CHAPTER ONE

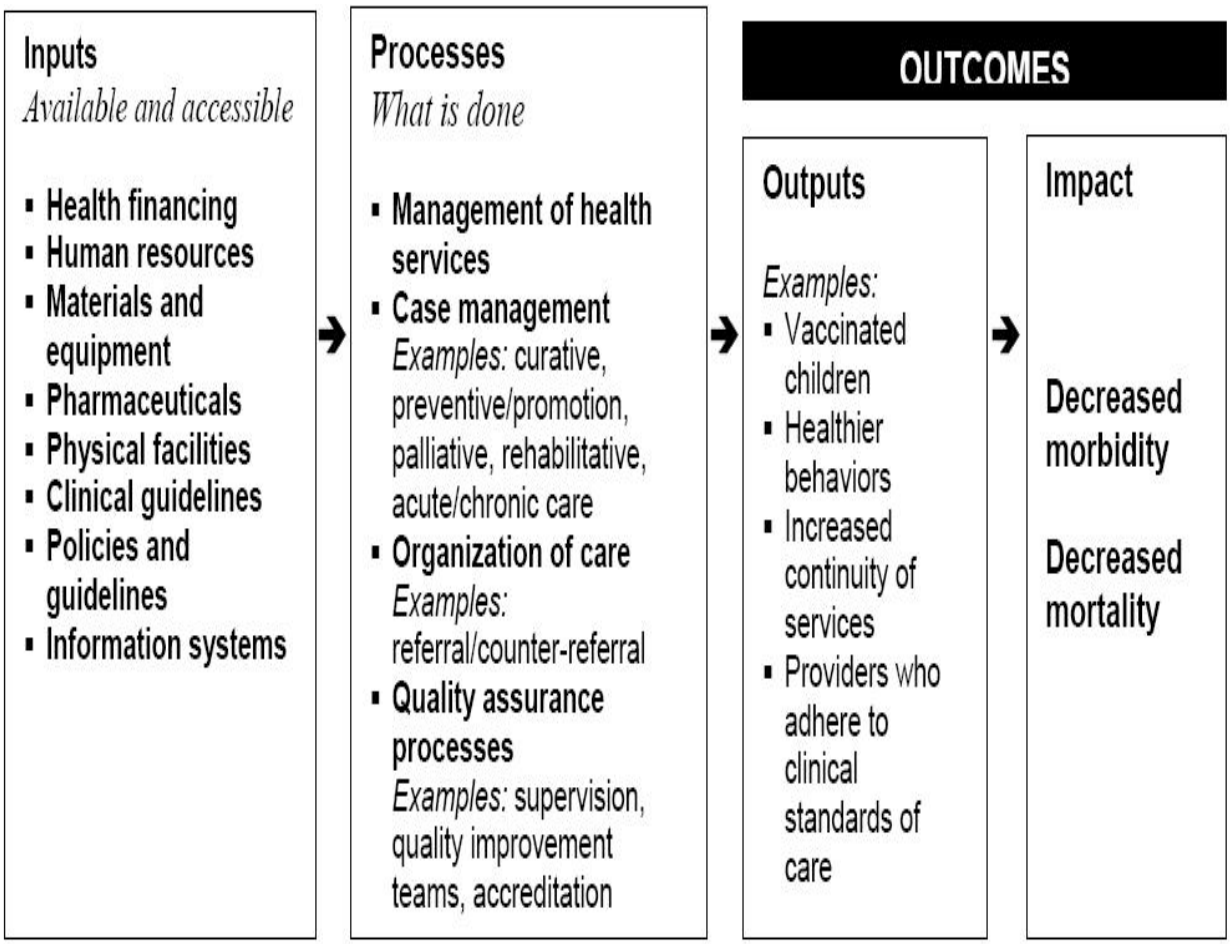
1.0: INTRODUCTION

1.1: Background of the study

Health systems provide health actions which are activities to improve and or maintain health. These actions take place in the context of and are influenced by political, cultural, social, and institutional factors. Any health system is identified by the way it provides its services, in other words, the entire health system is often identified with just service delivery. Therefore service provision or service delivery is the chief function the health system needs to perform (1).

The World Health Organization (WHO) defines service delivery as the way inputs are combined to allow the delivery of a series of interventions or health actions; it therefore consists of inputs, processes, outputs, and outcomes (figure 1). Some of the core inputs that are deemed necessary for health care delivery are financial resources, competent health care staff, adequate physical facilities and equipment, essential medicines and supplies, current clinical guidelines, and operational policies (2). These inputs must be available and accessible to have an impact. They also must be used to properly carry out the system processes to produce desired health outcomes.

Operational policies and current clinical guidelines enhance timely provision of services, enhance collaboration across service sectors, enhance consistency in service provision, enhance use of what researches proven concepts and ideas integrated into practice and enhance accountability (3, 4). National policies provide necessary leadership and guidance and operational policies are the means for implementing National policies. In many cases, program deficiencies such as lack of trained service providers and other resources can be traced to operational policies that are inadequate, inappropriate or outdated (5).



Source: health service delivery module (2)

Figure 1. Systemic View of Service Delivery

Standard Treatment Guideline (STG) is part of the Clinical Guideline which lists the preferred drug and nondrug treatments for common health problems experienced by people in a specific health system. It is a disease oriented manual that helps doctors, nurses, pharmacists, community health workers, and other health care providers to focus on the best treatment that should be used.

STGs offer a number of potential advantages for patients, health providers, supply managers, and health policy makers. Consistency among prescribers leads to reduced confusion and increased adherence of treatment by patients and also most effective treatments are prescribed and it helps to improve supply of drugs if drugs are prescribed only when needed. It is the basis of expert consensus given on most effective, economical

treatment for a specific setting, providers can concentrate on correct diagnosis, provide a standard to assess quality of care and provide simple basis for monitoring and supervision. The guideline is not only helpful to patients and prescribers, but also to supply management staff as it brings performance standard for drug supply, so that sufficient quantities of drugs are available for the most commonly treated problems at the different levels of the health system. Also it facilitates pre-packaging for course-of-therapy quantities of commonly prescribed items for common conditions and because drug demand more predictable, so forecasting more reliable. And for health policy makers it provides method to control costs by using drug funds more efficiently, provide the basis to assess and compare quality of care and development and implementation of a single set of standard treatments can be a vehicle for integrating special programs (diarrhea disease control, acute respiratory infection, tuberculosis control, malaria, and so on) at the primary health care facilities (6, 7).

Therefore, STG needs a well stipulated implementation plan involving printing sufficient copies, an official Launch, initial training, reinforcement training, monitoring and supervision so as to make it accessible and understood by all stakeholders. To enforce use of STG by service providers, WHO advised every country to form District and Hospital Medicine and Therapeutic Committees (MTC); which is a body designated to ensure the safe and effective use of medicines in the facility or area under its jurisdiction. Such committees are well-established in industrial countries as a successful way of promoting more rational, cost-effective use of medicines in hospitals.

MTC members should represent the administration and all the major specialties in any given facility. The members should also be independent and declare any conflict of interest such as owning shares in pharmacies which supply medicines. A senior doctor would usually be the chairperson and the chief pharmacist, the secretary. Their activities should however be much broader and should include developing or adapting clinical guidelines, medicines selection, monitoring medicines use and taking corrective action, staff education, controlling drug promotional activities by pharmaceutical industry within the premises of the health facility and monitoring adverse drug reactions (8, 9).

Health Service Delivery in Tanzania.

During the 1990s, Tanzania responded to the WHO's "health for all" declaration by attempting to decentralize the health system through the devolution of central power from the Ministry of Health and Social Welfare (MoHSW) to Local District Government Authorities. Following the political, administrative, and financial decentralization, the District Councils were given responsibilities of managing clinics and health centers and the generation of local funds for buying medicine and equipment. The MoHSW headquarters was responsible for making and monitoring health policies, guidelines and reforms (10).

Following the reform, every District or Council need to form a Council Health Management Team (CHMT) whose composition is as follows District/Council Medical Officer, District Nursing Officer, District Pharmacist, District Laboratory Technician, District Health Officer, Health Secretary, Social Affairs Officer and District Dental Officer. These are the core members of the team. Others are co-opted members including District coordinators of various health interventions including HIV/AIDS coordinator, TB/HIV coordinator, TB and Leprosy coordinator, Reproductive and Child Health coordinator, Home based care coordinator, Malaria coordinator and Cold chain coordinator. The District Medical Officer is the head of the team.

The CHMT is responsible for the supervision, management, and monitoring of all district based health services. Furthermore, each health facility is supposed to have a health committee consisting of community representatives to discuss community health problems and needs. It is also responsible for supervising, coordinating and supporting the Primary Health Care, comprised of health centers and dispensaries/clinics. Patients whose condition demands resources not available at the Primary Health Care level are transferred to the district hospital. In collaboration with the Local Government, the CHMT plans and budgets for the activities needed to manage, control, coordinate, and support health services in the district on a quarterly basis. The quarterly reports gathered from each health facility include details of health services offered, efficiencies and deficiencies of the health facility, for example the number of staff present and missing, and infrastructure constraints.

Although CHMT have multiple roles, more often, they lack sufficient capacity both in terms of quantity and quality, to take greater responsibility for health services management, including of supervision of curative services. However, their work is often interfered with by central government and donor funded parallel systems such that sometime they are ordered to implement directives from higher level authorities, such as attending centrally planned seminars and workshops, participating in centrally driven projects, attending requests for reports, and conducting supervision of health services as per MoHSW schedule (11).

Following advice from World Health Organization and as an attempt to delegate some of the activities of CHMT, hospitals (health facilities) were supposed to form a Medicine and Therapeutic Committee (MTC). This body is a technical organ that will provide a forum for various disciplines to work together in developing strategies for improving medicines and therapeutics management, such as developing and using medicines formularies, managing medicine safety, information and education activities, and investigating utilization of medicines in health facilities. Also it makes sure that adequate copies of STG are available and the health workers are well informed.

MTCs are not intended to be involved in the administration of health facilities but rather intervene on technical aspects of management and use of medicines, and equitable distribution of financial resources for improved patient care. Ideally, a hospital MTC is composed of Medical Officer in-charge of the Hospital (Chairperson), Pharmacist in-charge (Secretary), Specialists (Physician, Pediatrician, Gynecologist, Surgeon), Hospital Health Secretary, Nursing Officer (Matron/Patron), Laboratory Technologist in-charge, Radiologist/Radiographer in-charge, Hospital Supplies Officer and Hospital Accountant.
A health centre and dispensary MTC should comprise of, Assistant Medical Officer in-charge/Clinical Officer in-charge of the facility (chairperson), Pharmacy/Store in-charge (Secretary), Nurse in-charge, Laboratory Technician/Assistant in-charge, Health Officer/Assistant, Chairperson of Health Facility Committee and one member from the Health Facility Committee who is not a health worker at the facility.

Some hospitals have formed these committees and others are in the process (12). Health centres and dispensaries face difficulties in forming them as not only do they face inadequate human resource for health skill mix but also medicine skills of health workers working in these levels of service provision is very limited. Therefore management of drug use and enforcement of STG is still the sole role of the CHMT. In Tanzania, STG (2007) is the third edition to be published; the first edition was published in 1991 and the second edition in 1997 (13).

1.2. Statement of the problem

Doctors, nurses, pharmacists, community health workers, and other health care providers learn during their basic training about all of the treatments that could be used, instead of focusing on the best treatment that should be used. Casual observation, as well as more systematic study of prescribing practices, frequently reveals a pattern of tremendous diversity among prescribers in the treatment of even the most common conditions. A Treatment Guideline provides the basics of service provision in a particular society. Standard treatment guidelines list the preferred drug and non-drug treatments for common health problems experienced by people in a specific health system. They represent one approach to promoting therapeutically effective and economically efficient prescribing (7). This enhance management of medicines supply, achieve better rational therapeutics (6) and reduce the proportion of national health budgets spent on medicines which is high in developing countries, 20 to 40 percent compared to 10-20 percent in developed countries (9).

In spite of these benefits, the use of STG is still low globally. In developing and transitional countries; in primary health care less than 40 percent of patients in the public sector and 30 percent of patients in the private sector are treated in accordance with STG (14). For example, in Delhi India, Kotwani analysed prescriptions for mild persistent asthma and found that only 21 percent of the prescriptions were accordance to the recommended STG (16). Presence of guidelines alone is not a guarantee that it will be followed as printed materials alone has shown very little effect on prescribing practices. Knowledge alone doesn't change behavior and printed materials can only have a sustainable effect if accompanied by training and supervision (14, 15). To foster this, WHO recommends every hospital to have a MTC whose main function is to assess the need and monitor daily prescribing practices as it conforms to the underlying STG.

Tanzania has adopted the recommendation and currently most hospitals have functional MTC, however at health centres and dispensaries, it is difficult to have a therapeutic

committee which can operate efficiently as that of hospitals since there are limited number of competent professionals in the field of medicines and pharmaceuticals. As the result the role of the MTC has been commissioned to the CHMT which is the body that manages all health related issues in the district. As a Council health service managerial body, CHMT has multiple roles including supervising, coordinating, and supporting the Primary Health Care; health centres and dispensaries/clinics. Moreover, CHMT lacks sufficient capacity (quantity and quality) to take greater responsibility for health services management, including of curative services and their work is often interfered with by central government and donor funded parallel systems (11).

It is not clear of who are key players on STG distribution, sensitization and whether they are used as expected at Primary Health Facilities. Therefore this study aimed at exploring prescribing practices and the whole processes involved in dissemination and supervision of STG to primary health facilities and try to find ways of improving utilization of STG and other operational guidelines issued by the government, particularly Ministry of Health and Social Welfare to primary health care facilities.

1.3: Rationale

The findings of this study will provide better ways of utilizing STG at dispensaries and health centres. As the result it can help to reduce unnecessary drug budget for both the Government and individual population; also can promote rational drug use.

1.4: Research Questions

i. Is STG (2007) available at primary health facilities?
ii. Are prescribers aware of STG?
iii. Do prescribers adhere to STG?
iv. Who are involved in sensitization of STG at primary health facilities?

1.5: Research Objectives

1.5.1. Broad Objective

To assess awareness, availability and utilization of STG by health care providers at primary health facilities.

1.5.2. Specific objectives

i. To assess availability of STG (2007) at primary health facilities.
ii. To determine awareness on STG (2007) among health workers.
iii. To determine utilization pattern of STG among health workers
iv. To examine sensitization process of STG at primary health facilities.

1.6: Operational definitions

Primary Health Facilities (PHF) refers to dispensaries, clinics and health centres.
Prescriber anybody who make diagnosis and recommend treatment in PHF, he/she can be a medical doctor, assistant medical doctor, clinical officer, nurse, medical attendant, etc.
Awareness is the state of prescribers having knowledge or perception of STG
Availability is the state of STG being present in health facilities and ready for use.
Utilization is the situation whereby prescribers make practical and effective use of STG.

CHAPTER TWO

2.0: Literature review

Treatment guidelines

Local manuals are needed in every health system because of different decisions about drug choices and the patterns of illness within a country. Disease oriented manuals are called Standard Treatment Guidelines (STG), Treatment protocols or Prescribing policies. Drug oriented manuals are called Therapeutic formularies. These guidelines list the preferred drug and non-drug treatments for common health problems experienced by people in a specific health system and therefore are key components of the therapeutic process. They may be used to diagnose, decide on treatment and drug supply and assist with adherence to the prescribed treatment (6).

Establishment of STG

Establishing a Standard Treatment Guideline is a lengthy process, one that must be done methodically and thoroughly in order to have a product that all practitioners are willing to accept. The process can be described in five steps; first is establishment of a committee to address the development of the guidelines. The MTC may take responsibility for this task or select individuals to form a new committee for the purpose of establishing the guidelines (7). Secondly an overall plan for guidelines is developed. A comprehensive plan with well-defined time frames is necessary to ensure that the process is started and finished within a reasonable period of time.

The next step is identification of diseases that the STG will cover. The most common and serious diseases and medical conditions should be selected from available morbidity statistics. All of the medical departments and specialty areas should be consulted to identify important diseases to be addressed in the guideline. Then determine appropriate treatment options, whereby evidenced-based information must be used and experts and clinical specialists should be consulted to confirm proposed treatment options. Guidelines must be consistent with national formularies and guidelines (6, 7).

Afterwards a draft should be subjected for comments and pilot testing. STGs are controversial documents and may not be accepted by all practitioners. It is important to circulate the draft document and obtain comments as per its contents, ease of use, presentation, and overall acceptability. This step is vital to determine future use of the guidelines and to garner buy-in from practitioners in the hospital. After completion and approval of the final draft, the document must be published and distributed widely to the professional staff. An official launch, training of users, and monitoring/evaluation are all necessary components to the distribution of the guidelines. Lastly, the STGs should be updated regularly to reflect changes in accepted treatment strategies. If this is not done on a regular basis, the STGs will quickly lose their credibility (6, 7, 9, and 14).

Utilization of Standard Treatment Guidelines (STG)

In primary health care, in developing countries less than 40 percent of patients in the public sector and 30 percent in the private sector are treated in accordance with STG (14). A study conducted at a teaching hospital and secondary health care in Delhi showed that only 21 percent of the prescriptions for mild asthma adhered to STG (16) and Pathak found that there was low adherence for STG for management of acute diarrhea in children under the age of 12 years in Ujjain India (17). In the study to find out as why clinical staffs over-diagnose malaria in Tanzania, Chandler found that clinicians were found to follow mindless as well as or rather than the guidelines (18). A baseline study done in Dar es Salaam indicated that compliance with STG was 25.6% (14).

Research shows that the use of STG has shown positive results in some aspects of rational drug use and in others has shown no impact. The use of STGs for acute respiratory infections in Fiji resulted in a 50% reduction in antibiotic use. In Uganda the introduction of a National STG did not result in any significant change for most indicators such as the number of drugs per prescription, number of antibiotics or number of injections, despite intensive training and supervision. However more cases were treated according to the National STGs, particularly cases of malaria. The STGs had most effect among untrained health workers (22, 24). Wiedenmayer et al found similar results in Dar es Salaam (15).

Effects of non-use of Standard Treatment Guidelines (STG)

Overall use of STG is still low to the extent that irrational use of medicines is an extremely serious global problem that is wasteful and harmful. Medicines are said to be used rationally when patients receive the appropriate medicines, in doses that meet their own individual requirements, for an adequate period of time and at the lowest cost both to them and the community (14). Irrational use of medicines can be expressed in different forms; the use of too many medicines per patient (polypharmacy), inappropriate use of antibiotics, often inadequate dosage, for non bacterial infections. Others can be overuse of injections when oral formulations would be more appropriate, failure to prescribe in accordance with clinical guidelines and inappropriate self-medication, often of prescription only medicines.

Irrational prescribing can affect health of patients in different ways; can lead to drug resistance and intoxicate their body; economically, affects both individual patients and countries. This is worse in developing countries where proportion of National health budgets spent on medicines is higher (30 percent) compared to developed countries (15 percent) (9). According to The United Republic of Tanzania drug tracking report, 2007 the government spending on essential drugs for the period 2002-2005 increased by almost 150% and in 2004-2006 spending was over 7% of the budget estimates (12).

Availability of STG

Every prescriber is supposed to have a STG when prescribing. Studies showing the actual situation whether documents are available as per prescriber are limited. Wiedenmayer et al in their research to assess the impact of pilot intervention (Standard Treatment Guidelines, training) on prescribing patterns in Dar es Salaam revealed that STG manual was available only to 30% of the health facilities surveyed (15).

Strategies to improve utilization of STG

STG development strategies

Treatment guidelines must have the most up-to-date and accurate information available. Any attempt at providing a guideline without this accurate information will lead to failure of the guideline. Therefore, the use of evidence-based medicine in preparing the guideline

and the use of expert authors and reviewers cannot be overemphasized. A successful guide should be simplified such that the number of health problems is limited. For each health problem, a few key clinical diagnostic criteria are listed. Drug and dosage information is clear and concise (6). Credibility is another important aspect of a successful guide. The treatments are initially developed for patients by the most respected clinicians in the country using evidence-based information. Revisions based on actual experience have further added to the credibility. Input from paramedical staff has been actively sought and acknowledged. And there should be the same standards for all levels; Doctors and other health care providers use the same standard treatments (6, 8).

STG implementation strategies; Awareness and Sensitization

For better implementation of STG, an implementation plan is necessary and it should include the following important elements:

· Printed reference materials
· Official launch
· Initial training
· Reinforcement training
· Monitoring
· Supervision

Printed reference materials can include manuals, posters, and training materials. Depending on the number of treatments involved, printed references may be in the form of wall charts, pocket handbooks, or larger “shelf-size” reference books. Some people feel that wall charts provide a better reminder to health workers, are more permanent, and help the patient better understand the treatment process. Others feel that a handbook is more effective, provided it fits into the pocket, is durable, and is well organized (6, 7).

An official launch is very important. The Minister of Health, the leaders of professional bodies, and leading clinicians should present the new guidelines at a public forum. Ideally, the presentation should be covered by the press and broadcast media and attended by representatives of health worker associations.

Initial training is also important. Ideally, standard treatments should be introduced during formal pre-service training for doctors and other health care providers. Use of the standard treatments and the reference manual or wall chart early in training develops good habits for later clinical practice. This implies that examinations should include questions on standard treatments. The length of initial in-service training will depend on the number and complexity of standard treatments. Training should specifically consider prescribers' inhibitions about using standard treatments. Some may be afraid that "looking things up in front of the patient" will detract from their credibility. Participants should therefore practice the use of reference materials in actual patient care situations or in role-plays (6). Other prescribers may not appreciate how the treatments were prepared and at first may not trust the treatments. Participants should be strongly encouraged to accept the standard treatments, perhaps even by signing a written agreement (7).

Especially for health care providers already in practice, reinforcement training during the first 6 to 12 months after the initial training can play an important role in reemphasizing the importance of following standard treatments and can allow an opportunity for the MTC to respond to questions that have arisen from attempts to apply the treatments (8).

Finally, the monitoring system and supervisory efforts should focus on the priority health problems and standard treatments for these problems (6, 15). Trap et al in their study to see the impact of supervision on stock management and adherence to treatment guidelines found that supervision improved adherence to STG by 19% (23), and is improved more if accompanied by educational outreach services (24).

Routine reports that focus on high-priority health problems is of great importance, on adequacy of supply of the few drugs needed for these conditions. The use of drug use evaluations can be helpful in monitoring and ensuring compliance with standard treatment guidelines. The implementation of guidelines is a complex process and the effects in terms of cost-effectiveness and long-term outcomes in patients are not well-studied (14).

3.0: CHAPTER THREE: METHODOLOGY

3.1 Introduction

Study independent variables were the key component in assessing the role played by each one on the dependent/ outcome variable and each one was obtained differently. Dependent variable, utilization of STG (2007) was measured by looking into patient register or Health Management Information System, HMIS (*MTUHA in Swahili*) number five (5) whereby patient records; diagnosis and prescribed medicines were recorded. These records were for a period of one year that is, February 2011 to March 2012. Independent variable like availability of STG (2007) was determined using a check list and others including distribution, sensitization, awareness and education level of prescribers were determined using a questionnaire (14).

3.2 Study design

A cross-sectional descriptive study using quantitative data collection tool was conducted in Magu District Council. Study area was selected randomly as literatures remain silence whether a similar study has been conducted in Tanzania except the baseline survey which was done in Dar-es-Salaam.

3.3 Variables

Dependent variable/outcome

Utilization of STG (2007)

Independent variables

1. Availability of STG to prescribers
2. Awareness of STG
3. Sensitization process
4. CHMT supervision on STG
5. Education level of prescribers

3.4 Area of the study

Magu District Council is one of the eight Districts of Mwanza Region. It lies between 20˚10' and 2˚50' latitudes south of the equator and 33˚ and 34˚ east of Greenwich. The District has a total area of 4,795km square of which 1,725km square is covered with water, mainly Lake Victoria. The temperature ranges between 25˚C and 30˚C; and the annual rainfall ranges between 700mm to 1000mm.

Administration; borders and structure

The District borders with Ilemela District, Nyamagana District (Mwanza City) and Misungwi District to the west; Kwimba District to the south, Bariadi District to the east and Bunda and Ukerewe Districts to the north. Almost the entire north border is covered with water of Lake Victoria. The District has 6 divisions, 31 wards, 122 villages and 16 streets.

Economic activities

The main economic activities are agriculture (small-scale or subsistence crops), livestock keeping, fishing, petty business, small scale industries and Cotton Ginning Factories.

Demographic data

National census result of 2002 showed that the district had a total population of 415,000; with growth rate of 2.1%. Children under the age of one year were estimated to be 4% of the total population, 18% are children below five years, while Women in child-bearing age (15 to 49 years) were 22.7% of the population.

District health system

The District has a total of 67 Health Facilities as shown in table 1 below

	Hospital	Health Centres	Dispensaries	Total
Government	1	6	47	54
Voluntary Agency	1	0	2	3
Private	0	0	10	10
Total	2	6	59	67

Table 1: Number, Type and Ownership of Health Facilities

3.5 The target population

The target population of this study was all prescribers in Primary Health Facilities

3.6 The study population

The study population of this study was all prescribers in both public and private dispensaries and health centres in Magu District Council.

3.7 Inclusion criteria

3.7.1 Inclusion criteria for health facilities

All registered dispensaries and health centres were included in this study.

3.7.2 Inclusion criteria for study participants

All health workers who had been prescribing for the last 12 months were included in the study.

3.8 Sampling Procedures

Stratified simple random sampling was used. Stratification involved separation of health centres and dispensaries and from each category simple random sampling was employed to obtain the study sample. Through simple random sampling; all health centres, public dispensaries and private dispensaries were listed independently. From each category, study samples were selected by lottery method. The sample involved 22 health facilities: 2 public health centres (out of 6); 17 (out of 47) and 3 (out of 10) government and private dispensaries respectively. Eight (8) prescribers from 2 health centre and 32 from 20 dispensaries, at least one from each dispensary were interviewed. Therefore 40 out of 62 prescribers were involved.

In order to get information for STG proper utilization, procedures stipulated by WHO (21) was employed in getting the sample size. From the twenty two (22) health facilities randomly chosen above; at least thirty prescriptions of patients treated between March

2011 and February 2012 were randomly selected by a simple random sampling method. Six hundred forty seven (647) prescriptions were analysed.

3.9 Data collection

Data on sensitization processes, awareness, supervision and education level of prescribers were collected using a guided questionainnare; while data concerning availability and utilization of STG were gathered using a check-list. Data collection processes were done by a researcher and two research assistants.

3.10 Data processing

Collected responses of different variable were coded to allow easy entry and interpretation; then coded data were entered into Ms- Excel spread sheet and then exported to SPSS version 16.0 statistical software for checks and analysis. Data were cleaned for validation, checked for consistency, range (outliers) and missing values.

3.11 Data analysis

Categorical variables were tabulated using frequencies and percentages. Chi- square test for testing the significance of associations between categorical variables; the significance level was set at $p < 0.05$

3.12 Recruitment and training of research assistants

Two research assistants with sufficient knowledge on prescribing were recruited and given a two day orientation on the objectives and content of the study, familiarization of research tools and how to administer tools. Research assistants were introduced to research ethics and administrative issues such as work schedule and other logistics.

3.13 Ethical Considerations

Ethical clearance was obtained from the office of the Director of Postgraduate and Research and Publication Committee of Muhimbili University of Health and Allied Sciences. The permission to collect data was obtained from Mwanza Regional

Administrative Secretary office and Magu District Council Director. Nevertheless before commencement of the study, Magu District Medical Officer were informed and provided an introductory letter to the heads of health facilities within the District.

The prescribers who meet the criteria were asked for verbal informed consent before the data collection begun. Confidentiality of the data and the information collected was ensured to the participants of the study.

3.14 Limitation of the study

The study targeted patient prescriptions in order to get proper information as far as STG utilization is concerned. But none of the health facilities provided proper prescriptions to patients. Two facilities had Ministry of Health and Social Welfare prescriptions which lacked space for diagnosis. So we decided to use patient registers and HMIS (*MTUHA in Swahili*) book 5 which had information on diagnosis and treatment as those written on prescriptions. The disadvantage of this is to miss some prescribed medications which were not available at health facilities. Also one private health facility lacked any previous patient information concerning diagnosis and medicines prescribed. To overcome this, we included in the study another private dispensary. And interview was conducted only to prescribers who were available on the day of data collection. This had no any setback as long as were part of health facilities' prescribers.

4.0: CHAPTER FOUR: STUDY FINDINGS

This chapter presents results that were obtained from the study. These results are presented in tables and figures preceded by brief explanations and interpretations of findings. A total number of 40 prescribers of which 80% were women were interviewed. Data in table 2(a) shows the numbers and proportions of respondents by sex, education level and other socio-demographic characteristics. Medical attendants and nurses together make 75% of all prescribers found in health facilities. Table 2(b) gives information on type of health facilities surveyed while table 2(c) tells the proportion of participants per health facility surveyed.

Table 2(a). Socio-demographic characteristics of study participants

	Socio-demographic characteristics	**Frequency** (n=40)	**Percent (%)**
Sex	Male	8	20
	Female	32	80
Academic qualification	None	1	2.5
	Certificate	31	77.5
	Diploma	8	20.0
Profession	None	1	2.5
	Medical Attendant	16	40.0
	Nurse	14	35.0
	Assistant Clinical Officer	2	5.0
	Clinical Officer	7	17.5
Duration on Job(years)	1-2	9	22.5
	2-3	8	20.0
	>4	23	57.5

Table 2(b). Proportion of primary health facilities surveyed.

	Type of health facility	**Frequency** (n=22)	**Percent (%)**
	Public dispensaries	17	77.3
	Private dispensaries	3	13.6
	Public health centres	2	9.1

Table 2(c): Proportion of participants per health facility surveyed

Prescribers			
Health facility	**Frequency**	**Percent**	**Cumulative Percent**
Health centre	9	22.5	22.5
Public dispensary	27	67.5	90.0
Private dispensary	4	10.0	100.0
Total	40	100.0	

Table 2(d): Prescribers by cadre by type of health facility

Prescribers						
Health facility	**CO**	**ACO**	**Nurse**	**M/A**	**None**	**Total**
Health centre	1(11%)	1(11%)	5(56%)	2(22%)	0(0%)	9
Public dispensary	3(11%)	1(4%)	9(33%)	14(52%)	0(0%)	27
Private dispensary	3(75%)	0(0%)	0(0%)	0(0%)	1(25%)	4
Total	7(16%)	2(5%)	14(35%)	16(40%)	1(4%)	40

Most of Clinical Officers were aware of STG (2007). As shown on table 3(a) below, 85.7% of Clinical Officers were aware compared with other cadres; nurses being the least, only 21.4%. There was significant difference on awareness to STG (2007) among Medical Attendants, Nurses, Assistant Clinical Officers and Clinical Officers. χ^2 =9.09, p=0.028.

Prescribers working in private dispensaries were more aware compared to those in public primary health facilities. Fifty percent of private dispensaries' prescribers were aware of STG (2007) compared with 11.1% and 44.4% in health centres and public dispensaries respectively. However as shown in table3 (b) below, the difference in awareness among prescribers of the three categories of primary health facilities was not statistically significant, χ^2 =3.5, p=0.174.

Table 3(a): Proportion of respondents by cadre who were Aware of STG (2007)

	Awareness of STG(2007)			χ^2	p-value
Characteristics	**Not aware(N=25)**	**Total**	**Aware(N=15)**		
Cadre				9.09	0.028
Medical attendant	12 (70.6%)	17	5(29.4%)		
Nurse	11(78.6%)	14	3(21.4%)		
Assistant Clinical Officer	1(50.0%)	2	1(50.0%)		
Clinical Officer	1(14.3%)	7	6(85.7%)		
Total	25 (62.5%)	40	.5(37.5%)		

Table 3(b): Proportion of respondents by health facility who were Aware of STG(2007)

	Awareness of STG(2007)			χ^2	p-value
Characteristics	**Not aware(N=25)**	**Total**	**Aware(N=15)**		
Health facility				3.5	0.174
Health centres	8(88.9%)	9	1(11.1%)		
Private dispensary	2(50.0%)	4	2(50.0%)		
Public dispensary	15(55.6%)	27	12(44.4%)		
Total	25(62.5%)	40	15(37.5%)		

Most prescribers who were aware of STG use it frequently as a reference during case management. As shown in figure 2 below, 86% uses frequently and 6% don't use.

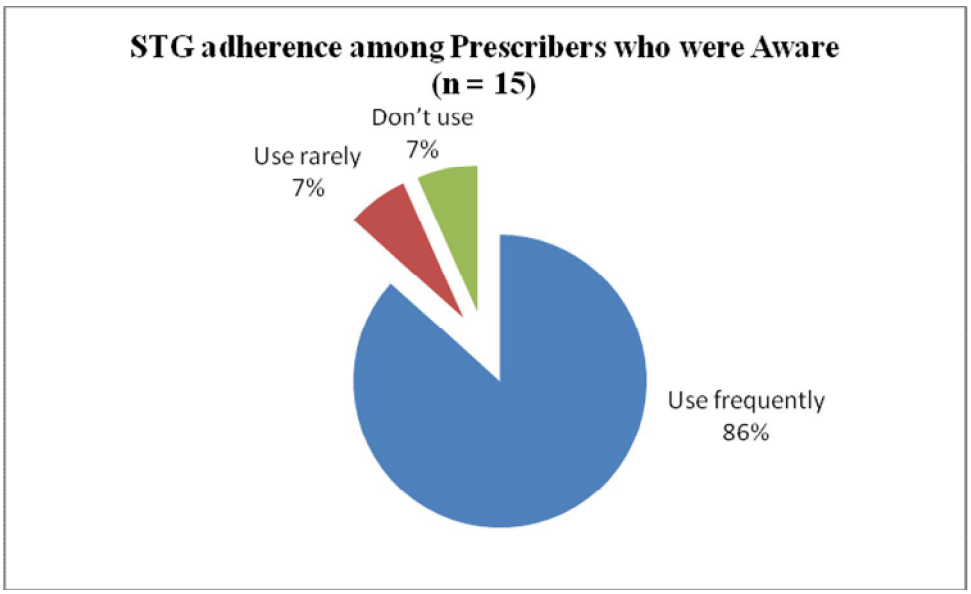


Figure 2: Proportion of aware prescribers who use STG on daily clinical case management

Fifty one percent of patients in primary health facilities were treated in line of STG (2007); in private dispensaries, adherence is highest (58.9%) with lowest in public dispensaries (49.6%), see table 4 below. There was no significant difference in treatment adherence to STG (2007) in health centres, public dispensaries and private dispensaries. χ^2=2.039, p=0.361.

Table 4: Proportion of patients treated according to STG (2007) per facility

	Treatment STG(2007)		**Adherence**	χ^2	**p-value**
Health facility	**Not Adhered (N=318)**	**Total**	**Adhered (N=329)**		
Health Centre	28(45.9%)	61	33(54.1%)	2.039	0.361
Public dispensary	267(50.4%)	530	263(49.6%)		
Private dispensary	23(41.1%)	56	33(58.9%)		
Total	318 (49%)	647	329 (51%)		

Most (78.3%) of primary health facilities surveyed had STG (2007). All health centres and 82% of public dispensaries had STG while only 33.3% of private dispensaries had the document. However the difference in availability among the primary health facilities was not statistically significant. χ^2 =4.136, p=0.136, see table 5.

Figure 4 shows that 47% of the health facilities with STG, the document were found elsewhere, mostly in drug store or left home and not in the prescribers' office or desk. And all facilities that have STG (2007) had only one copy.

Table 5: Proportion Health facilities with STG (2007)

	Availability of STG (2007)		χ^2	**p-value**
	Not available(N=5)	**Available (N=17)**		
Health facility			4.136	0.136
Health Centre	0 (0%)	2(100%)		
Private dispensary	2(66.7%)	1(33.3%)		
Public dispensary	3(18%)	14(82%)		
Total	5(22.7%)	17(78.3%)		

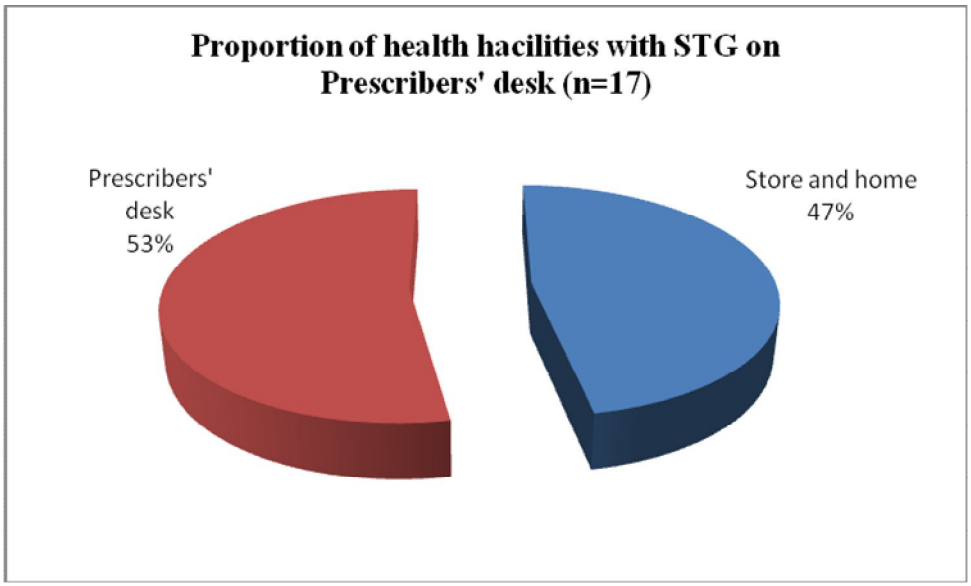


Figure 3: Proportion of H/F with STG on prescribers' desk/room.

Sixty six percent of Primary health facilities with STG were supplied through the Integrated Logistic System, 8.3% were supplied by CHMT and the rest got by various individual initiatives including buying, borrowing from colleague and some don't know where they got them as shown in figure 5 below.

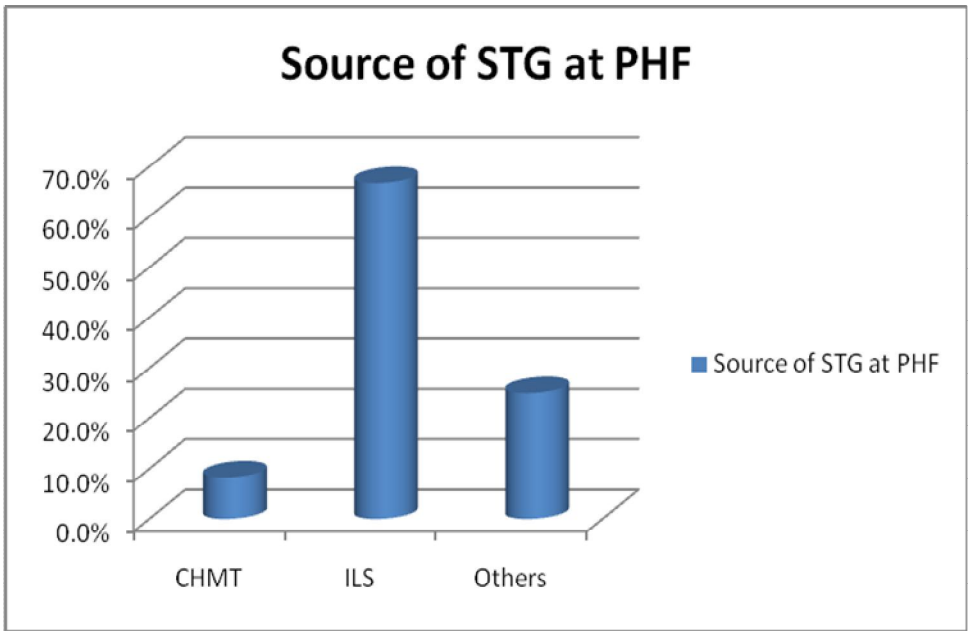


Figure 4: Sources of STG available at PHF.

As far as sensitization of STG is concerned, only eight percent of all health facilities with STG were sensitized on the importance of using the guideline on the day of delivery, and these were public dispensaries among those supplied by CHMT. None of the prescriber had attended any workshop or seminar. Also neither of the facilities had active MTC no Non Governmental Organization (NGO) which participated in any activity related with STG (2007).

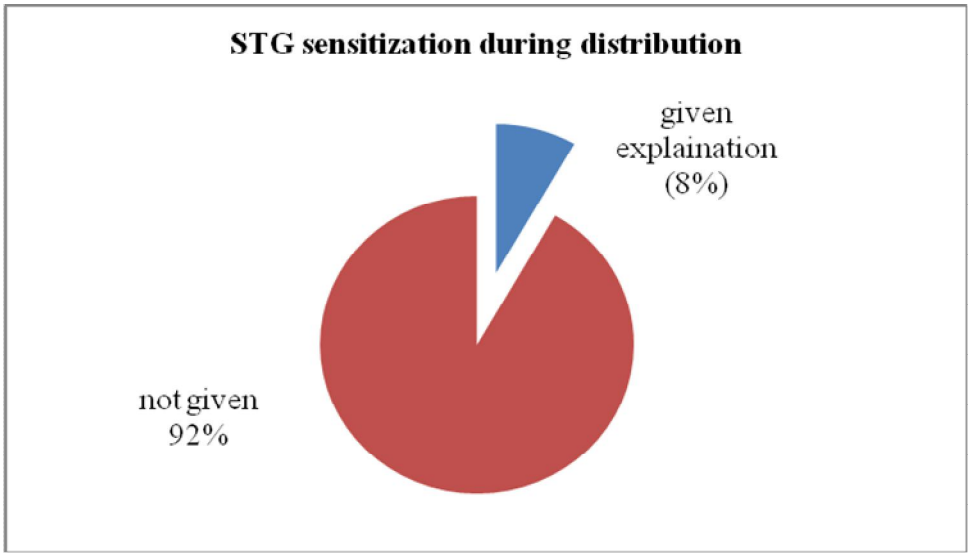
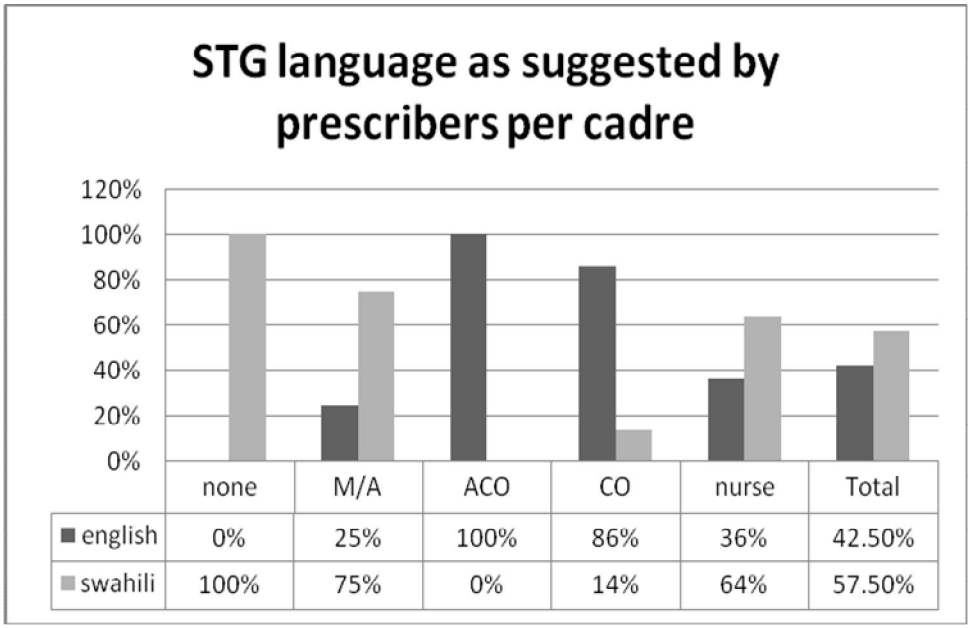


Figure 5: Proportion of health facilities which were sensitized on delivery of STG.

More than 79% of prescribers responded CHMT supervision doesn't help them understand STG because they visit rarely and once they came they have a lot of issues to deal with.

Language of which the guideline is written seems to be a factor for maximum use of the document. Seventy five percent of Medical attendants and 64% of nurses who formed a large proportion of the prescribers according to this study suggested that the guideline should be written in Kiswahili as it is easy for them to understand. Overall 57.5% of all interviewed prescribers suggested Kiswahili to be the means of communication in STG.



	none	M/A	ACO	CO	nurse	Total
english	0%	25%	100%	86%	36%	42.50%
swahili	100%	75%	0%	14%	64%	57.50%

Figure 6: Proportion of Prescribers who suggested STG to be written in Kiswahili.

In order to maximize use of Treatment guidelines supplied to Primary Health Facilities, 65% of prescribers suggested that health workers have to be trained immediately and 20% argued for sufficient copies to be supplied (figure 9 below). These will enable them to supervise themselves under the head of facilities instead of relying on CHMT.

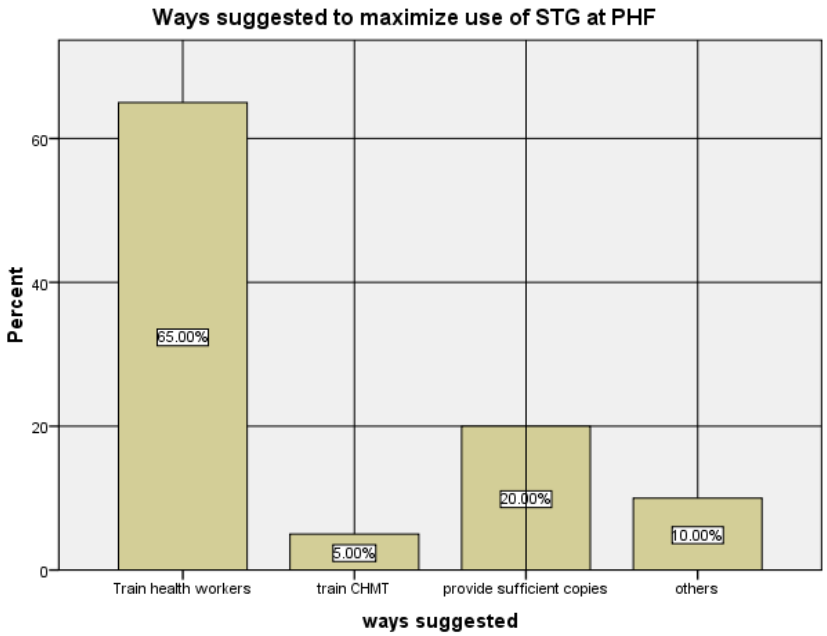


Figure 7: Ways suggested for maximizing utilization of STG at PHF

5.0: CHAPTER FIVE: DISCUSSION

Generally the study was carried out to assess awareness, availability and utilization of STG (2007) by health care providers at primary health facilities in Magu District Council. The study population comprised of 40 respondents who were prescribers, 32(80%) of them were women. Three quarters were nurses and medical attendants, Garner et al. (24) also found majority of prescribers in primary health care were nurses and medical attendants. The target group was prescribers in Primary Health Facilities; health centres, public and private dispensaries. However, the study design was cross-sectional, some prescribers might have left the place of work for any reason including leave, seminar or being sick; therefore those interviewed were those we found at health facility at the time of data collection. Also from twenty two health facilities surveyed, 647 patient records for the patients treated from March, 2011 to February 2012 were analyzed so as to determine prescribing pattern.

This study shows that treatment adherence to STG in public and private dispensaries were 49.6% and 58.9% respectively higher than the WHO report on The World Medicine situation 2011 which indicated that in developing countries, less than 40 percent of patients in the public sector and 30 percent of patients in private sector are treated in accordance with STG (9,14). And also the overall STG utilization in all primary health facilities was 51%, again higher than that found by Wiedenmayer et al in their baseline survey in Dar es Salaam which was 25.6% (15).

While the results provide promising situation of STG utilisation they are not sufficient as all patients are supposed to be treated according to the guideline. Factors are multifaceted (14) but according to this study, this can be attributed to insufficient dissemination as twenty two percent of all facilities lacked STG and the rest had only one copy regardless the number of prescribers available. Wieldernmayer et al found 30% of all primary health facilities in Dar es Salaam had STG (15). Not only these but also half of facilities with STG, the document were not in daily use.

Language barrier might also have contributed to the underutilization of STG as the current STG is written in English which is not well understood by most of the prescribers interviewed who commonly use Kiswahili to communicate. Fifty seven percent of all prescribers interviewed suggested that the document should be written in Kiswahili for easy understanding; similarly standard treatment guide suggests that the guideline should be simple, clear and user friendly (6, 7).

Awareness on STG among prescribers was low; only 37.5% of all prescribers who participated in the study were aware of the document. This might be the outcome of the system used to disseminate the documents. Most STG were delivered through the ILS system direct from Medical Store Department (MSD) by which nobody is responsible to provide any clarification as far as STG are concerned. Not only these but also awareness was impaired by lack of training among prescribers after the launching of the guideline. Studies show that effective implementation can be enhanced by providing training and educational outreach visits (24). Inactivity of MTC in primary health care facilities surveyed also impaired awareness among prescribers. Prescribers in private dispensaries were more aware because 75% of them were senior Clinical Officers compared to 11% of prescribers in government health centres and dispensaries; most of them have on job experience of not more than five years.

Neither Government itself nor partner/NGO was involved in sensitization to primary health facilities during the inauguration of STG (2007). This impaired advocacy as promoting STG use and rational prescribing is multifaceted (14) that more resources are needed.

CHMT supervision doesn’t help health workers in primary health facilities to understand STG for them to prescribe accordingly. According to findings of this study, CHMT supervision doesn’t help prescribers to solve issues related to STG. A study conducted in Zimbabwe shows that supervision increased treatment adherence to STG by 19 %(23). All these at the end affect STG utilization as printed materials can only have a sustainable effect if accompanied by training and supervision (14, 15).

6.0: CHAPTER SIX: CONCLUSION

Results from this study indicate that only a half of patients visiting primary health facilities are treated according to STG, more than three quarters of the health facilities have at least one copy of STG (2007) and a half of them are used by prescribers frequently. Language is a barrier to some prescribers especially of lower cadres. Most prescribers are unaware of STG and CHMT supervision plays minor role in both distribution and sensitization of the document.

Sensitization and training should be conducted whenever a new guideline is introduced so as to make maximum use of it and reduce undesirable effects to both patients and government. These include orientation training to all health caregivers present in primary health facilities, provision of sufficient copies and closer supervision.

Validity and reliability of my studyfindings

The findings of this study are valid and reliable because the methodology and data analysis technique used are relevant. Also the time used to collect data, one month is sufficient to get all needed in formations, area of study is another added advantage as the whole District was studied. The problem is generalization of findings to other Districts is difficult since they differ geographically, number and type of health workers and how CHMT manage them.

6.1 RECOMMENDATIONS

In order to maximize use of Standard Treatment Guidelines at primary health facilities, the MoHSW need to strengthens the supply system for STG and ensure that STG are placed in the prescribers rooms/sites.

Prescribers should be trained or oriented immediately and supplied with sufficient copies.

Treatment guidelines should be written in both English and Kiswahili to allow maximum use by all prescribers.

Private primary health facilities should also be supplied with STG in the same way as for public facilities.

Development partners and NGOs need to participate in activities related to STG, including sensitization and awareness creation to lower primary health facilities.

CHMT supervision should focus on building capacity of health workers in primary health facilities in understanding STG so as they can prescribe accordingly.

The Ministry of Health and Social Welfare should identify other means of disseminating STG to lower health facilities rather than relying on MSD. This is because the study found that some facilities had the document which was supplied through this system but they are still stored in the drug stores of the health facilities.

7.0: References

1. World Health Report 2000 (www.who.int./whr/2000/en) [accessed 2011/11/14]
2. Health service delivery module (www.who.int./health info/systems/WHO_MBHSS_2010_section_web.pdf) [accessed 2011/11/14)
3. A shared responsibility, Ontario Policy Framework for child and youth mental health, Ministry of Children and Youth Services (www.children.gov.on.ca) [accessed 2011/11/05]
4. Mwandime R, Bijilsma M, Costleman T, Lwanga D. Developing and applying National Guidelines on Nutrition and HIV/AIDS, Regional Centre for quality of Health Care Hand Book, Kampala Centre, Kampala (2003).
5. Kai S. Policy Implementation Barriers Analysis; Conceptual framework and pilot test in three countries. Washington DC. Future group, Health policy initiative, Task order I (2009)
6. Standard treatments session guide. (archives.who.int/produc2004/rducd/session_guides/standard_treatments-session-guide.htm) [accessed 2011/11/11]
7. Drug and Therapeutics Committee Training Course Session 10: Standard Treatment Guideline. Participants guide, Rational Pharmaceutical Management Plus Program, Arlington USA. Revised Draft 2001 (ebookbrowse.com/dtc-training-course-session-10-Pdf-d24927400) [accessed 2011/11/09]
8. WHO. Promoting rational use of medicines: Core components (apps.who.int/medicine/docs/Pdf/h3011e.Pdf) [accessed 2011/11/10]
9. Promoting Rational Use of Medicines: A publication of the World Council of Churches. Contact no. 183. Autumn/winter (2006) (www.oikoumene.org/files/wcc-main/con-183-e.Pdf) [accessed 2011/11/12]
10. URT Health Sector Reform (HSR) Draft 1994
11. Kimaro HC, Sahay S. An institutional perspective on the process of decentralization of health information systems: A case study of Tanzania. Information Technology for Development (2007), Vol 13(4), 363-390.
12. URT. Drug tracking study, Final Report (2007)

13. URT. Standard Treatment Guidelines (STG) and the National Essential Medicine List (NEMLIT) for mainland Tanzania. Third edition, 2007
14. Holloway K, The World Medicines situation 2011. Rational use of medicines, WHO, Geneva (2011) (www.who.int/medicines/areas/policy/world_medicines) [accessed 2011/11/15]
15. Wiedenmayer K, Mtasiwa D, Majapa Z, Lorenz N. Impact of pilot intervention; Standard Treatment Guidelines, training on prescribing patterns in Dar es salaam (archeves.who.int/icium/icium1997/posters/2f4_text.html) [accessed 2011/11/15]
16. Kotwani A. Impact of standard treatment guideline and patient education on quality of asthma management, University of Delhi (2007)
17. Pathak K. Adherence to treatment guidelines for acute diarrhea in children up to 12 years in Ujjain, India. Biomed Central (2011)
18. Chandler UR. Guidelines and Mind lines: Why do clinical staffs over-diagnose malaria in Tanzania? A qualitative study. Malaria Journal (2008), 7:53
19. Magu DC Comprehensive Council Health Plan 2011/2012
20. Bunda DC Comprehensive Council Health Plan 2011/2012
21. WHO/DAP/93.1. How to investigate drug use in health facilities.
22. Le Grand A, Hogerzeil HV and Haaijer-Ruskamp F. Intervention research in rational use of drugs: a review. Health Policy and Planning, Oxford University Press 1999; 14 (2): 89-102.
23. Trap B, Todd CH, Moore H and Laing R. The impact of supervision on Stoke management and adherence to treatment guidelines: a randomized controlled trial. Health policy and planning, Oxford University Press 2001; 16(3) 273-280.
24. Pagaiya N and Garner P. Primary care nurses using guidelines in Thailand: a randomized controlled trial. Tropical medicine and International Health, Blackwell Publishing Ltd (2005); 10 (5) 471-477.

8.0: Appendices

Appendix 1: Questionnaire

QUESTIONNAIRE

FOR HEALTH CENTRE AND DISPENSARY PRESCRIBERS

I. BACK GROUND INFORMATION

Name of Council…… Code of facility…….Date……

Code Number of interviewee……....Sex: Male/Female…….

Academic qualification (Degree, diploma, certificate, none, etc)……

Profession (MD, Nurse, CO, Medical attendant, etc)……

Position holding in at health facility (in charge, matron, prescriber, etc)…….

How long have you been prescribing (in years)

1. <1 year ( )
2. 2-3 years ( )
3. >3 years ( )

II. AWARENESS ON STG (2007) AMONG HEALTH WORKERS

1. Have you heard standard treatment guideline (STG) of 2007?

   1. Yes ( ) 2. No ( )

2. If no go to question number 22; If yes, Where did you hear:

   1. From Regional Management Team (RHMT) ( )
   2. From CHMT members ( )
   3. From seminar/workshop ( )
   4. From Hospitals/Health Centres/Dispensaries health workers ( )
   5. Others (specify) ( )……

3. Have you seen it (STG)?

   1. Yes ( ) 2. No ( )

4. If the answer is no to question 3 go to number 14; If the answer is yes, Have you read it?

   1. Yes ( ) 2. No ( )

5. If the answer is no to question number 4, why?

   1. You were not interested ( )

2. It was not necessary ( )
2. Any other reason……..

6. Have you attended any seminar/workshop/training of STG 2007?

1. Yes ( ) 2. No ( )

7. If yes to question 6, who were the trainee?

1. CHMT members ( )
2. People from ministry of health ( )
3. NGOs (specify)…… ( )
4. Others (specify)……. ( )

III. AVAILABILITY OF STG (2007) AT HEALTH CENTRES AND DISPENSARIES

8. Is there any copy of STG 2007 in your working room/desk?

1. Yes ( ) 2. No ( )

9. If yes who brought them?

1. CHMT ( )
2. RHMT ( )
3. MSD (in ILS kits) ( )
4. Others (specify) ……. ( )

10. When they brought the STG, did they give any explanations regarding their use?

1. Yes ( ) 2. No ( )

IV. APPROPRIATE UTILIZATION OF STG AMONG HEALTH WORKERS DURING DAILY CASE MANAGEMENT

11. Do you use the guideline in your day to day clinical case management as a reference?

1. Yes ( ) 2. No ( )

12. If yes, How often do you use it?

1. More often ( )
2. Rarely ( )

13. If you use it more often, why?
    1. It help to remind some issues ( )
    2. You have been told to do that ( )
    3. Any other reason……
14. If you use it rarely, why?
    1. it is not clear
    2. you don't have your own copy ( )
    3. The knowledge you have is enough ( )
    4. You don't have time to do that ( )
    5. Any other reason……
15. If no to question no 11, why?
    1. You don't understand it ( )
    2. The knowledge you have is enough ( )
    3. You don't have time to do that ( )
    4. Any other reason……

V. SENSITIZATION PROCESS AT PRIMARY HEALTH FACILITIES.

16. Did supportive supervision done by CHMT helpful in understanding STG?
    1. Yes ( ) 2. No ( )
17. Did CHMT members help you solving challenges related with the use of STG or prescribing practice in general during their supervision?
    1. Yes ( ) 2. No ( )
18. What can you say about CHMT members knowledge on their ability to clarify STG 2007 during supervision?
    1. Very poor ( )
    2. Poor ( )
    3. Very good ( )
19. Who distributed STG (2007) at your facility?
    1. CHMT members ( )
    2. RHMT members ( )

3. MSD through ILS ( )
4. Others (mention)……..

20. Are there any partners (NGO/FBO, etc) who participated in any activity related to STG 2007?

1. Yes ( ) 2. No ( )

21. If Yes in question 19, who were they and what did they do?

Name of partner	Activity conducted			
	1.sensitization	2.distribution	3.awareness creation	4.other activity(specify)

VI. WAY FORWARD

22. At your health facility, do you sit together discussing issues relating to good prescribing of medicines?

1. Yes ( ) 2. No ( )

23. If no to question no 20, why?

.....

.....

.....

.....

24. If yes to question number 20, how many times per year do you discuss together?

1. 1-2 times
2. 3-4 times
3. >4

25. In order for you to understand STG clearly, do you think it should be written in which language?

1. English ( ) 2. Kiswahili ( )

26. What do you think who should be given the roles and responsibilities of supervising and monitoring the daily use of STG at your health facility?
    1. Dispensary/ health centre therapeutic committee ( )
    2. District Hospital therapeutic committee ( )
    3. CHMT ( )
    4. Others ……..
27. What do you think should be done to enhance good prescribing and proper use of medicines according to Tanzania Standard Treatment Guideline at your facility?
    1. Establish dispensary/ health centre therapeutic committee ( )
    2. Train CHMT so that they can supervise well ( )
    3. Train District Hospital Team so that they can supervise ( )
    4. Make sure there are sufficient copies of STG ( )
    5. Others (explain)

       ……
       ……
       ……
       ……
       ……
       ……
       …….
28. If you think having a dispensary/health centre therapeutic committee is the best way, who should be the members?

    .....
    .....
    .....
    .....
    .....

THANK YOU FOR YOUR COORPERATION

Appendix 2. Observational Checklist

(To be filled by the researcher/ research assistant)

Name of health facility……

A: For STG

1. Presence of any STG: Yes……..No……..
2. If Yes, how many copies? …….
3. If Yes, which edition(s)? 2007…….Others…….
4. Where is it; in the shelves…….on prescribers' desk……..

B: For Prescription/Patient Card

1. Prescription number …….

   Disease diagnosed

   ……

   ……..

   Medicines prescribed

   ……

   ……

   ……

   Medicines supposed to be diagnosed according to STG (2007)

   ……

   ……

   ……

   ……..

APPENDIX III-INFORMED CONSENT

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS

INFORMED CONSENT FORM

Interviewee no. ☐☐

Consent to Participate in a Study

Greetings! My name is Kitwala John. A student of Master of Arts in Health Policy and Management of Muhimbili University of Health and Allied Sciences (MUHAS), School of Public Health and Social Sciences. I am working on a study titled "***Assessment of the awareness, accessibility and utilization of Standard Treatment Guideline (STG) at Primary Health Facilities"***

Purpose of the study

The study is conducted in partial fulfillment of the requirements for the degree of Master of Arts, Health Policy and Management of MUHAS. This study is aiming at evaluating role of different organs involved in the distribution, sensitization, distribution and utilization of STG.

You are being asked to participate in this study because your information, contribution and suggestions will be of tremendous importance to the study. Please be honest and fair as that will lead to a clear picture of implementation status and the findings will be useful for making recommendations and suggestions to be used for improvement of the service.

What participation involves

If you agree to participate in the study, you will be required to answer all questions in the questionnaire.

Confidentiality

I assure you that all the information collected from the interview will be respected, treated confidentially, and used for the purpose of the study only. Your answers, opinion and suggestion will be valued for the improvement and better implementation; your name will not be written in the report/document. All information collected from the interview will be entered into computers with only the interviewee number.

Risks

We do not expect that you will come to any harm as a result of participating in this study. There may be some questions you are not able or comfortable to answer. Please feel free to answer the way you know.

Right to withdraw and alternatives

Taking part in this study is completely voluntary. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve any penalty.

Benefits

The information you provide will contribute towards a clear picture of the way how STG especially that of 2007 has been in place in your facilities.

This evaluative report will create awareness and inform the management; your District Medical Officer's Office, Regional Medical Officer's Office and MOHSW at large on the strengths and challenges facing the distribution, sensitization, distribution and utilization of STG and other Clinical guidelines.

Who to contact

If you ever have questions about this study, you should contact:

1. The Researcher, Kitwala John Makwi of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es Salaam (0712342279, E-mail address kitwala2001@yahoo.com)

2. The study supervisor, Dr. D.N.P. Urassa, of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es Salaam. (Tel: 0715279553)

3. The director research and publications, Prof. M. Aboud, of Muhimbili University of Health and Allied Sciences, P. O. Box 65001 Dar es Salaam.(Tel : 022- 2152489, E-mail drp@muhas.ac.tz)

Signature:

Do you agree to participate in the study?
I ……. have read the contents in this form. My questions have been answered.

I agree ☐ I DO NOT agree ☐

Signature of participant ……

Date of signed consent …….