMC for six tracer items

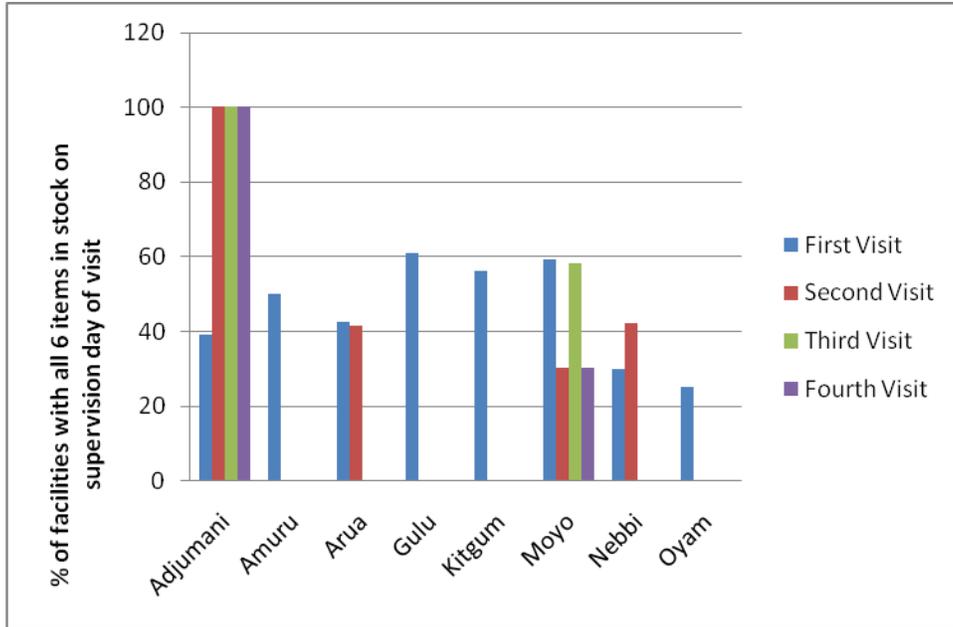


Figure 4. Facilities that had all six indicator items on the day of supervision visit

Storing medicines according to first expiry first out (FEFO) was another principle emphasized during the trainings, and figure 5 shows the proportion of health facilities that had their medicines stored according to this principle on the day of the supervisory visit.

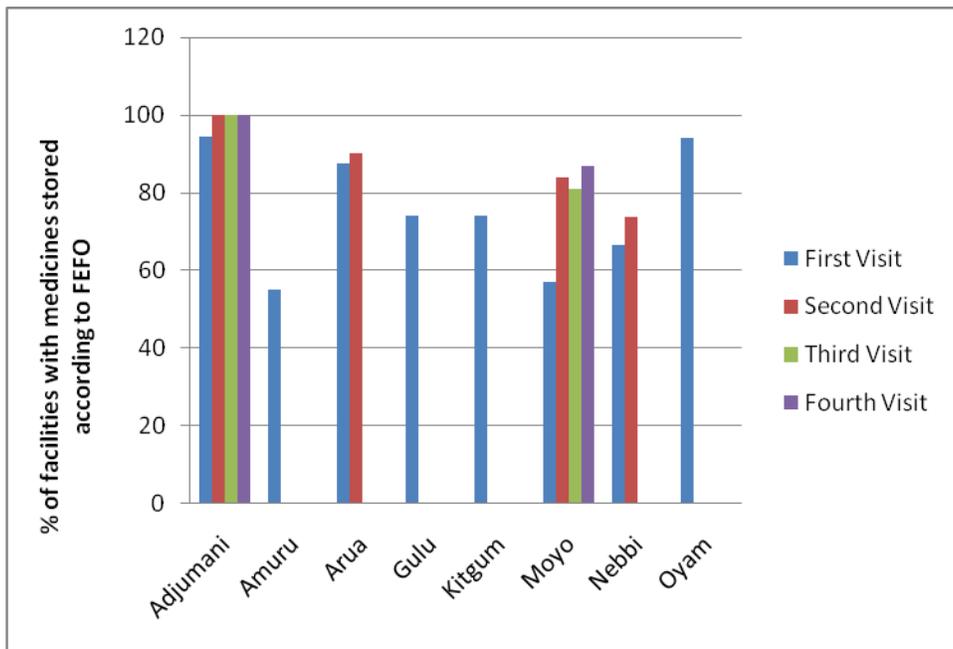


Figure 5. Health facilities that had their medicines stored according to FEFO on the day of supervisory visit

In all the districts trained, job aids needed to be developed for the various tasks (i.e., ordering, receiving, storing) related to medicines management in the districts. The supervision team sat with the facility personnel, and together they read through a model job aid for adaptation to the facility needs. Once they read it, the facility staff applied the procedure and gave feedback to the team on their next visit, making proposals for adjustments and then adapting the job aids for their work processes. Figure 6 shows the proportion of health facilities that had job aids—in the form of standard operating procedures (SOPs)—on how to order for medicines on the day of the supervisory visits.

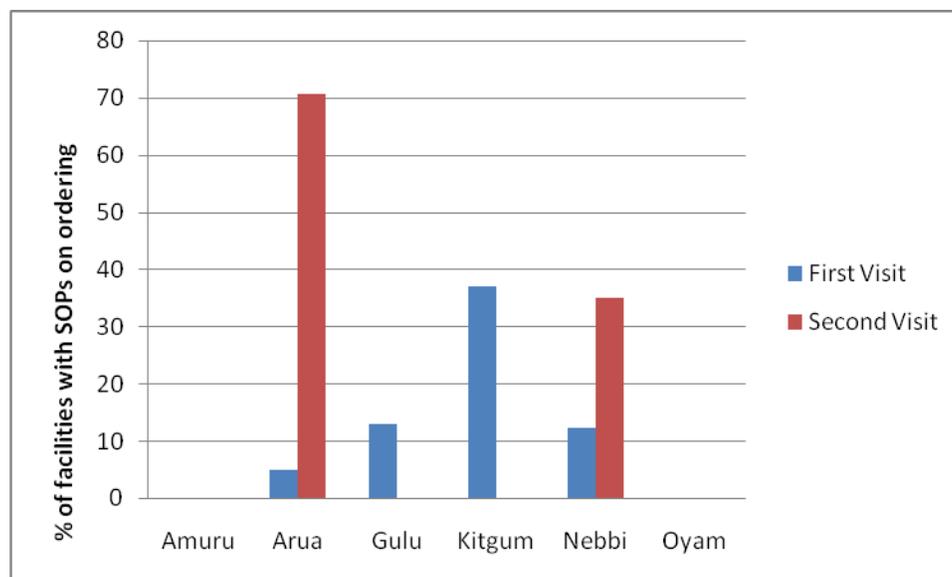


Figure 6. Percentage of facilities with job aids on ordering of medicines on the day of supervisory visit

After each site assessment, the supervision teams discussed the results with the facility personnel and, where possible, trained them and planned the next implementation steps. They agreed on targets and dates for the next visit. During the supervision visits the teams also distributed tools for logistics management information systems (e.g., order forms, stock cards, and other tools) if they were unavailable.

Having expiry dates written on the stock cards was found to be useful in facilitating the process of tracking of medicines expiries. Figure 7 shows the proportion of health facilities that were found to have expiry dates written on stock cards on the day of the visit.

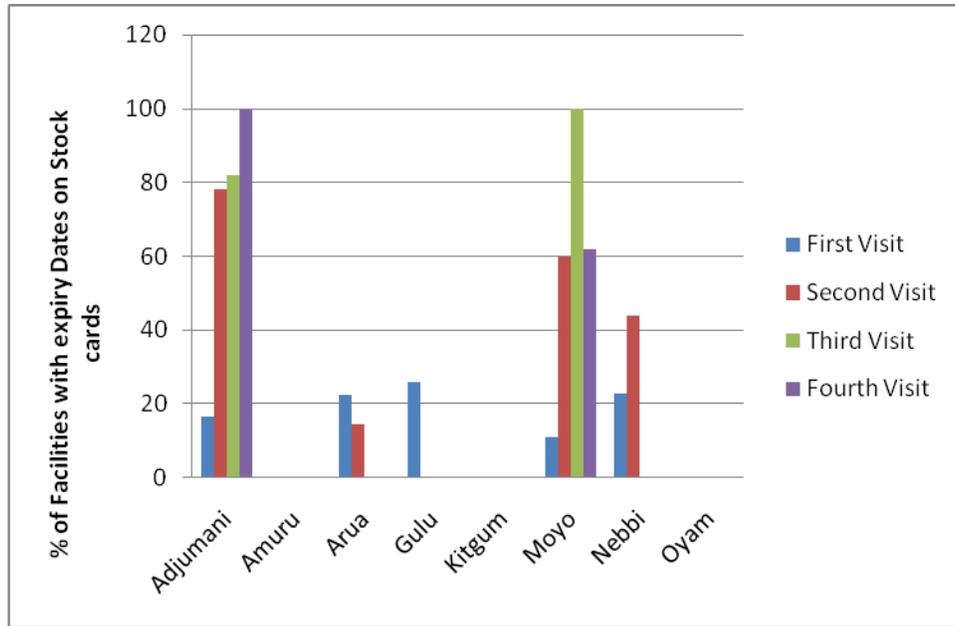


Figure 7. Facilities with expiry dates written on the stock cards on the day of the visit

Monitoring Activities from the Center

Monitoring of all the assignments was done by a central team comprising members from MSH and MoH. The purpose was to ascertain whether the activities were going on as planned. The team monitored activities and assessed the performance of selected facilities in an HSD. Monitoring was performed in only two districts, Adjumani and Moyo, because of resource constraints. After the process, the monitoring team sat with the district supervisory team to discuss results and plan the next steps. Reports were made to the district health office and MoH.

THE MTP EVALUATION PROCESS

The MTP process was evaluated qualitatively to assess the effectiveness of the trainings and support supervision in improving medicines management in selected districts. Two districts were purposely selected to include Gulu, which had received only one supervision visit, and Moyo, which had received supervision for a year. In each of these districts, health facilities that were easily accessible by road and interviewed their health facility personnel were selected. Key informants from both districts were also interviewed to determine their views and perceptions about the MTP approach in medicines management. A series of questions (see appendix 3) was posed, and the general conditions and practices in the facilities visited were noted.

In Moyo District, the district stores and a total of six health facilities were studied—

- Eria Health Centre III
- Kweyo Health Centre II
- Lagoba Health Centre II
- Laropi Health Centre III
- Moyo Hospital
- Palorinya Health Centre III

In Gulu District, data were collected from five centers—

- Bardege Health Centre III
- Kal-Ali Health Centre II
- Patiko Health Centre III
- Odek Health Centre III
- Opit Health Centre III

Key informants in Moyo District included the following—

- Dr. Richard Mangwi, medical superintendent, Moyo Hospital
- Michael Mundrugo, the district stores manager, along with his assistant Terrence Dralou
- Steven Anyanzo, clinical officer in-charge, and Dramuke Kusai of Palorinya Health Centre III
- Julius Erwaga, in-charge; Florence Kinyaa, nursing assistant; and Felista Adong of Eria Health Centre III
- Azo Margaret, in-charge, and Mundua Alice, nursing assistant, of Kweyo Health Centre II
- Paul Candig, in-charge, and Jane Mander, nursing assistant, Laropi Health Centre III

Key informants in Gulu District included the following—

- Nono Joyce, in-charge, Bardege Health Centre III
- Ocitti Geoffrey, in-charge, Patiko Health Centre III
- Adhere Pasquelline, enrolled midwife and acting in-charge, Kal-Ali Health Centre II
- Dr.Ezan Aswani, in-charge, Opit Health Centre III
- Labedo Okello, in-charge, Odek Health Centre II
- Dr. Paul Onek, DHO

The following sections describe the results of the analysis in Moyo and Gulu districts.

Effect of MTP in Moyo District

The data collected were sorted by the effect of MTP on each of the following in Moyo District: ordering, receiving, storing, issuing medicines from stores and dispensing them to patients, and availability of medicines.

Ordering

The district and HSD teams have come to appreciate the importance of estimating monthly consumption and its use in determining the quantity to order. Facility in-charges have also been empowered to fill out order forms and stock cards correctly. Poorly filled-out order forms are rejected at the HSD level, and those facilities concerned are reminded to determine their AMCs so they will be able to request the correct quantities of medicines on the order forms. Michael Mundrugo, district stores manager, Moyo District, commented on the importance he has come to attach to AMC: “Without AMC, you cannot estimate what to order, you will not be accurate on what to order, and maybe you will always run short of drugs. This has helped us a lot, and I’m very happy...”

Each health facility in-charge is now aware of the budget allocation and has a list of items that are essential for a particular level of care of the facility aiding prioritization when placing orders, which in turn leads to better availability of key items within a health unit. Mundrugo added, “Before the support we didn’t know the money allocated for H/C II, H/C III [II and III health centers] under credit line and PHC. This time it is on their walls, printed so that they should order within the limit.”

Receiving

Delays in receiving medicines at the health facilities have been minimized because of the availability of SOPs, which allow for the delegation of duties. At the health unit, a copy of the order form is now maintained, and when items are delivered, the staff is able to compare what is on the order form with what is on the delivery note as well as make a physical check of the items, which in turn tremendously reduces errors in receiving medicines.

Because they receive only what they have accurately ordered, expiries and shortages are now less common. Dramuke Kusai and Steven Anyanzo of Palorinya Health Centre III both observed, “Previously we used to have drugs which are soon expiring or, which have not been ordered like quinine and benzathine which expired recently..... But from the training, we are rejecting items which we have not ordered. Like recently they brought atropine, which we had not ordered, and we rejected it because it cannot be used at this level. It can only be used at HC [health centre] IV and in hospitals.” Noting how the SOP has allowed delegation of duties and reduced delays in receiving medicines, Kusai added, “Like me as a junior to him [Anyanzo] if the drugs are brought and he’s off, and I receive those drugs and when he comes back he just has to go over so that he ensures that everything is in place....”

Storage

Proper storage of medicines has been strongly emphasized, right from the district store to the health units. After the training, health personnel reorganized their stores according to the set standards of adequate storage space, light, shelves, pallets, and locks, and some had to create better space for the medicine in cases where the former store had no light or locks. The stores visited exhibited the standard requirements and personnel admitted having improved on storage after the training.

Dr. Richard Mangwi, medical superintendent of Moyo Hospital, commented about how he and his staff had improved storage practices after the training: “...we were first of all interested in the space, aeration, and how you arrange the drugs according to FEFO, so all these were really strongly emphasized and right now I think all our stores meet at least that standard of space, aeration, locks and someone in charge...”

In the facilities visited, the supervisory team found that medicines are now kept on shelves and arranged in alphabetical order and that FEFO principles were followed. Pallets are used in some of the stores to keep medicines off the floor and, in others, bricks are used instead of the wooden pallets seen in figures 8 and 9. At the health units, personnel have maintained up-to-date stock cards, and the recording of medicines in and out of the stores has improved considerably. The stores now have ventilation, enough light, and a lock to ensure safety of the medicines. Health workers at the units admit that much of the improvement in storage was undertaken after the training and with support supervision they have been able to improve.



Figure 8. Arrangement of medicines at Eria Health Centre III, Moyo District

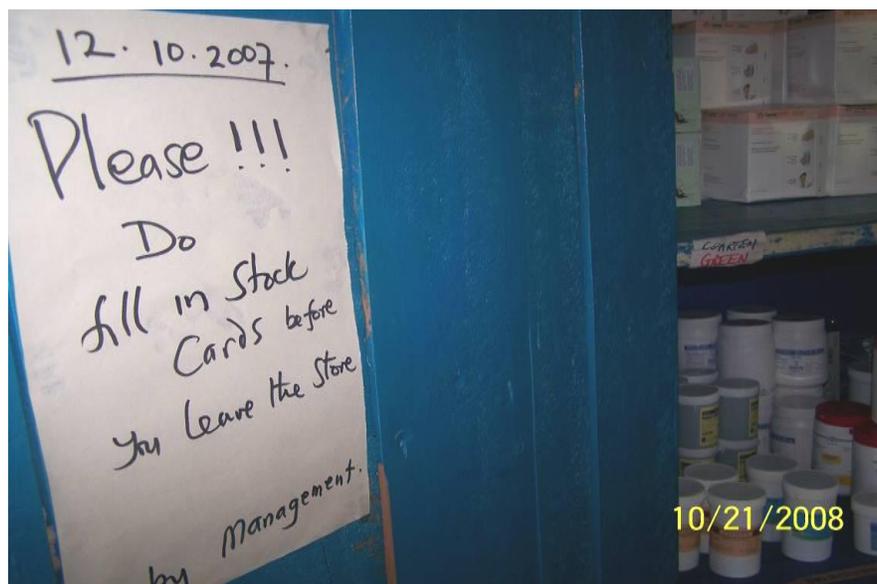


Figure 9. Medicines cupboard in Laropi Health Centre II, Moyo District

Issuing and Dispensing

Health units maintain records of items issued and dispensed, and many of the staff total the count at the end of the day and then use that count to compute their AMCs. Before the training, many of them would not keep proper records of medicines dispensed and hardly knew how to compute their AMCs. “They told us that immediately after finishing work we have to add the number of drugs (dispensed) for that day,” observed Felista Adong, nursing assistant Eria Health Centre III, sharing with the data collection team what she had learned from the team that attended the training. Commenting on how Laropi Health Centre accounts for medicines consumed, nursing assistant Jane Mandera, remarked, “With recording of issues, we do not have much problem because if we issue drugs from the main store, that is written out and if it is in the dispensing room we have a dispensing log....” Figure 10 shows a sample dispensing log.

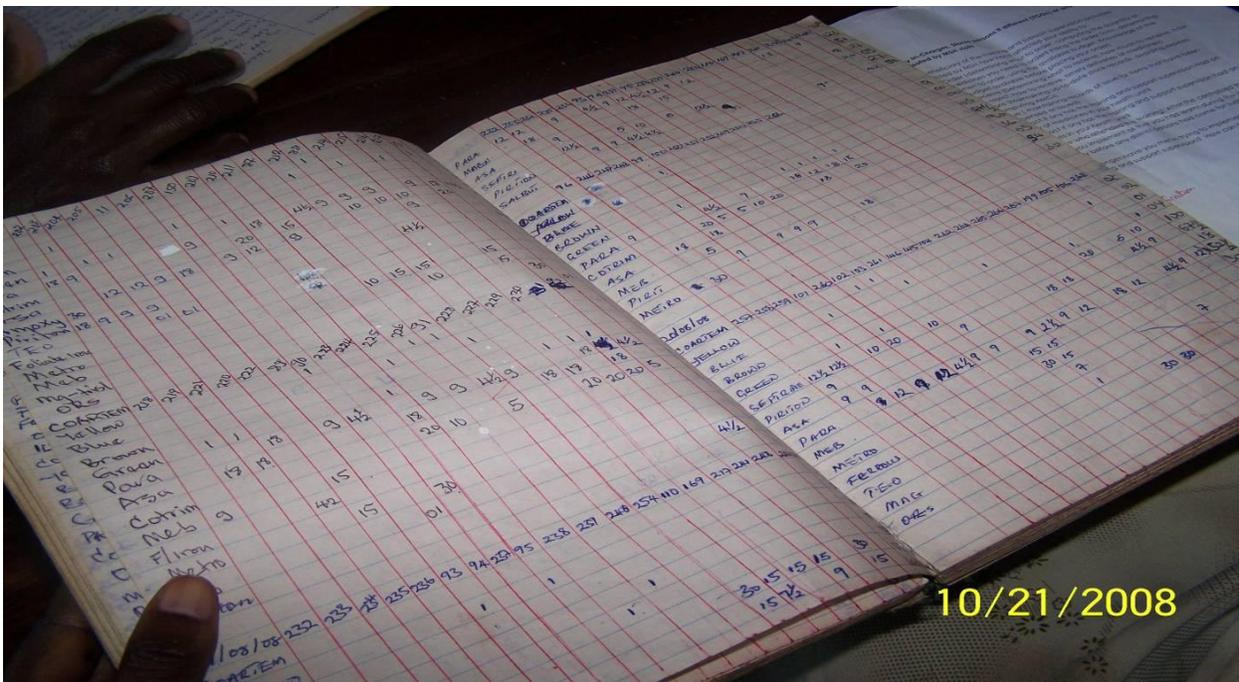


Figure 10. Dispensing log in Kweyo Health Centre III, Moyo District

Availability of Medicines

Dr. Richard Mangwi, medical superintendent of Moyo Hospital, confirmed that storage and availability of all medicines, especially in the lower health units, improved after the training and support supervision conducted in the district. According to Dr. Mangwi, Coartem and oral rehydration salts (ORS) were the most available products in all the facilities and now run out only when they are not available at the medical stores. Medicines rarely expire at the health units because of the improved quantification, having a selected list of medicines, tracking expiry dates using a new tool introduced by MSH, and the support supervision visits that make it possible to collect excess quantities for redistribution.

Effect of MTP in Gulu District

In this district, the supervisory team discovered that support supervision in pharmaceutical management has not been effective, and even after the training, the agreed-upon workplans had not been implemented. In addition, new staff have recently been recruited following the apparent end of the conflict that has ravaged the district over the last 20 years. Funding is still a constraint, and budgets are not adequate at some facilities.

“I’ve not developed any [SOPs] so far, but I’ll give it a try,” Ezan Aswani, in-charge at Opit Health Centre III, replied when asked about implementation of agreed-upon workplans.

Primary health care (PHC) funds have not been consistent, affecting both planning and availability of medicines. According to Dr. Paul Onek, DHO for Gulu District, if the health units were regularly supervised, they would be performing better than today. The DHO also noted some improvement in the availability of medicines since the training because the staff can now make proper orders, but he also emphasized the need for more support and recommends a visit of MSH together with the MoH staff because he believes the MSH approach is more focused and effective.

When asked to compare the MTP approach of MSH to other trainings in medicines management, Dr. Onek noted, “...they don’t usually have enough time...this approach from MSH was more focused and tailored to look at pharmaceuticals. I think it was much more effective, and they had more time with us.” Dr. Onek added, “...if there’s future support supervision, I would also recommend to MSH to come with a team from the MoH so that they become part of the system. They learn better if they participate with MSH”

“In our unit, that is Aswa HSD, our budget for drugs compared to Omoro is somehow small because for the last one and a half quarters we have not received any PHC....” said Ocitti Geoffrey, in-charge at Patiko Health Centre III, commenting on challenges affecting the availability of medicines.

Drug stores at the facilities are still not well maintained, and in some health units storage space is inadequate. Because only one supervision visit was conducted, practices have not improved much yet as seen in figure 12.



Figure 12. Storage area in Bardege Health Centre III, Gulu District

Workers have tried to develop job aids in some units, but they still need more assistance to improve the quality and content of the materials developed, as seen in figures 13 and 14.

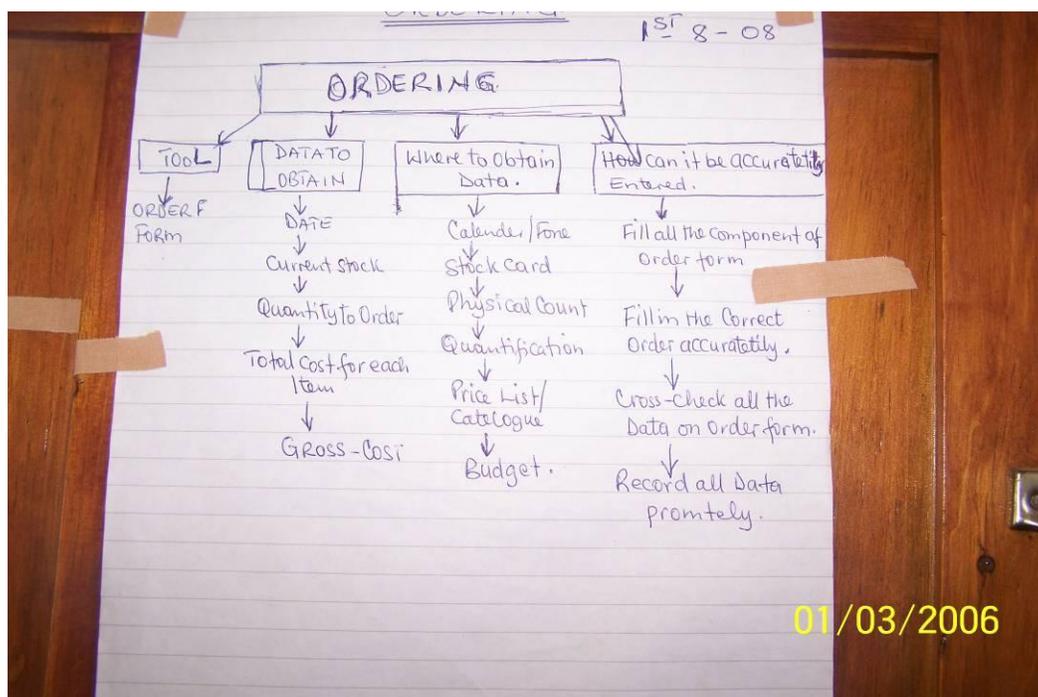


Figure 13. Ordering process displayed at Patiko Health Centre III, Gulu District

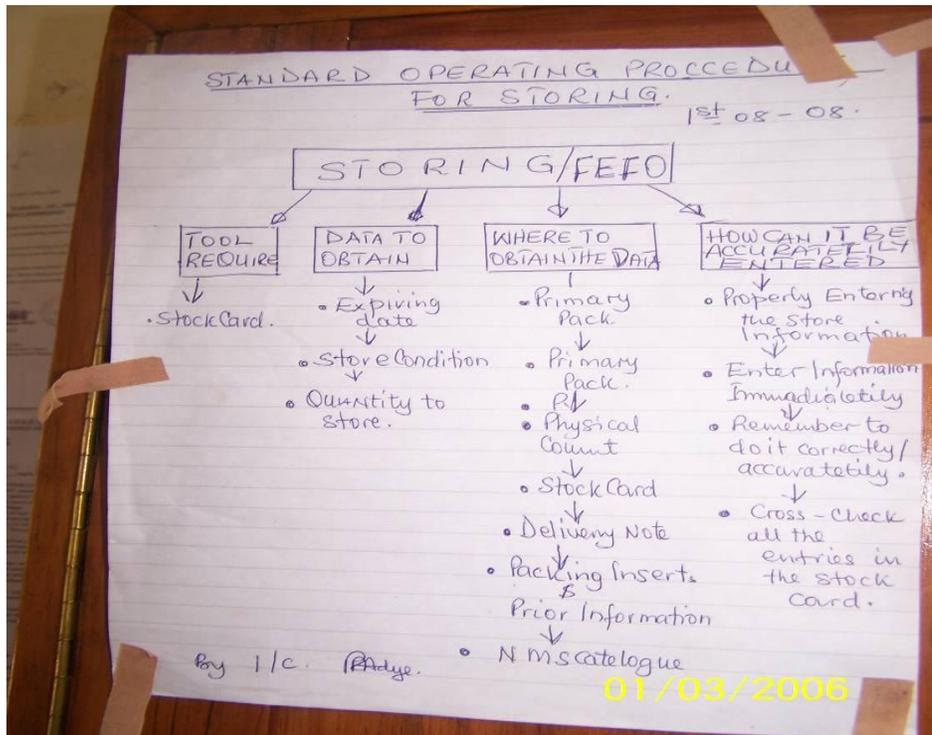


Figure 14. Storage procedure at Patiko Health Centre III, Gulu District

CHALLENGES ENCOUNTERED WHEN IMPLEMENTING MTP

The initial MTP training was too expensive and was not scalable. It required a lot of revisiting and redesigning. SPS reviewed costs for the activities conducted by district and reduced the number of visits. Initially, the supervisory team conducted visits monthly, but the frequency was scaled back to quarterly to reduce the costs.

Some health workers are not committed to improving medicines management probably due to low morale and involvement in other activities outside the health facilities. We discovered that in districts where the leaders (i.e., DHO, HSD in-charges) were strong on the ground, more committed, and involved in the activities undertaken the staff was more highly motivated. In well-performing districts, HSD in-charges participated in the supervision visits, and DHOs chaired the review meetings and discussed the way forward with the facility in-charges.

Infrastructural problems, such as limited storage space, and understaffing affect medicines management. Certain districts have medicines delivery systems that run parallel to the MoH system and distort the supply chain of the health units. In such cases, donor organizations provide medicines to health units without consulting with the district or facility leadership. In the end, because some of the items are not even required by the units, medicines expiries occur. We advised the districts to develop and implement guidelines on donations that would direct the receipt of such unsolicited donations. Streamlining the operations of partner organizations within districts and also developing district guidelines on donations would be necessary.

In other districts, the management is not yet willing to allow the staff to make their own orders, especially the PHC orders.

Distribution of medicines from the district to the health facilities is sometimes delayed because of poor roads, especially during the rainy season.

Tools, such as stock cards, that are essential to medicines management are not available at NMS, and since obtaining them from other sources would require money, they are sometimes foregone. We advised the facility staff to use photocopies of stock cards to record their medicines. Advocacy is needed, however, to have the medicines stocked and availed through the credit line medicines facility.

LESSONS LEARNED

The integrated support supervision model is useful in addressing pharmaceutical management problems at the district and health facility but requires continuous monitoring, training, and planning of next steps in order to achieve the desired results. Assessments based on a set of defined indicators should be made, and the resulting assessment scores, by facility and HSD, should be disseminated for corrective action. Integration of the model also requires commitment from the district leaders including the DHOs, the HSD heads, the district stores person, DADIs, and other stakeholders.

RECOMMENDATIONS FOR THE MTP APPROACH

The MTP approach is recommended as an effective means of skills building that needs to be extended to all public health facilities in all the districts of Uganda in an integrated manner within the framework of the existing support supervision system.

APPENDIX 1. SUPPORT SUPERVISION CHECKLIST

No.	Condition	Yes	No	NA	Remarks
1	Is the store separate from the dispensing area (e.g., medicines are not dispensed to patients from the store)?				
2	Is the store large enough to keep all of the supplies?				
3	Is the store well secured (e.g., is the store door kept locked at all times when not in use; are windows secured, and do they have grills)?				
4	Is the store's environment dry? (Check the roof, walls, floor, and windows.)				
5	Does the store have an appointed person in charge, and is access limited to authorized personnel?				
6	Is the store structure in good condition (e.g., no cracks, holes, or signs of water damage)?				
7	Is there a ceiling in the store?				
8	Is the ceiling in good condition?				
9	Does air move freely in the store (e.g., fans in good condition and ventilators not blocked)?				
10	Are medicines shielded from direct sunlight (e.g., the windows are painted white or have curtains)?				
11	Is the store free of pests (e.g., no signs of pest infestations)?				
12	Is the store tidy (e.g., shelves are dusted, floor is swept, and walls are clean; supplies are stored neatly on shelves or in boxes)?				
13	Is the light adequate for work-related activities?				
14	Are quarantined products kept in a separate area (e.g., expired or damaged products or items not part of stores inventory and kept separately from the stock)?				
15	Is the temperature of the store room monitored? (Check record charts.)				
16	Are supplies in boxes raised off the floor using pallets or on boards and bricks?				
17	Is the refrigerator in good condition?				
17	Are narcotics, psychotropic medicines, and dangerous chemicals kept in a separate place under lock and key?				
18	Is there a fire functional extinguisher in the store?				
	Total				

Remarks

1. Medicines and Health Supplies Checklist

How well organized is your store? Tick YES if the statement describes the organization in your store. If not, tick NO. NO items need to be implemented or improved. Tick NA if the question is not applicable to your store.

No.	Condition	Yes	No	NA	Remarks
1	Are supplies organized in the store in a systematic manner (i.e., following alphabetical order, therapeutic category, or dosage form or any combination of these three)?				
2	Are tablets, capsules, and other dry medicines (such as ORS packets) stored in airtight containers on the upper shelves?				
3	Are supplies, such as surgical items, condoms, and corrosive liquids stored on the bottom shelves?				
4	Are cold-chain items stored in the refrigerator?				
5	Are supplies with shorter expiry dates placed in front of those with later expiry dates on the shelves (FEFO)?				
6	For medicines with the same expiry date, are newly received medicines placed behind those already on the shelves (first in first out)?				
7	Are there written procedures for handling: <ul style="list-style-type: none">• Expired items?• Overstocked items?				
	Total				

Remarks

2. Stock Card Checklist

Tick YES if the statement is true. If not, tick NO. NO items need to be implemented or improved.
Tick NA if the question is not applicable to your store.

No.	Condition	Yes	No	NA	Remarks
1	For each of the following items, is there a stock card				
	• Artemether/lumefantrine?				
	• SP tablets?				
	• Co-trimoxazole tablets?				
	• Depo-Provera?				
	• ORS?				
	• Quinine tablets?				
	• RH/ZE?				
2	For each of the following items, is the balance on the stock card the same as the physical count of the items				
	• Artemether/lumefantrine?				
	• SP tablets?				
	• Co-trimoxazole tablets?				
	• Depo-Provera?				
	• ORS?				
	• Quinine tablets?				
	• RH/ZE?				
3	For each of the following items, is "AMC," "maximum," or "minimum" written on the stock card				
	• Artemether/lumefantrine?				
	• SP tablets?				
	• Co-trimoxazole tablets?				
	• Depo-Provera?				
	• ORS?				
	• Quinine tablets?				
	• RH/ZE?				
4	Is a physical count made at regular intervals, such as once a month?				

Remarks

3. Ordering Supplies Checklist

Tick YES if the statement is true. If not, tick NO. NO items need to be implemented or improved. Tick NA if the question is not applicable to your store.

No.	Condition	Yes	No	NA	Remarks
1	The person in charge of ordering at the facility knows— <ul style="list-style-type: none">• How to calculate the average monthly consumption				
2	The person in charge of ordering at the facility knows— <ul style="list-style-type: none">• The ordering and delivery schedule (copy available)				
3	The person in charge of ordering at the facility— <ul style="list-style-type: none">• Has copies of the last two orders made				
4	The copies of previous orders have stock-on-hand information.				
5	The stores person is knowledgeable about the medicines budget for the facility for credit line funds.				
6	The stores person is knowledgeable about the medicines budget for the facility for PHC funds.				

Remarks

4. Receiving Supplies Checklist

Tick YES if the statement is true. If not, tick NO. NO items need to be implemented or improved.
Tick NA if the question is not applicable to your store.

No.	Condition	Yes	No	NA	Remarks
1	Are copies of two previous deliveries to the facility available?				
2	Were the deliveries witnessed by an independent third party (signature on the delivery documents)?				
3	Were the deliveries recorded in the stock card within two days of receipt?				

Remarks

5. Dispensing Procedures Checklist

Tick YES if the statement is true. If not, tick NO. NO items need to be implemented or improved.
Tick NA if the question is not applicable to your store.

No.	Condition	Yes	No	NA	Remarks
1	Does the dispenser label the package with the patient's name, name of the item, quantity dispensed, and written instructions for the patient?				
2	Does the dispenser tell the patient to keep all medicines and medical supplies in a safe place at home, and out of the reach of children?				
3	Are dispensing records maintained in the recommended health management information system format at the following dispensing points:				
	• Outpatient department dispensary?				
	• Prenatal care?				
	• Family planning?				
	• Home-based management of fever (HBMF)?				
	• Outreach activities?				
4	Is the adverse drug reaction reporting form available?				
5	Are the adverse drug reaction reporting procedures known at the facility?				

Remarks

6. Medicines Management in General

Tick YES if the statement is true. If not, tick NO. NO items need to be implemented or improved.
Tick NA if the question is not applicable to your store.

No.	Condition	Yes	No	NA	Remarks
1	Are the following items available on the day of the visit:				
	• Artemether/lumefantrine?				
	• Measles vaccine?				
	• SP tablets?				
	• Co-trimoxazole tablets?				
	• Depo-Provera?				
	• ORS?				
	• RH/ZE?				
	• AZT/3TC/nevirapine?				
2	Was there a stock-out of any of the above items in the last one month? (A stock-out is defined as when a patient goes away without medicines.)				
3	Was the stock-out reported to higher authorities using health management information system 105. (See previous month's report.)				

Remarks

7. Additional Constraints or Problems

A. What specific problems have you had with the medicine logistics system?

1. _____

2. _____

3. _____

B. What could have been the causes of the above problems?

1. _____

2. _____

3. _____

APPENDIX 2. SUMMARY OF WORKPLANS DEVELOPED BY THE DISTRICTS AT THE END OF EACH TRAINING WORKSHOP

Problems Identified	Root Causes	Proposed Interventions and Activities	Resources	Responsible Person(s)	Means of Verification
1. Delayed ordering of medicines (M, G, K, N, Am, O) ^a 2. Lack of order forms (N, G,K, Ar, Am, O, M, Ad) 3. Lack of knowledge about credit line or PHC budget (G, K, A, O) 4. Fluctuation of prices of medicines (Ar) 5. Lack of delivery schedule (G, K, M) 6. Poor flow of information from the center to facilities (N, G, K, Am) 7. Lack of transport to submit orders (N)	<ul style="list-style-type: none"> Poor coordination of the ordering process No focal person on ordering 	<ul style="list-style-type: none"> Identify focal person to coordinate ordering process. Draw up terms of reference for the focal person. Download order forms and photocopy them. Avail telephone contact of focal person to facility persons. Monitor implementation of activities. 	<ul style="list-style-type: none"> Stationery Vehicle Fuel Copy of generic SOP 	<ul style="list-style-type: none"> In- Charge (IC) health unit HSD support supervision team 	<ul style="list-style-type: none"> Document listing terms of reference for focal person on ordering available at the district Order forms available at the district or health facilities Monitoring report available at the HSD
8. Inaccurate quantities on orders (N) 9. Stock-on hand and AMC information not used during ordering (Am, O) 10. Some units not involved when making orders (O, N) 11. Lack of knowledge on ordering and quantification (G, K, Ar, Am, O, N, M, Ad)	<ul style="list-style-type: none"> Lack of procedure on how to order and determine quantity to order HSD does not involve facility staff or stores staff in ordering of medicines 	<ul style="list-style-type: none"> Develop and implement the use of SOPs. Train all health facility staff on how to order and compute AMC. Monitor use and adherence to SOPs. 	<ul style="list-style-type: none"> Stationery Vehicle Fuel Copy of generic SOP 	<ul style="list-style-type: none"> IC health unit HSD support supervision team 	<ul style="list-style-type: none"> Copies of SOPs available and in use at every health facility Attendance register of training session available at health facility

Problems Identified	Root Causes	Proposed Interventions and Activities	Resources	Responsible Person(s)	Means of Verification
<ol style="list-style-type: none"> 1. Lack of knowledge on how to receive (G, K, Ar, Am, O, N, M, Ad) 2. No proper checking of received items (N, Ar, G, K) 3. Delivery of short expiry medicines (N, G, K) 4. Missing documents on delivery of medicines (N, G, K) 5. Delivery of poor quality or damaged products (G, K) 6. Missing items or supply of items not requested (N) 7. Lack of commitment by stores persons (Am, M) 8. Some deliveries are not recorded (N) 9. Lack of time to check items during delivery (N, M, Ad) 	<ul style="list-style-type: none"> • Lack of support supervision • No procedure for receiving medicines 	<ul style="list-style-type: none"> • Develop and implement the use of SOPs. • Train all persons on how to receive medicines. • Monitor use and adherence to SOPs. • Encourage team work. • Strengthen support supervision. 	<ul style="list-style-type: none"> • Stationery • Vehicle • Fuel • Generic SOP 	<ul style="list-style-type: none"> • IC health unit • HSD support supervision team • DHO 	<ul style="list-style-type: none"> • Copies of SOPs available and in use at every health facility • Quarterly support supervision report available at the HSD
<ol style="list-style-type: none"> 10. Lack of copies of order forms for which items are delivered (N, Am, Ad) 	<ul style="list-style-type: none"> • Poor knowledge of ordering process 	<ul style="list-style-type: none"> • Retain copies of order forms. 	<ul style="list-style-type: none"> • Stationery • Vehicle • Fuel • Generic SOP 	<ul style="list-style-type: none"> • IC health unit • HSD support supervision team • DHO 	<ul style="list-style-type: none"> • Copies of placed order available at each health unit

Appendix 2. Summary of Workplans Developed by the Districts at the End of Each Training Workshop

Problems Identified	Root Causes	Proposed Interventions and Activities	Resources	Responsible Person(s)	Means of Verification
11. Delays in verification of medicines by auditors and health unit management committees (N, Am, G, K)	Lack of awareness of the importance of medicines by management committees	Sensitize management committees on importance of quick verification of delivered medicines.	Sensitization materials	IC health unit	Minutes of meetings with management committees indicating communication on importance of quick verification of medicines
12. No information sent prior to delivery of medicines from the center (N, Ad) 13. Lack of transport to deliver goods to facilities (Am)	Poor coordination of the receiving process	Use focal person on medicines to follow up on discrepancies and communicate with NMS on delivery dates.		<ul style="list-style-type: none"> • IC health unit • HSD support supervision team • DHO 	Terms of reference for ordering focal person should include communication on NMS delivery dates and following up on discrepancies
14. Misinterpretation of delivery notes by politicians (Ad)	Lack of knowledge by politicians	Sensitize politicians.	Delivery notes	<ul style="list-style-type: none"> • DHO • HSD IC • IC health facility 	<ul style="list-style-type: none"> • Meeting minutes • Attendance register
1. No one appointed to specifically manage the stores (O, N) 2. Differing quantities between what is on delivery notes from what is in the stock card (G, K) 3. Frequent expiry of medicines (M, N, G, K) 4. Lack of knowledge on good storage practices (Am, O, N, G, K) 5. Pilferage (Ad)	<ul style="list-style-type: none"> • No verification of received items • Lack of procedure on how to store items • No tracking of medicines expiries 	<ul style="list-style-type: none"> • Develop SOPs on storage and receiving. • Implement use of SOPs through training of all staff. • Update all stock cards. • Monitor adherence to the use of SOPs. • Conduct quarterly support supervision visits. • Distribute expiry dates tracking tools. 	<ul style="list-style-type: none"> • Stationery • Stock cards • Vehicle • Fuel • Generic SOP 	<ul style="list-style-type: none"> • IC health unit • HSD support supervision team • DHO 	<ul style="list-style-type: none"> • Copies of SOPs available and in use at every health facility • Quarterly support supervision report available at the HSD • Expiry dates tracking tools available at each health facility

Problems Identified	Root Causes	Proposed Interventions and Activities	Resources	Responsible Person(s)	Means of Verification
6. Delayed recording of items on stock cards (Am, O, G, K) 7. Laziness and lack of commitment of staff (Am, O, G, K) 8. Lack of stock cards (Am, N, G, K) 9. Lack of or poor record-keeping (Ar, Am, G, K) 10. Poor maintenance of stores (N, G, K) 11. Irregular updating of stock cards (Ad, N)		<ul style="list-style-type: none"> • Conduct regular support supervision visits. • Use focal person to avail tools through photocopying or procure them using PHC funds. 	<ul style="list-style-type: none"> • Stationery • Fuel for vehicles • PHC funds 	<ul style="list-style-type: none"> • HSD support supervision team • DHO 	<ul style="list-style-type: none"> • Report on support supervision available at the HSD • Stock cards available • All stock cards for items updated
12. Inadequate storage space (Ar, Am, O, N, G, K)	<ul style="list-style-type: none"> • Storage space not changed according to Increasing population • Lack of proper planning at the facilities 	<ul style="list-style-type: none"> • Improvise alternative storage space for medicines. • Use existing space efficiently by availing pallets. • Construct shelves. 		IC health facility	Adequate storage space for medicines identified and used
1. Consumption not computed in the registers (O, M) 2. Poor record-keeping (Ar, N, G, K)	<ul style="list-style-type: none"> • No capacity building on how to issue medicines • Lack of support supervision 	<ul style="list-style-type: none"> • Conduct quarterly support supervision. • Conduct regular Continuing Medical Education sessions and train staff to compute daily consumption. 		<ul style="list-style-type: none"> • IC health facility • HSD support supervision team • DHO 	<ul style="list-style-type: none"> • Support supervision report available • Consumption computed on all dispensing logs

Appendix 2. Summary of Workplans Developed by the Districts at the End of Each Training Workshop

Problems Identified	Root Causes	Proposed Interventions and Activities	Resources	Responsible Person(s)	Means of Verification
3. Lack of dispensing logs and when counter books are used they do not follow the recommended format (Am, N) 4. Lack of knowledge on how to use the dispensing logs (O, N, G, K)	<ul style="list-style-type: none"> • No supply of standard tools at the facility for dispensing medicines • Lack of procedure on how to use the dispensing log 	<ul style="list-style-type: none"> • Use the standard format of dispensing logs when using counter books. • Train health workers on how to use the dispensing logs. 	Stationery	<ul style="list-style-type: none"> • IC health unit • Support supervision team 	All records in standard format
5. Frequent stock-outs of medicines and supplies at the health facilities (Am, G, K)	Lack of knowledge on proper quantification	See "Ordering."			
6. Interference by politicians on what patients should receive (G, K)	Lack of knowledge of medicines by politicians	Sensitize politicians on how medicines should be prescribed	<ul style="list-style-type: none"> • Stationery • Allowance for participants 	<ul style="list-style-type: none"> • IC health unit • HSD support supervision team • DHO 	Minutes of sensitization meetings
7. Lack of dispensing equipment , e.g., trays, medicine envelopes (Ad, N)	Dispensing tools not ordered from the respective sources	Plan to include dispensing tools in the next order form.	Order forms	IC health facility	Dispensing tools included in the subsequent order

^a Ad = Adjumani, Ar = Arua, Am = Amuru, G = Gulu, K = Kitgum, M = Moyo, N = Nebbi, O = Oyam

APPENDIX 3. QUESTIONNAIRE FOR QUALITATIVE DATA COLLECTION

DHOs, HSD Heads, and District Stores Persons

1. Are you aware of the support you have been receiving from MSH (probe)?
2. What is your opinion of the pharmaceutical management skills-building approach that was introduced by MSH in this district?
3. How has the implementation of this approach in this district affected the following areas of pharmaceutical management?
 - Support supervision on pharmacy-related activities [Note: In Moyo, we worked more with the HSD; in Gulu we worked more with the district.]
 - Ordering of medicines from NMS and JMS
 - Storage of medicines at the district stores and health facilities
 - Availability of essential medicines including ACTs (e.g., Coartem)
 - Expiry of medicines at the district and facility stores
 - Communication between the facilities and the district or HSD heads
 - Reporting of medicines use from the health units
4. How has the support supervision helped in identifying and solving problems at the health facilities?
5. What is the future of support supervision after the MSH funding has stopped? Briefly explain how the skills of the personnel will be maintained, the process will be funded, and which human resources will be responsible for carrying this forward. In your view, does this approach vary from other support supervision or training approaches previously conducted in your district or HSD? Explain.
6. Would you recommend the approach to the Pharmacy Division of MoH for adoption as a national approach for pharmaceutical management support supervision? Why or why not?
7. What are the challenges in conducting support supervision using this approach, and how can they be mitigated?
8. Why, after the centralized trainings, do facilities not implement the workplans developed and do so only after they have been visited by the district teams? How was training and support supervision conducted before? What is the difference between MSH approach and previous approaches?

Health Facility In-Charges, Stores Persons If Different Focus Group Discussions, or Anyone Who Has Been Capacitated by MSH Visits

1. As a beneficiary of the training and support supervision activities conducted by MSH, how has it affected your ability to do the following?
 - Order (i.e., determine what to order, compute the quantity of medicines you need to order, fill out the order form, determine when to order, use the available budget; know the budget available before placing your order)
 - Receive (i.e., determine what to receive, how much to receive, how to reject, and how to receive; ensure timely deliveries of medicines)
 - Store (i.e., maintain up-to-date stock records, avoid expiries, and compute AMCs)
 - Issue (i.e., maintain records of issue for items that have been dispensed or issued)
2. What impact, if any, has the training and support supervision had on the availability of medicines in your health unit?
3. What impact, if any, has the training and support supervision had on expiry of medicines in your health unit?
4. [*Note: Ask anyone who attended the training*] After the centralized training in Moyo, did you implement all that you had learned during the training immediately before any district persons had come for support supervision? If not, why not?
5. What challenges have you met in trying to implement the agreed-on plans after training and support supervision? How can those challenges be mitigated?