**KILIMANJARO SCHOOL OF PHARMACY**



**TECHNICIAN CERTIFICATE IN PHARMACEUTICAL SCIENCE**

**(NTA LEVEL 4)**

**A FIELD WORK REPORT ON MEDICINE DISPENSING AND MEDICAL STORE MANAGEMENT**

**FIELD WORK CONDUCTED AT ST ELIZABETH HOSPITAL FROM 2And APRIL TO 11Th MAY 2018.**

**PREPARED BY: MAGRETH E. MEELA**

**REGISTRATION NUMBER: KSP.2002/017/150**

**SUPERVISED BY: MUSSA J. MWAKALINGA**

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# ABBREVIATIONS:

* 3TC - Lamivudine
* A.R.Vs - Antiretroviral
* ABC - Abacavir
* AZT - Zidovudine
* C.T.C. - Care and Treatment Center
* CD4 - Cluster of Differentiation 4
* EFV - Efeverenz
* FTC - Emtricitabine
* I.L.S. - Integrated Logistic System
* I.P.D. - In Patient Department
* LPV/r - lopinavir/ritonavir
* M.S.D. - Medical stores Department
* N.H.I.F. - National Health Insurance Fund
* NNRTIs - Non Nucleoside Reverse Transcriptase Inhibitors
* NRTIs - Nucleoside Reverse Transcriptase Inhibitors
* NVP - Nevirapine
* O.P.D. - Out Patient Department
* P.Is. - Protease Inhibitors
* PEP - Post Exposure Prophylaxis
* TDF - Tenofovir
* TB - Tuberculosis
* ELMS - Electronic Logistic Management System

# INTRODUCTION

I began my field work at St Elizabeth hospital on April 2, 2018 to May 11, 2018 .I reported to the medical officer in charge Mr. Godson Kisanga and he sent me to the pharmacist in charge Mussa.

## **ORGANIZATION DETAILS**

St. Elizabeth Hospital is one of the biggest hospitals in Arusha and treats all medical conditions of patients. Its private hospital and also there is a part of government.

St Elizabeth Hospital has a vision "to be a center of excellence in providing health and spiritual services through provision of enhanced modernized, professional and quality patient care alongside spiritual ethics." They aim to offer accessible and affordable services, motivating, supporting and engaging staff, as well as, Pastoral and Counseling services.

The Vision of the Archdiocese of Arusha is "to build a society whereby the health and well being of individuals and communities are enhanced, especially for those most in need."

The Mission of the Archdiocese of Arusha is "To provide quality, equitable and affordable comprehensive health care services along with spiritual care depending on the circumstances of each health unit"

St. Elizabeth Hospital has been serving the Arusha urban since 1975, first as a dispensary and then as a hospital. It is the second largest hospital in the region and acts as a referral hospital to other health facilities in Arusha and the Manyara Region. The hospital has just over one hundred beds and provides in and out patient care in the following fields:

Surgery, Medical, Surgical, Eye, Dental, X-ray, Maternity and Pediatrics also offers outreach programs to remote areas HIV/AIDS counseling, testing, and treatment of Tuberculosis and Malaria disease. Also it is the only hospital in Arusha with ophthalmologist (taking care of eye surgeries and disease).

## **WHEN THE ORGANIZATION WAS FOUNDED**

The hospital was started as a dispensary in 1975 and due to problems in taking care of mothers and children it was found that there was a need to upgrade this dispensary to a hospital in 1984. This is the second largest hospital in Arusha. It has 120 staff, a capacity of 100 beds, and treats both in-patients and out-patients.

## **PLACEMENT LOCATION INFORMATION**

St. Elizabeth Hospital is located in the Ngarenaro area within Arusha city. This hospital is in the middle of two other social services; the St. Augustine Ngarenaro University, and the St. Elizabeth Catholic Church. The St. Elizabeth Hospital offers medical services to different communities both in and outside of Arusha. The placement is also located opposite to the HIV clinics center and they provide free tests and counseling for HIV/AIDS.

# OBSERVATIONS MADE DURING MY FIELD WORK;

The role of the pharmacy in the community.

* 1. To make sure that essential medicine are available and accessible
  2. A place of triage, advice and referral
  3. Point of care testing
  4. Dispensing medicines and appliances
  5. Providing prescription-linked healthy lifestyle advice.

# Role of pharmacetical techinician;

a) Supply medicine to patients whether on prescription or over the counter

b) Provide information to patients and other healthcare professional.

c) Gives instruction on how to use the medicine prescribed.

d) Gives advice on the common side effect of the medicine prescribed

e) Write orders of medical supplies and drugs the order goes to the main store.

f) Handling of unfit and counterfeit medicine.

GOOD DISPENSING PRACTICES;

**Dispensing** refers to the process of preparing and supplying medicines to a named person together with clear instructions, advice and counseling where necessary on the use of those medicines. It involves the correct interpretation of the order for prescribed medicines and accurate preparation and labeling of medicines for use by the patient. The dispensing process includes all activities that occur between the time the prescription or request for medicine is presented up to the time the medicines or other prescribed items are issued to the patient.

**Good Dispensing Practice** ensures that the right medicines of desired quality are delivered correctly to the right patient with the right dose, strength, frequency, dosage form and quantity, together with clear instructions, both written and verbal and with appropriate packaging suitable for maintaining the quality and efficacy of the medicine.

A safe, clean and organized working environment provides the basis for good dispensing practice. The dispensing environment includes:

* Qualified / trained staff
* Appropriate physical surroundings
* Adequate shelving and storage areas
* Proper work surfaces
* Suitable equipment
* Necessary packaging materials

Responsibility for the accuracy and quality of the medicines supplied lies on the persons overseeing the dispensing process. It is important that the staff dispensing medicines are trained and equipped with the technical knowledge and the skills necessary to dispense the range of medicines prescribed and to communicate effectively with patients/ caregivers.

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| --- |
| DISPENSING PROCESS |
| Adherence to good dispensing procedures is vital in ensuring that medicines are dispensed correctly and any potential/ real errors which may occur during the dispensing process are detected and rectified before medicines reach the patient.  **Who should be involved in the process of dispensing:**  a) **Screening of Prescription:** Healthcare professional (Registered medical practitioner/ registered dentist/ pharmacist)  **b) Preparation of Medicines2:** Pharmacist, registered medical practitioner or a person under immediate supervision of a pharmacist/ medical practitioner  **c) Supplying the Medicines2:** Registered medical practitioner, registered dentist or pharmacist  **d) Counselling :** By healthcare professional |

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| PROCESSING THE PRESCRIPTION | | |
| A-i. Screening  * On receiving a prescription, it should be screened and validated to ensure that it is for the correct patient and it complies with the requirements in the Poisons Act. * The prescription should be written legibly or printed. * The prescription should have the following information | | |
| **Patient Details**   1. Name 2. Address 3. Identification number   (Passport number) | **Prescription Details**   1. Drug regimen(name of medicine,dose,frequency,administration and duration). 2. Doctor’s signature, stamp and registration number 3. Doctor’s name and address 4. Date of prescribing | |

* Names of medicines prescribed should be written in generic name and abbreviations should not be used. **Brand (trade) names** should be avoided as far as possible. If a patient must be given a particular brand, it should be indicated on the prescription.
* Age of the patient and body weight should be stated on prescriptions for children under 12 years of age.

# A-ii. Interpreting the Prescription Order

* The person receiving the prescription should check for:
* Dose, frequency and duration
* Drug interactions, medicine duplication, polypharmacy, inappropriate drug therapy, contra-indications.
* Allergies
* Unusual usage and suspected drug misuse or abuse.
* For partial medicine supply, ensure that the second or subsequent supply does not exceed the quantity for the duration prescribed.

# A-iii. Handling Prescriptions which Require Clarification

If an incomplete prescription or one which requires further clarification is received, attempts must always be made to contact the prescriber:

i. If the prescriber can be contacted and is available on site, arrange for the incomplete/missing details to be inserted on the prescription by the prescriber. Remedial action for such prescriptions should be discussed with the prescriber prior to sending the prescription back to him/her.

ii. If the prescriber is not available to amend the prescription himself/herself, authorization to make the change may be obtained verbally through the phone.

iii. The amendments to the prescription should be repeated back to the prescriber to ensure accuracy. The amendments should be documented on the prescription and endorsed with “PRESCRIBER CONTACTED” (PC), dated and initialed by the pharmacist/person dispensing.

iv. If the prescriber cannot be contacted, patient should be informed and the prescription must be sent back to the prescriber with information on the clarification/action needed.

v. Prescriber should document any changes made to the patient’s medical record.

# A-iv. Handling Prescriptions in A Stock-Out Situation

* Stock-out is defined as a situation where the prescribed medicine is not available at the pharmacy when a prescription is being processed. This may be due to the medicine being temporarily out-of stock at that time or the pharmacy does not keep stock of that particular medicine.
* If such situation occurs:

i. Inform the prescriber. If the medicine cannot be substituted with another medicine that is available, inform the patient.

ii. If the patient agrees for it to be supplied at a later time, arrange to get stocks so as to enable prompt supply the medicine to the patient;

iii. If the patient requires the medicine urgently, the pharmacist/person dispensing must communicate with the prescriber to discuss if the prescribed medicine can be substituted with another medicine which is readily available.

iv. Any substitution of medicine must be approved by the prescriber and documented on the prescription.

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| PREPARING THE MEDICINESB-i. Filling a) Selecting the Medicines   * When selecting the medicine to be dispensed, prevent any medication errors by establishing an appropriate system to ensure that the correct medicine is selected, especially if there are medicines with similar names and packaging. Pick the medicine by reading the label at least twice and cross-checking the medicine name and strength against the prescription. * If a barcode system is available, it should be used to enable correct and accurate selection of the medicine. * Check the expiry date of dispensed medicines to ensure that they remain unexpired for the duration of the supply course. * Medicines should be dispensed in original packaging as far as possible. * Tablets/capsules should not be removed from the strip/blister when dispensing. * Bulk loose packs for supply are not encouraged. Avoid direct contact with the hand if loose packs are to be used.      * Medicines which need to be packed such as loose capsules/tablets should be packed into a clean, dry container, such as a bottle or plastic envelope which will not compromise the quality of the product after dispensing. |
| B-ii. Labeling  * Every medicine containing any scheduled poison sold or supplied must be prepared and labeled by or under the immediate personal supervision of the medical practitioner or dentist. * All dispensed medicines should be labeled according to the requirement stated by law. It is advisable for labels to be printed. If handwritten, it should be neat and legible with clear instructions on use * Label should contain: * Name, address, and contact number of hospital / clinic / pharmacy * Patient’s name * Name of medicines (generic and/or trade names) * Dosage form with the strength and quantity per unit dosage form: mg/ml of liquid, mg/g for semi-solid preparations * Directions for use: dose, frequency and duration (if necessary) * Date of supply * Expiry date (especially if dispensed medicine is not in its original   packaging)   * “Controlled Medicine” should be labeled for all controlled medicines * Medicines for external use should be dispensed in suitable containers and should be labeled conspicuously with the words “Not to be Taken” or “For External Use Only” in English printed in red OR on a red background * Special precautionary labels should be used where necessary (e.g., “Complete the course” for antibiotics, “May cause drowsiness” for sedating drugs, etc)     Whenever possible, **always dispense the medicine in its original packaging** so that patients will have access to the product information.  If a medicine is not dispensed in its original packaging and it is not possible to include all the necessary information on the label, it should be written/printed separately and dispensed together with the medicine. **Patient information leaflet (PIL) should be provided, where available.**   B-iii. Checking Check the prescription and the filled medicines to ensure that the filled medicines correlate with the prescription   |  | | --- | | COUNTER-CHECKING | | * Counter-checking should be done by a second person, other than the staff who did the previous filling and labeling tasks. * Check all the medicines prepared for dispensing against the prescription. * Once the counter-checking is done, the person performing his task should initial on the prescription | |
| RECORDING |
| Proper record keeping is an essential part of dispensing as it facilitates good management and monitoring of services provided. Such records can be used to verify the stocks used in dispensing, and will be required if a need arises to trace patients dispensed with a particular medicine |

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| |  | | --- | | ISSUING MEDICINES TO THE PATIENT | | |  | | --- | |  | | Issuing or supply of medicine should only be done by registered medical practitioner or a pharmacist. When dispensing the medicines, ensure the **5Rs**:   * + Right Patient   + Right Medicine   + Right Dose   + Right Route   + Right Time * Check the name and ID to verify the right patient. * Medicines supplied for a person under 18 years of age is for the purpose of his medical treatment only2. * Ask about allergies or known adverse drug reactions (ADR). * Give **clear instructions** and **proper advice** on how to take/ use the medicines dispensed. * Ensure the patient is made aware if there are special requirements during transportation, proper storage conditions and usage requirements for the medicines. * Compliance aids (e.g. measuring spoon or syringe) for the appropriate dose should be provided, if required. * Every effort must be made to ensure that the recipient understands the information/instructions and advice provided. * Advise patients to inform the clinic/pharmacy should they encounter any adverse drug reactions (ADRs) when taking the dispensed medicines.  CODE OF ETHICS FOR PHARMACY TECHNICIANS Preamble  Pharmacy Technicians are healthcare professionals who assist pharmacists in providing the best possible care for patients. The principles of this code, which apply to pharmacy technicians working in any and all settings, are based on the application and support of the moral obligations that guide the pharmacy profession in relationships with patients, healthcare professionals and society.  Principles   1. A pharmacy technician's first consideration is to ensure the health and safety of the patient, and to use knowledge and skills to the best of his/her ability in serving patients. 2. A pharmacy technician supports and promotes honesty and integrity in the profession, which includes a duty to observe the law, maintain the highest moral and ethical conduct at all times and uphold the ethical principles of the profession. 3. A pharmacy technician assists and supports the pharmacists in the safe and efficacious and cost effective distribution of health services and healthcare resources. 4. A pharmacy technician respects and values the abilities of pharmacists, colleagues and other healthcare professionals. 5. A pharmacy technician maintains competency in his/her practice and continually enhances his/her professional knowledge and expertise. | | |

St Elizabeth hospital has five pharmacy departments namely

* Pharmacy A department
* Pharmacy B department
* Pharmacy C (CTC pharmacy) department
* TB pharmacy department
* Main store department

PHARMACY ‘A’ DEPARTMENT**:**

Pharmacy ‘A’ department is also namely MSD pharmacy it’s the government pharmacy its deals with in patient and out patients. Dispensing of drugs to Out patients doctors usually use the computer system the main system used in St Elizabeth hospital is care 2x system.

Activities done in pharmacy ‘A’ include the following**;**

* Record refrigerator temperature at the sub store and room temperature at the main store. The average refrigerator temperature is 2oc to 8oc and the main store temperature ranges from 15oc to 30oc.
* Put on the distiller machine. This machine is used to purify impure water onto pure water so that the water can be used for sterilization of equipment in Operation Theater. The machine runs for four hours so when I switch on I usually set an alarm and switch off after four hours.
* Sort, set various things from documents to drugs and medical devices at the dispensing room and do general cleaning.
* Empty dustbin.
* Prepare daily requirement the order from the main store to pharmacy ‘A’ including drugs, medical devices and other working tools.
* Collect the daily requirement from main store.
* Do prepacking for fast moving drugs.eg amoxicillin caps, paracetamol tabs, metronidazole tabs.
* Dispensing drugs to outpatients using care 2x system for the whole of the remaining hours, also issue drugs and medical devices to inpatients as per the orders from each ward .each ward has the order book so they usually write there order in the book.
* Record to register drugs and medical devices that have been issued to inpatients and other departments but didn’t pass through the care 2x system.
* Restock the emergency trays for OPD and for the wards.
* Do general cleaning and close.

# PHARMACY ‘B’ DEPARTMENT

Pharmacy ’B’ is a private pharmacy in St Elizabeth hospital .This pharmacy also dispense drug to both out patients and inpatients .Dispensing drugs to out patients uses the care 2x system also pharmacy B sales drugs by cash to patients with prescription only without passing in the system and insurance patients BIMA and NHIF .

The first thing in the morning before dispensing drugs to the patients I do general cleanliness I mope the floor I clean the shelves and arrange the drugs and empty the dustbin. Then I start dispensing drugs to BIMA patients and patients having the receipt .The cash patients I usually ask my supervisor for the cost of the drug then after giving the patient the drugs I usually right the receipt in the receipt book.

Drugs in the pharmacy B are arranged according to drugs groups

* Antipyretics: reducing fever (pyrexia/pyresis)
* Analgesics: reducing pain (painkillers)
* Antimalarial drugs: treating malaria
* Antibiotics: inhibiting germ growth
* Antiseptics: prevention of germ growth near burns, cuts and wounds
* Stimulants: methylphenidate, amphetamine
* Tranquilizers: chlorpromazine, diazepam, and alprazolam
* Statins: lovastatin, and atovastatin
* Hypertensive: for high blood pressure amlodipine, losartan
* Antidiabetic:Aprinox ,Glibleclamide

# CARE TRETEMENT CARE (CTC)

This is the department which deals with HIV/AIDS patients, when I arrived in this department, the supervisor of the department (Miss moisan) she gave me the instruction on how to deal with HIV patient..

I learned why the HIV patient supposed to use ARVs therapy;

* Increasing CD4 count
* Decreasing viral load
* Improving quality of life

I learnt the normal range of CD4 count 700-1500 in adults and 700 to 2500 in children.

The Criteria for starting ARVs are when

* CD4 count less than 350 cell/ml
* sero positive pregnant women regardless WHO stages
* sero positive infant regardless WHO stages
* viral load above 5500copies/ml

The ARVs used to increase CD4 and to reduce viral load are

1. **Nucleoside Reverse Transcriptase Inhibitors [NRTIs]** E.g. Zidovudine, Stavudine, Lamivudine, Abacavir, Emtricitabine, Tenofovir and Didanosine.
2. **Non-Nucleoside Reverse Transcriptase Inhibitors [NNRTIs] Eg.** Efavirenz and Nevirapine
3. **Protease Inhibitors[PIs ] E.g.** Lopinavir/ritonavir, and Atazanavir/ritonavir

PIs cannot be given alone they are boosted with ritonavir so they are given together

.Management of HIV/AIDS is triple therapy ie.

2NRTIs + 1NNRTIs (1st line)

Or 2NRTIs + 1PI (2nd line)

Combinations of ARVs are as follows; E.g. 1st line - Combivir (AZT/3TC) [Zidovudine/Lamivudine] or Combivir with EFV/NVP [Efavirenz/Nevirapine]

* Duovir-N [Zidovudine/Lamivudine/Nevirapine (AZT/3TC/NVP)
* Truvada [Tenofovir/Emtricitabin] (TDF/FTC)
* Atripla [Tenofovir/Emtricitabin+Efavirenz (TDF/FTC + EFV)
* Trimune [Stavudine/Lamivudine+Nevirapine (d4t/3TC + NVP)

2nd line – alluvia (LPV/r[Lopinavir/ritonavir])

* Truvada + Alluvia (TDF [Tenofovir/FTC [Emtricitabin] +LPV/r) [Lopinovir/ritonavir
* Combivir + Alluvia[Zidovudine/Lamivudine+Lopinavir/ritonavir (AZT/3TC +LPV/r)
* Alluvia + 3TC[Lamivudine] + ABC[Abacavir]
* The reasons for changing from 1st line to 2nd line are;
* Side effects
* Compliance
* Resistance
* Side effects of ARVs; Zidovudine[AZT]- anemia

[ Nevirapine] NVP – hypersensitive

[ Efavirenz] EFV – night mares.

[Tenofovir]TDF – nephrotoxicity

Also Alluvia cause diabetes

PEP is the post exposure prophylaxis whereby treatment are given to prevent uninfected person from contracting HIV/AIDS within 2 hours of contact and the drugs used are combivir[Zidovudine/Lamivudine [AZT/3TC] or combivir with Nevirapine. Reasons may be due to;

* Rape
* Contact with potentially infected body fluid/blood

If it is low risk the victim is given double therapy [combivir] but if it is high risk the patient is given triple therapy that is combivir+Nevirapine.

Also if the first line failed the patient switched into second line, the reasons for switched patient to the second line are:

* Drugs resistance(first line)
* Treatment failure.

But nowadays the first line is tenofovir+lamivudine+efavirenz (TLE) for those who start ART, but for those patients who had started old first line regimen namely zidovudin+lamivudine+efavirenz they should persist their regimen regardless the new one.

Also I learned on how to enter the patient information in the A1 register

# TB PHARMACY

**Tuberculosis** (**TB**) is an [infectious disease](https://en.wikipedia.org/wiki/Infectious_disease) caused by the bacterium [Mycobacterium tuberculosis](https://en.wikipedia.org/wiki/Mycobacterium_tuberculosis) . Tuberculosis generally affects the [lungs](https://en.wikipedia.org/wiki/Lung), but can also affect other parts of the body. Most infections do not have symptoms, in which case it is known as [latent tuberculosis](https://en.wikipedia.org/wiki/Latent_tuberculosis).

The classic symptoms of active TB are

* a chronic [cough](https://en.wikipedia.org/wiki/Cough) with [blood-containing](https://en.wikipedia.org/wiki/Hemoptysis) [sputum](https://en.wikipedia.org/wiki/Sputum),
* [fever](https://en.wikipedia.org/wiki/Fever)
* [night sweats](https://en.wikipedia.org/wiki/Night_sweats)
* [Weight loss](https://en.wikipedia.org/wiki/Weight_loss).

Tuberculosis is [spread through the air](https://en.wikipedia.org/wiki/Airborne_disease) when people who have active TB in their lungs cough, spit, speak, or sneeze. People with latent TB do not spread the disease. Active infection occurs more often in people with [HIV/AIDS](https://en.wikipedia.org/wiki/HIV/AIDS) and in those who [smoke](https://en.wikipedia.org/wiki/Tobacco_smoking). Diagnosis of active TB is based on [chest X-rays](https://en.wikipedia.org/wiki/Chest_X-ray), as well as [microscopic](https://en.wikipedia.org/wiki/Microscopic) examination and [culture](https://en.wikipedia.org/wiki/Microbiological_culture) of body fluids. Diagnosis of latent TB relies on the [tuberculin skin test](https://en.wikipedia.org/wiki/Mantoux_test) (TST) or blood tests.

Prevention of TB involves screening those at high risk, early detection and treatment of cases, and [vaccination](https://en.wikipedia.org/wiki/Vaccination) with the [bacillus Calmette-Guérin](https://en.wikipedia.org/wiki/Bacillus_Calmette-Gu%C3%A9rin)vaccine (BCG). Those at high risk include household, workplace, and social contacts of people with active TB. Treatment requires the use of multiple [antibiotics](https://en.wikipedia.org/wiki/Antibiotic) over a long period of time. [Antibiotic resistance](https://en.wikipedia.org/wiki/Antibiotic_resistance) is a growing problem with increasing rates of [multiple drug-resistant tuberculosis](https://en.wikipedia.org/wiki/Multi-drug-resistant_tuberculosis)  (MDR-TB).

***There are two types of tuberculosis***

* Pulmonary tuberculosis
* Extra pulmonary tuberculosis

# PULMONARY

If a tuberculosis infection does become active, it most commonly involves the lungs (in about 90% of cases). Symptoms may include [chest pain](https://en.wikipedia.org/wiki/Chest_pain) and a prolonged cough producing sputum. About 25% of people may not have any symptoms (i.e. they remain "asymptomatic"). Occasionally, people may [cough up blood](https://en.wikipedia.org/wiki/Hemoptysis) in small amounts, and in very rare cases, the infection may erode into the [pulmonary artery](https://en.wikipedia.org/wiki/Pulmonary_artery) or a [Rasmussen's aneurysm](https://en.wikipedia.org/wiki/Rasmussen%27s_aneurysm), resulting in massive bleeding. Tuberculosis may become a chronic illness and cause extensive scarring in the upper lobes of the lungs. The upper lung lobes are more frequently affected by tuberculosis than the lower ones. The reason for this difference is not clear. It may be due to either better air flow, or poor [lymph](https://en.wikipedia.org/wiki/Lymph) drainage within the upper lungs.

# EXTRAPULMONARY

In 15–20% of active cases, the infection spreads outside the lungs, causing other kinds of TB. These are collectively denoted as "extra pulmonary tuberculosis". Extra pulmonary TB occurs more commonly in [immunosuppressed](https://en.wikipedia.org/wiki/Immunosuppression) persons and young children. In those with HIV, this occurs in more than 50% of cases. Notable extra pulmonary infection sites include the [pleura](https://en.wikipedia.org/wiki/Pleural_cavity)(in tuberculosis pleurisy), the [central nervous system](https://en.wikipedia.org/wiki/Central_nervous_system) (in tuberculosis [meningitis](https://en.wikipedia.org/wiki/Meningitis)), the [lymphatic system](https://en.wikipedia.org/wiki/Lymphatic_system) (in [scrofula](https://en.wikipedia.org/wiki/Tuberculous_cervical_lymphadenitis) of the neck).

Spread to [lymph nodes](https://en.wikipedia.org/wiki/Lymph_nodes) is the most common. An ulcer originating from nearby infected lymph nodes may occur and is painless, slowly enlarging and has an appearance of "wash leather".

When it spreads to the bones, it is known as "osseous tuberculosis”, a form of [osteomyelitis](https://en.wikipedia.org/wiki/Osteomyelitis) A potentially more serious, widespread form of TB is called "disseminated tuberculosis", also known as [military tuberculosis](https://en.wikipedia.org/wiki/Miliary_tuberculosis). Military TB currently makes up about 10% of extra pulmonary cases.

Treatment of tuberculosis

TB is treated by four combination of drugs which are Rifampicin,isonizid,pyrazinamide and ethambutal (RHZE).In adult 70kg and above takes 4 tabs per day and below 70 kg takes 3 tabs per day.The new patients usually starts with RHZE for 56 days then continues with RH .

MAIN STORE AND SUB STORE DEPARTMENT.

This is the place where the drugs are stored in the main store drugs are store according to FEFO(First expire first out) and FIFO(First in first out).The first thing in the morning I recorded the refrigerator temperature in the sub store its ranges 20c-8oc.Then I go to the main store and record the room temperature its ranges 24-31.

In the main store each item has the bin card there also ledgers but a ledger can contain four items. Every morning me and my supervisor we receive orders from laboratory, operation thetre,dispensing, eye department and RCH clinic.

After receiving the orders we record in the drug requision book and post it in the bin card after posting in the bin card I post in the ledger.

Procurement of drugs in the mainstore.

Drugs in the main store are procured from MSD and Trinity pharmacy .When procuring drugs in MSD the system used is ELMS( electronic logistic management system) and drug from whole sale pharmacy are procured using the care 2x system.

# Receiving of procured drugs

When receiving the drugs there must be delivery containing the item ordered and the quantity of the item. Also before receiving we check the expiry date and the amount of the item if it’s the same as in the delivery. Then if the goods are okay we put them in the car then to St Elizabeth hospital

# CONCLUSSION;

The above are activities and observation done during my field work although the field work was four weeks I tried to learn a lot of things during that short time although it was very hard because there are six department and each department has a lot of things to learn.

# RECOMMENDATION.

First I would like to recommend that the field work should be at least eight weeks because there are so many things to learn the four week are not enough to learn all the activities that are done in the hospital pharmacy

Second there should be a price list of drugs in the pharmacy B so that it can be easy to sale medicine to the patients with prescription only without passing through the system also there should be labels in the shelves that store drug so that it can be easy to know where the drug is without asking the supervisor each and everything also it can be easy to dispense medicine to patients within a short of time.

Thirdly I recommend that there should be In patients pharmacy (IPD) that deals with only patient admitted in the wards so that it can stop the confusion of dispensing medicine to outpatient and at the same time issuing medicine to pentients in wards by the files.

Lastly I would like to recommend that there should be a compounding room for preparation of eye drops because it’s the only hospital with eye operation also it can be easy for patients to get there medicine from the hospital and also it can increase hospital income.

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