Sustainable Drug Seller Initiatives Uganda

Evaluation Report

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About SDSI

Sustainable Drug Seller Initiatives (SDSI) is a program that builds on Management Sciences for Health's Strategies for Enhancing Access to Medicines (SEAM) and East African Drug Seller Initiatives (EADSI) programs. The program's goal is to ensure the maintenance and sustainability of the public-private drug seller initiatives in Tanzania and Uganda and to introduce and roll out the initiative in Liberia.

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Acronyms

ADDO	Accredited Drug Dispensing Outlet
ADS	Accredited Drug Shop
ALU	artemether-lumefantrine
AMFm	Affordable Medicines Facility – malaria
DADI	District Assistant Drug Inspector
EADSI	East African Drug Sellers Initiative
HAI	Health Action International
IPT	intermittent preventive therapy
IMCI	Integrated Management of Childhood Illness
M&E	monitoring and evaluation
MOH	Ministry of Health
MSH	Management Sciences for Health
NDA	National Drug Authority
ORS	oral rehydration solution
PHC	primary health care
SEAM	Strategies for Enhancing Access to Medicines
SDSI	Sustainable Drug Seller Initiatives
SP	sulfadoxine-pyrimethamine
STG	standard treatment guideline
STI	sexually transmitted infection
UGX	Ugandan shilling
USAID	U.S. Agency for International Development
WHO	World Health Organization

Executive Summary

The Bill & Melinda Gates Foundation provided Management Sciences for Health (MSH) with a three-year grant to continue its efforts in Africa to involve private drug sellers in ensuring access to essential medicines. The Sustainable Drug Seller Initiatives (SDSI) program builds on MSH's Strategies for Enhancing Access to Medicines (SEAM) and East African Drug Seller Initiatives (EADSI) programs. Those programs focused on creating and implementing public-private partnerships using government accreditation to increase access to quality pharmaceutical products and services in underserved areas of Tanzania and Uganda. The program's goal was to ensure the maintenance and sustainability of these public-private drug seller initiatives in Tanzania and Uganda and to introduce and roll out the initiative in Liberia.

In Uganda, EADSI developed a strategy for adapting Tanzania's Accredited Drug Dispensing Outlet (ADDO) model for Uganda and the concept was introduced successfully in Kibaale district. Results from the project evaluation showed that the community embraced the Accredited Drug Shop (ADS) initiative. The objective of SDSI is to enhance the ADS initiative's long-term sustainability, contributions to community-based access to medicines and care, and ability to adapt to changing health needs and health system context by, among other things, expanding the intervention to other districts in Uganda. Working in collaboration with STRIDES for Family Health, another MSH program funded by the U.S. Agency for International Development (USAID), the ADS concept was expanded to a further four districts in Uganda. To evaluate the effectiveness of this program in these new implementation districts, a comprehensive evaluation was conducted in one selected district. A comparable non-implementing district was selected to serve as a control. This report presents the findings of this evaluation.

Methodology

The evaluation sought to collect data in three main areas. These were product prices, availability, and quality of pharmaceutical services. Forty price and availability tracer items were used to collect relevant information, while a mystery shopping exercise was conducted to assess quality of services.

Results

The availability of most drugs generally increased from baseline to endline, while they decreased in the control district. The availability of a specific category of drugs also increased. Notably, the availability of both Class B (prescription only) and Class C (non-prescription) drugs increased in Mityana compared to Kayunga. Also, the availability of anti-infectives increased in the intervention district following the implementation of the ADS program. For most of these medicines, the increases were quite significant. There was increased availability of other therapeutic classes of drugs, including antimalarials and antidiarrheal medicines. This suggests that most medicine stores embraced the ADS concept and were finding value in increasing their stock levels.

Prices

In Mityana, prices appeared to increase following the introduction of the ADS intervention. Before a shop could be accredited by the National Drug Authority (NDA), it had to be better stocked,

dispensers trained, and shops ungraded. It is not unexpected that the related costs would be passed on to the customer. From this evaluation, it is apparent that some of this cost would have resulted in products being marginally and in some instances significantly more expensive than they were at baseline. Inflation and the mere passage of time may also have led to some price increases. Marginal price increases in key commodities are consistent with the results of the original SEAM program and the EADSI project, which preceded the SDSI project.

Quality of Services

For the management of urethral discharge in both Mityana and Kayunga, the majority of drug attendants sold a combination of ciprofloxacin and doxycycline, the correct combination for urethral discharge according to the Uganda treatment guidelines. However, at baseline, practices in the two districts were far apart with 79% of drugs shops in Kayunga giving the right drugs compared to 31% in Mityana. At endline, however, only 35% of encounters in Kayunga gave the correct medicines, while the percentage in the intervention district increased to 40%. This marginal increase may be a sign that other supporting interventions, such as supportive supervision, are necessary to accelerate changes in practices. Also, it is not clear whether a longer implementation period would have seen larger increases in practice-based indicators.

In addition to assessing the appropriateness of the medicines recommended for sexually transmitted infection (STI) management, the mystery shopping exercise also sought to assess various dispensing practices within drug shops. The results of this exercise seem to show that dispensing practices improved with the advent of the ADS intervention. For example, at baseline, 56% of dispensers in Mityana asked the client what other medicines they had taken, while at endline this number stood at 82%. There was no significant increase in this indicator in the control district. Other dispensing practice indicators, such as the provision of information on drug dosing and sexual behavior, also improved in Mityana compared to Kayunga.

Conclusions

The ADS intervention improved shop appearance and the cleanliness of the vicinity around drug shops. In addition, after the introduction of the ADS intervention, shops in Mityana kept more practice records, such as sales and patient records, compared to the control district of Kayunga. Even though provider perceptions were not assessed during this evaluation, it appears most owners and sellers warmed up to the intervention.

The ADS intervention appeared to increase the availability of medicines in Mityana district. The increase in availability of medicines was across both Class B (prescription only) and Class C (non-prescription) medicines. The increase in availability was also observed across therapeutic groups, including antibiotics, analgesics, and antidiarrheal medicines, among others.

The ADS intervention appeared to have led to marginal increases in medicines prices in the intervention district. The increase in prices appears to be a direct response to expenses incurred in improving infrastructure, training dispensers, improving quality of services, and increasing stock levels.

Overall, the program appeared to have improved dispensing services. During a mystery shopping exercise for STI clients, the number of dispensers who sold the correct medicines increased from baseline to endline, the number of dispensers who gave correct dosage instructions increased, and

the number of dispensers who gave a number of patient-counseling information related to STIs increased.

Background

The Bill & Melinda Gates Foundation provided Management Sciences for Health (MSH) with a three-year grant to continue its efforts in Africa to involve private drug sellers in ensuring access to essential medicines. The Sustainable Drug Seller Initiatives (SDSI) program builds on MSH's Strategies for Enhancing Access to Medicines (SEAM) and East African Drug Seller Initiatives (EADSI) programs. Those programs focused on creating and implementing public-private partnerships using government accreditation to increase access to quality pharmaceutical products and services in underserved areas of Tanzania and Uganda. The new program's goal is to ensure the maintenance and sustainability of these public-private drug seller initiatives in Tanzania and Uganda and to introduce and rollout the initiative in Liberia.

Through their work in the three countries, SDSI expects not only to expand access to medicines and treatment in additional geographical areas, but to validate the global view that initiatives to strengthen the quality of pharmaceutical products and services provided by private sector drug sellers are feasible, effective, and sustainable in multiple settings.

In Uganda, EADSI developed a strategy for adapting Tanzania's ADDO model for Uganda and the concept was introduced successfully in Kibaale district. Results from the project evaluation showed that district health officials, shop owners, and sellers have embraced the ADS initiative. The objective of SDSI is to enhance the ADS initiative's long-term sustainability, contributions to community-based access to medicines and care, and ability to adapt to changing health needs and health system context.

STRIDES for Family Health, a USAID-funded program in Uganda—implemented by MSH in partnership with Jhpiego, Meridian International, and the Ugandan organizations Communication for Development Foundation and the Uganda Private Midwives Association—recognized the importance of the private sector in the delivery of reproductive health, child survival, and family planning services, and supported selected private drug sellers to improve and increase access to quality essential services in remote areas. STRIDES used an adapted EADSI/SDSI private-sector drug seller model package to train and promote the accreditation of the private drug sellers in STRIDES program districts, namely Mityana, Kamuli, Kyenjojo, and Kamwenge, using the ADS standards approved by the NDA. STRIDES perceived this approach as essential for the introduction of new interventions, particularly in family planning and child survival areas. As such, the SDSI program incorporated components of reproductive health, child survival, and family planning into services provided by ADS.

To evaluate if the program achieved its intended objectives of improving quality of services and products in the implementation districts, a comprehensive evaluation plan was put in place. The evaluation plan involved the collection of practice indicators in one implementation district, Mityana, before the intervention, and collecting the same indicators after 14 months of implementation. To control for unknown covariates that could affect practice in the intervention district, a control district, Kayunga, was selected to serve as a comparator. Data for the same indicators that were collected in Mityana before and after the program was implemented were also collected in Kayunga.

Ideally for a program of this nature, a one-year post-implementation period or more is necessary to observe sustained system changes. However, since the SDSI program effectively ran for a period of no more than two years, at least twelve months of implementation was considered adequate before evaluating the effectiveness of the program on key performance areas. In Mityana, the program was

implemented from July 2012. Baseline data were collected in June, 2012 (i.e. prior to the implementation). The endline data collection exercise was conducted in October 2013, which gave approximately 14 months' implementation period. This document presents the evaluation report for the SDSI program in Mityana district.

Objective

In light of the modification of the model, SDSI was interested in carrying out an evaluation of whether or not the model would continue to meet the public health goals of increasing access to essential medicines and pharmaceutical services. The objective of this exercise was to conduct an evaluation with an aim of determining the extent to which class C drug shops improve access to essential medicines and quality family planning and child health services in selected districts of Uganda. Pharmaceutical Systems Africa, a Uganda-based organization with expertise in pharmaceutical monitoring and evaluation (M&E), were contracted to conduct the evaluation. The evaluation entails baseline and endline data collection exercises in one intervention district, Mityana, and one control district, Kayunga. This report is the final evaluation report, which includes data from both the baseline and endline data collection exercises.

Methodology

The evaluation sought to collect data in three main areas. These were prices, product availability, and quality of pharmaceutical services. Tracer items used in this exercise included those used for reproductive health, child health, and family planning. A list of tracer items used for this evaluation exercise is presented in the Price and Availability Data Collection Tool in the Annexes.

Price and Availability

The exercise sought to measure the two indicators below:

1. Median price to patients for the set of the tracer items mentioned above
2. Percentage of drug shops with tracer items in stock

To collect these data, teams of data collectors visited randomly selected drug shops in the intervention and control districts. Different shops were used for the mystery shopping exercise and price and availability surveys. During the exercise, data collectors introduced themselves to the attendant in the shop and explained the purpose of their visit. When there was reluctance to cooperate, a pre-prepared letter from NDA was presented. Data collectors asked attendants to show them the drugs on the list, one by one. When it was determined that a product was in stock and not expired, it would be recorded as available and its price would be recorded. More often than not, only one brand of a product was in stock in most shops, making it unnecessary to record multiple prices for one product.

In addition to collecting price and availability information, a general survey was conducted in each shop visited. This allowed the data collectors to collect information on various practices, services, and infrastructural parameters. Data were collected on paper tools and entered into Excel spreadsheets at the end of each day of data collection.

Quality of Pharmaceutical Services—Sexually Transmitted Infections

This exercise sought to collect information on the following indicators:

1. Percentage of encounters in which appropriate STI antibiotics were dispensed consistent with standard treatment guidelines (STGs) for STIs
2. Percentage of encounters in which attendant provided instructions on how to take the medication
3. Percentage of encounters in which attendant asked about the symptoms of the client
4. Percentage of encounters in which attendant asked about any medications the client may have taken
5. Percentage of encounters in which the attendant advised consulting a hospital or clinic
6. Percentage of encounters in which attendant advised the client to avoid sexual activity until STI symptoms had resolved

7. Percentage of encounters in which attendant advised the client on the use of condoms
8. Percentage of encounters in which attendant mentioned the risk of HIV/AIDS infection
9. Percentage of encounters in which the attendant recommended notifying sexual contacts and urging them to seek care

To execute this component, a mystery shopping exercise was conducted in randomly selected shops in Mityana, the intervention district, and Kayunga, the control district. Data collectors went into the pre-selected shops masquerading as an adult presenting with urethral discharge. Management of the condition, including advice and the medicines suggested, were recorded immediately after our data collectors left the shops.

Results

Study Demographics

Number of drug shops surveyed

Table 1 gives a summary of drug shops visited for price and availability and for the mystery shopping exercise in the two districts. Due to contextual issues, such as some shops not being open at the time of the visits, the numbers were not equal across districts. The target number for data collection was 60 shops in each district for each exercise.

Table 1: Number of drug shops visited in Mityana and Kayunga

District	Number of shops visited for availability		Number of shops visited for mystery shopping	
	Before	After	Before	After
Mityana	64	61	55	62
Kayunga	59	56	53	62
Total	123	117	108	124

Status of persons interviewed

The majority of the persons interviewed for the exercise in both districts were sellers. However, a large number of owners were found in the shops during the survey, which indicates the importance of including owners in the ADS training program. Figure 1 presents the number of shops that were manned by owners versus those that were manned by sellers in both districts. A comparison of the personnel manning the shop before and after the intervention did not reveal significant changes in the patterns of those manning the shops. The majority of the owners were nurses, midwives, or clinical officers, while the majority of the sellers were nursing assistants.

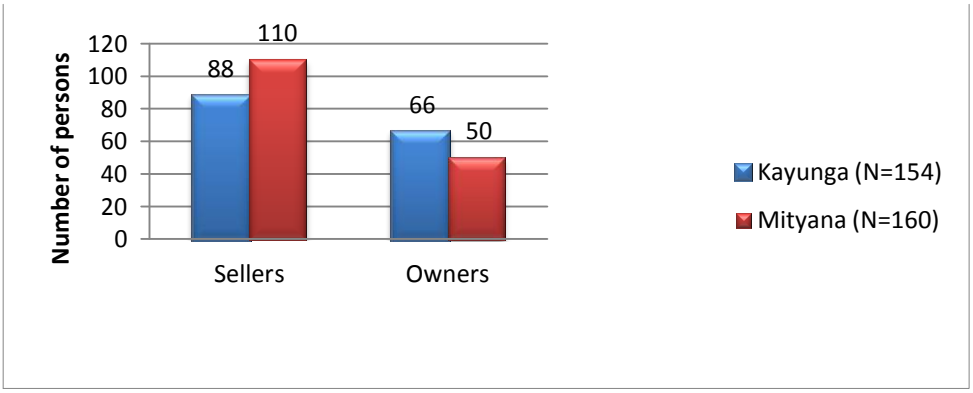
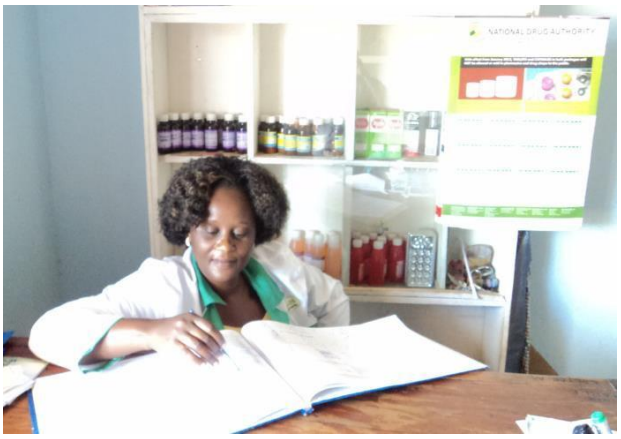


Figure 1: Status of persons interviewed in intervention and control districts

Prescription handling



The majority of drug shops surveyed reported that they dispense medicine by prescription. The prescriptions originated mainly from nearby healthcare facilities. This trend did not change before and after the intervention.

Figure 2 shows the number of drug shops that reported that they use injections within the facility. From 18% of the facilities in Mityana that reported the use of injectables at baseline to 3% after 12 months of program implementation, the intervention seemed to have worked in this regard. In comparison, in Kayunga, the control district, 28% of the facilities reported that they use injectables at baseline, compared to 25% at endline. However, the reliability of this indicator can still be questioned, since data collectors were relying on self-reporting. Drug shop owners, whether in ADS districts or in non-ADS districts, are aware that the use of injections in the facilities is not allowed; hence, they are always likely to underreport or not report it at all.

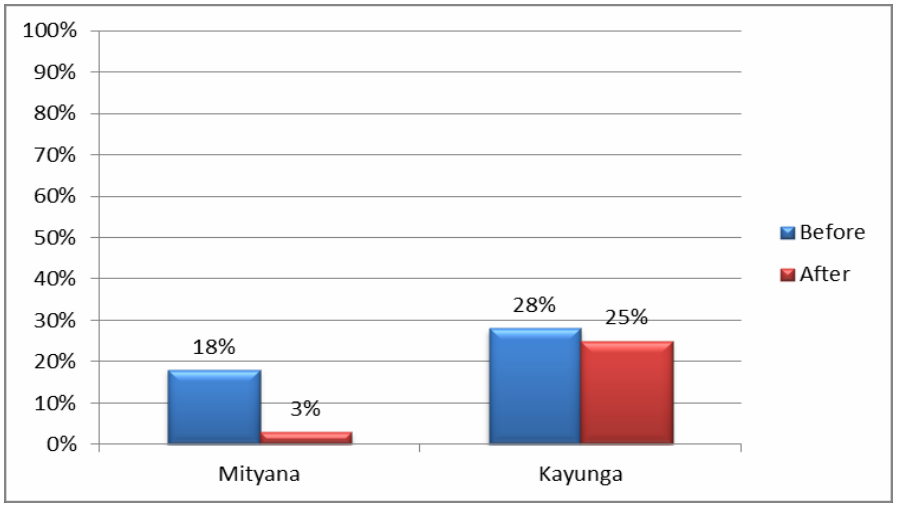


Figure 2: Percentage of shops that admitted to using injections

Availability of Records

Sales records

Due to the importance attributed to business-related record keeping, the survey looked at the availability of sales records in drug shops. Typically, Mityana kept more sales records than the control Kayunga before the interventions. These increased from 63% of shops at baseline to 79% of shops after 12 months of implementation. In the control district, 43% of shops had sales records, and this number also increased from baseline values. Sales records are a critical tool for assessing business success. It is imperative that all ADS are encouraged to keep sales records to help them manage the business.

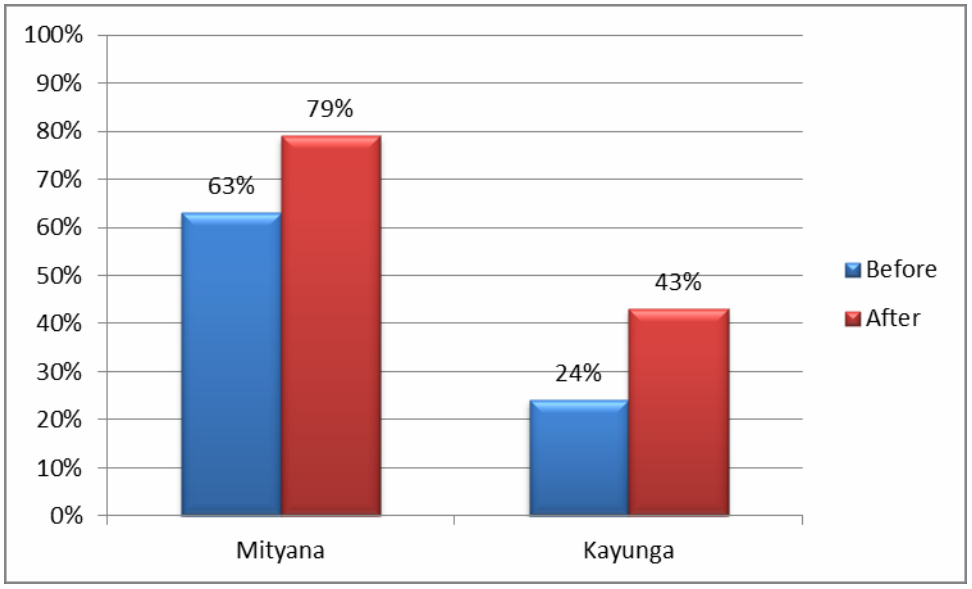


Figure 3: Percentage of drug shops that kept sales records

Patient records

As part of the ADS intervention, drugs shops are required to introduce and maintain patient registers, particularly for childhood illnesses, infectious diseases, and reproductive health. Before the intervention, very few shops, 18%, maintained patient registers in Mityana. This number increased to 54% after the intervention. In the control district, a very small number of drug shops kept patient records of any sort. Even though an increase from 18% to 54% is significant, this number should be higher as every accredited shop is required to have these records in place. Figure 4 shows the availability of patient records in Mityana and Kayunga before and after the ADS intervention.

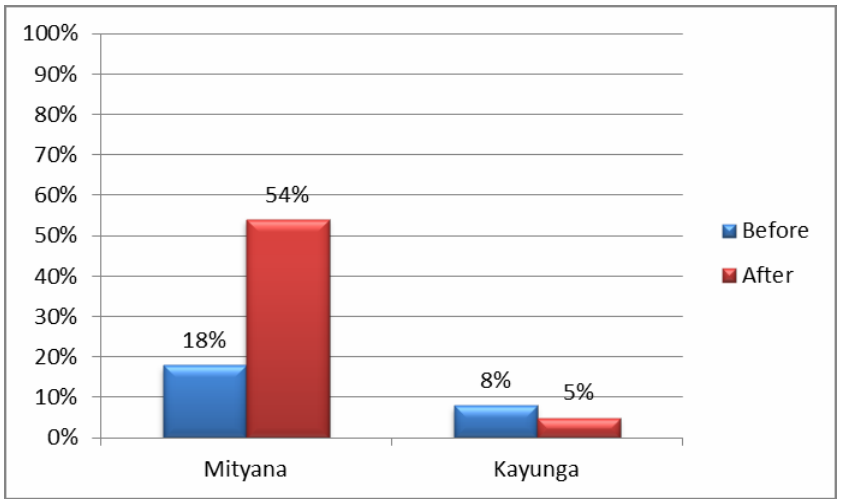


Figure 4: Percentage of drug shops that keep patient records

Price and Availability

Availability

In Uganda, medicines are categorized into prescription-only medicines (Class B), sold only in pharmacies, and over-the-counter medicines (Class C), which can be sold in both pharmacies and drug shops. To assess the availability and prices of medicines in Mityana and Kayunga districts, we used a tracer list of 40 drugs. The tracer list included both Class B and Class C drugs. NDA provisionally allowed ADS to sell a limited list of certain Class B medicines, such as antibiotics, as part of the pilot initiative in Kibaale. During the scale up in Mityana, Kamuli, Kamwenge, and Kyenjojo, the limited list of Class B drugs was allowed to be sold in these districts. Therefore, all of the Class B items on the tracer list were approved for sale in ADS in all four pilot districts, but were not approved for sale by Class C drug shops in Kayunga.

Availability of Medicines in Drug Stores

Table 2 presents the availability of 40 tracer items in Mityana before and after the ADS intervention. To be able to make comparisons, the indicator was also measured in the control district of Kayunga. Differences of pre/post measures between the districts were computed and compared using chi-squared tests in SPSS for Windows. In Mityana, the availability of most of these medicines generally increased from baseline to endline, while they decreased in the control district. Reasons why availability of medicines decreased in drug stores in Kayunga are not clear, but the differences between the two districts at endline seem to indicate that the ADS intervention had an effect on product availability. At baseline, availability patterns were very similar between the two districts.

Table 2: Percentage of drug shops with tracer items available

Tracer Medicine	Mityana Pre % (N=64)	Mityana Post % (N=61)	Kayunga Pre % (N=59)	Kayunga Post% (N=56)	Mityana pre/post difference	Kayunga pre/post difference	Between group difference	P-value
Class B Drugs								
Amoxicillin capsules 250mg	61%	100%	71%	55%	+39%	-16%	**+55%**	*P<0.05*
Amoxicillin suspension 125mg/5ml	61%	95%	60%	18%	+34%	-42%	**+76%**	*P<0.05*
Artemether + lumefantrine tablets 20/120mg [24's]	88%	97%	78%	80%	+9%	+2%	**+7%**	*P<0.05*
Benzyl benzoate lotion 25%	30%	32%	25%	25%	+2%	0	**+2%**	*P=0.235*
Benzyl penicillin injection 1MU vial	30%	3%	41%	9%	-27%	-32%	**+5%**	*P=0.186*
Chlorhexidine gluconate solution 20%	16%	20%	9%	2%	-4%	-7%	**+3%**	*P=0.175*
Chlorpheniramine 4mg tablets	91%	92%	95%	71%	+1%	-24%	**+25%**	*P<0.05*
Chloroquine phosphate tablets 300mg base	17%	15%	10%	14%	-2%	+4%	**-6%**	*P=0.576*
Ciprofloxacin tablets 500mg	55%	98%	59%	38%	+43%	-21%	**+64%**	*P<0.05*
Condoms – male {3's}	83%	98%	88%	91%	+15%	+3%	**+12%**	*P=0.157*
Cotton wool 100gm	47%	96%	39%	25%	+49%	-14%	**+63%**	*P<0.05*
Co-trimoxazole tablets 480mg	80%	95%	71%	54%	+15%	-17%	**+32%**	*P<0.05*
Co-trimoxazole suspension 240mg/5ml	48%	30%	44%	23%	-18%	-21%	**+3%**	*P=0.288*
Doxycycline capsules 100mg	52%	96%	51%	29%	+44%	-22%	**+66%**	*P<0.05*
Erythromycin tablets 250mg	52%	88%	53%	32%	+36%	-21%	**+57%**	*P<0.05*
Ferrous sulfate tablets 200mg	39%	73%	51%	38%	+34%	-13%	**+47%**	*P<0.05*
Ferrous/folic acid tablets	16%	35%	7%	18%	+19%	+11%	**+8%**	*P=0.062*
Folic acid tablets	63%	63%	63%	39%	0	-24%	**+24%**	*P<0.05*
Glucose Infusion 5%, 500ml bottle	16%	0%	22%	7%	-16%	-15%	**-1%**	*P=0.248*

Tracer Medicine	Mityana Pre % (N=64)	Mityana Post % (N=61)	Kayunga Pre % (N=59)	Kayunga Post% (N=56)	Mityana pre/post difference	Kayunga pre/post difference	Between group difference	P-value
Ibuprofen tablets 200mg	84%	98%	93%	80%	+14%	-13%	**+27%**	*P<0.05*
JIK household antiseptic 500ml	8%	27%	5%	5%	+19%	0	**+19%**	*P<0.05*
Metronidazole 200mg	78%	95%	85%	66%	+17%	-19%	**+36%**	*P<0.05*
Nitrofurantoin 100mg	9%	43%	15%	9%	+34%	-6%	**+40%**	*P<0.05*
Nystatin pessaries 100,000 IU {each pessary}	61%	82%	39%	27%	+21%	-12%	**+33%**	*P<0.05*
Nystatin suspension 100,000 IU	11%	28%	24%	14%	+17%	-10%	**+27%**	*P<0.05*
ORS	80%	96%	85%	86%	+16%	-1%	**+17%**	*P<0.05*
Procaine penicillin fortified 4MU	25%	0%	32%	18	-25%	-12%	**-13%**	*P<0.05*
Quinine injection 300mg/ml	31%	0%	29%	9%	-31%	-20%	**-11%**	*P<0.05*
Quinine tablets 300mg	61%	80%	75%	52%	+19%	-23%	**+42%**	*P<0.05*
Salbutamol tablets 4mg	50%	78%	59%	52%	+28%	-7%	**+35%**	*P<0.05*
Sodium chloride 0.9%, 500ml bottle	14%	0	14%	7%	-14%	-7%	**-7%**	*P=0.05*
Surgical gloves	69%	83%	70%	54%	+14%	-16%	**+30%**	*P<0.05*
Sulfadoxine + pyrimethamine tablets 525mg	69%	33%	58%	13%	-36%	-45%	**+9%**	*P<0.05*
Tetracycline eye ointment 1% 3.5g	69%	83%	59%	29%	+14%	-30%	**+44%**	*P<0.05*
			Class C Drugs					
Aspirin (acetyl salicylic acid tablets 300mg)	47%	27%	54%	32%	-20%	-22%	**+2%**	*P=0.308*
Albendazole 200mg	63%	78%	59%	68%	+15%	+9%	**+6%**	*P=0.132*
Combined oral contraceptive pill {cycle}	70%	93%	56%	68%	+23%	+14%	**+9%**	*P<0.05*
Mebendazole tablets 100mg	78%	92%	85%	73%	+14%	-12%	**+26%**	*P<0.05*

Tracer Medicine	Mityana Pre % (N=64)	Mityana Post % (N=61)	Kayunga Pre % (N=59)	Kayunga Post% (N=56)	Mityana pre/post difference	Kayunga pre/post difference	Between group difference	P-value
ORS	80%	96%	85%	86%	+16%	-1%	**+17%**	
Paracetamol tablets 500mg	98%	100%	98%	100%	+2%	+2%	**0**	*P=0.731*
Zinc tablets 20mg	41%	72%	22%	59%	+31%	+37%	**-7%**	*P=0.095*

Availability of Class B (prescription only) vs. Class C (non-prescription) medicines

The availability of both Class B (prescription only) and Class C (non-prescription) drugs increased in Mityana compared to Kayunga (Table 2). For Class C drugs, significant increases were recorded in the availability of contraceptive pills, oral rehydration salts, and mebendazole tablets. All these are commodities that are of significance to childhood illnesses and maternal and reproductive health. For zinc tablets, also an important medicine for childhood illnesses, even though the availability increased from 41% at baseline to 72% at endline in Mityana, there was also a corresponding increase in Kayunga. It is therefore difficult to attribute the increase in the availability of Class C drugs to the ADS intervention *per se*. Other interventions by Integrated Management of Childhood Illnesses (IMCI) could have been on-going in Kayunga, which could have led to improved availability for medicines related to these conditions.

Availability of anti-infective medicines

Availability of anti-infectives increased in Mityana after the implementation of the ADS program. For most of these medicines, the increases were quite significant. This seems to show that most drug stores embraced the ADS concept and were finding value in increasing their stock levels. In Kayunga, the control district, the availability of anti-infectives decreased from the time when the baseline data collection was conducted to the time the endline data collection was done. One possible explanation for this could be that inspections by NDA and district authorities have increased over the past year. This ordinarily would deter Class C drug shops from stocking products that they wouldn't sell freely. This assertion is made more plausible by the fact that the availability of Class C drugs in Kayunga increased during the period in question. Some of these drugs, including zinc tablets and mebendazole tablets, increased by a large margin. Figures 5 and 6 show the changes in the availability of anti-infectives in Mityana and Kayunga, respectively.

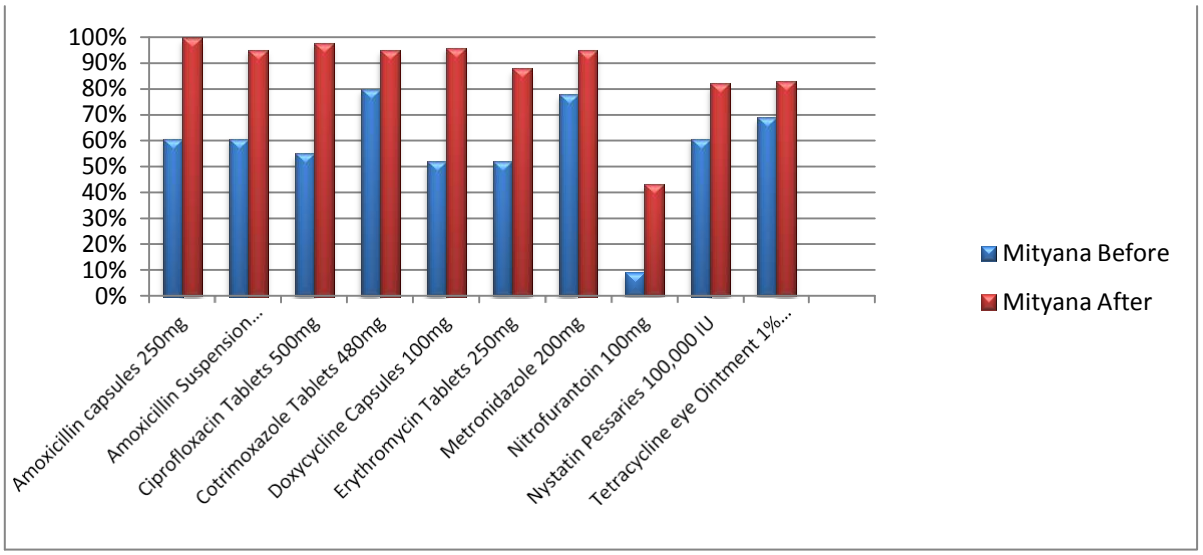


Figure 5: Availability of anti-infective agents in Mityana before and after the ADS intervention

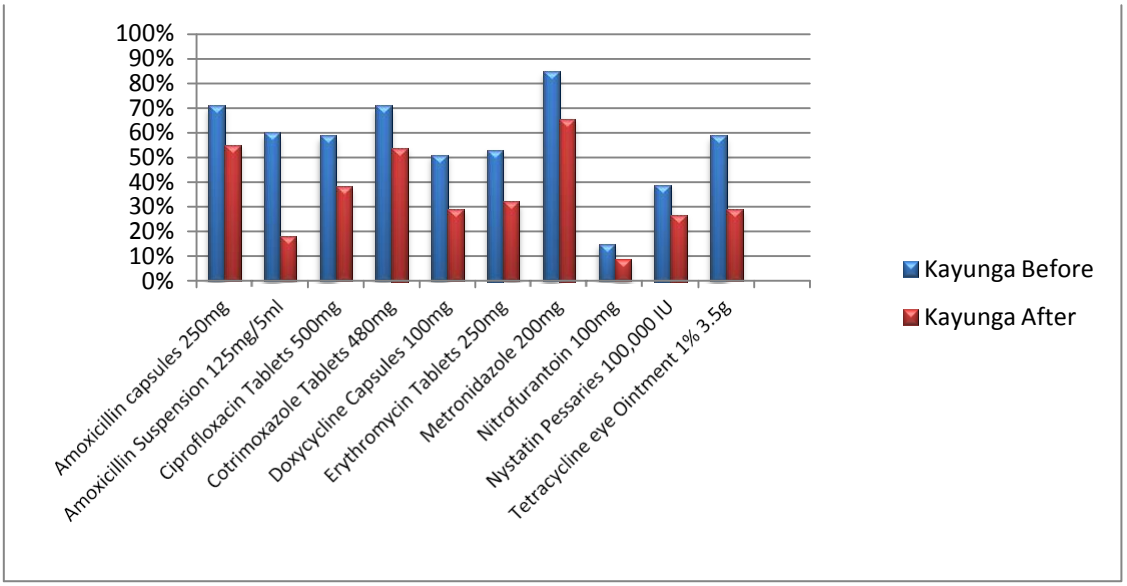


Figure 6: Availability of anti-infective agents in Kayunga before and after the ADS intervention

Availability of antimalarial medicines

The availability of the recommended first-line antimalarial medicine for uncomplicated malaria, artemether-lumefantrine (ALU), was high in Mityana before the ADS intervention. With 88% of the shops having the commodity in stock at baseline, only a nominal increase (9%) could be realized following the introduction of the intervention. Coverage of drug shops with ALU in Kayunga was also high, both before and after the intervention. This is consistent with the country's national strategy to improve access to effective and quality-assured antimalarial commodities in the country.
Quinine tablets are the recommended second-line treatment for uncomplicated malaria in Uganda. Before the ADS intervention, 61% of drug shops in Mityana had this product in stock. Following the ADS intervention, this number increased to 80%. In Kayunga, the control district, the availability of quinine tablets decreased from 75% to 52%.

In Uganda, and other countries for that matter, both chloroquine and sulfadoxine-pyrimethamine (SP) are considered undesirable products for the management of uncomplicated malaria. During the ADS dispenser training course, dispensers were trained on this. Following the advent of the ADS program in Mityana, the availability of chloroquine tablets decreased marginally from 17% to 15%, while the availability of SP decreased from 69% to 33%. According to the Uganda National Treatment Guidelines, SP is still the recommended medicine for intermittent preventive therapy (IPT) in pregnancy, so modest stock levels of this product are desirable at the community level. In comparative terms, the availability of chloroquine in Kayunga increased marginally, while the availability of SP also fell, possibly as a result of the national programs described above.

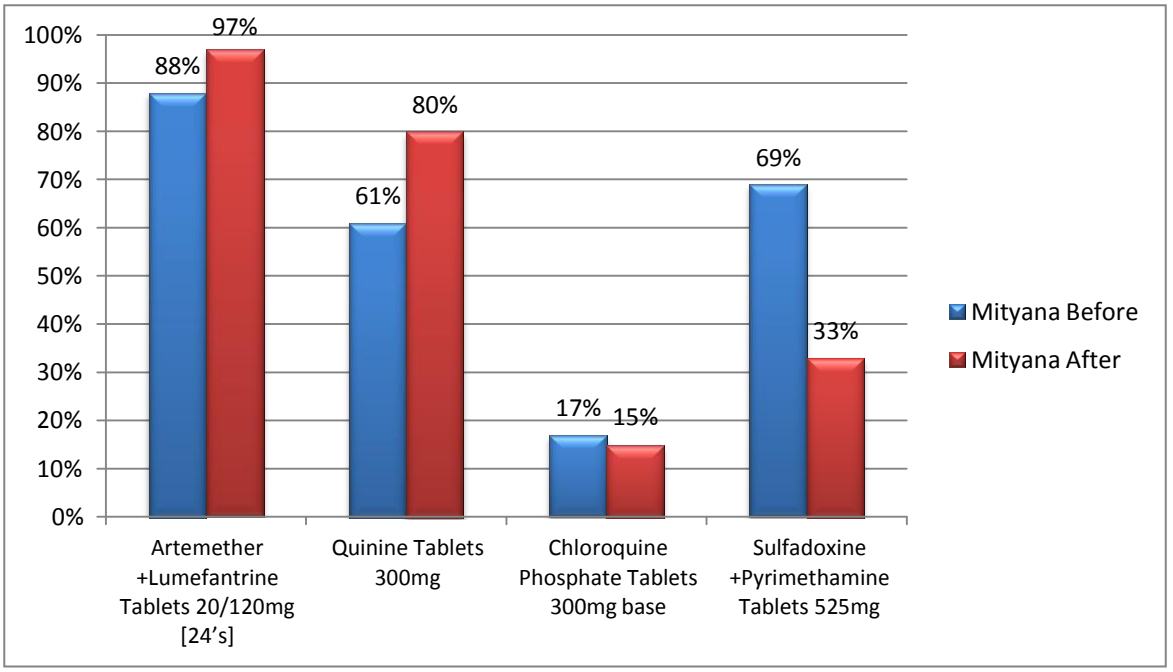


Figure 7: Availability of antimalarials in Mityana before and after the ADS intervention

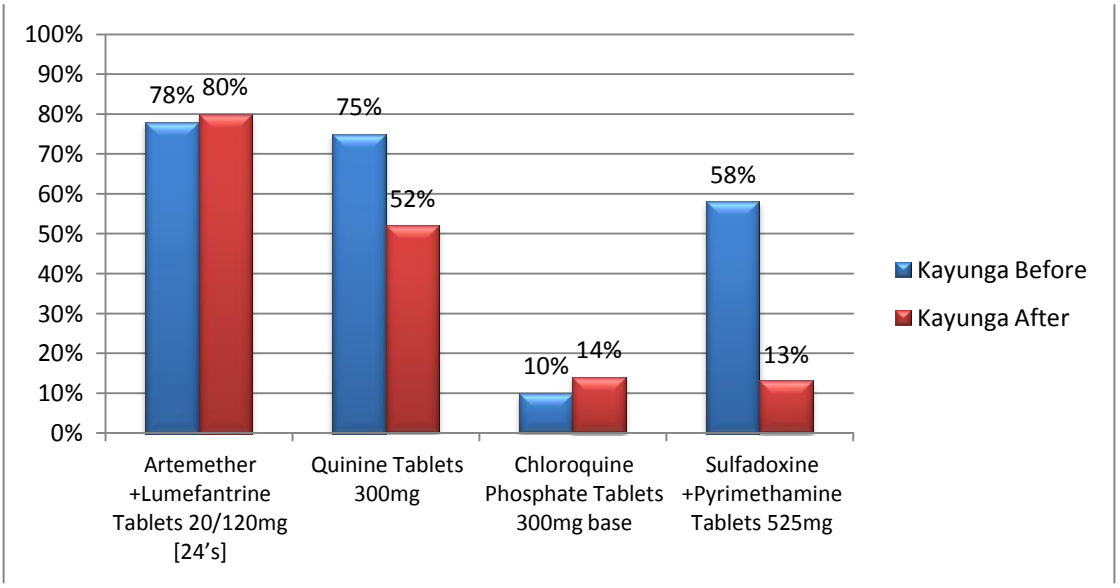


Figure 8: Availability of antimalarials in Kayunga before and after the ADS intervention

Availability of antidiarrheal medicines

The number of drug shops in Mityana stocking oral rehydration solution (ORS) increased from 80% at baseline to 96% at endline. In the control district Kayunga, there were no corresponding increases in the availability of ORS in drug shops. This was partly due to the fact that the ORS availability in this district at 80% was already high, possibly because of other national IMCI programs. Like ORS use, the availability of zinc tablets in Mityana increased, from 41% at baseline to 72% after 14 months of program implementation. In Kayunga, the availability of zinc tablets also increased during the same period, even though the availability value, at 59%, is much lower than the 72% value in Mityana. Figures 9 and 10 show the availability of ORS and zinc tablets in Mityana and Kayunga, respectively.

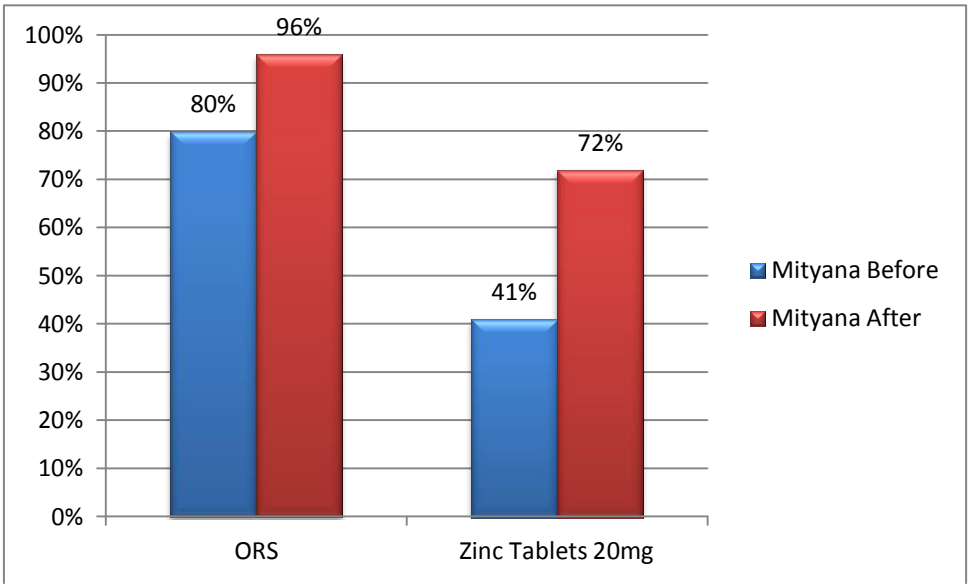


Figure 9: Availability of antidiarrheals in Mityana before and after the ADS intervention

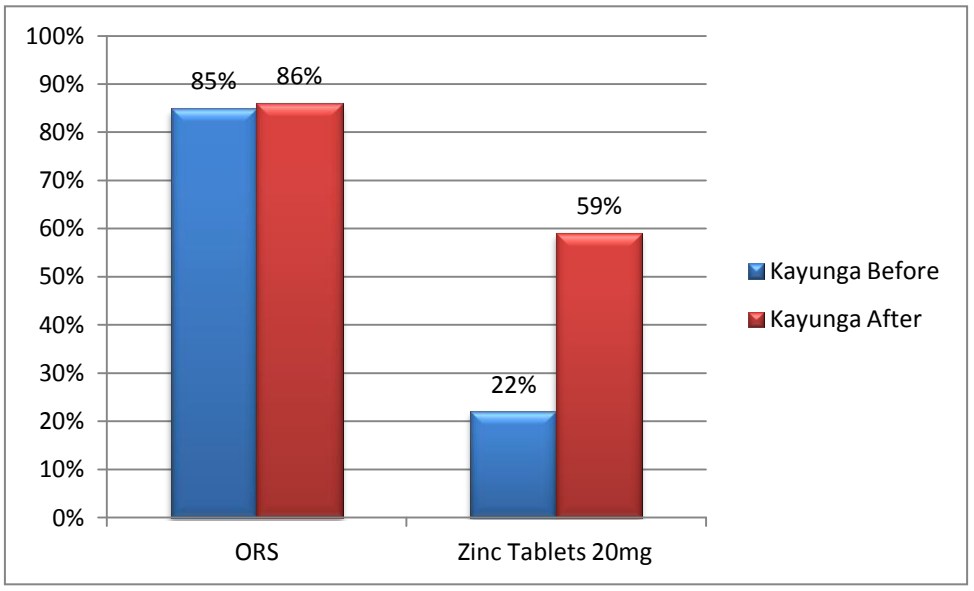


Figure 10: Availability of antidiarrhoeals in Kayunga before and after the ADS intervention

Availability of injectables

Injectables, by law, are not supposed to be sold in either Class C shops or ADS. Yet at baseline, drug shops in both Mityana and Kayunga stocked these items. At endline, very few ADS in Mityana had injectables in stock (Figure 11). Practices in Kayunga, on the other hand, remained largely unchanged (Figure 12).

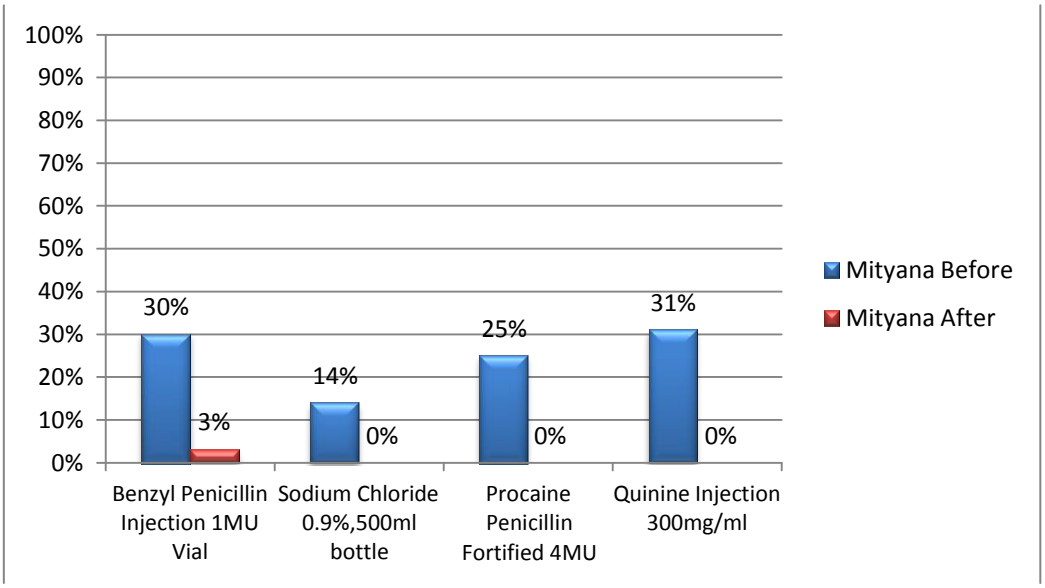


Figure 11: Availability of injectables in Mityana before and after the ADS intervention

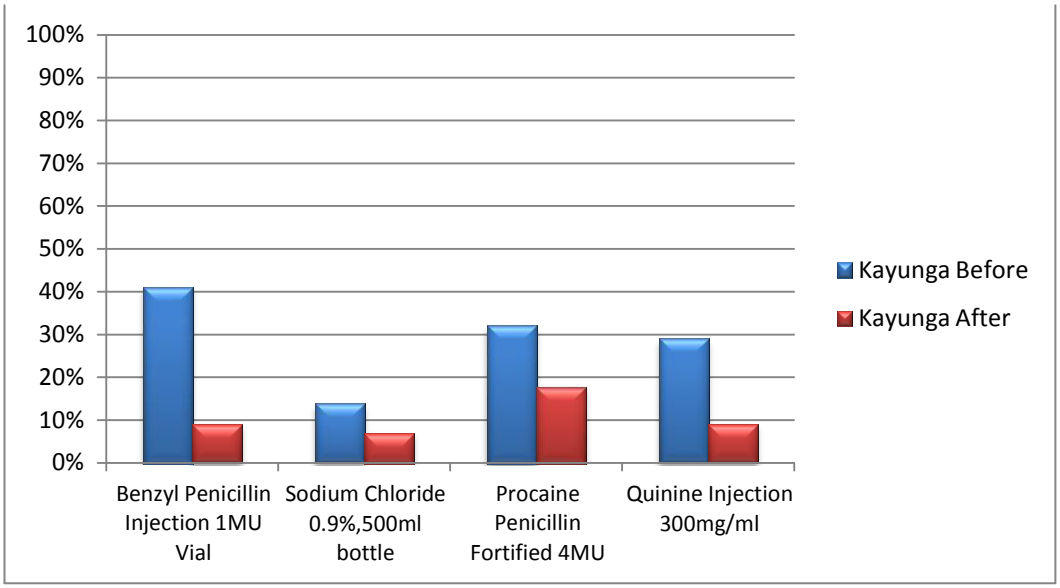


Figure 12: Availability of injectables in Kayunga before and after the ADS intervention

Prices

During the exercise to collect availability data, prices were also recorded for the 40 tracer items. When different brands of the same product were available in a particular store, the median price from that shop was recorded. Table 3 presents median prices for each product in Mityana and Kayunga before and after the intervention. Where the smallest countable unit was the tablet, the price presented in Table 3 was for the tablet (unit). For products that should be dispensed in dosage packs, such as ALU or contraceptives, the individual pack was considered the unit. All prices are given in Ugandan shillings (UGX). At the time of conducting this evaluation, this currency was approximately valued at UGX 2,600 to the U.S. dollar.

In Mityana, prices appeared to increase following the introduction of the ADS intervention. Since accreditation by NDA required the shops to become better stocked, train their dispensers, and upgrade their premises, it is not unexpected that the related costs would have to be passed on to the customer. From this evaluation, it is apparent that some of this cost would have resulted in products being marginally and in some instances significantly more expensive than they were at baseline. Inflation and the mere passage of time may also have led to some price increases. However, in the control district, medicine prices remained largely unchanged from baseline to endline, so inflation cannot be the sole explanation for the increase in prices in Mityana. Price increase following the introduction of similar interventions is not an unexpected phenomenon. Marginal price increases were reported in the original SEAM program[1] and the EADSI program in Singida, Tanzania, and in Kibaale district[2] in Uganda.

Whereas price increases are largely marginal, increases in life-saving medicines such as ALU should be of concern. At UGX 5,000, treatment with ALU is probably out of reach for the majority of the people in the district. High prices of quality-assured antimalarials will likely see people reverting back

[1] Management Sciences for Health. Strategies for Enhancing Access to Medicines (SEAM) Evaluation Report, July 2006

[2] Management Sciences for Health. East Africa Drug Seller Initiative (EADSI) Evaluation Report, November 2011.

to less effective products such as chloroquine. In fact, due to decreased demand, the price of chloroquine went down. This was about the only product to do so in Mityana following the ADS intervention. The price increases for ALU in both Mityana and Kayunga were rather surprising given the fact that the Global Fund's Affordable Medicines Facility-malaria (AMFm) pilot, which subsidized this product in drug stores and pharmacies, was still ongoing at the time of the endline evaluation. The last price recorded in different districts by Health Action International (HAI), working for the AMFm, was approximately UGX 3,000.[3]

Having reported increases in prices, such increases should not be construed as indicators of a reduction of clientele or profitability. Even though this evaluation did not include a profitability scope, the overwhelming availability rates described above seem to indicate that business had improved.

Table 3: Median prices for tracer items in Mityana and Kayunga, before and after the ADS intervention

Tracer Medicine	Median price (Uganda shillings)						
	Mityana Pre (N=64)	Mityana/ Post (N=61)	Kayunga/ Pre (N=59)	Kayunga/ Post (N=56)	Mityana difference (pre/post)	Kayunga difference (pre/post)	Between group difference
Albendazole 200mg	500	1000	500	700	500	200	300
Amoxicillin capsules 250mg	100	150	100	100	50	0	50
Amoxicillin suspension 125mg/5ml	2500	3000	2500	3000	500	500	0
Artemether + lumefantrine tablets 20/120mg [24's]	4000	5000	4000	4000	1000	0	1000
Aspirin (acetyl salicylic acid tablets 300mg)	25	50	20	25	25	5	20
Benzyl benzoate lotion 25%	2500	3000	2500	2500	500	0	500
Benzyl penicillin injection 1MU vial	1000	1500	500	500	500	0	500
Chlorhexidine gluconate solution 20%	1750	2500	2000	2000	750	0	750
Chlorpheniramine 4mg tablets	25	50	20	25	25	5	20
Chloroquine phosphate tablets 300mg base	200	150	150	150	-50	0	-50

[3] Health Action International. Retail prices of ACTs co-paid by the AMFm and other antimalarial medicines: Ghana, Kenya, Madagascar, Nigeria, Tanzania and Uganda, May 2012.

Tracer Medicine	Median price (Uganda shillings)						
	Mityana Pre (N=64)	Mityana/ Post (N=61)	Kayunga/ Pre (N=59)	Kayunga/ Post (N=56)	Mityana difference (pre/post)	Kayunga difference (pre/post)	Between group difference
Ciprofloxacin tablets 500mg	250	300	200	300	50	100	-50
Combined oral contraceptive pill {cycle}	1000	1000	1000	1000	0	0	0
Condoms – male {3's}	500	500	500	500	0	0	0
Cotton wool 100gm	3000	3500	3000	3000	500	0	500
Co-trimoxazole tablets 480mg	70	100	50	100	30	50	-20
Co-trimoxazole suspension 240mg/5ml	2000	2500	2000	2000	500	0	500
Doxycycline capsules 100mg	100	100	100	100	0	0	0
Erythromycin tablets 250mg	200	250	200	200	50	0	50
Ferrous sulfate tablets 200mg	25	25	25	25	0	0	0
Ferrous/folic acid tablets	31.5	50	20	25	18.5	5	13.5
Folic acid tablets	33	50	25	25	17	0	0
Glucose infusion 5%, 500ml bottle	2250	2500	2500	2500	250	0	0
Ibuprofen tablets 200mg	50	75	33	50	25	17	8
JIK household antiseptic 500ml	2500	3000	2500	3000	500	500	0
Mebendazole tablets 100mg	50	50	25	50	0	25	-25
Metronidazole 200mg	50	50	33	50	0	17	-17
Nitrofurantoin 100mg	40	50	50	50	10	0	10
Nystatin pessaries 100,000 IU {each pessary}	250	300	300	300	50	0	50
Nystatin suspension 100,000 IU	3000	3500	3000	3000	500	0	500
ORS	500	500	500	500	0	0	0
Paracetamol tablets 500mg	33	50	25	40	17	15	2

Tracer Medicine	Median price (Uganda shillings)						
	Mityana Pre (N=64)	Mityana/ Post (N=61)	Kayunga/ Pre (N=59)	Kayunga/ Post (N=56)	Mityana difference (pre/post)	Kayunga difference (pre/post)	Between group difference
Procaine penicillin fortified 4MU	1500	1500	1100	1100	0	0	0
Quinine injection 300mg/ml	1000	1000	1000	1000	0	0	0
Quinine tablets 300mg	300	300	250	250	0	0	0
Salbutamol tablets 4mg	50	50	41.5	50	0	8.5	-8.5
Sodium chloride 0.9%, 500ml bottle	2500	3000	2500	3000	500	500	0
Surgical gloves	1500	2000	1500	1500	500	0	500
Sulfadoxine + pyrimethamine tablets 525mg	575	600	500	600	25	100	-75
Tetracycline eye ointment 1% 3.5g	1500	1500	1000	1500	0	500	-500
Zinc tablets 20mg	225	300	200	200	75	0	75

Management of Urethral Discharge in Medicine Stores

The extent to which STIs were appropriately managed was assessed based on Ministry of Health (MOH) STGs. Generally, for the clinical management of urethral discharge, a combination of ciprofloxacin and doxycycline is indicated. The clinical management of urethral discharge in Uganda according to the MOH operation guidelines[4] is presented in the box below.

Box 1: Symptomatic Management of Urethral Discharge in Uganda

i. Ciprofloxacin 500mg single dose plus
ii. Doxycycline100mg every 12 hourly for 7 days
iii. Treat partner with similar drugs
iv. If partner is pregnant, give partner:
v. Erythromycin 500mg every 6 hours for 7 days plus
vi. Cotrimoxazole 2.4g (5 tabs) every 12 hours for 3 days

To assess the management of urethral discharge, a mystery shopping exercise was conducted. In the exercise, data collectors presented as adult males with purulent urethral discharge with dysuria. In addition, they went on to describe the symptoms of burning sensation while passing urine and increased frequency of micturition. They presented as having had these symptoms for a period of two weeks. The discharge was described as copious and was apparent even when the penis was not squeezed. The mystery shoppers were trained on how to respond to specific questions when asked by the dispensers. The mystery shoppers bought the medicines suggested by the dispenser and observed dispensing practices, such as the questions asked, the instructions given on how to take the medicines, and dosage instructions. These were recorded on a data collection tool as soon as the mystery shopper left the drug shop.

In both Mityana and Kayunga, the majority of drug attendants sold a combination of ciprofloxacin and doxycycline, the correct combination for urethral discharge according to the Ugandan treatment guidelines. However, at baseline, practices in the two districts were far apart with 79% of drug shops in Kayunga giving the right drugs compared to 31% in Mityana (Figure 13). The possible explanation for the appropriate management of urethral discharge in Kayunga at baseline may include the fact that an international organization had recently conducted trainings for public health workers on the symptomatic management of STIs in the district. Since the majority of ADS owners in the district also work in public hospitals and clinics, the knowledge attained from this intervention would ordinarily be carried over to private practice. At endline however, only 35% of encounters in Kayunga gave the correct medicines for the management of urethral discharge. This seems to indicate the need for refresher courses to reinforce positive practice behaviors.

[4] Sexually Transmitted Infections, Operations Manual, STD/AIDS Control Programme. Ministry of Health and Social Welfare, Uganda, September, 2003.

In Mityana, the percentage of those who gave the correct drugs increased from 31% to 40% from baseline to endline. Even though this change can be attributed to the ADS intervention, other supporting interventions may be necessary to further improve practice in this area and other related practice areas, such as the management of malaria, pneumonia, or diarrhea in children. Figure 12 shows the percentage of drug shops that dispensed a combination of ciprofloxacin and doxycycline, the recommended medicines for the symptomatic management of urethral discharge. Figures 13 and 14 present the percentage of encounters where the recommended dosage of the particular medicine was given.

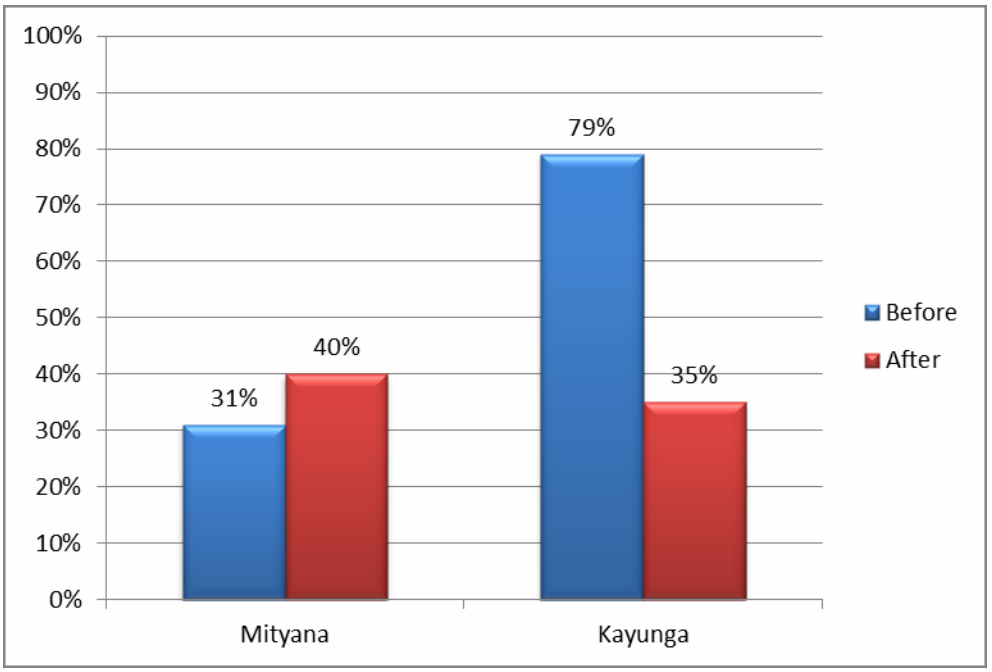


Figure 13: Percentage of drug shops that dispensed ciprofloxacin and doxycycline

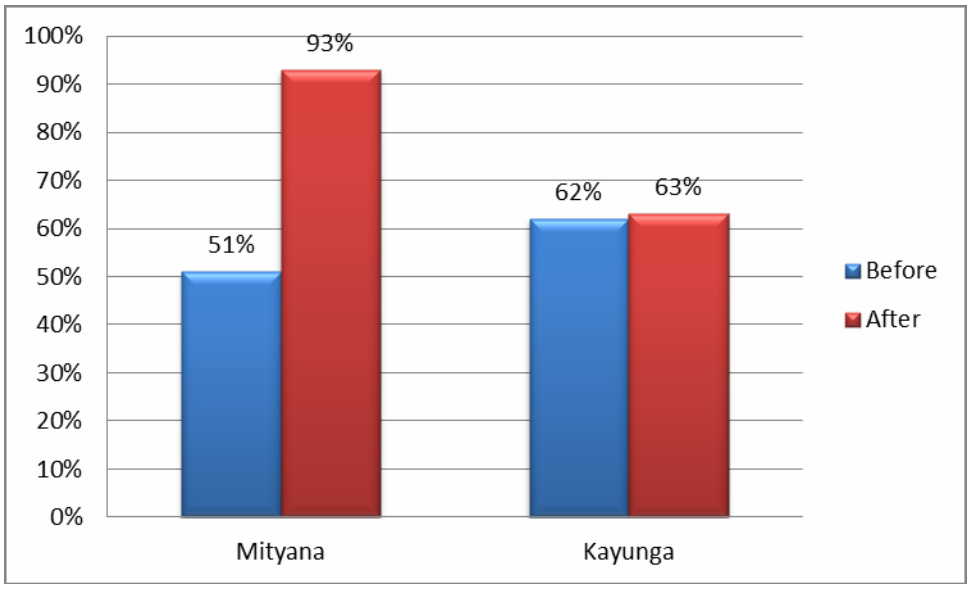


Figure 14: Percentage of drug shops that gave correct dosage instructions for ciprofloxacin

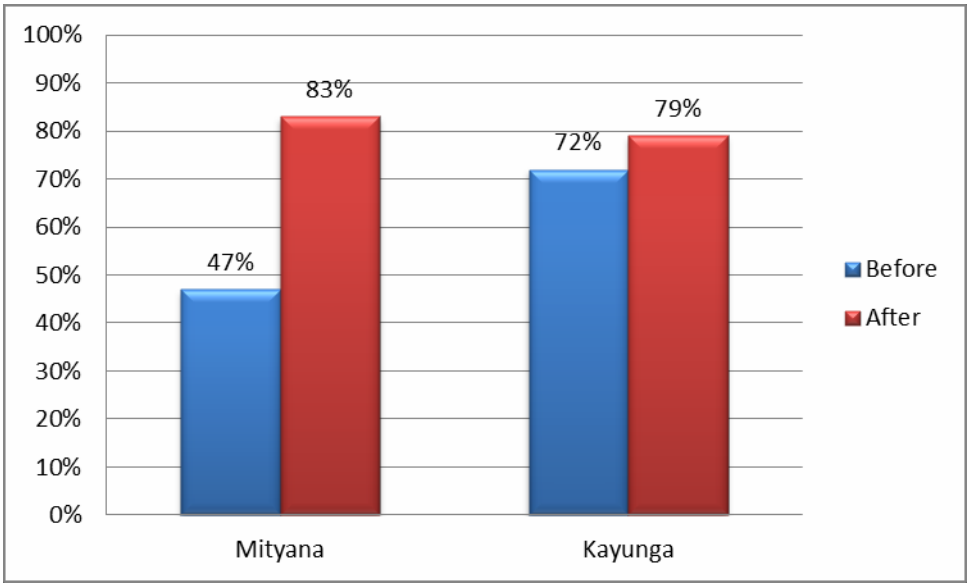


Figure 15: Percentage of drug shops that gave correct dosage instructions for doxycycline

Range of medicines suggested for the management of urethral discharge

A wide range of medicines were suggested for the management of urethral discharge in both districts. The majority of the encounters received ciprofloxacin and doxycycline, but a large percentage of encounters received metronidazole. It is not clear why dispensers in both the ADS district and the control district had an affinity for metronidazole, which, according to the Ugandan STGs is an inappropriate medicine for this condition. Other antibiotics, such as penicillin or co-trimoxazole, were not widely suggested. Table 4 shows the frequency of all medicines sold for the management of urethral discharge in both Mityana and Kayunga.

Table 4: Frequency of medicines suggested for the management of urethral discharge

Name of medicine sold	Mityana		Kayunga	
	Pre (N=55)	Post (N=62)	Pre (N=53)	Post (N=62)
Amoxicillin 250mg caps	13%	0	0	6%
Ampicillin 250mg caps	11%	2%	11%	8%
Ampiclox 500mg caps	2%	2%	4%	2%
Cephalexin 250mg tabs	0	0	4%	0
Chloramphenicol 500mg caps	4%	3%	2%	0
Ciprofloxacin 500mg* tabs	56%	71%	79%	71%
Cotrimoxazole 480mg tabs	0	1%	4%	0
Dexamethasone 0.5mg tabs	2%	3%	4%	0
Diclofenac 50mg tabs	13%	6%	8%	5%
Doxycycline 100mg caps	53%	58%	87%	52%
Erythromycin 250mg tabs	16%	0	6%	5%
Ibuprofen 200mg tabs	11%	18%	43%	31%
Benzathine penicillin 2.4MU inj	16%	0	8%	2%

Name of medicine sold	Mityana		Kayunga	
	Pre (N=55)	Post (N=62)	Pre (N=53)	Post (N=62)
Ceftriaxone 1gm inj	20%	0	11%	0
Gentamycin 80mg/ml inj	9%	0	11%	0
Metronidazole 200mg tabs	51%	44%	70%	66%
Nitrofurantoin 100mg tabs	9%	3%	11%	6%
Ofloxacin 200mg caps	6%	0	0	0
Paracetamol 500mg tabs	4%	4%	8%	8%
Piroxicam 20mg tabs	4%	3%	6%	0

Dispensing Practices

In addition to assessing the appropriateness of the medicines recommended for STI management, the mystery shopping exercise also sought to assess various dispensing practices within drug shops. The series of graphs below show the percentage of attendants who were able to perform certain tasks or to communicate certain desirable messages to the client when he presented with symptoms of a sexually transmitted disease.

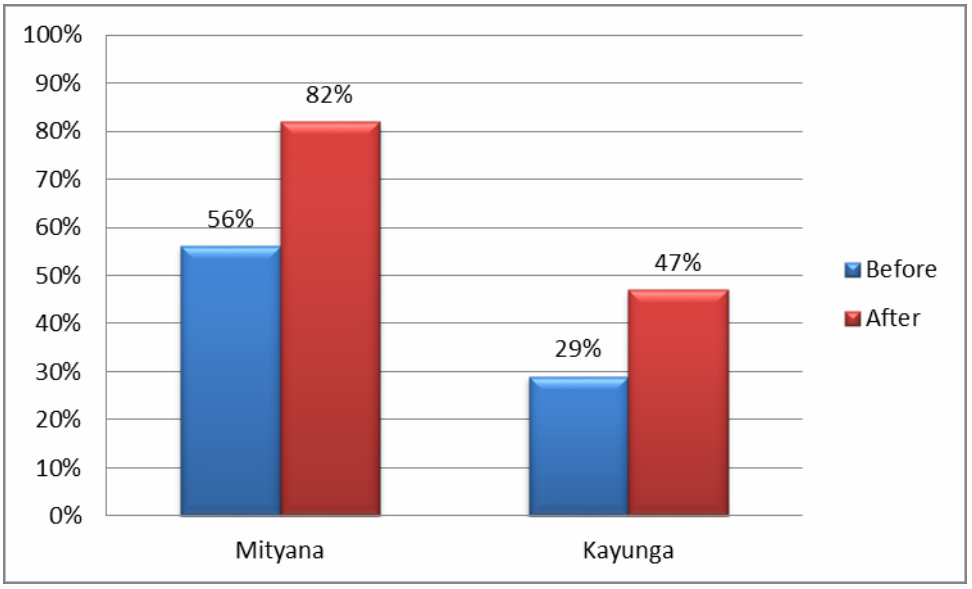


Figure 16: Percentage of attendants who enquired about other medicines the client was taking

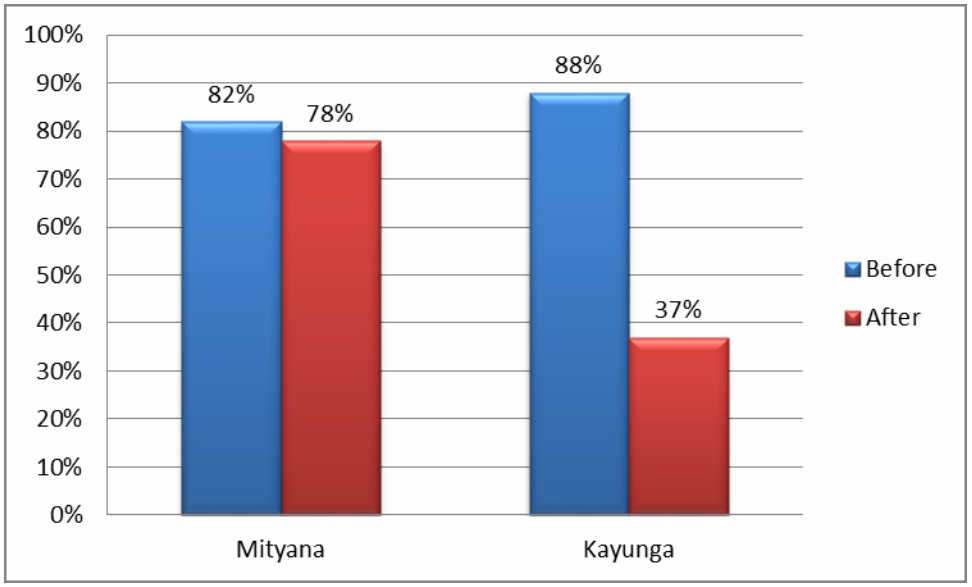


Figure 17: Percentage of attendants who informed the client on how to take the medication

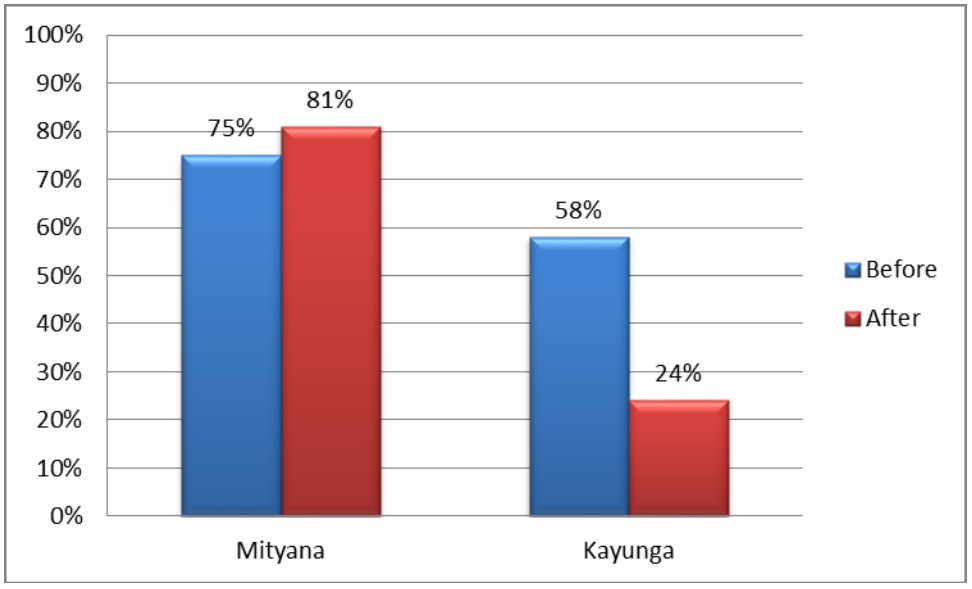


Figure 18: Percentage of attendants who informed the client on the duration of therapy

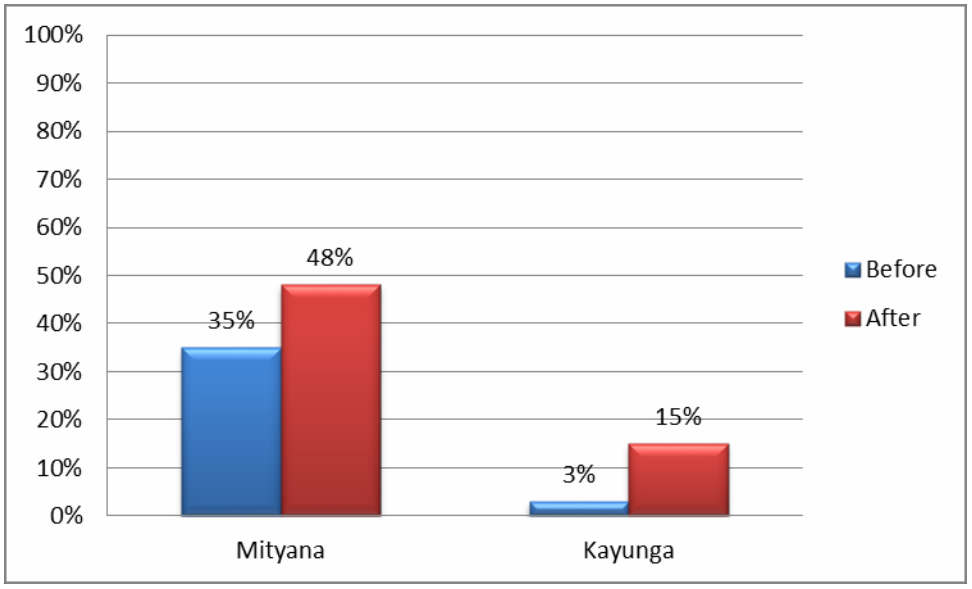


Figure 19: Percentage of attendants who advised on avoiding sexual activities until symptoms had resolved

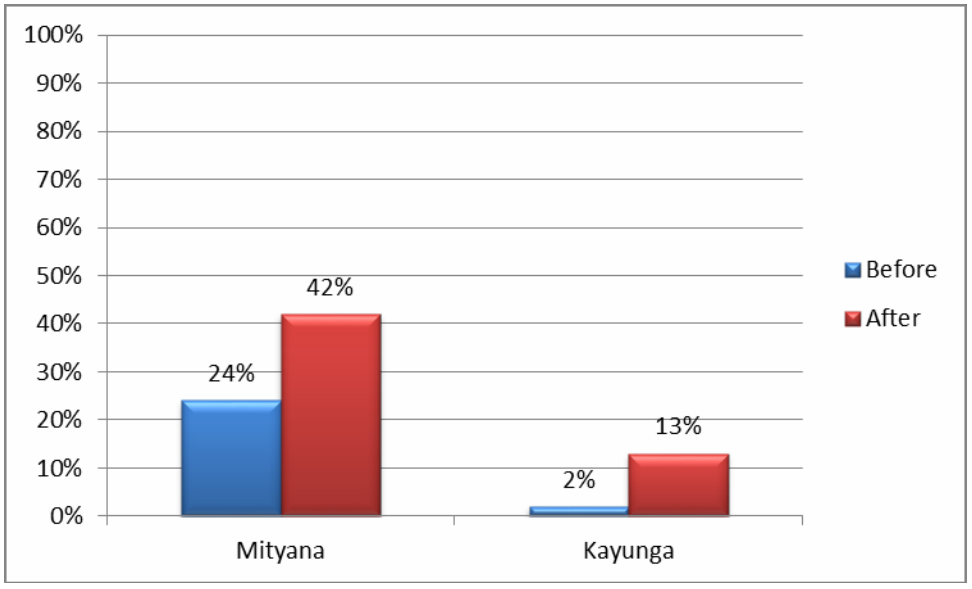


Figure 20: Percentage of attendants who counseled the client on safer sex methods

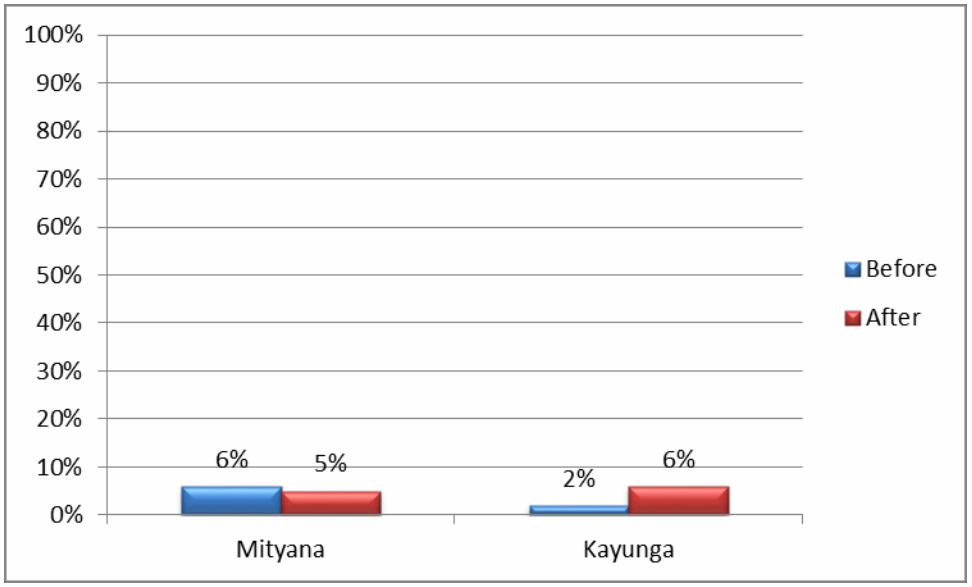


Figure 21: Percentage of attendants who mentioned the risk of HIV/AIDS to the client

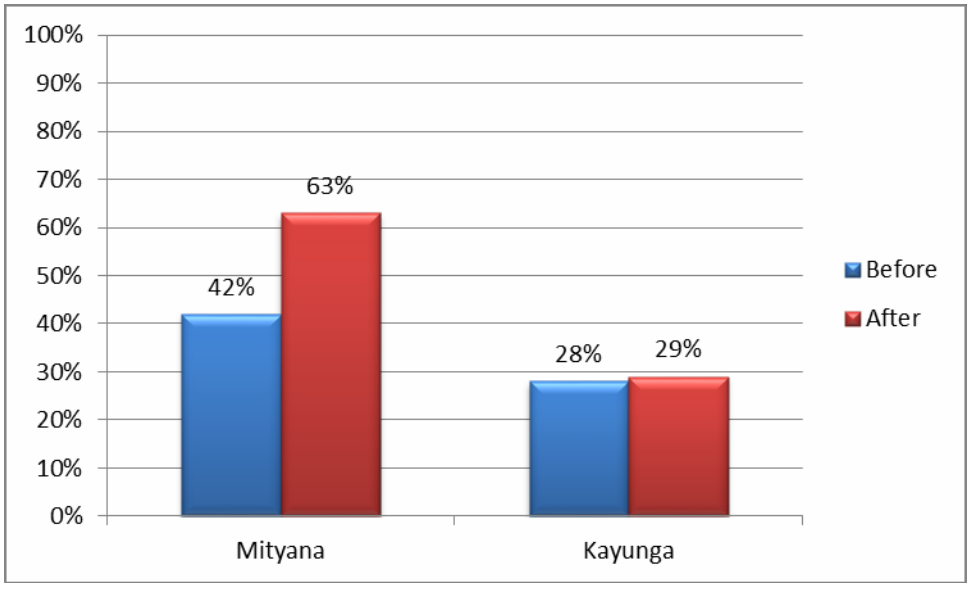


Figure 22: Percentage of attendants who recommended notifying sexual partners

From Figures 16–22 above, it is apparent that the ADS intervention improved dispensing practices in Mityana. At the beginning of each conversation, at baseline, 56% of dispensers in Mityana asked the client what other medicines he was taking. At endline, this number increased to 82%, a significant increase. There was a marginal increase in this indicator in Kayunga.

At baseline, in Mityana, a high percentage of dispensers told the client how to take the medicines they had received. This number remained high at endline (82% vs. 78%). In Kayunga, this number declined from 87% at baseline to 37% at endline. This same trend was followed on the number of drug shop attendants who told the client about the duration of therapy for the medicines.

At baseline, 35% of dispensers in advised the clients to avoid sexual activities during treatment for STIs and also to inform sexual partners. This number increased to 48% after the introduction of the

ADS intervention. In the control district, the percentage was 3% and even though it increased at endline, the figure remained low, at 15%. Similarly, 24% of dispensers advised clients on using safer sex methods at baseline; these increased to 42% at endline. The comparative numbers for Kayunga were 2–13%. Only a small percentage of dispensers in both districts counseled clients on the risk of HIV/AIDS. This may be an area that requires further intervening if there is going to be further rollout of the ADS program to other districts in Uganda.

The areas described above seem to indicate that the ADS intervention had a positive effect on dispensing practices. However, due to the fact that the intervention has only been running for slightly over a year, it is not possible to extrapolate on whether the intervention is sustainable or not. A more in-depth evaluation of program impact may be necessary once the program has matured.

Table 5: Dispensing practices for the management of STIs

Indicator	Mityana Pre % (N=55)	Mityana Post % (N=62)	Kayunga Pre % (N=53)	Kayunga Post% (N=62)	Mityana pre/post difference	Kayunga pre/post difference	Between group difference	*P value*
Attendants who enquired about other medicines the client was taking	56%	82%	29%	47%	+26%	+21%	+7%	*P<0.05*
Attendants who informed the client on how to take the medication	82%	78%	88%	37%	-4%	-51%	+47%	*P<0.05*
Attendants who informed the client on the duration of therapy	75%	81%	58%	24%	+6%	-33%	+27%	*P<0.05*
Attendants who advised on avoiding sexual activities until symptoms had resolved	35%	48%	3%	15%	+13%	+12%	+1%	*P=0.412*
Attendants who counseled the client on safer sex methods	24%	42%	2%	13%	+18%	+11%	+7%	*P<0.05*
Attendants who mentioned the risk of HIV/AIDS to the client	6%	5%	2%	6%	-1%	+4%	-5%	*P=0.05*
Attendants who recommended notifying sexual partners	42%	63%	28%	29%	+21%	+1%	+20%	*P<0.05*

Conclusions and Recommendations

The ADS intervention improved shop appearance and the cleanliness of the vicinity around drug shops. In addition, after the introduction of the ADS intervention, shops in Mityana kept more practice records, such as sales and patient records, compared to the control district of Kayunga. Even though provider perceptions were not assessed during this evaluation, it appears most owners and sellers warmed up to the intervention.

The ADS intervention appeared to increase the availability of medicines in Mityana district. The increase in availability of medicines was across both Class B (prescription only) and Class C (non-prescription) medicines. The increase in availability was also observed across therapeutic groups, including antibiotics, analgesics, and antidiarrheal medicines, among others.

The ADS intervention appears to have led to marginal increases in medicines prices in the intervention district. The increase in prices seems to be a direct response to expenses incurred in improving infrastructure, training dispensers, improving quality of services, and increasing stock levels.

Overall, the program appeared to have improved dispensing services. During a mystery shopping exercise for STI clients, the number of dispensers who sold the correct medicines increased from baseline to endline; the number of dispensers who gave correct dosage instructions also increased; and the number of dispensers who gave out patient-counseling information related to STIs also increased.

Annexes

Annex 1: Sustainable Drug Sellers Initiative, Uganda: Monitoring & Evaluation Framework

DIMENSION	VARIABLES	INDICATORS	METHODOLOGY
ACCESSIBILITY: Extent that intervention improves access to quality medicines and pharmaceutical services	Quality of pharmaceutical products Product price Product availability Quality of pharmaceutical services—STIs	% of items sampled that are registered with the NDA Average % difference in median price to patients between ADS/Class C drug shops and international reference prices for a set of tracer items (prescription and nonprescription medicines) % of a set of tracer items in stock % of encounters in which appropriate STI antibiotics were dispensed consistent with STGs for STIs % of encounters in which attendant provided instructions on how to take the medication % of encounters in which attendant asked about the symptoms of the client[5] % of encounters in which attendant asked about any medications the client may have taken % of encounters in which the attendant	Drug shop data collection in **Intervention** and **Comparison** districts • For baseline data collection, 60 randomly selected Class C drug shops total from Mityana, and 60 randomly selected Class C drug shops total from Kayunga • For endline data collection, 60 total randomly selected ADS in Mityana and 60 randomly selected Class C shops in Kayunga. • Data on quality of pharmaceutical products, product prices , and product availability collected on 30 tracer drugs using availability and price data collection tool based on SEAM and HAI methodologies • Mystery shopper visits in intervention and comparison districts to determine the management of STIs at 60 randomly selected shops in Mityana district and 60 randomly selected shops in Kayunga district.

[5] Symptoms include: consistency of discharge, color of discharge, pain associated with discharge, duration of discharge, ulcerations, itching, recent sexual contact, and sexual contact with prostitute. Additional symptoms for women include: odor of discharge and heaviness of discharge.

DIMENSION	VARIABLES	INDICATORS	METHODOLOGY
		advised consulting a hospital or clinic % of encounters in which attendant advised the client to avoid sexual activity until STI symptoms have resolved % of encounters in which attendant advised the client on the use of condoms % of encounters in which attendant mentioned the risk of HIV/AIDS infection % of encounters in which the attendant recommended notifying sexual contacts and urging them to seek care	

Annex 2: General Survey Data Collection Tool

Drug Shop General Survey

Instructions: This survey is to be applied to drug shops, not pharmacies. Ask to speak to the person in charge of the drug shop or the drug seller. Present the letter of introduction from MSH and the Ministry of Health (MOH). Explain the purpose of the study and the amount of time required to complete the questionnaire (about one to one and a half hours). Respond to any questions or concerns about confidentiality and obtain permission to carry out the survey. Explain that the interviewee(s) will receive UGX 5,000 at the end of the interview for their assistance.

CONDUCT THIS SURVEY BEFORE PRICE AND AVAILABILITY

Name of Drug Shop: _____

District: _____

Village: _____

County: _____

Sub-County: _____

Parish: _____

Town/Village: _____

Name of person interviewed: _____

Position of person(s) interviewed: _____

Collector: _____ **Date:** _____

1. What is the professional qualification of the drug sellers working in the shop?

Pharmacy Technician	
Clinical Officer	
Nurse	
Midwife	
Nurse Assistant	
Other (specify)	

2. How many years has the shop been open? _____

3. Doe the shop dispense drugs from prescriptions **Yes** ☐ **No** ☐

4 If you answered 'Yes' to question 3 above, specify the origin of the majority of the prescriptions.

_____

5 Approximately how many prescriptions do you dispense each day? _____

6. Does the shop provide the following services?

Injecting patients	
Clinical diagnosis/lab services	
Immunization and vaccination	
Wound and burn treatment/dressing	

7. List the 5 most common problems treated in your Shop

i.
ii.
iii.
iv.
v.

8. List the 5 fastest moving pharmaceutical products in your shop (Write trade name & generic name and strength where possible)

i.
ii.
iii.
iv.
v.

9. List your 5 main suppliers

i.
ii.
iii.
iv.
v.

	Yes	No
10. Does the shop have access to telephone services		
11. Does the shop have water for hand washing?		
12. Does the shop have access to toilet facilities?		
13. Are there expired medicines on the shelves?		
14. Is the floor clean and tidy?		
15. Are walls and shelving clean?		
16. Is the shop free from pests/vermin?		

17. How do you package tablets and capsules?

In ordinary paper	
In plastic/paper envelopes	
Other (Specify)	

18. Does the shop have a dispensing tray? **Yes** ☐

No	

19. When was the last time the shop was inspected by a government authority?

Within the last year	
Within the last 2 years	
Never	
Don't know	

20 If your shop was inspected, which entity conducted the inspection?

_____

21. Have you had any of the following training within the last two years?

TRAINING	**Y/N**	**PROVIDER OF TRAINING**	**COST OF TRAINING**
Malaria management			
Management of childhood diseases			
Maternal health			
Management of diarrheal diseases			
Family planning			
Dispensing of medicines			
Other training (specify)			

22. Which of the following records does the shop keep?

Record Exists	Y/N	Record up-to-date	Y/N
Book of sales			
Prescription books			
Patient register			
Stock record book			
Other			

23. How do you manage expired drugs?

Burn	
Store them separately	
Bury	
Dump	
Return to supplier	
Other	

Annex 3: Price and Availability Data Collection Tool

This form is used for the indicators listed below:

- Average percentage of tracer list items in stock
- Average percentage difference in price to clients between drug shops in Mityana and Kayunga districts for a list of tracer items selected

Important: *the medicines and supplies on the tool are essential medicines on the ADS list.*

Summary of data collection procedure:

Where to Go	Whom to Ask	What to Get
Drug shops selected for the exercise	Inform the attendant of the purpose of the survey and obtain permission to collect the data. Where a shop has also been selected for the simulated client exercise, this should be conducted before the price and availability exercise.	Ask to see if the items on the list are in stock. Note the pack sizes and prices for the cheapest and most expensive brands.

Instructions for completing the forms:

1. Introduce yourself to the attendant at the shop and explain the purpose of your visit. You may wish to present the letter of introduction or authorization to conduct the survey.

2. **Name and location of the shop**: Explain that the information gathered will be kept confidential. The name of the shop and location will be used only for reference.

3. **Availability:** Ask the attendant to show you the drugs on the list, one by one. You may offer various name brands if the generic names are not known. When you have seen the item and determined that it is not expired, mark that it is available.

4. **Cheapest and most expensive prices:** Ask the attendant to see the most expensive brand of the product and the least expensive brand. Note the number of units in the pack and the pack price.

Use this form to collect information on stock availability and prices.

Name of Drug Shop: _____

District: _____

Village: _____

County: _____

Sub-County: _____

Parish: _____

Town/Village: _____

Name of person interviewed: _____

Position of person(s) interviewed: _____

Collector: _____ Date: _____

Note: *If product is sold by individual units (e.g., tablet) rather than packs, note unit price and mark "1" for number of units per pack.*

	Generic name, dosage form, strength	Price category	Brand name(s)	Available Y/N	No. of units per pack	Unit price	Expired Y, N, DK
1	Albendazole tablet 200mg	Lowest					
		Highest					
2	Amoxicillin capsule 250mg	Lowest					
		Highest					
3	Amoxicillin suspension 125mg/5ml	Lowest					
		Highest					
4	Artemether + lumefantrine tablet 20/120 mg [12 + 12]	Lowest					
		Highest					
5	Aspirin (acetyl salicylic acid) tablet 300mg	Lowest					
		Highest					
6	Benzyl benzoate lotion 25%	Lowest					
		Highest					
7	Benzyl penicillin injection 1MU	Lowest					
		Highest					
8	Chlorhexidine gluconate solution 20%	Lowest					
		Highest					
9	Chloroquine phosphate	Lowest					

	Generic name, dosage form, strength	Price category	Brand name(s)	Available Y/N	No. of units per pack	Unit price	Expired Y, N, DK
	tablet 300mg base	Highest					
10	Chlorpheniramine tablets 4mg	Lowest					
		Highest					
11	Ciprofloxacin tablets 500mg	Lowest					
		Highest					
12	Combined oral contraceptive pill	Lowest					
		Highest					
13	Males condoms	Lowest					
		Highest					
14	Cotton wool 100mg	Lowest					
		Highest					
15	Co-trimoxazole suspension 240mg/5ml	Lowest					
		Highest					
16	Co-trimoxazole tablet 480mg	Lowest					
		Highest					
17	Doxycycline capsule/tab 100mg	Lowest					
		Highest					
18	Erythromycin tablet 250mg	Lowest					
		Highest					
19	Ferrous sulfate tablets	Lowest					
		Highest					
20	Ferrous/folic acid tablets	Lowest					
		Highest					
21	Folic acid tablets	Lowest					
		Highest					
22	Glucose infusion 5%	Lowest					
		Highest					
23	Ibuprofen tablet 200mg	Lowest					
		Highest					
24	JIK household antiseptic 500mL	Lowest					
		Highest					
25	Mebendazole tablet 100mg	Lowest					
		Highest					
26	Metronidazole tablet 200mg	Lowest					
		Highest					
27	Nitrofurantoin tablets	Lowest					

	Generic name, dosage form, strength	Price category	Brand name(s)	Available Y/N	No. of units per pack	Unit price	Expired Y, N, DK
	100mg	Highest					
28	Nystatin pessary 100,000 iu	Lowest					
		Highest					
29	Nystatin suspension 100,000 iu	Lowest					
		Highest					
30	ORS	Lowest					
		Highest					
31	Paracetamol tablet 500mg	Lowest					
		Highest					
32	Procaine penicillin fortified 4MU	Lowest					
		Highest					
33	Quinine injection 300mg/ml	Lowest					
		Highest					
34	Quinine tablets 300mg	Lowest					
		Highest					
35	Salbutamol tablets 4mg	Lowest					
		Highest					
36	Sodium chloride infusion 0.9%	Lowest					
		Highest					
37	Surgical gloves	Lowest					
		Highest					
38	Sulfadoxine + pyrimethamine tablet 525 mg	Lowest					
		Highest					
		Highest					
39	Tetracycline eye ointment 1%, 3.5g	Lowest					
		Highest					
40	Zinc tablet 20mg	Lowest					
		Highest					

Annex 4: Management of STI Data Collection Tool

Instructions for Simulated Clients/Data Collectors

Scenario for Simulated Client: Sexually Transmitted Infection

Present as an adult male with purulent urethral discharge with dysuria. You also have symptoms of burning sensation while passing urine and increased frequency of micturition. You have had these symptoms for over two weeks. The discharge is copious and is apparent even when one does not squeeze the penis.

If the drug seller asks these questions, reply as follows:

Previous medicines taken: Amoxicillin three times daily for 7 days.

Have you been to a clinic or doctor? No, your previous medication was from a drug shop

Did you complete the course? Yes

Simulated Client Form for STI

Name of Drug Shop: _____

District: _____

Village: _____

County: _____

Sub-County: _____

Parish: _____

Town/Village: _____

Name of person interviewed: _____

Position of person(s) interviewed: _____

Collector: _____ **Date:** _____

1. What are the name(s) of the product(s) that you purchased? For all drugs sold to you, write the following information

	Name of drug, strength	Dosage instructions given	Quantity
i.			
ii.			
iii.			

2. What are the name(s) of the product(s) that were recommended by the attendant but you did not purchase?

i.	
ii.	

3. Did the attendant ask about symptoms? **Yes** ☐ **No** ☐

4. Did the attendant ask about other medications you are taking/ you took? **Yes** ☐ **No** ☐

5. Did the attendant tell you the dosage and frequency of taking the medication? **Yes** ☐