

SEAM Tanzania

Accredited Drug Dispensing Outlets: Monitoring Medicine Use

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Background

Duka la Dawa Baridi

In Tanzania, there are 50 percent more *duka la dawa baridi* (DLDB) than any other type of public health facility. DLDB were constituted by the Tanzania Food and Drugs Authority (TFDA) to provide nonprescription drugs to consumers. In the rural areas, for many common medical problems such as malaria, diarrhea, and acute respiratory infection, DLDB are often the most convenient retail outlets from which to buy drugs, including those prescribed by government health care workers. The shops therefore invariably stock prescription medicines that are prohibited for sale by the TFDA. The quality of these medicines cannot be assured; shops lack adequate facilities for proper storage of medicines, and the majority of dispensing staff lack basic qualifications, training, and business skills. Regulation and supervision in the DLDB are also inadequate.

Accredited Drug Dispensing Outlets

In response to these problems, the TFDA and MOH established a network of accredited drug dispensing outlets (ADDOs) to provide selected essential medicines and other health supplies in the five districts of the Ruvuma region. The approach involved changing the behavior of shop owners and dispensing staff by providing education, incentives, and improved local regulatory capacity. In addition, the approach affected client demand and expectation of quality products and services.

The first ADDO shops received accreditation from the Minister of Health in August 2003. Since then, more than 150 shops have been accredited across the Ruvuma region. There are now fewer than 10 nonaccredited drug shops remaining in the region.

The Challenge

The SEAM Program and its initiatives are focused on improving four major dimensions of access to medicines: geographic accessibility, availability, affordability, and acceptability. One of the constants of improved access, which helps anchor these dimensions, is quality of care. Ongoing monitoring of medicine use is vital to detecting poor care practices and improving use. Monitoring is needed to determine whether costly or inappropriate medicines are being sold.

Objective

To explore a simple method of monitoring drug use in ADDOs that would be feasible as an ongoing way to ensure appropriate drug use.

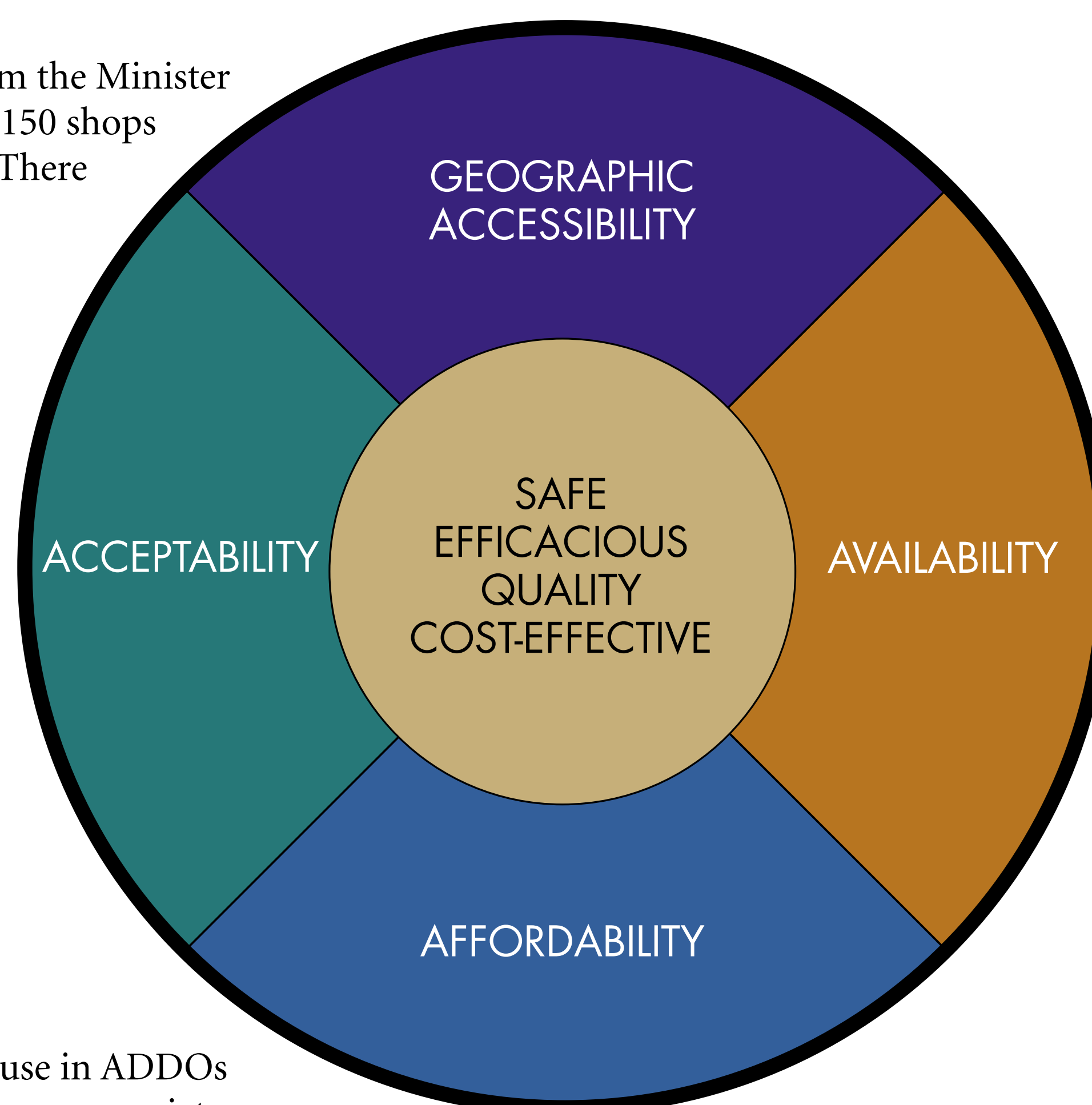
Methods

An Access-based data program was developed to analyze prescribing and dispensing data by drugs dispensed or by patient care for all shops, by location, gender, age, and survey.

All ADDOs were asked to keep a detailed log book of patient encounters. Although this was a time-consuming task, the shop owners agreed to participate because they were motivated by the possibility of becoming accredited.

For September and December 2003 and for March and June 2004, 100 patients were randomly selected from the record books of each ADDO shop and entered into the database. There were more shops in the latter months than the former.

Prescribing indicators were calculated both overall and for four conditions of public health importance: malaria, pneumonia, ARI, and diarrhea.



Results

Malaria	All	Under 5 Years Old	≥ 60 Years Old
Drugs per case	1.6	1.6	1.5
Cost per case (in Tanzania shillings)	471	436	486
% of cases receiving antibiotics	4.8%	8.1%	4.6%
% of cases receiving injection	2.6%	6.6%	1.5%
% of cases receiving antimalarials	88.1%	85.6%	91.8%
% of encounters dispensed SP	58.9%	29.0%	74.9%
Avg. mg SP dispensed	1,449	588	1,576
% of encounters dispensed amodiaquine	14.6%	13.9%	13.0%
Avg. mg amodiaquine dispensed	1,339	502	1,608
% of encounters dispensed amodiaquine syrup	11.9%	11.9%	0.0%
% of encounters dispensed quinine	10.7%	24.2%	2.9%
Avg. mg quinine dispensed	5,342	2,383	9,231
% of encounters dispensed quinine injection	2.9%	9.6%	1.3%
% of encounters chloroquine dispensed	0.0%	0.0%	0.0%

Note: Correct dose for sulfadoxine-pyrimethamine (SP): adult, 1,500 mg; average child, 500 mg. Correct dose for amodiaquine: adult, 1,600 mg; average child, 350 mg. Correct dose for quinine: adult, 12,600 mg; average child, 3,150 mg

Diarrhea	All	Under 5 Years Old	> 60 Years Old
Drugs per case	1.4	1.3	1.1
Cost per case (in Tanzania shillings)	466	521	456
% of cases receiving antibiotics	24.6%	29.1%	20.0%
% of cases receiving injection	0.3%	0.0%	0.0%
% of encounters dispensed oral rehydration salts (ORS)	13.3%	29.1%	1.7%
% of encounters dispensed metronidazole	70.1%	53.4%	81.7%

Note: Recommended treatment for simple diarrhea is ORS alone, with no antibiotics or metronidazole.

ARI	All	Under 5 Years Old	> 60 Years Old
Drugs per case	1.3	1.2	1.3
Cost per case (in Tanzania shillings)	674	702	664
% of cases receiving antibiotics	42.0%	40.7%	41.6%
% of cases receiving injection	0.5%	0.3%	0.0%
% of encounters dispensed co-trimoxazole	4.0%	6.6%	4.2%
Avg. mg co-trimoxazole dispensed	4,581	1,217	7,200
% of encounters dispensed amoxicillin	19.5%	19.3%	20.1%
Avg. mg amoxicillin dispensed	2,625	3,388	4,039
% of encounters dispensed with benzylpenicillin	0.2%	0.1%	0.0%

Note: Recommended treatment for ARI would not include an antibiotic.

Pneumonia	All	Under 5 Years Old	> 60 Years Old
Drugs per case	1.3	1.2	1.3
Cost per case (in Tanzania shillings)	774	774	815
% of cases receiving antibiotics	98.7%	98.0%	98.7%
% of cases receiving injection	4.6%	4.5%	3.8%
% of encounters dispensed co-trimoxazole	5.9%	5.5%	5.1%
Avg. mg co-trimoxazole dispensed	5,580	—	7,200
% of encounters dispensed amoxicillin	61.8%	67.7%	53.2%
Avg. mg amoxicillin dispensed	2,445	—	3,757
% of encounters dispensed benzylpenicillin	2.6%	4.0%	2.5%

Note: Recommended dose for co-trimoxazole: adult, 4,800 mg minimum; average child, 2,400 mg. Recommended dose for amoxicillin: adult, 5,000 mg; average child, 5,000 mg.

ADDO Monitoring Data Compared with Data from Other Facilities Visited during the SEAM Survey, 2001

	ADDO Data	SEAM Assessment Data		
		MOH	Private	NGO
Number of facilities	201	22	15	3
Number of patients	20,197	793	538	108
% of child cases	14.1%	38.7%	32.0%	32.4%
Drugs per case	1.3	1.6	1.8	2.3
% of encounters dispensed antibiotics	22.4%	49.1%	55.8%	45.4%
Number of cases of malaria	6,421	173	117	35
% of child cases	33.2%	28.7%	26.7%	48.6%
Number of patients with ARI	3,002	90	74	3
% of child cases	25.9%	15.6%	20.3%	2.9%
% of encounters dispensed antibiotics	42.0%	88.9%	93.2%	66.7%
Number of patients with pneumonia	743	36	27	4
% of child cases	7.0%	8.5%	11.0%	5.7%
% of encounters dispensed antibiotics	98.7%	100.0%	100.0%	100.0%
Number of cases of diarrhea	792	21	5	1
% of cases of diarrhea	3.9%	2.6%	0.9%	0.9%
% of child cases	5.2%	3.6%	2.3%	2.9%
% of encounters dispensed antibiotics	24.6%	23.8%	20.0%	100.0%
% of encounters dispensed ORS	13.3%	81.0%	80.0%	100.0%
% of encounters dispensed metronidazole	70.1%	33.3%	40.0%	0.0%

Conclusions

This monitoring exercise has highlighted the strengths and weaknesses of ADDO dispensing practices.

Only about 14 percent of patients are noted as being under five, although this may be due to a record-keeping error. The data depends on the accuracy of recording data on the patients the shops have seen. There is no evidence on exactly how correct and complete those data are; however, because the data from different shops are consistent in many ways, it can be assumed that the data is useful for assessing how well these shops are dealing with diseases of public health importance.

Overall, ADDOs compare favorably with other establishments in Tanzania that were surveyed during the SEAM assessment. However, there are distinct areas for improvement and the monitoring data can both detect and monitor the effectiveness of interventions to improve practices.

Malaria is seen very commonly, but in children, quinine and quinine injections (a third-line treatment) are used more often in Songea urban and rural areas (and at a similar rate in Mbinga) than SP, which is a first-line treatment. The injections tend to be used in a single dose, so dispensers may be giving one injection and referring the patient on for further treatment elsewhere. The quinine tablets are being given in low doses, which reflects the difficulty of taking tablets for seven days. It is much easier (but less profitable) to give the single needed dose of SP.

For ARI, antibiotics are used more frequently than needed (in around 40 percent of cases seen), although this compares favorably with other health establishments in the SEAM survey. For pneumonia, co-trimoxazole, a first-line drug, is used very rarely, in about 6 percent of cases, and seems to be administered in proper doses for adults and children under five years old. Amoxicillin, another first-line drug, is used much more frequently, in 60–70 percent of cases, at doses lower than necessary.

Diarrhea in particular is managed poorly, with a high usage of unnecessary antibiotics and metronidazole, and a low usage of ORS. It is conceivable that people purchase their ORS from other sources, but almost all patients with diarrhea who are seen in ADDOs are given an antibiotic or metronidazole. Furthermore, not many patients with diarrhea are seen in ADDOs in general, and those who are seen may present more serious cases.

It has been shown in ADDOs that drug register maintenance is feasible, and periodic drug use review, based upon the drug register data, can reveal strengths and weaknesses in dispensing practices. If there are any chances for supervisory and educational interventions, it is these aspects that should be the focus for improvement.