ST.MARY'S UNIVERSITY SCHOOL OF GRADUATE STUDIES

ASSESSMENT ON AUDITABLE PHARMACEUTICAL TRANSACTIONS AND SERVICES IMPLEMENTATION OUTCOME: THE CASE OF TIKUR ANBESSA SPECIALIZED HOSPITAL

BY

SELAMAWIT MILKESSA WAKJJIRA

JULY, 2019

ADDIS ABABA

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A THESIS SUBMITTED TO ST.MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr Temesgen Belayneh. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

_____ _____

Name Signature

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

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Advisor Signature & Date

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List of Abbreviations /Acronyms

APTS	Auditable Pharmaceutical Transaction and Services
DTC	Drug and Therapeutics Committee
EC	Ethiopian calendar
EHRIG	Ethiopian Hospital Reform Implementation Guideline
ETB	Ethiopian Birr
FMOH	Federal Ministry of Health
IPLS	Integrated Pharmaceutical Logistics System
HSDP	Health Sector Development Program
MSD	Medical Services Directorate
OPD	outpatient department
PFSA	Pharmaceutical Fund and Supply Agency
RDF	Revolving Drug Fund
SIAPS	Systems for Improved Access to Pharmaceuticals and Services
SNNPR	Southern Nations, Nationalities and People's Region
SPS	Strengthening Pharmaceutical Systems
SPSS	Statistical Package For Social Science
SSA	Stock Status Analysis
TASH	Tikur Anbessa Specialized Hospital
USAID	US Agency for International Development
VEN	Vital, Essential, Nonessential
WHO	World Health Organization

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Abstract

The objective of this study is to assess the outcome of APTS implementation in TASH using the five APTS result areas as a reference for measurement. Cross- sectional descriptive study was used both quantitative and qualitative methods were employed. The data for this study was obtained from primary and secondary sources. In-depth interviews were made with the pharmacy department head, accountants, finance head, Human resource head and internal auditor of the hospital. Self-administered questionnaire was distributed to 67 pharmacy staffs and 100 patients. 100 patients were also interviewed for their knowledge on dispensed medicine. Quantitative data was entered using SPSS version 20 and analyzed using descriptive statistics that is percentage and frequency. Quantitative finding showed that most of the prescribed medicines were available. Patients' satisfaction stood at score of 66% while 88 % of the employees are dissatisfied with their job. 74.75% of the patients know how to take their medication .The medicine name and its strength with frequency were the most frequent information written on the labels, 70% and 72 % respectively. The health facility wastage rate in monetary values found to be 2.86%.Qualitative findings shows that availability of different components of pharmaceutical services was included in the hospital except for extemporaneous compounding, various components of pharmacy services were believed to be inadequately staffed both with the pharmacist and accountant. Implementing APTS tools and systems in TASH contribution availability of prescribed medicines, patient knowledge on correct dosage of medications is also increased thereby adherence and patient satisfaction on pharmacy services, reducing rate of medicines expiry even if there is still a gap in achieving the national goal. The hospital should strengthen the system while taking a corrective action in the areas most challenge is seen.

***Key words**: APTS, wastage rate, patient satisfaction*

CHAPTER ONE

1. INTRODUCTION

1.1 Background Of The Study

Pharmaceuticals are a crucial high-value element in health care systems and holds accounts for 10-30% of health care costs that often make a difference in the health outcomes for the individual and the population (Fidler and Msisha, 2008). Provision of essential medicines was outlined by World Health Organization as one of the eight essential components of primary health care (WHO, 1978). As the availability of necessary medicines is integral to modern health care, access to these medicines is the fundamental right of every person. However, the WHO) reported that approximately 67% of the population lives without access to essential medicines (WHO, 2004). Among the medicines made available, more than 50% are prescribed, dispensed, or sold inappropriately, and 50% of patients fail to take them correctly (WHO, 2002).The factors undermining the availability of medicines include poor medicine supply and distribution systems; insufficient health facilities and staff; low investment in health; and the high cost of medicines (Sakthivel, 2005).

In Ethiopia a double burden of diseases is already emerging, with a mix of persistent infectious diseases and increasing non-communicable diseases and injuries (EPHA, 2012).Most of these health challenges could have easily been prevented or treated by ensuring the continuous availability and proper use of a few essential medicines selected on the basis of disease prevalence and evidence of the efficacy, safety, and relative cost-effectiveness of these medicines. However, there are many reasons these essential medicines are not adequately available at all public health facilities on a continuous basis (WHO, 2005).

The poor governance of the pharmaceutical sector in the country is believed to have contributed significantly to most of the challenges related to pharmaceuticals management at different levels of the health system (Tadeg et al, 2014). The selection and prioritization of medicines was not guided by proven tools and techniques, resulting in frequent stock outs and expiry of life-saving medicines. Moreover, the provision of pharmaceutical services was not systematized to ensure proper workflow and adequate medication use counseling during the dispensing process, compromising the overall treatment outcome and patient satisfaction.

Documentation of services was very minimal and was not standardized. As a result, relevant reports were neither generated nor shared with the relevant body to guide the decision-making processes. In recognition of the problems, the country implemented several measures in the past to build a strong pharmaceutical and medical supplies system. Notable among these measures were an increase in health care spending including the drug budget as well as an increase in the drug-financing risk pool, the establishment of the Pharmaceutical Fund and Supply Agency (PFSA), and the introduction of systems, tools, and guidelines such as the Integrated Pharmaceutical Logistics System (IPLS), Logistics Management and Information System (LMIS), Auditable Pharmaceutical Transactions and Services (APTS), and Ethiopian Hospital Reform Implementation Guidelines (EHRIG,2010)

The EHRIGs, which were developed in 2010, are among the sector-wide reforms implemented by the Federal Ministry of Health (FMOH) to improve the quality and accessibility of health services, including pharmaceutical services. Among other things, the guidelines focused on hospital governance, service quality, patient flow, record-keeping, pharmacy services, and human resources management (FMOH, 2010).The Pharmacy Chapter of EHRIG was designed to improve the provision of quality pharmaceutical services and institute transparency in pharmaceutical transactions in hospitals.DebreMarkos Hospital pioneered in EHRIG implementation (Adinew et al., 2012). Following the implementation, the hospital management identified the pharmacy services as determinants of service quality and customer satisfaction. A team of pharmacists identified major gaps and devised possible interventions after sharing their experiences during visits to hospitals in Addis Ababa with relatively better pharmacy services. Best practices and lesson learned there inspired the management and pharmacy professionals in DebreMarkos Hospital to take concrete actions. They sought technical assistance from the USAID project Strengthening Pharmaceutical Systems (SPS), a predecessor of SIAPS. As per the hospital's request, the technical team from SPS began to work jointly with them to improve pharmacy services at DebreMarkos Hospital, developing a package of interventions in identified areas, which was later called Auditable Pharmaceutical Transactions and Services (APTS).

1.2 Statement Of The Problem

In recent years, Ethiopia's FMOH has made tremendous efforts to improve the quality of health services at the hospital level, as laid out in the Ethiopian Hospital Reform Implementation Guide (FMOH,2012).However, frequent stock-outs of essential medicines and poor quality of pharmacy services pose challenges to achieving the desired level of success in hospital improvement. A 2003 assessment of Ethiopia's pharmaceutical sector showed that the average duration of stock-outs of essential medicines was 99.2 days in the 2002 in public health facilities and regional drug stores. The accumulation of medicines that was of limited utility to the catchment population led to expiry and wastage of limited resources, with expired medicines in health facilities reportedly as high as 8%. It was also observed that 43% of medicines dispensed to patients in health facilities were inadequately labeled, and 33% of patients who received medicines did not know how to take them correctly (APSE,2003).Various findings showed that essential medicines are poorly available 65% with high expiry rate 8.24% nationally There are poor information on product and financial values of medicines, inefficient utilization of medicines budget, poor pharmacy infrastructure and chaotic work flow, all together resulting in poor quality of medicines management and erratic dispensing activities including counseling services and low overall patient satisfaction on pharmacy services 74.5%(FMHACA, 2003). Many of these problems were attributable to poor governance in the pharmaceutical sector. Specifically, a lack of transparency and accountability left pharmaceutical transactions and services vulnerable to mismanagement, including poor planning, decision making, prescribing and dispensing, and reporting, which compromised both the availability and use of medicines (USAID/SIAPS, 2014).And Since TASH is the only tertiary hospital in Ethiopia that serves more than 818 patients per day according to the data on outpatient pharmacy service. Majority of these patients receive a prescription containing one or more drugs (TASH Pharmaceutical List, 2012). The hospital is also has cancer treatment center that admit clients from all over the country. Frequent stock out of essential medicines and other pharmaceutical products, low patient satisfaction and poor quality of pharmacy services in the hospital is hindering the progress in achieving the desired level of success in delivering the prospected quality healthcare service to patients. Hence, assessing the implementation of the system in order to make further improvements in the areas where the actual and the desired gaps. This paper aimed in assessing the outcome of APTS implementation in TASH.

1.3 Research Question

1) What are the outcomes of APTS implementation in TASH as per the five APTS result areas?

2) What are the major challenges that have affected the implementation of APTS in TASH?

3) What measurement could be taken to improve APTS implementation?

1.4 Objective Of The Study

1.4.1 General Objective

The general objective of this study is to assess the outcome of APTS implementation in TASH.

1.4.2 Specific Objectives

- To assess the outcomes of APTS implementation in TASH as per the five APTS result areas.
- To identify the major challenges that has affected the proper implementation of APTS.
- To find out measurement could be taken to improve APTS implementation.

1.5 Significance Of The Study

The study will be significant to find the gaps between actual practices with the desired practice during the implementation process of APTS in TASH. So the result of the study could provide some applicable recommendations to make further improvement in areas where gaps are seen and strengthen areas in which the system is good at in order to improve the pharmaceutical governance of the hospital. The outcome of this study could also be used by the stakeholders both governmental and non-governmental organization that works in collaboration with the hospital in improving the health care system.

Thirdly, the study will also be a contribution to the increase of the general knowledge of the subject and will act as a reference for future researchers.

1.6 Scope Of The Study

The study is conducted in Addis Ababa , TASH within the time period of January, 2019 to April, 2019 and it asses one of the broad concepts of governance at hospital level which is pharmaceutical governance.

1.7 Limitation Of The Study

Even though efficient budget utilization embraces wastage rate and affordability of medicines, this study limited to only wastage rate.

1.8 Organization Of The Study

The paper has been organized in five chapters. The first chapter is deals with introduction component of the study to give detailed information about background of the study, statement of the problem, objectives, scope, significance and other relevant specification of the study. Second chapter contains the literatures reviewed both theoretical and empirical literatures to support the study. The research design and methodologies used are stated in chapter three of the paper. The forth chapter contains the result and discussion part. The final chapter which is chapter five contains summary of major finding, conclusion and recommendation part of the study.

1.9 Operational Definitions

- **ABC analysis:** "A" class – 10 to 20 % of items that takes 70-80% of the overall total cost, "B" class – 10 to 20 % of items that takes 10-20% of the overall total cost and "C" class – 60-80% of items that takes 5-10% of the overall total cost
- **APTS standard vouchers and sales tickets:** Models (19, 22), and sales tickets standardized by Federal Ministry of Finance for APTS implementation.
- **Efficient budget utilization:** gain revenue from sales and rate of expiry less than 2%
- **Key medicines:** Medicines used to treat 10 top disease are said to be key medicines
- **Rate of expiry:** It is the percentage calculated by dividing the expired value in monetary forms to the stock available for sale.
- **VEN analysis:** classification of medicine based on their importance after identifying top ten disease that the hospital encounter 'V' vital drug, 'E' essential drugs and 'N' non-essential drugs

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

2.1Theoretical Review

2.1.1 Description Of APTS

APTS is a service delivery scheme that assumed to enables establishment of transparent and accountable medicines transaction and service provision. The ultimate objectives of APTS are to: institute ethical, transparent and responsible pharmacy practice that enables health facilities optimize utilization of medicines budget; improve access to medicines; continually improve the number, skill, mix & efficiency of pharmacy workforce, improve documentation and pharmacy premises and workflow, generate reliable and consistent information on products finance and services for decision making, improve patient knowledge on prescribed medicines and customers satisfaction. The system is intended to enables pharmaceutical transactions and service to be audited at any time .APTS has five main pillars: Efficient budget utilization, transparent and accountable transactions, reliable information, effective workload analysis including; performance measurement and workforce deployment and improving customer satisfactions (Adinew et al, 2012)

APTS is a package of interventions that involves the following activities (FMOH and SIAPS, 2013):

• Preparing/using tools to ensure transparency and accountability—Tools include receiving and issuing vouchers, sales tickets, registers, and daily summary and monthly reporting forms.

• Developing/using methodologies for efficient utilization of medicines budget—Methods include: price setting; generating a daily sales summary as cash, credit, and no charge; generating information on products, finances, and pharmaceutical services; assigning bin ownership at the dispensary; preparing a facility-specific drug list with items categorized as vital, essential, and non-essential (VEN); undertaking ABC/VEN analysis to identify and reconcile the most needed medicines; and determining stock turnover through consumption and undertaking stock status analysis (SSA) to identify the usable stock versus obsolete stock.

• Planning for pharmacy renovation, reorganization, equipment/facilities, and suitable workflow—reorganize dispensaries in such a way as to promote one-stop shopping service and effective medicines sales; reorganize pharmacy workflow to improve medication use counseling and patient convenience; and redefine the roles of dispensers, accountants, and cashiers.

• Conducting workload analysis and determining proper human resource deployment, performance evaluation, and training.

•Planning for regular physical inventory and auditing to ensure transparency and accountability.

• Planning prescription evaluation and medicines-use counseling to promote proper use of medicines**.**

2.1.2 Objectives Of APTS Program

APTS was designed to address the following objectives:

- To bring efficient medicines budget utilization in health facilities by reducing expiry and Improve revenue from sales of medicines
- To establish transparent and accountable pharmaceutical transactions and services
- To enable health facilities produce reliable information on product, finance and pharmacy Services regularly
- To enable health facilities to measure workload, level of effort, develop human resource, Deploy and manage workforce effectively
- To improve customer satisfaction on pharmacy services to the standard level
- To improve rational medicines use and patient knowledge on correct dosage

2.1.3 Essential Elements and Benefits of APTS

Essential Elements of APTS

APTS is a data driven package of interventions, with internationally proven methodologies, used for pharmacy practices. It has five essential elements or result area (FMOH,2018).

- ✓ The Efficient Budget Utilization
- ✓ Transparent and Accountable Transactions
- ✓ Reliable Information for decision making
- ✓ Pharmacy Service organization
- ✓ Improved Customer Satisfaction

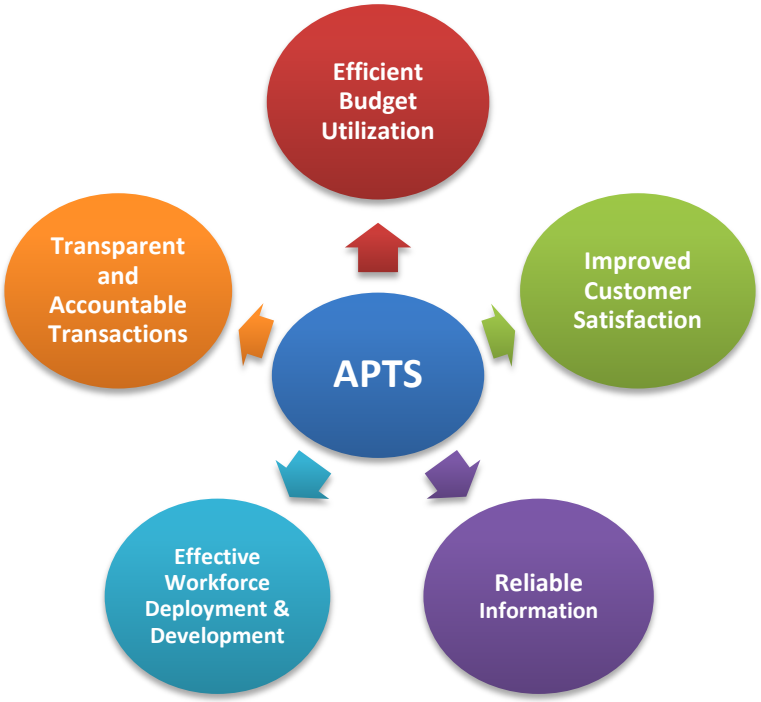

Figure 1.APTS key result area (Adinew et al, 2012)

1. **Efficient utilization of medicines budget**

- ✓ Sales management: Establishing effective medicines sales management system: price setting, daily sales summary as cash, credit and free
- ✓ Product prioritization: Preparation of facility specific drug list prioritization as vital, essential and non-essential (VEN)
- ✓ Reconciliation: undertaking ABC/VEN analysis to identify and reconcile the most needed medicines used to treat 20 top diseases in relation to budget consumption (80% of budget) to address priority health problems of the catchment population by the limited budget
- ✓ Stock analysis: undertaking the three-analysis including consumption to stock ratio, stock turnover and stock status analysis to identify the usable stocks versus obsolete stocks, to get reliable financial and product information and increase sales.
- ✓ Bin management: to identify slow moving items and reduce rate of expiry

2. Transparent and accountable pharmaceutical Transactions

- ✓ Tools - receiving and issuing vouchers, sales tickets, registers, daily summary and monthly reporting forms in a way that can easily ensure transparency of transaction
- ✓ The pharmaceutical transactions and services should be supported by well-designed and up-to-date systems, software, proven methodologies used for prioritization, quantification, stock analysis and tools used for recording and documentation.
- ✓ Conducting efficient and effective physical inventory
- ✓ Auditing of products, finance and service

3. Pharmacy renovation, reorganization, equipment/facilities, Workload analysis and proper human resource deployment

- ✓ Dispensaries organized as Outpatient, Inpatient, Emergency and Chronic Care Pharmacies to promote one-stop shopping service and effective medicines sales
- ✓ Reorganize pharmacy workflow best suited to improve medication use counseling and patient convenience (dispensaries with two doors—entrance and exit), arranging patient waiting area with shelter and chairs to sit.
- ✓ Rearranging the dispensing setup as Rx evaluator➔biller➔cashier ➔ counselor – all in a queue for patient convenience.
- ✓ Fulfilling the pharmaceutical services with adequate and secured storage spaces, cashier cubicles in the dispensary, dispensing & counseling counters, patients' waiting area, offices, rooms for extemporaneous preparation, provision of drug information services and reference materials.
- ✓ Redefine roles of dispensers, pharmacy accountants and cashiers as per the workflow
- ✓ Deployment of adequate number of pharmacy professionals and other supportive staff based on the workload in the health facility.
- ✓ Evaluation of performance based on quantity, quality and transparency of services rendered using the daily summary, and auditing and onsite training based on the gap.
- ✓ Measuring level of effort, analyzing workload and deployment of adequate number and mix of professionals for pharmacy services (pharmacist, pharmacy technicians, accountants, cashiers, clerks, porters, cleaners and guards)

4. Information for decision making

- ✓ Generating timely, reliable and consistent information on product transacted, finance and services rendered from daily summary and monthly reports for decision making. The information should be collected from vouchers, sales tickets, registers and formats which has serially numbered references. This information should be timely reported to be used for decision making in health facility, Woreda healthy office, Zonal Health department, regional and national levels.
    - ✓ Product information during the period includes: stock turn-over-ratio, wastage rate, consumption to stock ratio, physical inventory, product audit, availability of medicines for TOP ten diseases .
    - ✓ Finance information: includes, financial values of medicines procured/ received, issued, gross profit obtained, ending balance.
    - ✓ Service information: includes, number of counseling made per health facility, per pharmacist, drugs per prescription, number of patients served, number of DTP identified/ interventions, etc.

5. Patient knowledge and satisfaction

The patient satisfaction increases due to workflow arrangement, human power adjustment, improving availability of prescribed medicines and better counseling.

Benefits of APTS

The key benefits of APTS include:

- It enables efficient utilization of budget and helps to measure affordability
- It increases health facilities revenue by efficient sales management, reducing wastage
- It enables making informed decision on product, finance and services
- It facilitates auditing (product, finance and services) by improving transparency and accountability
- It enables to measure level of effort, human resource needs based on workload analysis.
- It increases patient knowledge on correct dosage and satisfaction on pharmacy services
- It supports the implementation of Balanced Score Card (BSC)
- It improves availability of essential medicines, supplies and reagents (Tadeg et al, 2014).

Table 1.Core indicators for measuring key result areas and implementation processes

Key results	Indicators
Transparent and accountable transaction	✓ Documenting /reporting wastage of medicine annually ✓ Conducting internal auditing at least once in a year ✓ Tracking sales of medicines and reconcile with actual medicines dispensed on a daily basis
Efficient budget utilization	✓ % of expired medicine based on monetary value ✓ Average revenue from sales of medicines ✓ Conducting stock status analysis ✓ Performing ABC/VEN reconciliation
Improved customer satisfaction	✓ % of patient who knows the correct dosage of dispensed medicines ✓ % overall patient satisfaction ✓ Average availability of 30 key medicines in pharmacy stores ✓ Average availability of 30 key medicines in dispensing units ✓ Mean stock out duration ✓ % prescribed medicines that are actually dispensed
Generation of information	✓ Submitting financial reports each months ✓ Generating service delivery reports on a monthly basis ✓ % of discrepancy between quantity of medicine recorded on bin card and actual physical count ✓ Received monthly feedback from FMOH on APTS indicators/performance
Effective workforce	✓ Accountants fully dedicated to managing financial transaction at pharmacy ✓ Cashiers fully dedicated to managing daily pharmaceuticals transaction ✓ Performance work load analysis ✓ Overall satisfaction of pharmacy professional

Source: (Teferi et al, 2016)

2.2 Empirical Review

Globally, in developing and industrialized countries alike, efforts to provide health care are facing new challenges. These include the rising costs of health care, limited financial resources, shortage of human resources, inefficient health systems, the huge burden of disease, and challenges to relate to treatment that one third of the world's population does not yet have regular access to essential medicines (Karin, 2006). For many people, the affordability of medicines is a major constraint due to high price especially in private sector reaching in some cases 80 times the international reference price and requires over 15 days' wages to purchase 30 days of treatment (Augustine, 2011).In low and middle income countries, because of high prices, medications account for 25% to 70% of total health care expenditures, compared to less than 15% in high-income countries. Inaccessibility and unaffordability to essential medicines are aggravated by medicines diversion from government to private, theft, non-transparency, nonsystematic selection, poor procurement and wastage due to expiry, irrational use, and poor pharmacy organization and workflow (WHO, 2019).

A recent report of the President's Malaria Initiative to Congress of the US Government indicated that until April 2014, the stealing is continuing and there was no solution solicited in Africa (USAID and CDC, 2014). As per the study of World Bank in collaboration with anti-corruption authority of Ethiopia, even though corruption is uncommon compared to other African countries, pharmaceutical sector is found to be one of the two most corrupted sectors in Ethiopia that donated products are being diverted for private resale within Ethiopia and abroad (Janelle,2012).Studies showed that the root causes of drug diversion in Ethiopia includes: non-transparent transaction; while medicines entered in the store, issued to sections and dispensed to patients, patients used to buy medicines with a receipt prepared by a cashier who is unable to write the names and full descriptions of medicines. In the wall Street journal, a survey showed that antimalarial medicines are diverted from east to West Africa due to lack of transparency of medicines supply management system**.** Therefore, a system that can transparently show step by step flow of medicines until it reach the intended patient is becoming mandatory (Benoît et al, 2013).

Epidemiological study conducted in India showed that less than half reported that they did not ask and were not told how to store their medicines properly at home. Less than one third (30.4%) of study participants reported that they did not ask the doctor about any possible side effects of their medicines and more than two thirds (72.4%) discontinued their treatment course when they felt that their symptoms disappeared (Pragnadyuti et al, 2013). Another study conducted in Afghanistan showed that the patients who know all the seven WHO drug use indicators that enables on how to take dispensed medicines (the name, dose, route of administration, the frequency, duration, precaution, storage) ranged from less than 10% to 60% (Terry et al ,2010). A study conducted in Tanzania showed adequate patient knowledge about the dispensed medicines was met only for 83.85% of patients and the correct medicine labeling criteria for prescriptions were met in 62.29% of the analyzed prescriptions (Kishiwa,2011). But in Ghana, seven patients (15%) in public pharmacies had not been informed on how to take their medicines (WHO, 2008). Study conducted in Ethiopia only 12.8% respondents understood how to take their medication as compared to the ideal value of 100% (FMOH, 2014). The assessment in Ethiopia shows that on average, only 19.9% of medication dispensed to the patients in health facilities is adequately labeled (FMOH, 2003). A baseline assessment for APTS implementation done by FMOH in collaboration USAID/SIAPS project, revealed that: patient knowledge on how to take their medicines; concerning dose, route of administration, frequency and duration showed that only 50.5% clients properly know all parameters (FMOH and USAID, 2014).Despite this fact, one-third of the world population lacks access to essential medicine, more than 50 % of all medicines are used inappropriately and 50 % of the patients have problem of compliance.

On the basis of the findings of studies in Harerge on satisfaction with the privacy of outpatient pharmacy is 122(37.8%) respondents were satisfied which is lower than the baseline assessment taken in the federal hospitals that was 54.9% of respondents were satisfied. In the APTS baseline assessments conducted at different times in these hospitals, overall patient satisfactions on pharmacy services were found to be; 77% in DebreMarkos Referral Hospital and 40% in FelegeHiwot Referral Hospital(ARHB and USAID,2014).

Different studies showed that there is a shortage in availability key essential drugs in different countries (Yang et al, 2010). For improvement of therapeutic outcome of hospital activity, availability of pharmaceuticals has a great role (Ferrettiet al,2014). But in real situation, pharmaceutical supplies interruption is very common even in developed countries. Delays in chemotherapy administration or changes in treatment regimens due to drug shortages were reported by 93% of survey participants and 10% reported reimbursement challenges related to drug shortages (Holle et al., 2013).Key essential medicines are largely available in public health facilities in Jamaica were 93.3% (WHO, 2012). A study conducted in Costa Rica showed half of exit survey respondents had not received a prescribed drug due to non-availability, an important indicator of ineffectiveness. Cameron and his colleagues investigated the availability of 15 generic medicines used for a range of conditions in 36 developing countries and found it to be 38%, average public sector availability of generic medicines ranged from 29·4% to 54·4% across WHO regions (Cameron et al, 2008). Another study in developing country indicated that in all countries less than 7.5% of these 32 medicines were available in the public sector, except in Brazil, where 30% were available, and Sri Lanka, where 28% were available (Mendis et al, 2007). In Ghana Overall indicators of access show that key essential medicines selected for the country are to a high extent available in public health warehouses 80%(WHO,2008) .Whereas in Tanzania About 61.75 % of the 14 items monitored was available in public health facilities (Kishiwa, 2011). In Sudan on the average, availability of selected essential medicines at the public pharmacy was found to be 80.6% (Elamin et al, 2014). The national average for availability of key essential drugs in health facilities was 70% for public health facilities in Ethiopia (FMOH, 2003). From the study conducted in Jimma University Specialized Hospital (JUSH) revealed that lack of drugs and supplies in the hospital pharmacies was the major problem, where about 70% of the clients with prescription paper for drugs did not get some or all of the ordered drugs from the Hospital's Pharmacy (Assefa ,2011). Improving the availability and accessibility of essential drugs as well as alternative drugs with information particularly in pharmacy profession are found to be crucial for optimal and rational pharmacotherapy(Abulaet al,2003). This could possibly be achieved through developing analyses conducted periodically, like ABC/VEN matrix analysis methods. (Ferrettiet al,2014).

Out of the many aid pharmaceuticals in 2009, only 62 items are analyzed. Out of these, Class A items were 6 (9.67%) which accounts 94.3% (3,376,941.75 birr) of the total consumed budget even if it is from donation source. But class B and class C pharmaceuticals cover only 4.25% (124127.4 birr) and 1.45% (69597.63 birr) of budget, respectively. But in item value, class C items cover 87.25% and class B was 11.3%. In the same way, the 2010 result showed a significant difference in budget assignment between class A items and rest classes. However, class A items accounted only 25 (10%) of total 250 items and they covered 97.57% (58103131.4 birr) of the budget. 80.2% of these items were occupied by class C items but it takes only 1.17% (700151.00 birr) budget, the rest taken by class B pharmaceuticals. In 2011 TASH got pharmaceuticals which cover 209697453.29 birr. 99.6% of this money covered by Class A items which were 12 (10.52%) in number. Class B and Class C items showed very small portion of the budget, only 0.27% and 0.13% respectively, and in quantity, class C took 78.95%and class B 10.5%. It was recommended by the researcher that Auditable Pharmaceutical Transactions and Services (APTS) could improve the inventory management.

Pharmacy organization of health facilities, workflow within pharmacy outlets, the number, mix and ratio of pharmacist to client ratio are the basic elements to be fulfilled to deliver quality pharmacy services and attain appropriate patient satisfaction (Ayalew et al, 2012).The pharmacies of hospitals should be organized as outpatient, inpatient and emergency pharmacies and a central medical store of each directed by a registered pharmacist (FMOH, 2010). In addition, the hospital has to have adequate personnel, equipment, premises and facilities required to store pharmaceutical supplies and carry out compounding, dispensing and counseling activities. The work flow should be designed in such a way that customers should enter in one gate of the pharmacy outlets and exit in another, in a way inside the pharmacy; customers see prescription evaluator, biller, cashier, and medicines use counselor in a queue (Ayalew et al,2012).A study in Kenyatta National Hospital, Kenya**,** indicated that "low employee's capacity, inadequate technology adoption for health service, ineffective communication channels and insufficient financial resources resulted to decrease in provision of health service quality (Kenneth et al ,2012).Workflow in pharmacy services is a problem in many African countries. Its inefficiency also has a negative impact in all over performance of the health facility.

There are different models in work flow of pharmacy services like were “single server-multiple queue models and multiple servers with multiple queue models”. Finally, after staff re-orientation the streamline process, the best model that reduces waiting time from 167.0 to 55.1 minute which indicated a 67% reduction waiting time was adopted by consensus and practiced (Ndukwe et al ,2011).

The study conducted in Serbia showed that the degree of professional satisfaction of Serbian healthcare professionals was low. The main causes of professionals’ dissatisfaction were wages, equipment, the possibility of continuous medical education/training and the opportunities for professional development Over 50% of healthcare professionals in Serbia were satisfied and very satisfied with their job in 2007 and 2008 (Nina B et al,2008).

Around 35 % of annual hospitals budget is spent on buying materials and supplies, including medicines (Kunders et al, 2000). But the inefficiency of the procurement has also resulted in the poor absorption capacity of funds allocated from different stakeholders. A study conducted in Jamaica reveled that not every public health facility had the VEN List, since it was only available in about one in each three facilities (35.7%) (WHO, 2012). Other study in Ethiopia showed that only four hospitals (23.5%) reported being allocated adequate budget for pharmaceuticals in the 2005 Ethiopian calendar (EC) year. Among those hospitals reporting that they had inadequate budget for pharmaceuticals, the average number of months covered by the allocated budget was 7.84 (Tadeg et al, 2014).Study conducted in Ethiopia during collection of APTS baseline data indicated that there was an overall wastage of 3,281,562.20 ETB ($164,078.11) in 2012, accounting to an average of 3.9% of the total value of medicines received by 6 hospitals. In 2013, the value of wastage was estimated to be birr 10,684,221.09 indicating an average wastage rate of 8.3%; in 2014 total wastage of 1,542,491.6 ETB ($77,124.58) indicating an average of 5.1% wastage rate (FMOH and USAID, 2014).This rate of expiry was found to be equivalent to the rate of expiry of medicines taken during national HSDP-IV (2010-2015) baseline (FMOH,2010).A study done in Kenya health facilities indicated that the incidence of expiry of medicines in dispensing shelves were found to 2.3% in government health facilities where as 1.9% in private health facilities Similarly study conducted in Uganda showed that high contribution of the expiry medicines to be due to storing medicines that treat rare diseases 81.8%and drug donation 56 % (WHO,2009).

Similar study in Ethiopia revealed that the national averages expiry rate of medicines was found to be 8%, 2% and 3% in health facilities, regional drug stores and private drug retail outlets, respectively (FMOH and USAID, 2014) The study also showed that the average rate of medicine wastage (7.5%) was higher than national target of below 2% set on HSDP IV (FMOH, 2010). On the contrary, findings of studies on implementation of Auditable Pharmaceutical Transactions and Services (APTS) in Ethiopia reported much lower figures of 0.27% and 1.1% wastage rate (Teferiet al,2016). In China various studies indicate that on average about 30 percent of public drug supplies are expired or counterfeit, suggesting poor logistics management, limited oversight and graft. In national assessment of Ghana pharmaceutical assessment 10% percent of the public dispensaries had expired medicines (WHO, 2008). At least US$550 000 worth of anti-retro-virals and 10 million anti-malarial doses recently expired in Uganda's National Medical Stores (Nakyanzi et al, 2010). Similarly a study on pharmaceutical sector in Ethiopia showed that average presence of expired drugs about 8% in health facilities (FMOH, 2003).

2.3 Conceptual framework for APTS evaluation; Adapted from Logic Model

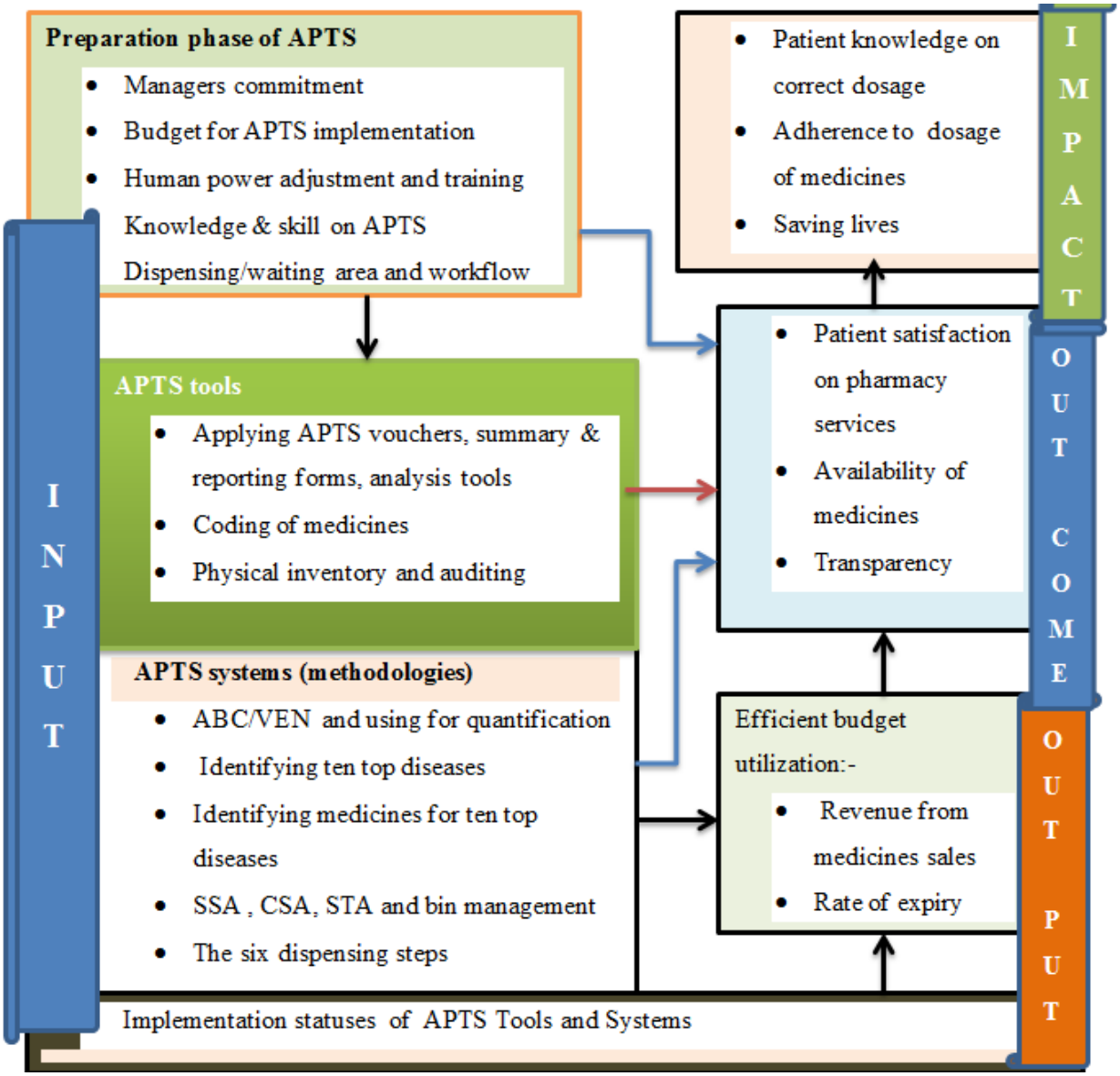

Figure 2.Conceptual framework for APTS evaluation; adapted from Logic Model Flowchart for Program Evaluation, March 2015

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Research Design

The objective of this study was to assess the outcome of APTS implementation in TASH. In order to fulfill this objective a mixed approach of both qualitative and quantitative method through facility based cross-sectional descriptive study design were employed because the researcher aims to understand, observe and measure about the five key areas of APTS implementation.

3.2 Data Type And Source

The data for this study was obtained from primary and secondary sources. Concerning primary source, relevant data was collected from respondents who had direct involvement in the implementation process and believed to have valuable insight about the implementation of APTS that were head of pharmacy, pharmacy staffs, finance head, internal auditor and clients. Regarding to secondary source, data was gathered from hospital records which were monthly inventory reports, ABC/VEN analysis and SSA.

3.3 Data Collection Method And Instrument

The data collection instruments were adopted from (FMOH and USAIDS, 2014).Questionnaire with a five point LIKERTs scale question was the main instrument used to collect quantitative data from patients and pharmacy staffs. To support the quantitative data, key informant in- depth interview was conducted with the pharmacy department head, accountants, finance head, Human resource head and internal auditor of the hospital.

The data was also supported by observation of relevant documents and pharmacy services. Documents related to bin/stock cards and records which were a monthly inventory reports generated by each pharmacy units on medicine wastage rate were reviewed to gather information on relevant indicators. Data on the availability of key medicine and accuracy of records were collected through the checklist developed by FMOH.The availability of medicines were measured based on actual observation of products on the shelf at the time of the visit.

3.4 Target Population And Sampling Technique

The target population of this study was employees of pharmacy professional, finance and human resource stuffs of TASH who were involved in the implementation of APTS. For patient knowledge and satisfaction, all patients who got pharmacy service on the data collection period. For expiry rate and implementation status; documents to be reviewed were all monthly reports of APTS by the year 2010EC, ABC/VEN analysis documents and sampled stock status analysis made in the same year.

Due to few number of target population who are involved in the implementation of APTS, it had decided to use the entire population in the study. All pharmacy professionals ,67 in number that took APTS training , accountants five in number, finance head, internal auditor, human resource head were used as respondents for the quantitative data and interview.

For patient knowledge to dispensed medicines and patient satisfaction on pharmacy services, the W.H.O. recommended sample size; at least 100 patients per facility (WHO, 1993).So 100 clients who fulfill the criteria were purposely selected and filled the questionnaire. Randomly selected medication was also selected from their prescription to be answered for assessing the patient knowledge and to observe the labeling information on it.

3.5 Data Collection Procedure

After getting permission by the pharmacy director of TASH, both open and closed-ended questionnaire was administered in four weeks to all categories of respondents. Interview was conducted with a few selected respondents and organized files were reviewed with the assigned personnel in the area.

3.6 Methods Of Data Analysis And Presentation

Data analysis as a process which involves drawing conclusion and explains findings in words about the study.The raw quantitative data were entered in SPSS and analyzed using descriptive statistics through frequency and percentages. Regarding the qualitative data, content analysis was utilized.

3.7 Inclusion Criteria

- All pharmacy and finance staffs working in the pharmacy units of hospitals.
- For patient knowledge and satisfaction, patients who got pharmacy service in the pharmacy units of during the study period and willing to participate in the study with all age groups were taken, for children and mentally disabled patients care givers were targeted.

3.8 Exclusion Criteria

- Staffs that were in annual leave during the study period.
- New staffs who were employed in less than six month period in the hospital.
- Patients who were very sick and unable to give information and also who are not willing.
- Documents which are disorganized

3.8 Ethical Consideration

Oral informed consent was obtained from each respondent for patient knowledge, availability of prescribed medicines and satisfaction prior to the interview. For the purpose of confidentiality and ethical issues, names of respondents from which information obtained were recorded and analyzed using uniquely identifying codes. And also the study did not expose respondents to psychological harm since the information asked was not private and sensitive.

CHAPTER FOUR

4. RESULT AND DISCUSSION

This chapter describes the data collection phase of the research. Data can be collected in a variety of ways in different setting and from different sources. In the case of this research survey response from the questionnaire, interview, observations and document review conducted for the purpose of assessing the five result area of APTS. The response rate of pharmacy professional and patients were 100%.Therefore, the total number of quantitative data response were 167.

4.1 Availability of Key Medicines

From the observation result, in total of 30 key medicines were selected to assess their availability at the time of the assessment the researcher visit to dispensaries and stores. The availability of key medicines at the store was 90% and 80% in the dispensaries at the time of the visits.

Table 4.1 .Availability of Key Medicines at the Store and Dispensary

# of key medicines	% of availability		Duration of stock out in days	
	Store	Dispensary	Min	Max
30	90%	80%	3	90

The above table shows that patients are not getting their prescribed medicines, although they are available in the hospitals store, that patients incur unnecessary costs at private pharmacies. In addition, such practices cause medicines to expire, while patients are experiencing stock-outs at the dispensaries. Improving accountability at the dispensary level through bin ownership among dispensing pharmacists is one major intervention that has proven instrumental in tackling problem at hospitals implementing APTS. The maximum stock-out duration for some of the key medicines in past three months was 90 days. The minimum stock-out duration was 3 days. Only one item (Cefepime inj) were out of stock for more than three months. Swiss Agency for Development and Cooperation (SDC) in 2004 reported the poor lack access to medicines for many reasons, the most important is poverty, which means that neither the poor nor their governments can afford to purchase essential medicines or ensure their rational use in well-run

health systems. Affordability is one core issue at the center of debates about medicine use in international health. There is however other major factors which deny access by the populations of low-income countries to effective medicines for the treatment of the diseases to which they are subject, poor infrastructure and unreliable medicine supply systems, waste and inefficiencies in managing logistics add to low availability of medicines. In 1990, when the Tanzanian Dar es Salaam Urban Health Project was launched, the medicine supply situation was inadequate, with chronic shortages, erratic financing, poor management, and irrational medicine use. But by the year 2004, they established sustainable medicine supply system that involved and motivated pharmacy staff, an efficient medicine procurement agency, and an existing national medicine policy from then the availability of essential medicines were ensured (DUHP, 2004).

4.2 Accuracy of Records (Matching of Recorded Quantity with Physical Count)

The key medicines selected were similar to those used for measuring availability. The actual physical count for each medicine was checked against the amount recorded on bin cards at the pharmacy store. Six records that were not accurately recorded among the 27 items, the other 21 items were recorded accurately.

Table 4.2. Level of Accuracy of Records for Key Medicines

# of key medicines	Availability of records	# records with discrepancy %	
27	27	6	22.2

Among the six items that were not accurately recorded ,one item were explained by the store manager that they receive the medication without model 19 which might questioning the accountability and transparency of the transaction, The generation of accurate records is necessary because most decisions regarding medicine selection, quantification, procurement, and use depend on it. When there are poor stock records, the budget that is going to be made on medicine supply will be based on inaccurate data, which leads to stock-outs and/or overstock. In pre-existing of APTS, reports from regions showed that pharmaceutical transactions and services at health facilities in the country hadn’t been supported by systems and tools that ensure transparency and accountability.

The pre-existing system didn't generate adequate, reliable and consistent information that is necessary for effective auditing of pharmaceutical transactions and services (FMOH, 2018).

4.3 Amount of Medicines Actually Dispensed

The number of medicines prescribed and dispensed was reviewed randomly selected prescription papers collected by OPD pharmacy .Overall, 228 medicines (77.2%) were actually dispensed at the OPD dispensary from a total of 295 prescribed medicines, a finding that is consistent with the availability of key medicines at the dispensaries. There is 22.8% gap in availing the medicine which was ordered.

Table 4.3. Amount of Medicines Actually Dispensed

#of prescriptions	# of medicine prescribed	#of medicines dispensed	% dispensed
100	295	228	77.2%

4.4 Availability of services and adequacy of stuffing

From the interview result, the hospital assessed deliver pharmacy services through several dispensing outlets, such as the outpatient pharmacy, inpatient pharmacy, emergency pharmacy, and pharmacy for antiretroviral therapy (ART) and it has specialized pharmacy services, such as clinical pharmacy, chronic care pharmacy, and medicine information services. The number of pharmacy and accounting staff varied depending on each department and the availability of various pharmaceutical services. The pharmacy head believed that the number of pharmacists worked at different unit of the pharmacy was in adequate except in Chronic care pharmacy and ART department. Extemporaneous compounding is one of the services overlooked by the hospital that it doesn't provide this service yet.

Table 4.4.Types of Service/stuff needed

Types of Service	# of stuffs	Perceived adequacy of staffing	
		yes	No
OPD pharmacy	25		No
Emergency Pharmacy service	5		No
Inpatient pharmacy service	20		No
ART pharmacy	2	Yes	
Clinical pharmacy services	3		No
Chronic care pharmacy	3	Yes	
DIC	1		No
All warehouses	6		No

N.B: Perceived adequacy means the opinion of the pharmacy head about the size of the pharmacy workforce in the respective service delivery units.

From the interview result, the facilities perform medicine selection, quantification, and procurement activities, with an in adequate number of professionals for these activities. As hospital are providing services at tertiary levels of care, the standards and quality of care desired at these levels can only be ensured by deploying staff of a higher caliber and with more expertise. The number of cashiers and accountants is very low in the hospital. As regards financial management of medicines sales and auditing, human resource like auditor, accountants and cashiers needs for these activities were one, five and eighteen respectively.

Workload analysis is one of the tools needed to be able to determine the number of employees in each unit needs work is the information about the workload of each employee in each work unit of the hospital.

4.5 Pharmacy Management

From the interview result, Human resource-related issues are decided by the hospital management. The number of the pharmacy stuff were decided based on the budget availability and predetermined .Hospital management also have greater autonomy in deciding human resource needs of the pharmacy divisions since it is the most appropriate body to understand actual needs, and to develop and deploy appropriate staff with the right mix of expertise and competencies.

The hospitals defined the roles and responsibilities of pharmacy staff in job descriptions. Without job descriptions, performance measurements and promotions are likely to be distorted (Bradley 2008), expecting deliverables from a professional who does not know his/her specific role and responsibilities is therefore very difficult.

The roles and responsibilities of pharmacy staff are defined in light of the implementation of the EHRIG-Pharmacy Chapter and other government initiatives and standards. The pharmacy division is represented in the management of the hospital and has an annual action plan for pharmacy services; however, hospital monitoring and evaluating their activities against the annual plan is weak. The hospitals apply a participatory, continuous improvement process as a means of improving the quality of services. Approaches the hospitals employ include regular meetings, surveys and interventions, in-service training, and consultations with stakeholders. The department reports its performance to decision maker (management) on yearly basis.

4.6 Patient Knowledge of Dispensed Medicines

Patients who knew the six basic W.H.O drug use indicators (dose, route, frequency, duration, storage and precaution).The dose, route of administration, frequency, and duration of use are considered the most important components of medicine knowledge without which patients may fail to take the medicines correctly (FMHACA 2012). To assess patient knowledge of dispensed medicines, 100 patients from outpatient pharmacy were interviewed after they received their medicines.

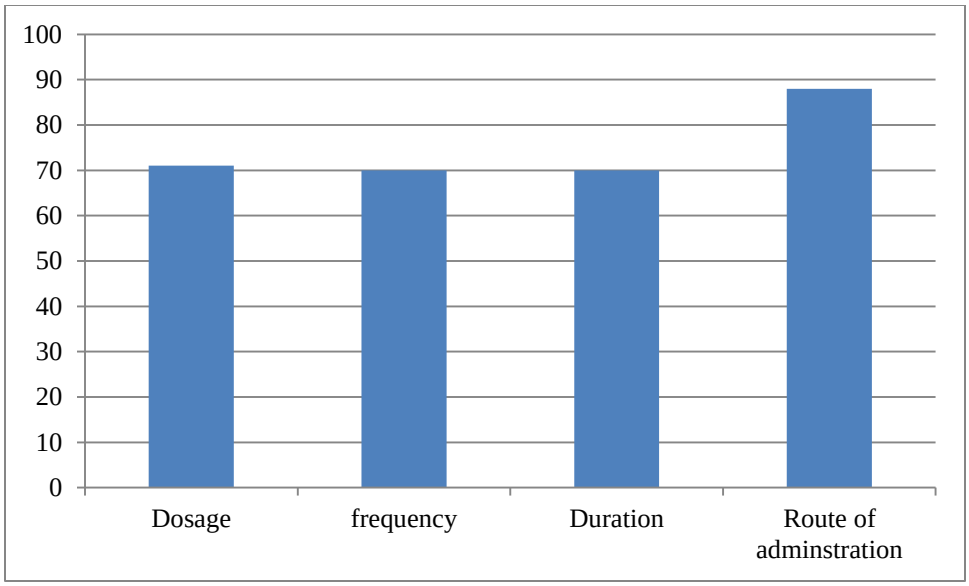

Figure 3.Level of patient knowledge of dispensed medicines

As the above figure shows that a large number of patients knew the dose, frequency, and route of administration, at 71%, 70%, and 88%, respectively. Given the very poor results obtained for the adequacy of labeling, one would expect a very poor level of patient knowledge on the duration but in this study patient knowledge on duration of use is 70%, this is because an out patients are supposed to come back to the hospital on the next appointment and most of the patients are filled the medications till that day. An assessment for APTS implementation done by FMOH in collaboration USAID/SIAPS project, revealed that: patient knowledge on how to take their medicines; concerning dose, route of administration, frequency and duration showed that only 50.5% clients properly know all parameters (FMOH and USAID, 2014).but in this assessment it's found out 74.75% of the patients know how to take their medication concerning these parameters.. As Terry et al, 2010, a study conducted in Afghanistan showed that the patients who know all the seven WHO drug use indicators that enables on how to take dispensed medicines (the name, dose, route of administration, the frequency, duration, precaution, storage) ranged from less than 10% to 60%.

4.7 Labeling

Labeling is one of the easiest tasks the pharmacy section can do to improve patient adherence to prescribed regimens**.** Clients should be given adequate labeling information to reinforce the counseling service provided because of the possibility of clients forgetting key information after they leave the pharmacy. Exit interviews were conducted with 100 patients at the hospital who had received medicines from the outpatient and chronic care unit pharmacies. It was reviewed labeling information on the package by randomly picking one of the medicines.

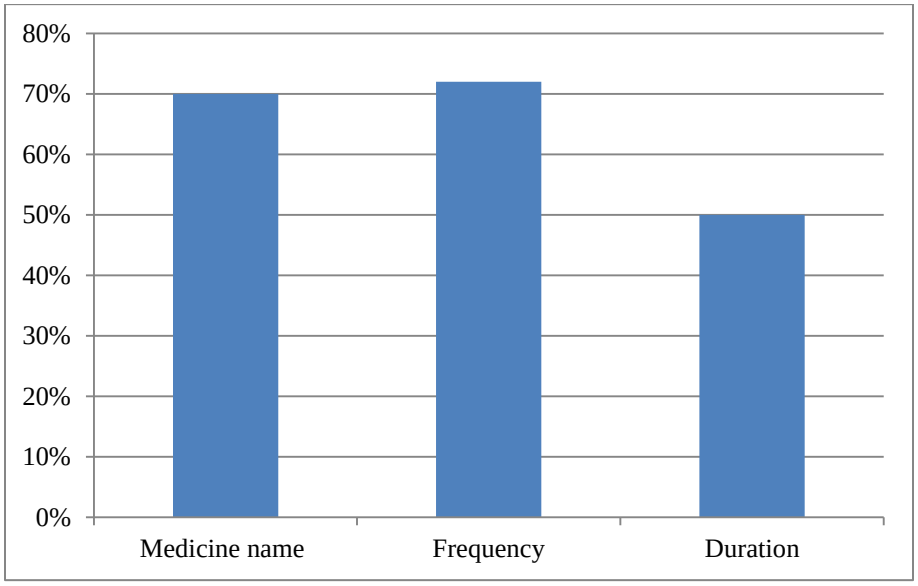

Figure 4.labeling information on dispensed medicine

As the above figure show, only 50% of the 100 medicine packages reviewed had duration for use labeling information. The medicine name and its strength with frequency were the most frequent information written on the labels, 70% and 72 % respectively. This could be because of the name of the product printed by the manufacturer. The assessment in Ethiopia by 2003 shows that on average, only 19.9% of medication dispensed to the patients in health facilities is adequately labeled (FMOH, 2003).this difference might be a result that by the time Ethiopia hadn't implement APTS. The labeling of medicines in pharmacies/drug retail outlets of Ethiopia is not up to the requirements and/or standard. It is common to see the dispensed medicines without a label, incomplete label, or illegible label (FMOH,2018).

4.8 Patient Satisfaction

Patient satisfaction with the quality of pharmaceutical services provided was assessed by interviewing the same patients who responded to questions regarding labeling and patient knowledge. The parameters used for assessing patient satisfaction were dispensing area, dispensing process, personnel skills, privacy of the setting, and assistance offered to the patient. The main purpose of this patient satisfaction survey was to identify the major factors, other than the availability of medicines, contributing to patient dissatisfaction with pharmacy services.

Table 4.5.Patient satisfaction (N=100)

		Strongly disagree/ Disagree	Neutral	Strongly agree /Agree
Dispensing Area				
1	The location of the pharmacy is easily accessible	30%	11%	59%
2	The waiting area is overall clean and comfortable	22%	18%	60%
3	The dispensing area and counter are convenient for service provision	58%	9%	33%
Dispensing process				
4	The pharmacy professionals instruction about how to take the medication is clear	41%	3%	56%
5	The proper storage of your medication was told about your pharmacist	67%	0%	33%
6	The pharmacist gives you information about the expected result of your medication	69%	8%	23%
7	The promptness of processing prescription medicines	31%	10%	59%
8	I could get all the prescribed medication in the pharmacy	29%	11%	60%
Privacy				
9	The privacy of my conversation with the pharmacist was kept	62%	3%	35%

Assistance to patients						
10	The amount of time spends by the pharmacy professional was adequate	25%		9%	66%	
11	The courtesy and respect shown to me by the pharmacy staff	27%		12%	61%	
Others						
12	The price of medicines in the pharmacy is fair	30%		3%	67%	
13	The amount of time I spend waiting for to get my prescription to be filled is fair	29%		3%	68%	
Overall satisfaction						
14	Considering everything, I am satisfied with the service that was delivered	15%	13%	6%	37%	29%

As table 4.5 showed, in this study 66 % of respondents in hospital were satisfied with the amount of time that the pharmacy professionals spend with them for providing the appropriate medications information. However, the study done in Gonder university referral hospitals shows that only 9.2% of the respondents were satisfied with amount of time spent with the pharmacy professionals (Surur et al, 2015).this might be the variation in the study period. Patients were satisfied with the dispensing area that scored more than 50%. The average result on the suitability of the dispensing area was 51.3%.The privacy of settings was also one reason for patient dissatisfaction. The result obtained for privacy was low, 62% of the patient strongly disagree/disagree with the statement the privacy of their conversation with the pharmacist were kept.Study conducted in Hiwot Fana hospital on satisfaction with the privacy of outpatient pharmacy is 37.8% respondents were satisfied (Yohannes ,2017).This might be explained by the difference in patient number they served and the difference in the sample size determination. Around 46% of the patients were satisfied with the dispensing process, meanwhile information given about the proper storage and expected result of the medication result less satisfaction.63.5% of the respondents acknowledged that they received good assistance from pharmacy staff. 67% of the respondents strongly agree/agree with the fairness of price of the medications and 68% of the patient satisfied with the amount of time they spend to get their prescription filled. Overall satisfaction of BLH stood at score of 66%.

4.9 Job satisfaction by the pharmacy professionals

For a hospital to be effective in serving its clients, the job satisfaction of employees plays a key role. Job satisfaction is "an individual's reaction to the job experience" (Berry 1997). Job satisfaction is usually measured using the following parameters: pay, promotion, benefits, supervisor, coworkers, work conditions, communication, safety, productivity, and the work itself. The job satisfaction of employees in the hospital was assessed as regards the state of supervision, collaboration with coworkers, payments, promotion, the work itself, and pharmacy premises and facilities.

Table 4.6.Job satisfaction of pharmacy professionals (N=67)

	Satisfaction with the supervision	Strongly Disagree/Disagree	Neutral	Agree Strongly/Agree
1	The supervisor I work with are supportive	38(56.7%)	14(20.8%)	15(22.3%)
2	My superior listen to me properly	28(41.7%)	17(25.3%)	22(32.7%)
3	I am fairly treated by the management of the hospital	44(65.5%)	3(4.4%)	20(29.8%)
4	My suggestion are usually given consideration by my supervisor	43(64.1%)	9(13.4%)	15(22.3%)
5	My work responsibilities are made clear by my supervisor	20(29.8%)	5(7.4%)	42(62.6%)

	Satisfaction with the co-workers	Strongly Disagree/Disagree	Neutral	Agree Strongly/Agree
6	I enjoy working with my colleagues in the hospital	14(20.8%)	2(2.9%)	51(76%)
7	The people I work with are responsible for their job	31(46.2%)	5(7.4%)	31(46.2%)
8	The people I work with give me enough support	44(65.5%)	5(7.4%)	18(26.8%)
9	The people I work with are cooperative	36(53.6%)	3(4.4%)	28(41.7%)

From table 4.6, 56.7% of the respondents were dissatisfied with the supervision they get from both by the top management and their supervisors**.** The highest satisfaction rate which was 76.2% of the respondent strongly agree/agree obtained for collaboration with coworkers and work itself which is the same result with Nina B,2016 study in Serbia, As healthcare professionals in Belgrade's public hospitals were most satisfied with the cooperation with the colleagues, interpersonal relations, and except with support from managerial staff.

Table 4.6.Job satisfaction of pharmacy professionals (N=67)

	Satisfaction with payment	Strongly Disagree/Disagree	Neutral	Agree Strongly/Agree
10	My pay is adequate ,considering the responsibility I have	60(89.5%)	3(4.4%)	4(5.9%)
11	The hospital pays me fair benefits (transport, house rent…)	65(96.9%)	2(2.9%)	0(0%)
12	There are benefits we don't have that we should	0(0%)	9(13.4%)	58(86.5%)
	Satisfaction with promotion			
13	I like the basis on which the hospital promotes people	53(79%)	4(5.9%)	10(14.8%)
14	Promotion are infrequent in the hospital	8(11.8%)	4(5.9%)	55(82%)
	Satisfaction with work itself			
15	My job is interesting	14(20.8%)	2 (2.9%)	51(76.1%)
16	I would rather be doing another job	39(58.1%)	1(1.5%)	27(40.3%)
17	I feel unappreciated by the hospital for the work I do	5(7.4%)	5(7.4%)	57(85%)
18	I have too much to do at work	6(8.8%)	0(0%)	61(90.9%)
19	I often feel that I don't know what is going on the organization	9(13.3%)	9(13.4%)	49(73%)
20	I feel the sense of pride in doing my job	17(25.3%)	9(13.4%)	41(61.2%)
21	I don't feel my efforts are rewarded the way they should be	12(17.8%)	11(16.4%)	44(65.6%)
22	Work assignment are not fully explained	44(65.6%)	3(4.4%)	20(29.7%)
23	My job makes good use of my	50(74.5%)	4(5.9%)	13(19.3%)

	skills and abilities			
24	I have a tools and resources to do my job well	57(85%)	2(2.9%)	8(11.9%)
25	My work gives me a feeling of personal accomplishment	55(82%)	3(4.4%)	9(13.3%)
26	In-service training adequately prepared me for the job	55(82%)	2(2.9%)	10(14.8%)

From the above table, 96.4% of the pharmacist responded that they strongly disagree/disagree with regarding the benefit the hospital offers and 89.5% strongly disagree/ disagree their payment is adequate. 82% of the professionals were strongly agree/agree that the promotions are infrequent in the hospital. A study in Pakistan by Ramesh k and other in 2013 also found out public health professionals reported low satisfaction with professional development opportunities, recognition, poor salaries and benefits (Ramesh et al, 2013).

Table 4.6.Job satisfaction of pharmacy professionals (N=67)

Premises and Facilities				
27	Sufficient attention is given to my job safety	39(57.1%)	2(2.9%)	26(38.7%)
28	Premises are convenient for conducting my duties	57(85%)	1(1.5%)	9(13.3%)
29	Facilities are adequate for conducting my duties	46(68.5%)	7(10.4%)	14(20.8%)
Overall satisfaction				
30	Considering everything ,I am satisfied with my job	59(88%)	2(2.9%)	6(8.8%)

Table 4.6 also shows that 85% of the pharmacy personnel are strongly disagree/disagree that with the convenience of the premises to conduct their job effectively. Considering everything, the level of satisfaction of pharmacy professionals is very low, 88 % responding strongly disagree or disagree with the statement they are satisfied with their job. This result is similar to the study conducted in Turkey (Bodur S, 2001).Results of the study showed that job satisfaction level of all health center staff can be seen to be low in Turkey, mainly because of working conditions and salary. In fact, salary and working conditions of health maintenance staff are worse in health centers than in hospitals.

In another study in Pakistan by Ramesh k and other in 2013, found out only 41% of the stuffs are satisfied, public health professionals reported low satisfaction with professional development opportunities, recognition, poor salaries and benefits, not being involved in decision making, doing a lot of irrelevant task and having sufficient time pressure(Ramesh et al,2013).

4.10 Finance, Budgeting and Audit

The hospital reported that Hospital /university board allocates the budget. The hospital reporting that they had inadequate budget for pharmaceuticals in 2010 EC, 57million birr was allocated; the average number of months covered by this budget was only 3 months (one quarter). But by the end of the year 2010 EC the hospital used 104 million which means additional 47million required to fulfill the hospital pharmaceuticals need. Tadeg et al, 2014, found out most Ethiopian hospitals reporting that they had inadequate budget for pharmaceuticals, the average number of months covered by the allocated budget was 7.84, this study was conducted nationally and took the average month. A study in Nigeria in 2010 by Mazi and his colleague, Allocation of financial resources for the purchase of essential drugs and supply for the Primary Healthcare Centers of Nigeria had been generally on the decline. In some cases, there have been some increase in the total allocation, but when this is adjusted for inflation and exchange rate deterioration, the general trend is a decline and they explain inadequate budget allocation is one of the reasons for unavailability of drugs and supplies.

Drug and Therapeutics Committees (DTCs) had developed and approved hospital-specific medicines lists classified by VEN which was used for in decision making process for pharmaceutical procurement forecasting .The hospitals used three years of data when computing ABC value analysis. The information obtained by conducting VEN classification and ABC analysis reconciled to produce information that is helpful for decision making. The relevance of ABC value analysis, VEN categorization, and reconciling the two is of paramount importance to ensuring the availability of medicines required to respond to the priority public health needs of the hospitals' catchment populations. These proven methodologies help budget managers allocate scarce resources to the most important medicines, ones that are highly relevant to clients served by the hospital. Stock status analysis (SSA) was conducted on a regular basis (every month).

Among the measurement taken, transfer to other health facilities, selling to other organizations and exchange with other medicines is the major ones .This also should be encouraged considering its importance to maintaining the continued availability of medicines and minimizing expiry.

Table 4.7.Total Medicine Wastage

Beginning Balance in 2010EC(ETB)	Total Value (in ETB) of Medicines Received (both budget and program)	Value of Medicines wasted (in ETB)			Wastage rate (%)
		Expired and damaged		Total Expired and Damaged	
		Budget	program		
18,241,337.38	88,710,901.01	397,584.29	2,662,829.60	3,060,413.89	2.86%

$$\text{Wastage rate (\%)} = \frac{\text{Value of medicines wasted (in ETB)}}{\text{Beginning balance + Total value received (ETB)}} X\ 100\%$$

As the above table indicated, the hospital document wastage of medicines due to expiry and damage, but not for theft and pilferage of pharmaceuticals. It was continuously documented for three years their wastage of medicines due to expiry and damage but not for theft and pilferage of pharmaceuticals, this might arise a question about the transparency of the financial transaction and an indication of a lack of accountability for preventing or minimizing wastage of medicines. The EHRIGs, which were developed in 2010, put standard that health facility wastage rate in monetary value, should be less than 2% but in this study it was found to be 2.86% (3,060,413.89ETB).As Nakyanzi et al, 2010, cross-sectional survey of six public and 32 private medicine outlets in Kampala and Entebbe municipality was conducted using semi-structured questionnaires The Results of study showed that drugs and medicines prone to expiry include those used for vertical programmes16, donated drugs, and those with a slow turnover. Even essential medicines expired in the supply chain. The study also found out that the lack of medical logisticians and pharmacists in the field to procure and manage drugs could exacerbate expiry**.**

The Kenya Medical Supplies Authority lost drugs valued at Sh352 million (USD3.47 million) due to expiry or damage last year alone.A 2003 assessment of Ethiopia's pharmaceutical sector showed that the accumulation of medicines that was of limited utility to the catchment population led to expiry and wastage of limited resources, with expired medicines in health facilities reportedly as high as 8% (APS, 2003).

From document review result indicated, the hospital document financial reports from medicines sales on a regular basis segregated by cash credit and free every month. Physical inventory of medicines and supplies was carried out in the hospital. Store pharmacies for both medicines and supplies conducted biannually where as in dispensary units conducted every month. Physical inventory is one of the most important ways to minimize wastage, stock-outs, theft, and pilferage. More frequent physical inventory will help to track and take action on theft, pilferage, expiries, and other wastage on a timely basis. Medicines sales are a major source of hospital revenue, information on the amount of revenue collected from the sale of medicines in 2010 EC weren't reported yet. It is unacceptable that information on the amount of revenue collected from the sale of medicines was not captured. The pharmacy didn't use a revolving drug fund (RDF) to improve their working capital, they depend on budget allocations from the government treasury. A study by Ogbonna and Nwako in Nigeria found out that before the introduction of RDF, acute shortage of essential drugs was seen in most public hospitals in Nigeria, it was claimed that this funding system had improved the availability of these essential drugs (Ogbonna etal, 2016). The government of Ethiopia has established the legal framework that authorizes revenue retention and use by hospitals.

Auditing the pharmacy department has always been a very intimidating task. The main reason is the lack of standardized, transparent, and accountable management practices for medicines and revenues from the sale of medicines (FMOH and USAIDS, 2014).It was reported that both stores and dispensaries weren't audited regarding to finance and services in the previous fiscal year.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary Of The Finding

- There is a set up pharmaceutical services as per the standards in the EHRIG-Pharmacy Chapter. The overall management of pharmacy services is based on the charter which is assigned coordinators that are responsible for overseeing the various service units under the supervision of the overall pharmacy service head .The availability of different components of pharmaceutical services is included in the hospital except for extemporaneous compounding.
- Various components of pharmacy services are inadequately staffed both with the pharmacist, accountants and cashiers. The Hospital management given the authority to determine the type and number of pharmacy staff needed to properly respond to the ever growing need for professionals at all service delivery points
- The pharmacy professionals practicing in the hospital with a formal job description. The pharmacy section has a clear plan of action and deliverables but hospital monitoring and evaluating their activities against their annual plan is weak. The pharmacy division represented in the management which helps the department to get the management support.
- The amount of the budget being allocated for medicine and supply is not adequate to cover all months of the year. The pharmacy didn't use a revolving drug fund (RDF) to improve their working capital, they depend on budget allocations from the government treasury. Drug and Therapeutics Committees (DTCs) had developed and approved hospital-specific medicines lists classified by VEN.
- Stock status analysis (SSA) was conducted on a regular basis (every month).But this result contradicted with the rate of expiry which is 2.86%.
- The hospital document financial reports from medicines sales on a regular basis segregated by cash credit and free every month but the amount of revenue collected from the sale of medicines in 2010 EC weren't reported. Physical inventory were carried out for both medicines and supplies stores.

- The pharmacy weren't audited in the previous fiscal year. The availability of key medicines in hospital store was 90% and 80% at the store and the dispensary unit of the pharmacy.
- The level of patient knowledge and labeling information on the medication is good except for labeling information about the duration which is only 50%.considering the overall quality of services, the level of satisfaction of patients is 66%, dispensing areas and privacy were among the major parameter that dissatisfies the patients. The study revealed that the level of job satisfaction of pharmacy staffs is low. Salary scales and other benefits Poor premises are the major source of dissatisfaction for pharmacy professionals. Infrequent promotion was also a reason for dissatisfaction.

5.2 Conclusion

Implementing APTS tools and systems in TASH contribute in the availability of prescribed medicines. Patient knowledge on correct dosage of medications is also increased thereby Adherence and patient satisfaction on pharmacy services, reducing rate of medicines expiry even if there is still a gap in achieving the national goal**.** APTS also contributed to the increased access and generate information on; product, finance and services.

APTS also reduce time to take physical inventory and make conditions suitable for auditing. This study revealed a low satisfaction level among professionals regarding the work load associated with APTS, even if the employee were trained, inadequate salary and infrequent promotion and unconvinced working environment were identified as the major factors. TASH lacks extemporaneous compounding as per the EHRIG pharmacy charter standard. Even if the system creates a suitable condition for audits and reports, because of lack of auditors and accountants the hospital couldn't get this benefit, further the accountability and transparency of the department might be in questioning.

The two most challenges faced during implementation status of APTS were found to be inadequate stuffs in the pharmacy and finance department and the manual process of documentation.

5.3 Recommendations

Based on the findings of the study, the following recommendations are given for improving APTS implementation

- The hospital should make an adjustment in their workforce based on work load analysis.
- TASH should include extemporaneous compounding in the pharmacy services as per the standards in the EHRIG pharmacy chapter.
- FMOH/SIAPS/TASH should replace the manual work with automated system that eases the documentation processes.
- The hospital should facilitate the effective implementation of revenue retention and use in line with RDF principles and give special concern to the budget allocation.
- To increase the availability medicines, inventory management needs to be improved through Hiring full time dedicated clerk so that decisions are guided by accurate information

- There is a need to institute standardized dispensing practices in the hospital through GDP training for the employee.
- Hospital management should improve working condition; create strategies that benefit its employee financially by establishing community based pharmacies outside the hospital.
- The hospital should also strengthen the managers/supervisors relation with the employee through ERM (Employees Relationship Management).
- Conducting internal auditing on a regular basis by hiring a full time and dedicated auditor.

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Appendix

Appendix A

Questionnaire for HR and Pharmacy department

1. Availability of Services and Adequacy of Staffing

1) Number of technical and support pharmacy staff full time for pharmacy service:

a. #Pharmacists= ____ b. #Druggists= ____

c. # Pharmacy technicians = ____ d. #Cashiers= _____

e. #Accountants= ____

f. #others (specify) _____

2) Who is entitled to make the final decision on employment of pharmacy staff?

a. FMOH/RHB b. Hospital Management

c. Hospital/University Board d. Others (specify): _____

3) On what basis is the number of pharmacy staff (employment) decided? (You may choose one or more)

a. Budget available 1. Yes 2. No

b. # Clients served 1. Yes 2. No

c. Staff size already pre-determined (e.g., BPR) 1. Yes 2. No

d. Others, specify:

4) Are any of the following services available?

SN	Types of Service	Yes/No	# of stuffs		Adequacy of Pharmacy personnel	Remark
			Full time	Par-time	1.yes 2.No	
1	OPD pharmacy					
2	Emergency Pharmacy service					
3	Inpatient pharmacy service					
4	ART pharmacy					
5	Clinical pharmacy services					
6	Chronic care pharmacy					
7	Drug information					

	services					
8	Extemporaneous compounding					
9	Medicine selection quantification and procurement					
10	Ware house and inventory management for medicines					
11	Warehousing and Inventory management for medical supplies and equipment					
12	Overall management and coordination of pharmacy services					
13	Others, Specify					

5) On average, how many patients per day are served at each dispensing outlet?

a. OPD pharmacy = _____ b. Emergency pharmacy = _____

c. ART pharmacy = _____ d. Inpatient pharmacy = _____

e. Chronic care pharmacy = _____

f. Others (specify) = _____

2. Pharmacy Management and Staffing

1) Does all staff of pharmacy have a job description indicating details of their role?

1. Yes 2. No

2) Is the pharmacy section directly represented in the health facility management meetings?

1. Yes 2. No

3) Are the pharmacy activities guided by an annual plan of action (other than a procurement plan)?

1. Yes 2. No

4) Does the pharmacy section monitor and evaluate its activities based on its plan?

1. Yes 2. No

5) Does the pharmacy section apply a participatory and continuous improvement process as a means to improve the quality of service on a continuous basis?

   1. Yes 2. No

6) If yes to Q5, what approaches does the pharmacy section apply?
   a. Regular meetings with staff and/or management
   b. Conduct survey or assessment and make an intervention as per the results
   c. Facilitate in-service training for staff
   d. Organize consultative meetings with stakeholders

7) Does the pharmacy section report its performance to the health facility management?

   1. Yes 2. No

8) If yes to Q7, how often does it report?

   a. Monthly b. Quarterly c. Biannually d. Annually

Appendix B

A questionnaire about Finance, Budgeting, and Audit for Finance head and Pharmacy head

1) Who allocates budget for pharmaceuticals?
    a. FMOH/RHB
    b. Hospital Mgt
    c. Hospital/University Board
    d. Others (specify): _____
2) What was the total annual medicines budget of the hospital for the year2010?
3) Was the pharmaceuticals budget adequate to cover annual needs? 1. Yes 2. No
4) If no to Q3, for how many months was the budget adequate? _____
5) Does the health facility have a medicines list developed by the DTC? 1. Yes 2. No
6) Is the medicines list prioritized by VEN? 1. Yes 2. No
7) Does the facility practice stock status analysis to minimize wastage, overstock, and shortage?
    a. yes b. No
8) Has the facility performed ABC value analysis? 1. Yes 2. No
9) If yes to Q 8, when was it (specify years covered in the analysis)?
    _____
10) If yes to Q 8, does the facility utilize results of ABC/VEN analysis to prioritize/adjust medicines budget?
    1. Yes 2. No
11) Do you have recorded documents on wastage of medicines due to expiry and damage?
    1. Yes 2. No
12) Do you have recorded documents on wastage of medicines due to theft and pilferage?
    1. Yes 2. No

13) If yes to Q.13 and/or Q 14, complete the following table:

Year	Total Value (in ETB) of Medicines Received (both budget and program)	Value of Medicines wasted (in ETB)			Remark
		Expired and damaged		Total Expired and Damaged	
		Budget	Donation		

14) Does the pharmacy generate financial reports from medicines on a regular basis (segregated by cash, credit & free)?

1. Yes 2. No

15) If yes to Q16, how often (tick one or more): a. Monthly b. Quarterly c. Yearly

16) Does the facility carry out a physical inventory on a regular basis? 1. Yes 2. No

17) If yes to Q18, how often (tick one or more): a. Monthly b. Quarterly c. Yearly

18) What is the amount of revenue collected from medicines sales for the year 2010?

19) What is the annual revenue of the hospital from services and others sources, if available? 2010

20) Do you use a Revolving Drug Fund (RDF) to improve your working capital for medicine supply? 1. Yes 2. No

21) Has the overall financial, product transactions, and services of the pharmacy section (store plus dispensaries) been audited in the past? 1.Yes 2.No

22) If yes to Q23, when was it last audited? _____

23) If yes to Q 23, which of the following auditing practices was/were performed? (you may choose one or more)

a. Daily summary (sales, shortages, overages, services, etc.)
b. Monthly reporting (sales, shortages, overages, services, etc.)
c. Surprise auditing of product and finance
d. Schedule auditing at least once per year (service, finance, and product)
e. Regular pharmacy service auditing
f. Physical inventory at least quarterly and balanced with quarterly financial reports

24) What are the challenges the department faced in the implementation of APTS?

Appendix C

1. Check-list for availability and Duration of stock-outs for Key Medicines for medical store

SN	Medicine description	At the time of visit				Stock out duration (in days)at store	
		Dispensary		Store			Remark
		Yes	No	Yes	No	Past 3 months	
1	Amoxicillin with or without clavulinicacid						
2	ORS						
3	Coartem						
4	Mebendazole tab						
5	TTC eye ointment						
6	PCM tab/syrup						
7	RHZE						
8	Depo injection						
9	Ergometrinmaleatinj/tab						
10	Fefol						
11	Pentavalent DPT V						
12	Lidocain injection						
13	TAT injection						
14	Diclofenac injection						
15	Doxycyclin capsule						
16	Cimetidine injection						
17	Ceftriaxone injection						
18	Fluconazoletablet/capsul						
19	Ciprofloxacin tablet						
20	CotrimoxazoleTab/sus						
21	Metronidazole injection						
22	Adrenalin injection						
23	Ringer lactate solution						
24	Normal saline solution						
25	Glucose 40% solution						
26	TDF/AZT/3TC/EFV						
27	Vancomycin injection						
28	Cefepime injection						
29	Oxytocine injection						
30	Mgso4 inj						

2. A check-list for accuracy of Records (Matching of Recorded Quantity with Physical Count) at Medical store.

SN	Medicine description	Store		
		Record	Count	Discrepancy
1	Amoxicillin with or without clavulinicacid			
2	ORS			
3	Coartemtabet			
4	Mebendazole tab			
5	TTC eye ointment			
6	PCM tab/syrup			
7	RHZE tablet			
8	Depo injection			
9	Ergometrinmaleatinj/tab			
10	Fefol			
11	Pentavalent DPT- Vaccine			
12	Lidocain injection			
13	TAT injection			
14	Diclofenac injection			
15	Doxycyclin capsule			
16	Cimetidine injection			
17	Ceftriaxone injection			
18	Fluconazole tablet/capsul			
19	Ciprofloxacin tablet			
20	Cotrimoxazole Tab/sus			
21	Metronidazole injection			
22	Adrenalin injection			
23	Ringer lactate solution			
24	Normal saline solution			
25	Glucose 40% solution			
26	TDF/AZT/3TC/EFV/NVP			
27	Vancomycin injection			
28	Cefepime injection			
29	Oxytocine injection			
30	Mgso4 inj			

Appendix D

Review and check-list on quality of Pharmacy Services & Patient Satisfaction with Services

1. Total number of medicines prescribed for the patient_____

2. Number of medicines dispensed per prescription _____

3. Patient's knowledge of medicine(s) dispensed and labeling practice

Answer by writing *Yes* if correctly answered by the patient, *No***,** if not.

Med #	Customers knowledge of dispensed meds				Labeling information		
	Dose	Frequency	Duration	Route	Medicine name	Frequency	Quantity/duration
1							
2							
3							
4							
5							
6							

Appendix E

Questionnaire on respondent's satisfaction with pharmaceutical services for patients.

SN	Tick one number for each questions	1	2	3	4	5
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Dispensing Area						
1	The location of the pharmacy is easily accessible					
2	The waiting area is overall clean and comfortable					
3	The dispensing area and counter are convenient for service provision					
Dispensing process						
4	The pharmacy professionals instruction about how to take the medication is clear					
5	The proper storage of your medication was told about your pharmacist					
6	The information of the pharmacist gives you about the expected result of your medication					
7	The promptness of processing prescription medicines					
8	I could get all the prescribed medication in the pharmacy					
Privacy						
9	The privacy of my conversation with the pharmacist kept					
Assistance to patients						
10	The amount of time spends by the pharmacy professional was adequate					
11	The courtesy and respect shown to me by the pharmacy staff					
Others						
12	The cost of medicines in the pharmacy is fair					
13	The amount of time I spend waiting for to get my prescription to be filled is fair					
Overall satisfaction						
14	Considering everything, I am satisfied with the service that was delivered					

የተገልጋዎች የእርካታ ዳሰሳ መለኪያ ቅፅ

መፍቻ

5) <u>እበጥ</u>፡ እጅግ በጣም ጥሩ **4) <u>በጥ</u>፡** በጣም ጥሩ **3) <u>አይ</u>፡** አይታወቅም **2) <u>ጥአ</u>፡**ጥሩ አደለም

1)<u>እጥአ</u>፡ እጅግ በጣም ጥሩ አደለም

		እበጥ	በጥ	አይ	ጥአ	እጥአ
		5	4	3	2	1
1	የመድኃኒት ባለሙያው በአክብሮትና በተገቢው መልኩ አስተናግዶኛል፡፡					
2	የመድኃኒት ባለሙያው በጥሞና ፍላጎቶቼን አድምጦኛል፡፡					
3	የመድኃኒት ባለሙያው መድኃኒቱ ለምን እንደታዘዘ ነግሮኛል፡፡					
4	የመድኃኒት ባለሙያው ልረዳው በምችለው መንገድ ስለ መድኃኒቱ አስረድቶኛል፡፡					
5	ስለ መድኃኒቱ የመድኃኒት ባለሙያው የሰጠዎት የቃል መመሪያ ግልጽነት					
6	የፋርማሲ ባለሙያው ለጠየቁት ጥያቄዎች የሰጠዎት ምላሽ ተገቢነት፡፡					
7	የአገልግሎት አሰጣጡ የግል ምስጢሮን የሚጠብቅ ነበር					
8	የመድኃኒት ቤቱ አጠቃላይ የአገልግሎት ቅልጥፍና፡፡					
9	የታዘዘልዎን መድኃኒት በመድኃኒት ቤቱ ውስጥ የማግኘት ሁኔታ፡፡					
10	ከመድኃኒት ቤቱ ያገኟቸው መድኃኒቶች ዋጋ አግባብነት፡፡					
11	የፋርማሲ አገልግሎት ለማግኘት የፈጀቦት የጊዜ ርዝመት፡፡					
12	የፋርማሲ አገልግሎት ለማግኘት የሚጠባበቁበት ቦታ ንጽህናና ምቾት፡፡					
13	ከሌሎች ጤና ተቋማት አገልግሎት መስጫ ቦታዎች አንፃር የመድሃኒት ቤቱ ቅርበት፡፡					
14	በአጠቃላይ የፋርማሲ ክፍል የአገልግሎት አሰጣጥ					

Appendix F

Questionnaire on job Satisfaction for pharmacy personnel

Instruction: responses should be collected from all staff in the pharmacy. Fill in numbers 1 to 5 in the box as per the following scale.

SN	Tick one number for each questions	1	2	3	4	5
		Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Satisfaction with the supervision						
1	The supervisor I work with are supportive					
2	My superior listen to me properly					
3	I am fairly treated by the management of the hospital					
4	My suggestion are usually given consideration by my supervisor					
5	My work responsibilities are made clear by my supervisor					
Satisfaction with the co-workers						
6	I enjoy working with my colleagues in the hospital					
7	The people I work with are responsible for their job					
8	The people I work with give me enough support					
9	The people I work with are cooperative					
Satisfaction with payment						
10	My pay is adequate ,considering the responsibility I have					
11	The hospital pays me fair benefits (transport, house rent…)					
12	There are benefits we don't have that we should have					
Satisfaction with promotion						
13	I like the basis on which the hospital promotes people					
14	Promotion are infrequent in the hospital					

Satisfaction with work itself						
15	My job is interesting					
16	I would rather be doing another job					
17	I feel unappreciated by the hospital for the work I do					
18	I have too much to do at work					
19	I often feel that I don't know what is going on the organization					
20	I feel the sense of pride in doing my job					
21	I don't feel my efforts are rewarded the way they should be					
22	Work assignment are not fully explained					
23	My job makes good use of my skills and abilities					
24	I have a tools and resources to do my job well					
25	My work gives me a feeling of personal accomplishment					
26	training adequately prepared me for the job					
Premises and Facilities						
27	Sufficient attention is given to my job safety					
28	Premises are convenient for conducting my duties					
29	Facilities are adequate for conducting my duties					
Overall satisfaction						
30	Considering everything ,I am satisfied with my job					