

Baseline Survey of the Pharmaceutical Sector in Tanzania 2002

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Acronymys

- ARI – Acute Respiratory Infections
- EDL – Essential Drugs List
- EDM – Essential Drugs and Medicine Policy
- EDP – Essential Drugs Programme
- HSR – Health Sector Reforms
- INRUD – International Network for Rational Use of Drugs
- MoH – Ministry of Health
- NDP – National Drug Policy
- NEDLIT – National Essential Drugs List of Tanzania
- NGO – Non-Governmental Organisation
- OPD – Out Patient Department
- ORS – Oral Rehydration Salts
- STG – Standard Treatment Guidelines
- URTI – Upper Respiratory Tract Infections
- WHO – World Health Organisation
- FEFO – First Expiry First Out
- PSU – Pharmaceutical Supplies Unit
- SP – Sulphadoxine 500mg/Pyrimethamine 25mg

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Executive summary

A survey on monitoring and assessing the pharmaceutical sector in Tanzania was carried out so as to know whether or not the population has access to essential drugs that are of good quality, efficacious and are being used properly. The survey also aimed at generating current information on the pharmaceutical situation in Tanzania. The information so gathered will form a basis for the review of the National Drug Policy (NDP) of 1991 and the Pharmaceutical Master Plan of 1992–2000.

This survey was carried out in October – November 2002 involving four purposely selected geographical areas, ie Mwanza, Kilimanjaro, Mbeya and the capital city, Dar es Salaam. From the four areas a total of 20 public health facilities were randomly selected (five from each study area). Around each of the health facilities visited, 15 households and one private pharmacy/drug outlet were surveyed.

Since the survey focused on monitoring and assessing the access, quality and rational use of medicines, the WHO level II core indicators were used. Face to face interviews, exit interviews plus retrospective record data were used to collect the required information.

A summary of key results of this survey report is as follows:

Indicator	Results
Stockout duration of 28 days	75%
Affordability of key drugs for children	51%
Affordability for adults	86%
Patient knowledge on dispensed drugs	80%
The use of antibiotic for non pneumonia ARI	90%
The average prescription of more than one antibiotic	6%
Adequate labeling of drugs	76%
Average number of drugs per encounter	1.8
No. of Patients receiving antibiotics per encounter	42%
Percentage of patients receiving injection	14%
Prescribing according to EDL	98.5%

Percentage of expired drugs in health facilities	13%
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It has been noted in this survey that there are more areas of the pharmaceutical sector in Tanzania which have shown improvement than those which raise concern of every stakeholder of the sector. The evidence for this deduction is based upon the indicators which have shown positive results and these are:

- Availability of key drugs in health facilities
- Stock out duration
- Affordability of key drugs in health facilities
- Adequacy of drug storage
- Patient knowledge
- Adequately labeled drugs
- Average number of drugs per encounter
- Percentage of prescribed drugs dispensed
- Patients receiving injections
- Prescribing according to EDL
- Percentage of expired drugs

The areas of concern as evidenced by those indicators which, showed negative trends are:

- Tracer cases treated according to STGs
- Adherence to recommended treatment guidelines in treating diarrhoea in children
- Number of patients receiving antibiotics in one encounter and
- Availability of Guidelines, STG, EDL etc.

On the basis of the above results, the following conclusions and recommendations have been drawn:

- The availability of/and access to key drugs has improved in primary health facilities however, there is still room for the situation to be even better especially on the area of appropriate drug supply management
- Rational Use of Drugs is improving and again, efforts should be made to further raising the standards and sustain them accordingly
- Adherence to prescribing according to EDL is excellent and need to be encouraged and sustained/maintained
- Adherence to STG is low and the situation has some areas whose poor status has remained so for about ten (10) years! The people concerned should institute corrective measures. The typical example here is the over usage of antibiotics.
- Prescribers and dispensers need further training and continuing education especially on areas of Rational Use of Drugs and Management of Drug Supply
- Preventive services need to be strengthened to improve the general sanitation in the community
- The laboratory services need to be strengthened so as to support rational prescribing of drugs
- The availability of STG, EDL and other National Guidelines is unacceptably low, efforts to improve the situation should be made which should include mounting of inspection exercises to health facilities for this purpose.

The general analysis of the survey data shows a considerable improvement in the performance of the pharmaceutical sector. The major recommendation is that, those indicators which, depicted unfavourable results should be addressed with new strategies of a revised NDP and the Pharmaceutical Master Plan.

Introduction

1. Tanzania Country Profile



- Population 34.5 million
- Urban: Rural 26 : 74
- GNP/Capita \$260
- Per capita health expenditure \$9
- Pharmaceutical annual expenditure per capita public+private \$ 2
- Allocated public expenditure per capita–Pharm \$1.30 (02/03)
- Agriculture 46% of GDP
- Annual Inflation 5%
- Literacy 62%
- Dependency ratio 104%
- Total fertility 6.5

- Infant mortality 102
- <5 mortality 154
- Maternal mortality 530
- Life expectancy 51
- Access to health facilities 93% (1 hr)
- Population/health facility 7,431
- Immunization coverage 83%
- Annual malaria deaths >100,000
- Poor/least poor ratios
 - Health indicators 1.7
 - Health interventions 0.62
- Population living with HIV 9.4%

2. Background Information

The overall objective of the National Health Policy is to improve the health and well being of all Tanzanians with a focus on those most at risk and to encourage the health system to be more responsive to the needs of the population, which stands at a total of 34,568,609 people (Mainland: 33,584,078 and Zanzibar: 984,531)(census 2002). The National Health Policy along with its underlying National Drug Policy (NDP) and the Health Sector Reform (HSR) clearly spell out the government responsibility for ensuring that Tanzanians have equitable access and utilization of health services offered by public, private and NGO institutions through the “*public–private partnership*” phenomenon.

In spite of the progress made since independence and the recent favourable economic growth realized so far, the Tanzania’s social indicators, which include health, are still below the acceptable levels. The causes that have resulted in the current unfavourable situation include, amongst others:

- Shortfalls in the annual health sector budget allocations
- Increased demand for health care due to expanding population and changing disease patterns
- Increased costs of essential health care inputs e.g. personnel emoluments, drugs, equipment and medical supplies.
- Increased morbidity and mortality due to HIV/AIDS

In response to a number of problems encountered in the pharmaceutical sector, the government of Tanzania through its Ministry of Health has taken several steps in an attempt to improve the situation. In 1991 it endorsed the first National Drug Policy (NDP), which serves as the basis upon which future planning of pharmaceutical sector is carried out. A master plan for the pharmaceutical sector 1992 – 2000 was developed from the NDP clearly indicating the objectives, strategies, time frames and the budget required to achieve development in various key areas of the pharmaceutical sector. The government further established complementary/alternative–financing mechanisms/options to alleviate the problems namely:

- User Fees (Cost–sharing/Drug Capitalization)
- Community Health Fund
- The National Health Insurance Scheme

The main objective of these developments is to ensure that the most needed drugs and medical supplies of good quality are made available in health facilities at all times with special emphasis on rural health facilities.

Monitoring and assessing the pharmaceutical situation in Tanzania, like in any other country, is important so as to know whether or not the population has access to essential drugs that are of good quality, efficacious and are being used rationally.

Since the pharmaceutical sector is complex, a systematic method of gathering data is very important to assess if the above objectives are met. There are multiple, cross cutting factors that can influence the achievement of these objectives and a variety of strategies to achieve them that can be implemented and adopted by a particular country.

The International Network for Rational Use of Drugs (INRUD) in collaboration with the World Health Organization (WHO) has developed core indicators for monitoring national drug policies that can be used to systematically assess, evaluate and monitor the formulation and implementation of various strategies and components of the pharmaceutical system.

The indicator-based method of assessing the pharmaceutical situation can be useful for various groups and parties involved in the provision of pharmaceuticals. The method can clarify the responsibilities of various players in the pharmaceutical system and assess their contributions to attaining key objectives.

Indicators can provide policy-makers and managers with a clear picture of national and institutional problems so that they can reassess their strategies and priorities. Results can be used as a guide to prioritize and strengthen pharmaceutical system components and strategies to achieve maximum impact or to synchronize policies.

The core indicators have been grouped into three levels. Grouping monitoring indicators by level has the following advantages:

- Suits the different purpose of those interested in information on the country's pharmaceutical situation:
- Rapid assessment of key pharmaceutical components.
- Monitoring outcome and achievement of key objectives of the pharmaceutical policy.
- In-depth assessment of specific system components.
- Provides practical methods for regularly monitoring NDPs and their components
- Encourages regular reporting and exchange of pharmaceutical information among facilities, districts, regions, government and non-government agencies within countries as well as international organization.

Rapid assessment, **Level I** indicators are intended to get information on the existing infrastructure and key processes in each component of the pharmaceutical sector.

Level II indicators provide systematic data to describe the degree of attainment of the NDP objectives *access, quality and rational use*. Access is measured in terms of availability and affordability of essential drugs especially to the poor and in the public sector. Measuring the actual quality of the drugs involve testing drug samples and can be expensive. Rational use is measured by examining patterns of drug use and the implementation of key strategies such as STGs and EDLs.

Level III indicators – such as those in the WHO manual on Indicators for Monitoring National Drug Policies can be used to assess in more detail the country's NDP programme and the implementation of each component of the pharmaceutical system. Countries implementing national drug policies can use this as baseline assessment and follow up studies can be conducted depending on needs and capabilities for extensive assessment.

Following the fact that the government has invested substantially in ensuring that people have access to essential drugs and medical supplies of good quality and that the drugs are being used properly. This study has adopted the use of level II core indicators which measure access to drugs and medical supplies by the population, matters on quality of drugs and matters on rational use of drugs. The WHO recommends that activities to strengthen the pharmaceutical sectors are organised under the umbrella of a rehearsal drug policy

(WHO, 1998).

OBJECTIVES OF THE STUDY

- To assess the country capacity such as availability infrastructure, logistic and human resources to implement the various elements of NDP.
- To monitor the process and strategies used in the implementation of various components of the pharmaceutical sector to see if they achieve the objectives of NDP and the Pharmaceutical Master Plan.
- To collect baseline information on the pharmaceutical sector in Tanzania from the facility to the central levels, this will provide a clear picture of the current situation so as to reassess the strategies and priorities to be used during the planned revision of the NDP.

Study Design And Methodology

The study was both prospective and retrospective cross-sectional survey involving twenty randomly selected health facilities and three hundred households.

Study population

The study population was drawn from clients and workers of public health facilities treating outpatients and with pharmacy/drug units. Also, from private pharmacies, drugs warehouse and households around the health facilities.

Sampling

The survey was conducted in Tanzania mainland, which is divided into 21 administrative regions. It is further divided into 121 districts. Each district is subdivided into divisions, wards, villages and hamlets.

For a situational analysis in a country, a minimum of 4 geographical areas was selected and the capital city is usually included. The other three geographical regions were purposely selected to represent the different geographical, demographic and socio-economic situations in the country.

The 4 geographical areas selected were: –

- Dar es Salaam
- Mbeya
- Kilimanjaro and
- Mwanza.

In each region one district was randomly selected. From these 4 identified districts, 20 public health facilities were randomly selected within 10 kilometres distance from the different districts. These formed the basis (reference points) for selecting private outlets and a total of four Zonal MSD warehouses were included one from each region which cater to general out patients and have a pharmacy or a drug dispensing unit. Around each health facility 15 households were randomly selected from a total number of households from the same area making a sample size of 300 households in total; 20 private outlets were also randomly selected. The total number of household around each health facilities was selected.

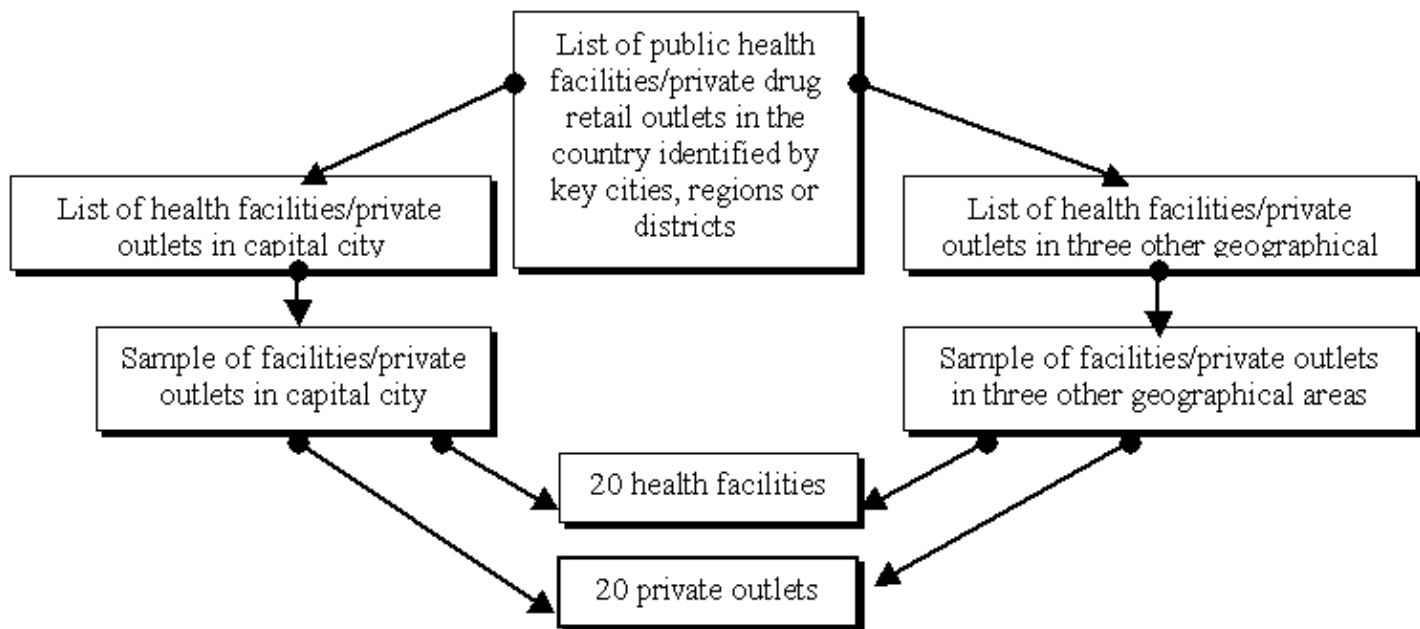


Figure 1: Sampling and selection process

Table 1: The sample of survey units

	Regions	Districts	Health Facilities	Pharmacies	Warehouses	Households
	Dar es Salaam	Temeke	5	5	1	75
	Mbeya	Urban	5	5	1	75
	Kilimanjaro	Hai	5	5	1	75
	Mwanza	Nyamagana	5	5	1	75
Total	4	4	20	20	4	300

Table 2: Classification of Health Facilities

	Region	District	Name of Health Facility	Status
	Dar es Salaam	Temeke Municipality	Temeke	Hospital
			Buza	Health Centre
			Mji Mwema	Dispensary
			Chekeni Mwasonga	Dispensary
			Nunge	Dispensary
	Mbeya	Urban	Mbeya	Regional Hospital
			Igawilo	Health Centre
			Mwansekwa	Dispensary
			Kiwanja Mpaka	Health Centre
			Itende	Dispensary
	Kilimanjaro	Hai	Hai	District Hospital
			Nronga	Dispensary
			Ngarenairobi	Dispensary

			Masama	Health Centre
			KIA	Dispensary
	Mwanza	Nyamagana	Sekotoure	Regional Hospital
			Rumagila	Dispensary
			Sakwa	Dispensary
			Igoma	Dispensary
			Buhongwa	Dispensary
Total	4	4	20	

Ethical consideration

Ethical considerations were adhered to throughout while conducting this study. Permission was sought beforehand from the regional and district authorities to work in their areas. Moreover, a number of ethical issues were also considered for example all information collected were treated confidentially, consent was sought and freedom of participation or opting out was provided.

At the same time all data collectors were given introductory letters to show to the heads of facilities, warehouses, private pharmacies and ten-cell leaders.

Pre-testing:

The tools for data collection were pre-tested in Kinondoni – Dar es Salaam region. The aim of pre-testing was to assess the applicability of the tools in the Tanzania situation. Relevant deletions and additions were effected on the final tools and methodology. **(See annex 16)**

Data collection

Face to face interview method with some exit interviews, plus retrospective record data sampling were used to collect information. These methods used the standardized tools developed by the WHO, mainly to measure the degree of attainment of the strategic pharmaceutical objectives of improved access, quality and rational use.

Access was measured in terms of availability and affordability of key drugs, which are used to treat the top 10 diseases as recommended by the MoH Tanzania. These are: –

- Malaria
- URTI
- Diarrhoea
- Worms
- Pneumonia
- Eye infection
- Fungal
- Allergies
- Pain
- Anaemia

The key drugs to treat the above top ten diseases include: –

- Amoxicillin 250mg tablets or capsules
- Aspirin 300mg tablets
- Chlorpheniramine 4mg tablets

- Co-trimoxazole 400/80mg tablets
- Ferrous salts 200mg
- Folic acid 5mg tablets
- Mebendazole 100mg tablets
- Oral rehydration salts (ORS)
- Paracetamol 500mg tablets
- Povidone iodine
- Procaine penicillin 4mu injection
- Quinine injection 600mg/2ml
- Sulfadoxine–pyrimethamine 500/25mg tablets
- Tetracycline eye ointment 1%
- Whitfield ointment (benzoic acid compound)

Quality, on the other hand, was assessed by adequacy of handling and storage of drugs. Finally, rational use was measured by examining patterns of drug use, and the implementation of key strategies such as STGs and EDLs.

Surveys were conducted to measure the indicators as follows:

? Public health facilities were used to gather information about:

- % of expired drugs.
- Availability of key drugs.
- Stock out duration.
- Adequacy storage.
- Affordability of key drugs (Treating Pneumonia without hospitalization).
- Average number of drugs per prescription.
- % of patients receiving injections.
- % of drugs in EDL.
- % of patients receiving antibiotics.
- % of drugs dispensed.
- % of drugs with adequate label.
- % of patients who know how to take drugs.
- Availability of STG for common local conditions.
- Availability of EDL at the facility and other relevant materials.
- % of tracer cases treated using recommended treatment guideline (STG).

? Private retail outlets to assess:

- % of expired drugs.
- Availability of key drugs.
- Stock out duration.
- Adequate storage.
- Affordability of key drugs (Treating pneumonia without Hospitalization).
- % of expired key drugs
- Availability of key drugs.

? Household around each health facility was conducted to assess:

- Household access and use of medicines.

Before implementing the survey, the top ten diseases in Tanzania were listed and the key drugs to manage them were also identified. These key drugs were listed on the survey forms **1a**, **1b**, **2a** and **2b** (Annexes 1–4). Likewise, drugs and preparation for standard treatment of pneumonia were identified and listed on survey form **4**. Altogether ten (10) survey forms were used for monitoring and assessing the pharmaceutical situation in Tanzania. (Forms: survey forms 1a–10 in annexes).

Main study results

Public health facilities' results

1. Availability of key drugs in health facilities

Figure 2 below shows availability of key drugs for treating the top ten diseases. 87.28% of key drugs are available in the zonal warehouses. In two regions the availability is above 90%.

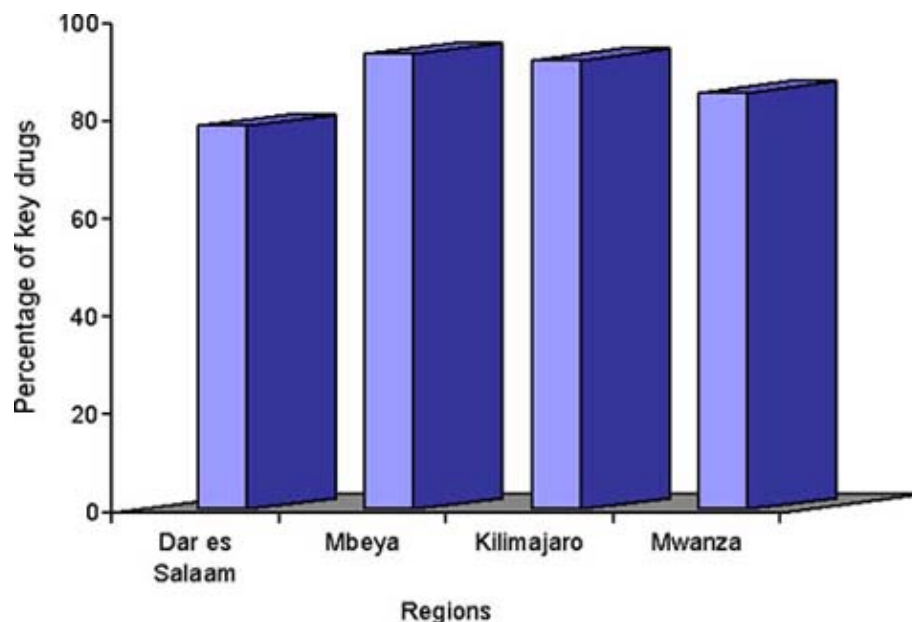


Figure 2: Availability of key drugs for treating top ten diseases

2. Stock-out duration

In this study it was found out that the average stock-out duration for all essential drugs is 28 days (Median 21.2, Maximum days 67.1, and Minimum days 3).

3. Affordability of key drugs in health facilities

In this study it has been revealed that on average 51% and 86% of the lowest daily government salary was spent to purchase drugs from private pharmacies for children and adult patients respectively.

4. Adequacy of drug storage

The average adequacy of storage was found to be 9 for Zonal warehouses and 7 for public pharmacies. This rating is out of an 11 ranking scale indicator.

5. Patient Knowledge

The result indicates that the average patient knowledge about dispensed drugs was 80%.

5. Tracer cases treated according to STGs

Figure 3: below shows the use of antibiotics for non-pneumonia ARI is over 90% in three regions and 66% in one region.

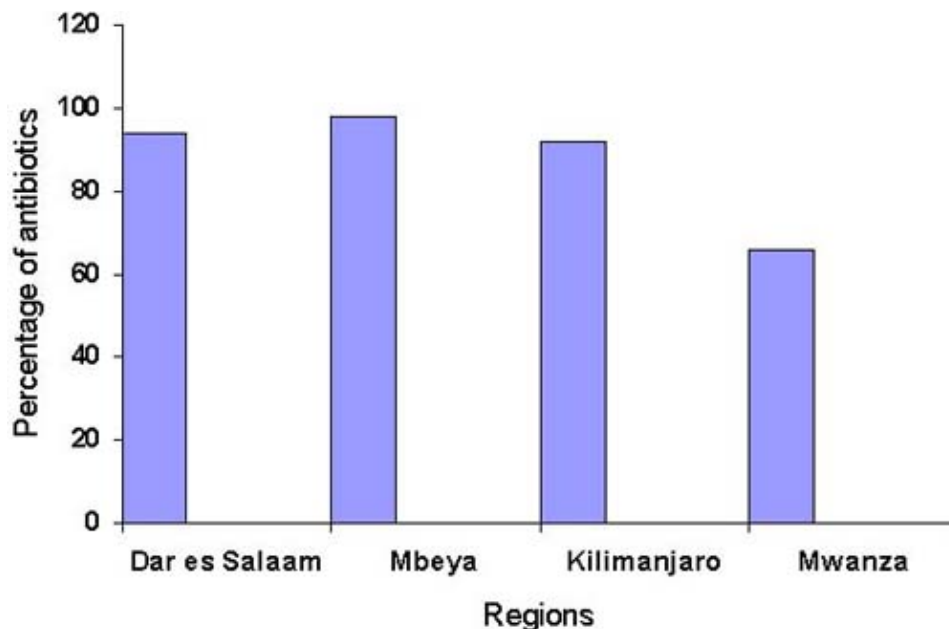


Figure 3: Percentage of antibiotic use in health facilities for treating non-pneumonic-ARI

The results in Figure 4 below show that in three regions the use of more than one antibiotic for treating mild/acute pneumonia is below 6%. It is high in one region, about 42%. In this particular case Amoxycillin was prescribed concomitantly with Co-trimoxazole, where the latter is not indicated.

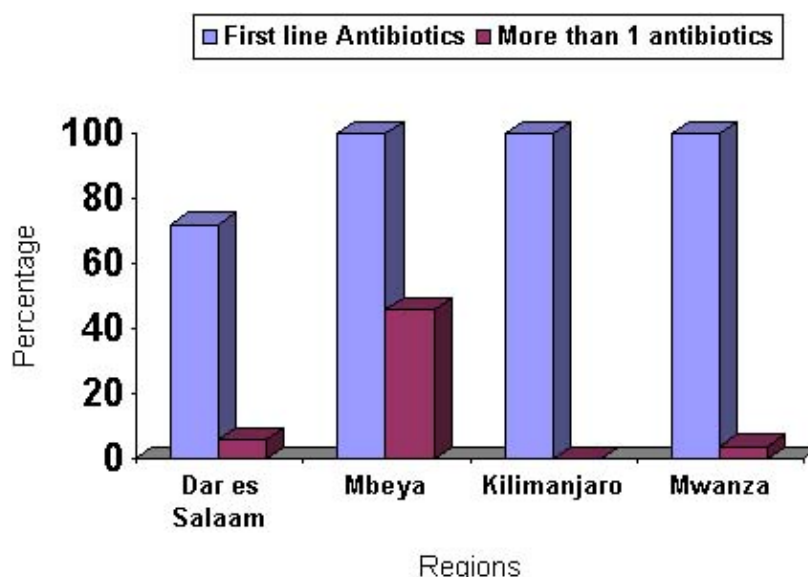


Figure Percentage of patients receiving more than one antibiotic to treat mild/acute pneumonia

6. Adherence to recommended treatment guidelines in treating Diarrhoea in children

Figure 5 below shows the adherence to recommended treatment for diarrhoea in children. The trend in all the surveyed areas shows a high non-adherence by the indiscriminate use of antibiotics of about 44% on average. However, ORS is prescribed on average of 82% of the cases. There are important differences among regions (Dar es Salaam, 82%; Mbeya, 80%; Kilimanjaro, 70% and Mwanza, 96%)

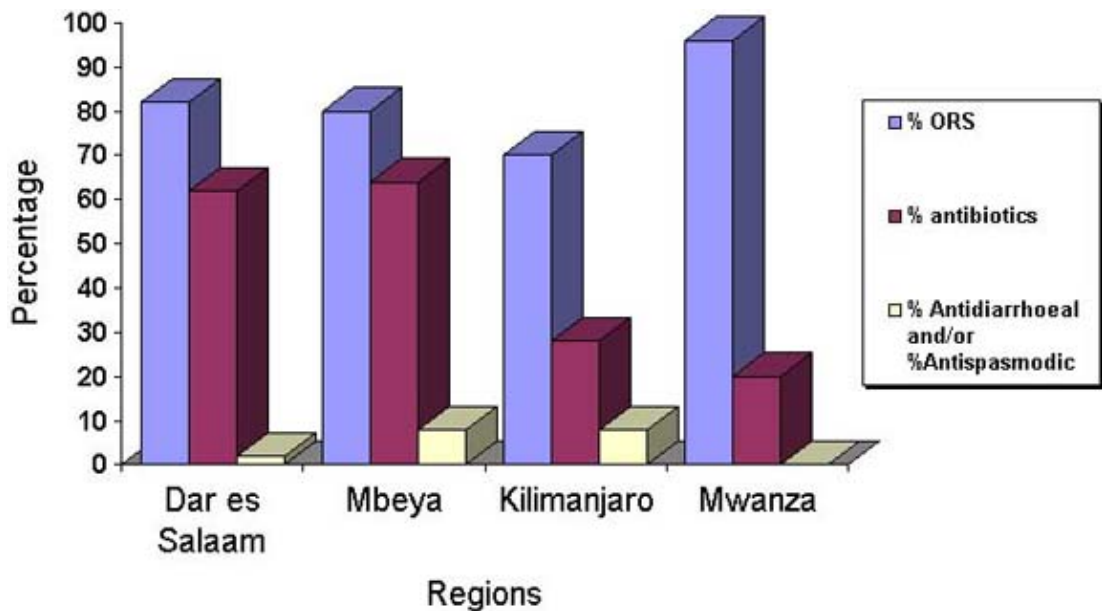


Figure 5: Adherence to recommended treatment guidelines in treating Diarrhoea in children

7. Adequately labelled drugs

The result indicates that on average 76% of drugs were labelled adequately.

8. Average number of drugs per encounter

The results show that the average number of drugs per encounter is 1.8.

9. Percentage prescribed drugs dispensed

- The results show that in the three regions, it is high and indeed from 80% onwards, the highest being about 90% (Figure 6 below). The lowest being 47% from one of the regions.

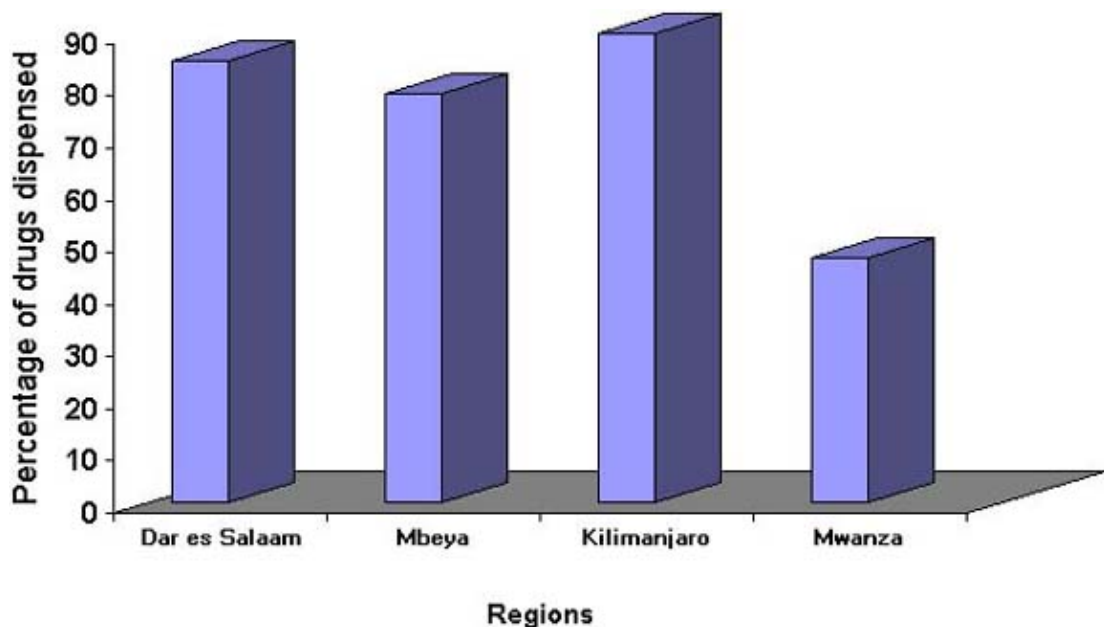


Figure 6: Percentage of drugs dispensed to patients

10. Number of patients receiving antibiotics in one encounter

The results show that 42% of patients were prescribed antibiotics.

11. Percentage of patients receiving injections

The number of patients receiving injections in the health facilities visited was 14%.

12. Prescribing according to EDL

The results show an average adherence of 98.5%.

13. Percentage of expired drugs

There were no drugs in the private facilities shelves with dates beyond expiry date. However, in public facilities 13% of key drugs were expired.

14. Guidelines Availability

Only five (5) facilities out of 20 had the national STGs in their premises.

Household survey results

Three hundred household heads were asked to report on a recent illness. Out of these households surveyed (patient cases) 43% (129) were males and 57% (171) were females. Forty-nine percent (49%) (147) of the patients had their ages ranging from

16 – 54 years and 15% (45) were 55 years of age and above and the rest were children under 16. The majority of those interviewed, 78% (234) had Primary school education followed by 8% (24) who had secondary school education, vocational or University level and the rest had no education. Ninety percent (90%) of those with secondary education were from Dar es Salaam region.

The disease cases that were encountered are summarized in Table 3:

Table 3: Diseases frequently consulted at health facilities.

Diseases	Frequencies
Diarrhoea	24
Cough	50
Fever	123
Others*	155

* Some patients had more than one disease condition

Under others, the diseases, which were frequently encountered, could be categorised into the following groups: Injury, Malaria, Flu, hypertension and gynaecological problems. Just less than half of the population surveyed 38% (114) consulted public health facilities for their medical cases as shown in Table 4 below.

However, quite a good percentage (19%) of the population went for alternative complementary therapies like traditional medicine. Where consultation was sought, 77% of all cases medication was prescribed, while only 23% medication was not prescribed. For those cases where medicines were prescribed, 79% received/bought all prescribed drugs from the facilities while 12% got part of the prescribed drugs and 9% did not get any drugs. The main reason for not getting all the drugs for some patients include from amongst others, affordability due to high prices for the drugs especially in private facilities. The other reason is contributed by stock out duration

Table 4: Frequencies of health services sought

Health Services	Frequencies	Percentage
Consulted Traditional healer	69	19
Consulted Public Health Clinic/hospital	142	38
Consulted Private Health Clinic/hospital	32	9

Consulted pharmacists	15	4
Consulted drug seller	12	3
Sought advise from friends/neighbour/family	18	5
Bought medicine without consultation	10	3
Used medicine left from another illness	4	1
Did nothing	68	18
Total	370	100

DISCUSSION OF RESULTS

ACCESS

Availability of key drugs in health facilities

Seventy five percent (75%) of key drugs were available in the Zonal warehouses. In two regions the availability was above 90%. Physical availability of key drugs in all health facilities especially in public sector facilities is expected to be 100%. Availability of key drugs to treat common health problems, in this case the top ten diseases in public health facilities and supply depots gives a clear picture of drugs availability to communities. Drugs availability is a sub core indicator under accessibility. Other sub core indicators under accessibility are stock out duration in health facilities and central/regional stores, percentage of drugs dispensed to patients and affordability of key drugs in facilities and private retail outlets.

The two cities, Dar es Salaam and Mwanza show a slightly lower availability of key drugs. The reasons for this trend are:

- There is a direct correlation with the population served. The cities have the highest number of people compared to the other municipalities (Census, 2002).
- In cities many people can afford the cost of treatment compared to municipalities (urban and rural) due to trade and business environment surrounding the cities.
- Trust of health service is higher in cities where there is a concentration of highly trained health personnel.
- There are many supporting services e.g. Transport system to facilitate access to health facilities.

This survey has noted with concern the over supply of SP drugs in all the public health facilities visited. This problem will continue for sometime if immediate measures are not taken since, every month there is a supply of 12 X 500 tablets in each facility. Moreover, advocacy on the use of SP in treating Malaria has not been well received by the community, needless to mention the compounding side effects of this drug. Furthermore, the dosage regimen for Malaria of 3 tablets for adults and 1½ for children have obviously contributed to the observed piling up of this drug in all public health facilities.

Notwithstanding, the long expiry of this drug (5 years) the current supply coupled by the slow moving will definitely have a net positive outcome on the over availability of this drug.

Stock-out duration

- Presence of essential drugs at all times in health facilities is an important factor in provision of quality health care. The historical availability of key drugs to treat common health problems shows an adequate logistic system that ensures essential drugs remain in stock at all times. The current situations of 28 days stock-out duration gives an indication that one of the key drugs is not available for about a month in health facilities. This stock-out duration has partly been influenced by late supply of quinine to the health facilities due to change in policy in Malaria cases management. In addition drugs such as amoxicillin caps, Co-trimoxazole 400/80mg tablets and Chloraphenicol have contributed substantially to this situation. Due to

their sometimes unnecessary over prescription such as in the cases of diarrhoea in children (see figure 4).

Affordability of key drugs in health facilities

The percentage obtained from this study (51% for children and 86% for adults) may have been influenced by the choice of tracer drug which in this case was the antibiotic, Amoxicillin and which was expensive. The cost of treatment using this drug was pegged against the lowest government salary (TShs. 1,500/= per day). The other contributing factor is the pricing mechanism operating, which is under free market forces. In this pricing system, it is possible to have different prices for the same drug within the same locality. In the public health facilities children below 5 years were supposed to be on free medical services, however, this were not consistent because local governments have their own operating mechanisms for exemption.

Adequacy of drug storage

Presence of dusts, protection against direct sunlight, drugs stored on floor, provision of temperature monitoring charts and facilities to monitor room temperature are common problems encountered in the pharmacies. According to the results the standard of the storage area was found to be very good for warehouses (9 out of 11 rating scale) and above adequate (7 out of 11 rating scale) for the public pharmacies.

Proper storage of drugs is an important factor in ensuring that quality of drugs is maintained either in warehouses or store pharmacies of health facilities and central/regional stores thus the public pharmacy stores need to improve the storage conditions.

RATIONAL DRUG USE

Patient Knowledge

Patients should have adequate knowledge about the dispensed drugs. In this case patient knowledge was measured by exit interview where a patient was required to restate correctly the instructions on how to use each drug dispensed. The person dispensing the drugs through verbal and written instructions imparts this knowledge normally. It is the responsibility of the person dispensing the drugs to ensure that the patients have adequate knowledge about the dispensed drugs before the patient leaves the dispensing window/room.

The patient knowledge about dispensed drugs, which was 80%, is indeed a good achievement. However, the 20% gap is still substantial since, it poses a risk for inappropriate use of the dispensed drugs.

The remedy to this situation again is to ensure that:

- The dispensing staff members are trained on good dispensing practice.
- The staffing levels are adequate.

Tracer cases treated according to STGs

The ideal situation is to have the lowest possible percentage use of antibiotics for Non pneumonic ARI. Figure 3 results above of over 90% in three regions and 66% in one region are on the higher side. This might be due to:

- Lack of supportive laboratory services to distinguish severity of ARIs may lead prescribers to opt for short gun therapies.
- Lack of clinical skills to diagnose ARI.
- Lack of continuing education on disease management.

According to the Standard Treatment Guideline the first line drug treatment is Co-trimoxazole and the alternative is Procaine penicillin or Amoxicillin.

The results in Figure 4 above show that in three regions the use of more than one antibiotic is below 6%. It is high in one region, about 42%. In this particular case Amoxicillin is prescribed concomitantly with Co-trimoxazole.

All in all the deviation from this indicator should be avoided, continuing education to prescribers and strengthening laboratory services are crucial in improving the situation.

Adherence to recommended treatment guidelines in treating Diarrhoea in children

The recommended treatment for diarrhoeal cases that are non-infective is by the use of ORS only. The trend in all the surveyed areas shows a high non-adherence by the indiscriminate use of antibiotics of about 44% on average. ORS is prescribed in 82% of the cases. There are however important differences among regions. Likewise, the use of antispasmodic (Hyosine butylbromide) in this case is also indiscriminate.

Adequately labelled drugs

The results indicate that 76% of drugs were adequately labelled. Similar study conducted in Dar es Salaam and Coast region show that 87% of drugs dispensed were adequately labelled (Massele et al, 2001). In Namibia a similar survey showed a 67% of the same (Lates et al, 2001). The remaining 24% of the drugs, which were not adequately labelled, is substantial enough to pose danger in use of the dispensed drugs. If drugs are to be used properly, the person carrying out dispensing should label them appropriately. Appropriately or adequately labelling of drugs for this study was defined to include name of the drug, how to take it and strength (see annex 16).

The reasons for having poorly labelled/unlabelled drugs are mostly due to:–

- Negligence on the importance of labelling from the dispensing staff.
- Pressure of work.
- Understaffing of qualified dispensers.
- Poor practicing of untrained dispensing personnel.
- Most of the dispensers had no pharmaceutical background.

Improper labelling of drugs leads to their improper use. Prolonged misuse of drugs such as antibiotics and antimalarials may naturally lead to favouring the survival of microbes that develop resistance.

Average number of drugs per encounter

The results show that the average number of drugs per encounter is 1.8. The smaller the number of drugs per prescription the better the prescribing habits and hence rational use of drugs. One does not get a drug every time he/she visits the doctor, however this figure of 1.8 is slightly improved from previous ones of mid 1990's when it was 2.2 (Malele, et al, 1992; Massele et al, 1997; Massele, 1993). This current trend compares very well with other developing countries such as Zimbabwe (1.7) Malawi (1.7), Guetemala (1.4) and Yemen (1.5) (Ross-Degnan et al, 1992).

Percentage of prescribed drugs dispensed

The ideal situation is to have 100% prescribed drugs dispensed. This study shows a performance ranging from 80%–90% in three regions and a 47% in one of the regions (Mwanza) as seen in Figure 6 above. Some of the reasons for this deviation may include: –

- The infrastructure and distance from ports of entry i.e Dar es salaam influences the distribution pattern of drugs/pharmaceuticals and thus the availability.
- Drug management systems are inadequate
- Purchasing power from the patient side was low.

Number of patients receiving antibiotics in one encounter

The results show that 42% of patients were prescribed antibiotics which compared to previously result of 39% 1993 (Massele et al); 51% of Namibia 1993 (Lates et al.) This shows that the trend has now been at this level for almost 10 years in Tanzania. There have been moves to reduce the over use of antibiotics mainly, to cut down on costs and offset the growing resistance. Tropical countries seem not to have much choice on this especially with tropical infections, and now the opportunistic diseases resulting from HIV/AIDS infections.

The blanket treatment and/or self-medication approaches for non-specific childhood diseases and for mild non-bacterial infection e.g. ARI are some of the factors, which contribute to this high percentage (overuse) of antibiotics.

Percentage of patients receiving injections

The 14% injection use performance has greatly improved over the past 10 years when the injection use stood at 35% (Massele et al, 1993, 1997 & 2001). HIV/AIDS campaigns are some of the factors, which have recently contributed to the fall in use of injection. Also many injections were from the use of chloroquine. A shift to SP has had an impact on this indicator. There is still room for improvement on use of injection cutting it down to less than this current observation since, injection treatment approach is expensive.

Prescribing according to EDL

The results show an average adherence of 98.5%, which is very good indeed. Expected adherence, however, would have been 100%. This performance could have been due to inclusion of the Essential drug concept in training/curriculum, policy emphasis and indeed streamlining and making available the key (essential) drugs in all health facilities. This situation is a positive contribution of the National Essential Drugs program. The shortfall of 1.5% could be due to special requested drugs for certain medical cases which are not in NEDLIT.

Percentage of expired drugs

There were no drugs in the private facilities shelves with dates beyond expiry date.

However, in public facilities 13% of key drugs were expired. One of the reasons for having expired drugs in public health facilities is because these facilities are not subjected to regular inspections which, in turn gives laxity in performance. Also, for the kit system some drugs are not needed in some health facilities leading to piling up and finally expiring

Guidelines Availability

This study has revealed that only five (5) health facilities out of 20 had the national STGs in their premises. The observed situation is an alarming one, especially when these guidelines are required as working tools and supposedly freely distributed to all public facilities. However, the other guidelines for examples, malaria, and TB treatment and reproductive health were available in health facilities. A mechanism should be instituted to ensure that private facilities have access to the same. Timely revision of STG and proper mechanism for dissemination and distribution should be instituted for all health facilities.

Households survey

From the household survey it was found out that more females (57%) were sick compared to males (43%). The results also revealed the utilisation of healthcare services of 38%. This the utilisation is still very low, below 50% given the substantial investment in the healthcare provision by the government and partners.



Figure 7: Health seeking behaviour

Some of the factors contributing to this trend include:

- Economical reasons (Affordability)

- Self medication
- Seeking such services from Traditional healers. This is mainly done to offset the otherwise expensive modern healthcare services

- Socio-cultural reasons

This is especially the case with STIs, which carry a stigma on the patient and hence influence the health seeking behaviour which in turn checks the utilisation of healthcare services.

However when these providers are combined as a public/private mix, it is found that more people (54%) seek help from professional health providers.

Specific recommendations

• Availability of key drug in health facilities

- * The availability of drugs is dependent on a proper scheduled procurement of drugs supply. Health facilities should adhere strictly to properly scheduled procurement cycles and make reviews of these cycles regularly.
- * The personnel involved in drugs/pharmaceuticals supply should be trained in managing drug supplies.
- * Adequate funding should be set for drugs.

Quantification of SP should be done immediately to save it from expiry and hence, save money. The distribution of this drug in the kit should be revisited to avoid further piling up.

• Stock-out duration

- Stock levels should be properly determined so as to avoid stock-out of essential drugs.
- Introducing reporting system on drug availability to all health facilities and hospitals and regional pharmacists to supervise these activities.
- Training for stock management to the pharmaceutical personnel.

- **Affordability of key drugs in health facilities.**

- The affordability of key drugs in health facilities is influenced by the economic status of the community. Since the majority of Tanzanians live in poverty, strategies to alleviate poverty among Tanzanian communities should be developed so as to raise the people's purchasing power and eventually increase the affordability of key drugs.

- **Adequacy of drug storage**

- The adequacy of drug storage has been found out, by this survey, to be 9 out of 11 points and 7 out of 11 points rating scale for warehouses and public pharmacy stores respectively. Since poor or inadequate storage conditions have negative effects on the quality of drugs, efforts should be made to ensure that the storage conditions are face-lifted to comply with the required standards.

- **Patient knowledge**

In order to enhance the patient knowledge on dispensed drugs.

- Qualified pharmaceutical staff should be recruited and deployed appropriately in the pharmaceutical sector.
 - The existing pharmacy staff should be trained in good dispensing practice.

- **Tracer cases treated according to STGs**

The use of antibiotics for non-pneumonic ARI is high according to results obtained from this study. Further to it, there is a deviation from the standard of using one first-line antibiotic, that is, more than one antibiotics are used in treating mild/acute pneumonia.

In order to avoid the recurrence of this situation:

- The STG should be reviewed to specify the demarcation of use of antibiotics in non-pneumonic ARI basing on the severity of the diseases.
 - Continuing education to prescribers and dispensers (especially on rational use of drugs) should be provided regularly.
 - Laboratory services should be strengthened to support the rational prescribing practice.

- **Adherence to recommended treatment guidelines in treating diarrhoea in children.**

- The study has revealed an indiscriminate use of antibiotics in treating diarrhoea in children averaging 44%. This is a high non-adherence trend of practice. The contributing factors for this situation might be the lack of supportive laboratory services for discriminating the infective from non-infective diarrhoea and pressure of work on the part of prescribers.
 - It is therefore strongly recommended to strengthen the laboratory investigation services so as to enhance the rational prescribing practice.
 - Good prescribing practices through continuing education

- **Adequate labeled drugs**

- The study indicates that 24% of drugs dispensed were not adequately labeled. The responsibilities for adequately labeling of dispensed drugs lies on the dispenser. This then

confirms the need to having trained pharmaceutical staff in health facilities and dispensing practice for non-pharmaceutical staff doing dispensing activities.

• **Average number of drugs per encounter**

The smaller the number of drugs per prescription, the better is the situation for this indicator. The result, from the survey is 1.8 that is quite good and the trend shows improvement with years. However, there is still room for improvement to bring the figure further down. In order to achieve even a lower figure:

- The preventive services, which include improvement and raising the standards of general sanitation, should be strengthened.
- Continuing education to prescribers on rational drug prescribing should be provided.
- Again, laboratory services should be strengthened so as to prevent short-gun-therapy tendencies practiced by some prescribers.

• **Percentage of prescribed drugs dispensed**

The study results indicate that 10–20% in three regions and 53% of the prescribed drugs were out of stock. The main cause of this situation has been attributed to insufficient drug distribution patterns in the drug supply/delivery system and insufficient funding especially for district hospitals.

It is therefore recommended that, the distribution and drug supply management system be strengthened and the NDP should have a strategic plan on this aspect.

Funding should be improved for drugs.

• **Number of patients receiving antibiotics in one encounter**

The use of antibiotics in one encounter is still high and stands, according to results of this study; at 42% and that it has remained so for almost 10 years. In order to reduce the over-usage of antibiotics:

- Preventive services should be strengthened at community level.
- Laboratory services should be strengthened and prescribers use them for diagnosis
- Continuing education to prescribers be provided
- Health education should be provided to the public to reduce the tendencies for self-medication.
- Research should be carried out for the purpose of seeking alternative ways of handling the opportunistic infections especially in HIV/AIDS cases.
- An antibiotic resistance-monitoring center should be established.
- Education to the public on the use of antibiotics should be improved.

• **Percentage of patients receiving injections**

The results show a tremendous improvement, from 35% down to 10% in the past 10-year's period. Nevertheless, there is still room to reducing the figure further down to only the absolutely necessary injections. It is therefore recommended that continuing education be provided to prescribers on various options available leading to cutting down the use of injections to patients.

• **Prescribing according to EDL**

The results are excellent on this indicator, that is, 98.5% adherence to prescribing according to EDL

- This trend should be encouraged and maintained.

• **Percentage of expired drugs**

- Regular inspections by the Pharmacy Board need to be carried out to public health facilities so as to curb the laxity exhibited on this aspect by the pharmacy staff in these facilities.
- Supervision by PSU should be implemented using the regional and district pharmacists.
- FEFO principle should be encouraged to all staff responsible for drug storage

• **Guidelines availability**

- Supervise and implement the use of National drug list and Guidelines. The Ministry of Health should ensure that STGs and/or NEDL are available in all health facilities and accessible to all health personnel. There is a need for supportive supervision in the pharmaceutical sector for maximum use of these guideline and policies.

GENERAL RECOMMENDATIONS

There are a number of interventions, which could be used to improve pharmaceutical sector in Tanzania and promote quality of health services provided. These include training of pharmaceutical personnel and prescribers; implementation of NDP and guidelines: presence of up-to-date pharmaceutical Master plan, targeted continuing education and research. In order to execute the various components of the pharmaceutical sector and achieve the objectives of the NDP, the following way forward is recommended: –

• **Encourage councils to recruit and deploy qualified pharmaceutical staff in the pharmaceutical sector.**

Shortage of qualified workers in pharmaceutical sector is found in many council health facilities. However, it is noted that councils are not giving due weight on recruiting and deploying qualified pharmaceutical personnel.

• **Ensure the pharmaceutical Master plan is revised and/or updated.**

The present pharmaceutical sector master plan has been in place since 1991. There have been a number of policies and institutional changes which need to be revised. In this regard, the Ministry of Health is urged to review and update the Pharmaceutical sector master plan.

• **Conduct a baseline survey using Level 111 core indicators in order to establish more details facing the Tanzania pharmaceutical Sector.**

- Establish mechanisms to monitor and assess the performance of pharmaceutical personnel.
- Promote and stimulate health consumers' knowledge about proper use of drugs.
- Investigate factors associated with presence of expired drugs in health facilities.
- Develop tools for assessing and monitoring drugs availability, accessibility and rational use.

A study should be done to see what is the mark-up for pricing of pharmaceuticals in Tanzania and if mechanisms could be instituted to effect drug pricing.

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List of annexes

Annex 1 – Survey form 1a: Central/district warehouse

Indicator: **% of expired drugs**

Availability of key drugs

Facility	Date	
Location	Investigator	
Key drugs in stock to treat common conditions [A]	In stock [B] Yes=1, No=0	Drugs in stock that have expired [C] Yes=1, No=0
Amoxycillin 250mg tablets or capsules		
Aspirin 300mg tablets		

Chlorpheniramine 4mg tablets		
Co-trimoxazole 400/80mg tablets		
Ferrous salts 200mg		
Folic acid 5mg tablets		
Mebendazole 100mg tablets		
Oral rehydration salts (ORS)		
Paracetamol 500mg tablets		
Povidone iodine		
Procaine penicillin 4mu injection		
Quinine injection 600mg/2ml		
Sulfadoxine-pyrimethamine 500/25mg tablets		
Tetracycline eye ointment 1%		
Whitfield ointment (benzoic acid compound)		
Total no. of key drugs [A¹]=	[B¹]=	[C¹]=
% in stock in this facility [B²]=		
% of expired drugs [C²]=		

Annex 2 – Survey form 1b: Public health facility pharmacy

Indicator: % of expired drugs

Availability of key drugs

Facility	Date	
Location	Investigator	
Key drugs in stock to treat common conditions [A]	In stock [B] Yes=1, No=0	Drugs in stock that have expired [C] Yes=1, No=0
amoxicillin tablets or capsules		
aspirin tablets		
chlorpheniramine tablets		
co-trimoxazole tablets		
ferrous salts		
folic acid tablets		
mebendazole tablets		
oral rehydration salts (ORS)		
paracetamol tablets		
povidone iodine		
procaine penicillin injection		

quinine injection		
sulfadoxine–pyrimethamine tablets		
tetracycline eye ointment		
whitfield ointment (benzoic acid compound)		
Total no. of key drugs [A¹]=	[B ¹]=	[C ¹]=
% in stock in this facility [B²]=		
% of expired drugs [C²]=		

Annex 3 – Survey form 2a: Central/district warehouse

Indicator: **Stockout duration**

Facility	Date		
Location	Investigator		
Key drugs [A]	No. of days out of stock [B]	No. of days covered by the review [C]	Equivalent no. of days/year [D]=[B] x 365/[C]
Amoxicillin 250mg tablets or capsules			
Aspirin 300mg tablets			
Chlorpheniramine 4mg tablets			
Co–trimoxazole 400/80mg tablets			
Ferrous salts 200mg			
Folic acid 5mg tablets			
Mebendazole 100mg tablets			
Oral rehydration salts (ORS)			
Paracetamol 500mg tablets			
Povidone iodine			
Procaine penicillin 4mu injection			
Quinine injection 600mg/2ml			
Sulfadoxine–pyrimethamine 500/25mg tablets			
Tetracycline eye ointment 1%			
Whitfield ointment (benzoic acid compound)			
[A ¹]= <i>Total no. of key drugs (sum of A)=</i>		[D ¹]= <i>Sum of D</i> [E] = <i>Average number of stock out days=[D¹/A¹]</i>	[D ¹]= [E]=

Annex 4 – Survey form 2b: Public health facility pharmacy

Indicator: **Stockout duration**

Facility	Date		
Location	Investigator		
Key drugs [A]	No. of days out of stock [B]	No. of days covered by the review [C]	Equivalent no. of days/year [D]=[B] x 365/[C]
amoxicillin tablets or capsules			
aspirin tablets			
chlorpheniramine tablets			
co-trimoxazole tablets			
ferrous salts			
folic acid tablets			
mebendazole tablets			
oral rehydration salts (ORS)			
paracetamol tablets			
povidone iodine			
procaine penicillin injection			
quinine injection			
sulfadoxine–pyrimethamine tablets			
tetracycline eye ointment			
whitfield ointment (benzoic acid compound)			
[A ¹]= Total nb of key drugs (sum of A)=			[D ¹]= Sum of D [E]= =[D ¹ /A ¹]

Annex 5 – Survey form 3a: Central/district warehouse: Storage Checklist

Indicator: **Adequate storage**

Facility	Date	
Location	Investigator	
Checklist		Store room
		(check the box if Yes)
Are there locks which are working in the storage area		<input type="radio"/>
Storage and shelves area are clean (no dust or litter)		<input type="radio"/>

No evidence of pests seen in the area	<input type="radio"/>
There is a ceiling	<input type="radio"/>
There are windows that can be opened or there are air vents	<input type="radio"/>
No direct sunlight should enter the area, glass window pane painted white, or with curtains/blinds to protect against sunrays	<input type="radio"/>
Area free from moisture (leaking drains and taps). Drugs should not be stored directly on the floor	<input type="radio"/>
There is a separate storage and dispensing area for issuing drugs	<input type="radio"/>
Drugs are sorted in systematic way (alphabetical, first expiry–first out)	<input type="radio"/>
There is stock record system	<input type="radio"/>
There is a cold storage with temperature chart	<input type="radio"/>
Rating	[A]=

Annex 6 – Survey form 3b: Public health facility pharmacy: Storage Checklist

Indicator: **Adequate storage**

Facility	Date			
Location	Investigator			
Checklist			Store room	Pharmacy
			<i>(check the box if Yes)</i>	
Are there locks which are working in the storage area			<input type="radio"/>	<input type="radio"/>
Storage and shelves area are clean (no dust or litter)			<input type="radio"/>	<input type="radio"/>
No evidence of pests seen in the area			<input type="radio"/>	<input type="radio"/>
There is a ceiling			<input type="radio"/>	<input type="radio"/>
There are windows that can be opened or there are air vents			<input type="radio"/>	<input type="radio"/>
No direct sunlight should enter the area, glass window pane painted white, or with curtains/blinds to protect against sunrays			<input type="radio"/>	<input type="radio"/>
Area free from moisture (leaking drains and taps). Drugs should not be stored directly on the floor			<input type="radio"/>	<input type="radio"/>
There is a separate storage and dispensing area for issuing drugs			<input type="radio"/>	<input type="radio"/>
Drugs are sorted in systematic way (alphabetical, first expiry–first out)			<input type="radio"/>	<input type="radio"/>
There is stock record system			<input type="radio"/>	<input type="radio"/>
There is a cold storage with temperature chart			<input type="radio"/>	<input type="radio"/>
Rating			[A]=	[B]=

Annex 7 – Survey form 4a: Public health facility pharmacy

Indicator: **Affordability of key drugs (treating pneumonia without hospitalization)**

Facility	Date					
Location	Investigator					
Drug/INN	Preparation	Unit price (inj. vial, tablet, or capsule)	No. of units needed to complete treatment	Total cost	[E]/[G] x100=	
[A]	[B]	[C]	[D]	[E]	[F]	
Identify adult drug preparation						
A.						
Identify child drug preparation						
B						
[G]= Lowest daily government salary =						

Annex 8 – Survey form 4b: Private pharmacy

Indicator: **Affordability of key drugs (treating pneumonia without hospitalization)**

Facility	Date					
Location	Investigator					
Drug/INN	Preparation	Unit price (inj. vial, tablet, or capsule)	No. of units needed to complete treatment	Total cost	[E]/[G] x100=	
[A]	[B]		[D]	[E]	[F]	
Identify adult drug preparation						
A.						
Identify child drug preparation						
B						
[G]= Lowest daily government salary =						

Annex 9 – Survey form 5: Private pharmacy

Indicator: **% of expired key drugs**

Availability of key drugs

Facility	Date		
Location	Investigator		
Key drugs in stock to treat common conditions [A]	In stock [B] Yes=1, No=0	Drugs in stock that have expired [C] Yes=1, No=0	
amoxicillin tablets or capsules			
aspirin tablets			

Location	Investigator	
Standard treatment guidelines available at facility		Yes¹
National STG		<input type="radio"/>
Malaria		<input type="radio"/>
Tuberculosis		<input type="radio"/>
Others:		<input type="radio"/>
EDL available at the facility		Yes¹
National EDL		<input type="radio"/>
Provincial/District		<input type="radio"/>
Primary EDL		<input type="radio"/>
Others:		<input type="radio"/>
STG is available in this facility ²		Yes ¹ <input type="radio"/>
EDL is available in this facility ³		Yes ¹ <input type="radio"/>

Annex 13 – Survey form 9: Public health facility: Treatment of diarrhoea, ARI, and pneumonia

Indicator: % tracer case treated using recommended treatment

Facility	Date	
Location	Investigator	

Notes: Select at random 30 patients (10 with diarrhea, 10 with ARI & 10 with pneumonia). Choose only single disease encounters. Always write 1 or 0 for all drugs enumerated.

Diseases/Drug prescribed	Cases (yes=1, no=0)										Total yes (1)/no. of cases x100
	1	2	3	4	5	6	7	8	9	10	
Diarrhoea in Children											
ORS											
Antibiotic											
Antidiarrheal and/or antispasmodic											
Non-pneumonia acute respiratory tract infection (ARI)											
Antibiotic prescribed											
Mild/moderate Pneumonia											
Any one of 1 st line antibiotic (Procaine penicillin, amoxicillin, cotrimoxazole)											
Any one receiving >1 antibiotics											

1. Have you or any members of the household been ill in the last two weeks? (exclude hospital admission)	
<input type="checkbox"/> Yes	
2. Sex of person who has been ill	
<input type="checkbox"/> Male <input type="checkbox"/> Female	
3. Age (in years) of person who has been ill	
<input type="checkbox"/> Under 1 <input type="checkbox"/> 1-5 <input type="checkbox"/> 6-15 <input type="checkbox"/> 16-54 <input type="checkbox"/> 55 and older	
4. Educational attainment of house hold head	
<input type="checkbox"/> Primary school <input type="checkbox"/> High school <input type="checkbox"/> Vocational <input type="checkbox"/> University <input type="checkbox"/> Post graduate	
5. What were the person's symptoms? (mark one or more)	
<input type="checkbox"/> Diarrhoea <input type="checkbox"/> Cough <input type="checkbox"/> Fever <input type="checkbox"/> Others (specify) _____	
6. What was the person's diagnosis, if any? _____	
7. What was done? (use numbers to indicate the order of actions taken)	
<input type="checkbox"/> Consulted traditional healer <input type="checkbox"/> Consulted public health clinic/hospital <input type="checkbox"/> Consulted private health clinic/hospital <input type="checkbox"/> Consulted mission clinic <input type="checkbox"/> Consulted pharmacist	<input type="checkbox"/> Consulted drug seller <input type="checkbox"/> Sought advice from friend/neighbour/family <input type="checkbox"/> Bought medicine without consultation <input type="checkbox"/> Used medicine left from another illness <input type="checkbox"/> Did nothing (<i>If no one was consulted, skip to question 12</i>)
8. Was medication prescribed?	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
9. Which medicines were bought/received?	
<input type="checkbox"/> All <input type="checkbox"/> Some <input type="checkbox"/> None	
10. If not all, why not? (mark one or more)	
<input type="checkbox"/> Price was too high <input type="checkbox"/> Did not have enough money <input type="checkbox"/> Not able to borrow enough money <input type="checkbox"/> Too many medicines were prescribed <input type="checkbox"/> Did not believe all the medicines were needed <input type="checkbox"/> Started to feel better <input type="checkbox"/> No time to get all the medicines	<input type="checkbox"/> Traditional healer did not have all the medicines <input type="checkbox"/> Public pharmacy did not have all the medicines <input type="checkbox"/> Private pharmacy did not have all the medicines <input type="checkbox"/> Drug seller did not have all the medicines <input type="checkbox"/> Already had some of the medicines at home

<input type="checkbox"/> Other										
11. How much of the prescribed medicine was taken? <input type="checkbox"/> All <input type="checkbox"/> Some <input type="checkbox"/> None										
12. What medicines were used? (include traditional medicines)	Amount spent (write 0 if free)	Mark an X through the source as numbered (1–9)								
	Local	1. Traditional healer 2. Public health centre/hospital 3. Private health centre/hospital 4. Mission facility 5. Public pharmacy				6. Private pharmacy 7. Local store/marketplace 8. Friends/neighbours/family 9. Medicines already owned 10. Other				
		1	2	3	4	5	6	7	8	9
		1	2	3	4	5	6	7	8	9
		1	2	3	4	5	6	7	8	9
		1	2	3	4	5	6	7	8	9
		1	2	3	4	5	6	7	8	9
		1	2	3	4	5	6	7	8	9
TOTAL										
13. Estimated family weekly income OR total household expenses last week Local currency _____										

Annex 16 – Comments on the forms

GENERAL COMMENTS

- Forms should be stapled according to facility to be visited

Warehouse
Public health facility pharmacy
Private pharmacy
Public health facility record section
Household

COMMENTS ON INDIVIDUAL FORMS

- Form 1a and 1b

? Each person should ensure that the drugs are available. Actually go through the shelves to make sure that there are no expired drugs.

? If expired drugs are listed and kept somewhere in the store to be destroyed, do not register them as expired.

- Form 2a and 2b

10. Household form

- ? Information about your visit should reach the hamlet leader one day before the visit, contact him before proceeding with interview,
- ? Groups be accompanied by someone from village government
- ? Education: primary, secondary, vocational, university, postgraduate
- ? Chronic diseases should be included
- ? Record only one case per household
- ? Interview only those having answered “yes” in question number one
- ? Do not disturb and interfere during lunch or dinner of household members
- ? Define meaning of free medication: if taken in charge by employer, or chronic condition
- ? Use local currency only
- ? How to obtain household income or expenses: use whatever easier for the person – monthly or weekly and recalculate
- ? In question 7 the note should say: “if no one was consulted, skip to question 12”
- ? Put serial numbers at the upper right corner of the forms to be used
- ? Summary form:
- ? More space is needed for price in question 12.
- ? Check numbers of questions and correspondence with form 10 (question 6 missing)
- ? If the answer to question one in “no” do not record at all
- ? Delete “no” row from question one
- ? Leave only fifteen columns in summary form
- ? Question number 13 – total does not apply, it should rather be “average”, delete column “total” from printed forms.
- ? National summary form:
- ? Give more space for facility names (title row)

11. Summary forms 1–9

- ? Take out repeated sheet
- ? Reformat affordability indicator
- ? Add line for average number of drugs per prescription from form 7 (exit interviews)

