

**THE UNITED REPUBLIC OF TANZANIA**  
**MINISTRY OF HEALTH, COMMUNITY DEVELOPMENT,**  
**GENDER, ELDERLY, AND CHILDREN**  
**NATIONAL AIDS CONTROL PROGRAM**



**CTC – Pharmacy Module User Manual**

**Second Edition – October, 2019**

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## List of Abbreviations

3TC	Lamivudine
ART	Antiretroviral Therapy
ARV	Antiretroviral
ATV	Atazanavir
AZT	Zidovudine
CTC	Care and Treatment Clinic
DRV	Darunavir
DTG	Dolutegravir
EFV	Efavirenz
FDC	Fixed Dose Combination
FEFO	First to Expire, First Out
GoT	Government of Tanzania
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HVL	HIV Viral Load
INSTI	Integrase Strand transferase Inhibitor
INH	Isoniazid
IPT	Isoniazid Preventive Therapy
LPV	Lopinavir
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly, and Children
MSD	Medical Stores Department
MTCT	Mother to Child Transmission
NACP	National AIDS Control Programme
NNRTI	Non-Nucleoside Reverse Transcriptase Inhibitors
NtRTIs	Nucleotide Reverse Transcriptase Inhibitors
NRTI	Nucleoside Reverse Transcriptase Inhibitors
NVP	Nevirapine
OI	Opportunistic Infection
PCP	Pneumocystis Jiroveci Pneumonia
PEP	Post Exposure Prophylaxis
PrEP	Pre Exposure prophylaxis
PI	Protease Inhibitors
PLHIV	People Living with HIV
PMTCT	Prevention of Mother to Child Transmission
RAL	Raltegravir
RTV	Ritonavir
TB	Tuberculosis
TDF	Tenofovir
UPT	Urine for Pregnancy test
VL	Viral Load
WHO	World Health Organization
HSHSP	Health Sector HIV AIDS Strategic Plan

# **Chapter 1: Background**

## **1.1. National State of HIV Epidemic and Response**

The burden of HIV and AIDS is still a public health concern in Tanzania. It is estimated that 1.6 million adults and children are infected with HIV nationwide as of December 2018 (**UNAIDS Spectrum data**). The Tanzania HIV impact survey (THIS) of 2016/2017 showed that the overall HIV prevalence in Tanzania is 4.7%. HIV Prevalence varies with sex (6.2% among females and 3.7% among males aged 15-49 years). The trend of HIV Prevalence among adults 15-49 years in Tanzania from 2004/05 to 2016/2017 has decreased from 7.2% to 4.7% respectively.

The decrease in HIV prevalence in Tanzania has been contributed by the implementation of interventions in preventive, care, treatment, and support towards achieving the Global targets of 90-90-90 by 2020 and the elimination of new HIV infections by 2030. In lieu of this, Anti-retroviral therapy (ART) in Tanzania was firstly rolled up in 2004. Moreover, there has been good progress towards attaining the 90 90 90 global targets by 2020. Notably, as of December 2018, 75% of all people living with HIV (PLHIV) are aware of their HIV-positive status, 98% of those who are aware of their HIV-positive status are on ART and 87.7% of those on ART have suppressed viral loads.

Furthermore, the number of health facilities offering ART services has been increasing over time from the baseline of 96 in 2005 to 6,206 in 2018. The 6,206 Health Facilities include 2,103 Care and Treatment Clinics (CTCs) and 4,103 PMTCT Standalone facilities as of December 2018. Additionally, it was established that there has been an improvement in the availability of ARVs, notably less than 5% of health facilities experienced stock-outs of ARVs medicines. (HSHSP IV, 2017–2022)

Towards improving quality data which contributes to the continuous availability of ARVs and OIs to ensure Optimal ART the pharmacy module database was designed by the National AIDS Control Program (NACP) in collaboration with the University of Dar es Salaam Computing Center (UCC). The database which is a computerized version of the NACP's official guidelines facilitates record-keeping and reporting of logistics information by enabling electronic capturing, storage and reporting of data at CTCs. It is designed to be a simple, useful tool for CTCs in Tanzania to store and analyze data on Antiretroviral (ARV) and Opportunistic Infections (OIs) Medicines, dispensing and stock management. Since the establishment of the database, there have been continuous upgrades in different versions through technical expertise from UCC in order to improve the efficiency of the database in alignment with user requirements. It is also expected that further

developments in the macro database can lead to electronic data transfer from Health Facilities up to the national level and further linkage of the pharmacy module with the redesigned electronic logistics management information system (eLMIS).

The MOHCDGEC through NACP in collaboration with stakeholders has developed/revised the training package to accommodate user requirements in the recent holistic upgraded database, compatibility in macro-database development and changes in ART guidelines so as to address the growing need in ARVs and OIs medicines management at all levels (from health facilities to the National level). As part of the training package, this participant's manual has been prepared in continuous efforts to roll out the training with respective updates and reference/Standard Operating Procedure (SOP) for the healthcare workers in the country.

This manual is intended to be used for training and reference in ARVs and OIs medicines management particularly for CTC dispensers, pharmaceutical in-charges of health facilities and/or any other similar staff who are involved in one way or the other in the medicines ordering, storing, dispensing, recording and or reporting through Pharmacy Module Database.

## **1.2. Goal and Specific Objectives**

### **Goal**

The main goal of this manual is to guide Health care workers managing ARVs and OIs medicines to use effectively and efficiently the Pharmacy Module Database in their Health Facilities.

### **Specific objectives**

By the use of this participant's manual; it is expected that the participant/earmarked healthcare worker will be able to understand different concepts and apply them effectively in Pharmacy Module database use, particularly:

- i. The basic concepts of ART in Tanzania
- ii. The basic concepts of ARVs and OIs medicines management in alignment with the redesigned logistic system.
- iii. The basic computer skills required in the operation of the pharmacy module database.
- iv. The functionalities and operations of the pharmacy module database.
- v. The basic concepts in Monitoring of Pharmacy module system

## **CHAPTER 2: OVERVIEW OF ART REGIMENS AND DRUGS**

### **2.1 Introduction:**

This chapter intends to equip participants with the knowledge on the goal of ART in Tanzania, specifically on HIV infected adults, adolescents, children and infants. It will also explain description of ART regimens and drugs to adult, adolescent and children patients available in Tanzania (first line, second and third line regimens); reasons for substituting and change of ARV regimens. The topic also covers ARV used for Post and Pre exposure Prophylaxis, HIV exposed infants prophylaxis, TB preventive therapy and prophylaxis for Pneumocystic Jiroveci Pneumonia. It is expected that, healthcare workers will utilize this knowledge to execute the general care and treatment portfolio in their daily practice while using the pharmacy module tool.

### **2.2 Specific Objectives:**

At the end of this session participants will be able to:

1. Describe the goals of ART in Tanzania
2. Describe ART regimens and drugs to adult, adolescent and Pediatric patients available in Tanzania
3. Describe reasons for Changing Antiretroviral therapy
4. Describe Drugs used for Prophylactic treatment
5. Explain the importance of adherence to ART

### **2.3 Primary Goals of ART**

1. Maximal and durable suppression of viral load to <50 copies/ml
2. Restoration/preservation of immune function by attaining CD4 $\geq$ 500cells/mm<sup>3</sup>
3. Reduction of HIV-related morbidity/mortality
4. Improvement of survival and quality of life

### **2.4 Secondary Goals of ART**

To reduce:

1. The pool of individuals who are virologically not suppressed, hence infectious and thus reduce the risk of HIV transmission in the community.
2. The pool of pregnant and lactating mothers who are virologically not suppressed, hence infectious and thus reduce the risk of HIV transmission from mother to child and
3. Transmission among discordant couples.

## 2.5 Description of ART regimens and drugs

### 2.5.1 First line ARVs in Tanzania

Antiretroviral therapy, both in naïve clients and those who have received treatment before, involves the use of a combination of antiretroviral drugs. Triple therapy consists of 2 NRTI + 1 INSTI or 2 NRTI + 1 NNRTI or 2 NRTI + 1 PI. It is important to remember that there is no single combination that is best for every client and/or that can be tolerated by all clients. It is stressed that for both initial and subsequent ART lines the aim is to attain undetectable viral load (<50 copies /ml) and regain CD4 cell count to normal thresholds ( $\geq 500$  cells/mm<sup>3</sup>). Prescriptions of ARV regimens should be recommended on the basis of a client's clinical condition, co-morbidities, co-administered drugs, age, pregnancy status, convenience, and ability to tolerate the regimen.

The recommended antiretroviral drugs to be used fall into the following five main categories:

- a) Nucleotide reverse transcriptase inhibitors (NtRTIs)
- b) Nucleoside reverse transcriptase inhibitors (NRTIs)
- c) Non-nucleoside reverse transcriptase inhibitors (NNRTIs)
- d) Protease inhibitors (PIs)
- e) Integrase strand transfer inhibitors (INSTI)/ Integrase inhibitors other antiretroviral drugs used elsewhere include:
- f) Fusion inhibitors e.g Enfuvirtide (ENF)
- g) Chemokine receptor inhibitors/ CCR5 inhibitors e.g Maraviroc

#### 2.5.1.1 Nucleotide Reverse Transcriptase Inhibitors (NtRTIs)

Nucleotide analogues resemble nucleoside analogues (NRTI's). The mechanism of action involves selectively inhibiting viral reverse transcriptase enzyme. Examples of these antiretroviral drugs include:

- Tenofovir disoproxil fumarate (TDF)
- Tenofovir alafenamide (TAF)

#### **2.5.1.2 Nucleoside Reverse Transcriptase Inhibitors (NRTIs)**

This group of drugs is the mainstay of antiretroviral therapy in the country. The primary mechanism of action of this class is inhibition of viral RNA-dependent DNA polymerase (reverse transcriptase) enzyme. The drugs that are available in Tanzania for this class include:

- Zidovudine (AZT)
- Lamivudine (3TC)
- Abacavir (ABC)
- Emtricitabine (FTC)

#### **2.5.1.3 Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs)**

Similar to the NRTIs, NNRTIs also act by disrupting the reverse transcription of viral RNA into DNA that is then incorporated in the cell's nucleus. However, unlike the NRTIs, they are not directly incorporated into the viral DNA; instead they inhibit replication directly by binding to the enzyme reverse transcriptase. Resistance to these drugs develops rapidly, especially when used alone due to low genetic barrier. There are two groups of NNRTIs, 1st and 2nd generation, the latter has an advantage of having a better resistance profile and a higher genetic barrier to the development of resistance. The 2nd generation of NNRTIs may be effective after the failure of the first generation of NNRTI-based regimen due to resistance. Drugs under this class that are recommended in this guideline include:

- Nevirapine (NVP)
- Efavirenz (EFV)

#### **2.5.1.4 Protease Inhibitors (PIs)**

PIs competitively inhibit the HIV protease enzyme whose activity is critical for the terminal maturation of infectious virions. This inhibition prevents the maturation of virions capable of infecting other cells. Such drugs are usually boosted with a small dose of ritonavir (also a PI) to enhance therapeutic drug concentration and hence increase efficacy of the drug, reduce food restrictions, dose and frequency of administration. Boosted PIs have a high genetic barrier to resistance. The newer PIs such as Darunavir have an advantage of having a better resistance profile, a higher genetic barrier to the development of resistance and a broad spectrum of activity against PI resistant viruses. They are therefore effective

after failure of a first generation PI-based regimen due to resistance. Drugs under this class that are recommended in this guideline include:

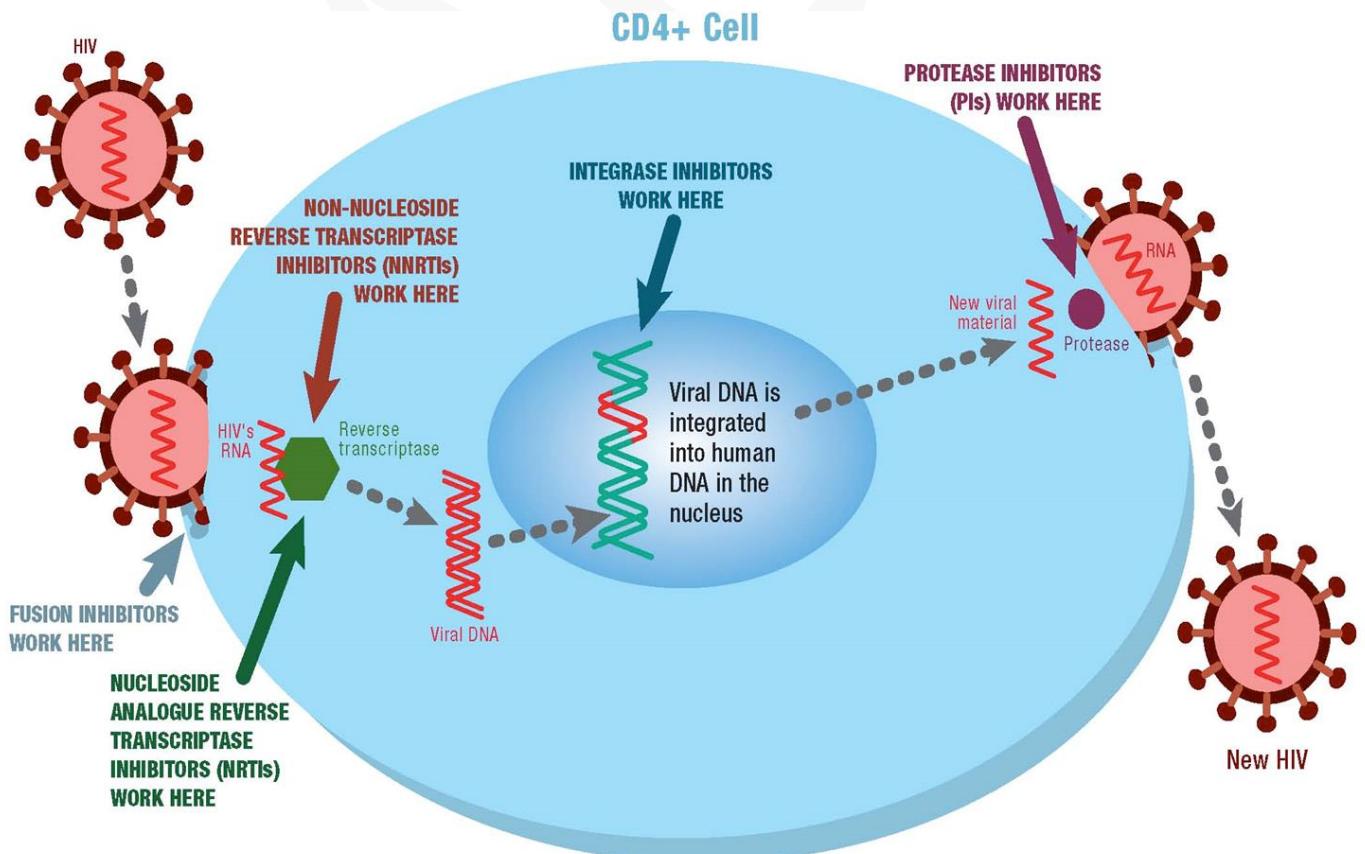
- a) 1st generation currently available Protease Inhibitors (PIs)
  - Atazanavir (ATV).
  - Lopinavir (LPV),
  - Ritonavir (usually used as a booster with other PIs)
- b) 2nd generation currently available Protease Inhibitors (PIs) - Darunavir (DRV)

#### **2.5.1.5 Integrase Strand Transfer Inhibitors (INSTI)/ Integrase inhibitors**

This group of drugs acts by inhibiting integrase enzyme which facilitates integration of viral pro-DNA into the host cell. Drugs under this class that are recommended in Tanzania include:

- a) Dolutegravir (DTG)
- b) Raltegravir (RAL)

#### **Classes of Antiretroviral Drugs: Areas of action in the HIV life cycle**



**The following ARV drugs are in Fixed Dose combination (FDC)**

- TDF/3TC/DTG (TLD)
- ABC/3TC/DTG (ALD)
- TDF/3TC/EFV600 (TLE)
- TDF/3TC/EFV400 (TLE)
- TDF/FTC (Truvada)
- ABC/3TC
- AZT/3TC/NVP (Duovir-N)
- AZT/3TC (Combivir)
- TDF/FTC/EFV

**First line ARV combination regimens**

The following recommended ARV drug combinations are currently available as first line treatment.

**Table 1: Recommended 1<sup>st</sup> line ARV regimens in Adults**

Patient group	Preferred Regimen (Default)	Alternative Regimen
Adults and adolescents (>15 years), Pregnant/lactating mothers	TDF +3TC +DTG (TLD)	ABC + 3TC+ DTG TDF + 3TC +EFV (TLE600 or TLE400) Special situations: AZT + 3TC + DTG
HIV and TB co-infections	TDF + 3TC +DTG (Double dosage of DTG)	TDF + 3TC +EFV (TLE600) ABC + 3TC+ DTG (Double dosage of DTG) Special situations: AZT + 3TC + DTG (Double dosage of DTG)
People who Inject Drugs (PWID)	DF + 3TC +DTG	ABC + 3TC+ DTG TDF + FTC +ATV/r

**The following 1st line ARV drug combinations will be systematically phased out when the new ARVs regimens are available**

- TDF+FTC+EFV600
- ABC/3TC+EFV600
- AZT /3TC+ EFV600
- AZT+3TC+NVP

**NOTE:**

- All women of child bearing potential should be tested urine for pregnancy (UPT) before ART initiation, especially if DTG is to be initiated. DTG can be used in pregnant and women of child bearing potential; however, there is a potential risk for neural tube defects for children born by mothers on DTG during conception and first trimester. All pregnant women and those who wish to conceive should be given Folic acid supplements.
- For women of child bearing potential who would not wish to conceive and use TLD, should be advised to use long acting contraceptive and/or effective dual contraception with condoms.
- Clients with TB and HIV co-infection who cannot tolerate DTG and pregnant women who will opt not to use DTG will continue to use TLE (EFV600) until evidence to support use of TLE (EFV400) is available.
- For clients with TB and HIV co-infection consider using a PI based regimen if Efavirenz is not available.
- The TDF+3TC+DTG combination is the default combination to be prescribed to all adult and adolescent clients if there is no any contraindication. The regimen can also be used in patients with TB and HIV, HIV and HBV co-infection and PWID.
- TLD is more efficacious compared to other available options with NRTI backbones, causing rapid decline in viral load of up to 50 RNA copies per milliliter in 12 weeks whereas the optimal suppression occurs at 24 weeks when using Efavirenz containing formulations. Furthermore, TLD causes robust CD4 recovery in both early and advanced disease; it is suitable for late presenters or those with advanced disease and more appropriate for pregnant women booking late at Antenatal Clinics.

- TLD has less side effects and few important drug-drug interactions hence well tolerated compared to previously used first line regimen. There are safety concerns for use of TLD in pregnant women but the pharmacokinetics studies do not show any difference between TLD and TLE.
- Higher genetic barrier of DTG 50mg means patients are less likely to develop resistance and do not shortly require switching to more expensive second-line treatment options.
- DTG 50mg does not interact with methadone; therefore it is a suitable drug for regimens in PWID.
- DTG dosing is 50mg OD but it should be administered at a dose of 50mg twice a day for patients on Rifampicin based treatment because Rifampicin reduces DTG 50mg drug levels in the blood.
- TDF 300mg based regimens should not be initiated to patients with weight less than 30kg.
- EFV should not be initiated for children aged <3 years or weighing <10kg.

**Table 2: Recommended 1st line ARV regimens Pediatric and Adolescents (Page 101)**

Patient group	Preferred 1 <sup>st</sup> Line Regimen	Justification	Alternatives	Comments
Infants and Children weighing <20kg	ABC/3TC+LPV/r	<p>Higher genetic resistance barrier</p> <p>Avoids NNRTI transmitted resistance from mother during PMTCT</p> <p>Potential for malaria prevention</p> <p>Spares AZT for second-line</p>	<p>AZT/3TC+LPV/r</p> <p>AZT/3TC+DTG (25mg or 10mg DTG if available)</p>	<p>LPV/r is available in three formulations (syrup, granules and tablets)</p> <p>-LPV/r oral solutions for younger infants until they are able to take granules</p> <p>-LPV/r granules for infants and younger children</p> <p>-LPV/r 100mg/25mg heat stable tablets for children 10kg and above and able to swallow whole tablets</p>

Children and adolescents weighing $\geq 20\text{kg}$	ABC + 3TC + DTG	<ul style="list-style-type: none"> <li>-Lowers HIV viral load very fast</li> <li>-Has high genetic barriers to resistance compared to both PIs and NNRTIs</li> <li>-Spares AZT for second-line</li> </ul>	ABC+3TC+LPV/r	ABC/3TC Dispensable Tablet 120/60 mg plus DTG tablet 50mg
Children and Adolescents weighing $\geq 30\text{ kg}$	TDF + 3TC + DTG	<ul style="list-style-type: none"> <li>Higher genetic resistance barrier</li> <li>Avoids NNRTI transmitted resistance from mother during PMTCT</li> <li>Possibility of malaria prevention</li> <li>Spares AZT for second-line</li> </ul>	ABC+3TC+DTG TDF+3TC+EFV600 or EFV400	TLD Fixed Dose Combination
For TB and HIV co-infected children already on LPV/r based regimen	ABC/3TC+LPV/r	Continue with ABC/3TC+LPV/r but the dose of LPV/r should be doubled due to the interaction between ritonavir and rifampicin		ABC/3TC+LPV/r in the morning and onlyLPV/r in the evening
For TB and HIV co-infected children already on DTG based regimen	ABC/3TC+DTG	<p>For children 20-25 kg who get TB/HIV co-infection it is advisable to give them ABC/3TC/EFV for the time of the TB treatment then revert to ABC/3TC/DTG after completion of TB Treatment</p> <p>For children <math>&gt; 25\text{ kg}</math></p> <p>Continue with ABC/3TC+DTG but the dose of DTG should be doubled due to the interaction</p>		ABC/3TC+DTG in the morning and only DTG in the evening

		between ritonavir and rifampicin		
For TB and HIV co-infected on TLD	TDF+3TC+DTG	<p>For children 20-25 kg who get TB/HIV co-infection it is advisable to give them TDF/3TC/EFV for the time of the TB treatment then revert to TDF/3TC/DTG after completion of TB Treatment</p> <p>For children &gt; 25 kg Continue with the same regimen, Double dose of DTG</p>		TLD in the morning and only DTG (50mg ) in the evening

### **ARVs for Exposed infants**

Regardless of the mother's HIV status, all infants should be kept warm after birth and dried carefully. Infants should be handled with gloved hands until maternal blood and secretions have been washed off. In caring for new-born, HCWs should observe standard precautions.

### **Prophylaxis for HIV Exposed Infants**

#### Prophylaxis for HIV Exposed Infants

- Administer NVP syrup immediately after birth to all HIV exposed infants and continue until six weeks of age.

**Table 3: recommended prophylaxis for HIV Exposed Infants**

<b>Infant NVP dosing recommendations</b>	
Infant age	NVP daily dosing
Birth to 6 weeks Birth weight 2000–2499g	10mg once daily
Birth weight ≥2500g	15mg once daily

Based on the dosing required to sustain exposure in the infant of >100 ng/mL with the fewest dose changes.

Low birth weight infants <2000g should receive mg/kg dosing; suggested starting dose is 2mg/kg once daily.

- In case a high-risk infant is identified, give enhanced postnatal prophylaxis (ePNP) for a total of 12 weeks as described in the table below.

**Table 4: Enhanced postnatal prophylaxis (ePNP) for high risk HEI.**

<b>Formulations</b>	<b>Dosage 0-6 weeks</b>	<b>Dosage 6-12 weeks</b>
Fixed Dose Combination AZT/3TC/NVP (60/30/50 mg)	¼ tab twice daily	NVP - once daily
If Fixed Dose Combination AZT/3TC/NVP is not available	AZT + 3TC (60/30mg); ¼ tab twice daily and NVP syrup Once daily.	NVP - once daily

### **High-risk infants:**

Are those who are: Born to women diagnosed to be living with HIV during pregnancy or breast-feeding period. Also, women known to be HIV positive but not yet on ART or already on ART but with high viral load ( $\geq 50/\text{UL}$  of blood).

Infant prophylaxis is most effective when given as soon as possible after birth, preferably within 6 to 12 hours. Infants identified beyond the age of four weeks should not be given ARV prophylaxis.

#### **Practice Point**

Infants who are diagnosed with HIV infection should be initiated on ART by a trained clinician or nurse at CTC or RCH.

- For High risk HIV exposed infants; Health care worker can use a fixed dose combination tablet to provide the prophylaxis as shown above:
- When administering the FDC tablet, remember to tell the mother that she should keep the remaining quarter of a tablet for the evening dose

## **2.5.2 Changing Antiretroviral Therapy**

There are multiple reasons that may prompt the need to change antiretroviral therapy. These can be grouped into two major categories:

- Drug specific adverse events (toxicity).
- Treatment failure.

Treatment failure can be caused by drug resistance due to nature of virus or mutations. It can be caused by other correctable factors contributing to suboptimal drug levels and poor clinical response. These include:

- Under-dosage
- Drug interactions that may reduce the efficacy of some of the ARV eg. Metabolism of NVP is increased when interacting with Rifampicin which may reduce level of effectiveness of Nevirapine.
- Patients' non adherence.
- Evidence of mal-absorption
- Use of less potent ARVs.

### **Changing Antiretroviral due to treatment failure:**

If changing due to treatment failure

- Never change to monotherapy
- Change at least two drugs, preferably change all three drugs
- When selecting drugs, choose drugs that have not been used before, drugs which do not have cross-resistance/or no overlapping toxicities or drug-drug interactions
- Lamivudine has advantage of decreasing viral fitness and increasing susceptibility to AZT and therefore it may be retained when changing the failing regimen.

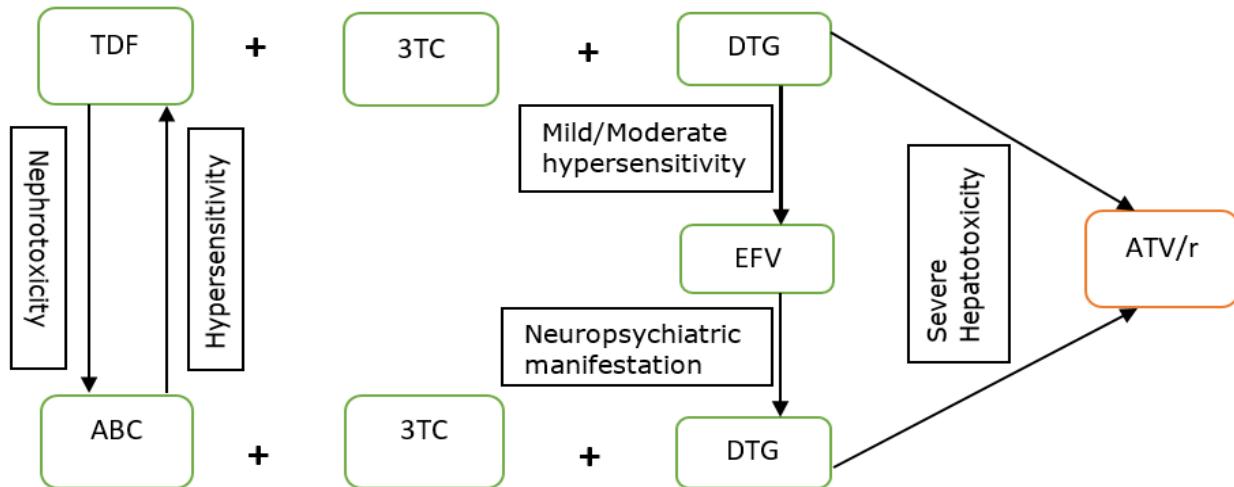
### **Changing antiretroviral therapy due to toxicity**

If changing due to toxicity

- Change only the drug suspected to be causing the problem.

From a clinical perspective, it is generally recommended that when changing a client's regimen due to toxicity, only the toxic drug(s) should be replaced, wherever possible, by a drug without overlapping toxicities.

**Figure 1: Substitution within First Line Antiretroviral Regimens**



### 2.5.3 Second line ARVs in Tanzania

The second line NRTI choice for adults and adolescents depends on the first line regimen. For patients on TDF based regimens in first line, the preferred second line option is AZT plus 3TC combined with a ritonavir-boosted PI, preferably ATV/r because it is dosed once daily and has fewer metabolic complications and side effects. The same NRTIs, with exception of 3TC and FTC used in previous regimen should not be used in subsequent regimens during switching due to treatment failure. LPV/r can be used as an alternative to ATV/r in patients using anti-TB drugs (with ritonavir super boosting) and children below six years. Also, ATV/r (300/100mg) cannot be used in children below 30kg.

For patients who were on AZT and had never used TDF regimen, the default second line option will be TDF or ABC based regimen combined with a boosted PI (TDF+FTC+ATV/r).

For patients who were introduced to TDF in first line due to AZT toxicity, the default second line option is to use ABC plus 3TC combined with a ritonavir-boosted PI ATV/r or LPV/r. (ABC + 3TC + LPV/r or ATV/r). However, ABC may be rendered ineffective due to cross resistance with TDF associated resistance mutations.

Note that ATV/r, LPV/r, ABC/3TC and TDF/FTC are currently available as FDC formulations which simplify dosing and administration.

**Table 5: Recommended 2<sup>nd</sup> line ARV regimens in Adults**

Patient group	Preferred (Default) Regimen	Alternative Regimen
Adults, adolescents (>15 years) and Pregnant women/ breast feeding mothers	AZT/3TC+ATV/r <sup>a</sup> : if TDF was used in first-line  TDF/FTC+ATV/r <sup>a</sup> : if AZT was used in first-line	ABC/3TC+ATV/r <sup>a</sup>  ABC/3TC+LPV/r <sup>a</sup>  TDF/FTC+LPV/r <sup>a</sup>  AZT + 3TC + DTG (For patients who did not use DTG in the first-line)
HIV and TB co-infection	AZT/3TC+LPV/r <sup>a</sup>	ABC/3TC+LPV/r <sup>a</sup>  TDF/FTC+LPV/r <sup>a</sup>  Note: double dosage of LPV/r to 800/200mg for Rifampicin based TB treatment
People Who Inject Drugs (PWID)	AZT/3TC + DTG	AZT + 3TC+ ATV/r <sup>a</sup>  ABC + 3TC +ATV/r <sup>a</sup>

**Table 6: Recommended 2nd line ARV regimens-Pediatric**

Patient group	If is on the following first line	Preferred 2L	Justification
Children and adolescent <20kgs whose 1st regimen was EFV or NVP based, then transitioned to LPV/r based regimen	ABC/3TC+LPV/r  AZT+3TC+LPV/r	Maintain PI  AZT+3TC+LPV/r	-Higher genetic resistance barrier  -Spare INSTI for third line

Children and adolescents $\geq 20\text{kg}$ whose 1st regimen was EFV or NVP based, then transitioned to DTG based regimen	ABC+3TC+DTG AZT+3TC+DTG	AZT+3TC+ATV/r AZT/3TC+DTG ABC+3TC+DTG (for those who cannot tolerate AZT)	Maintain DTG in the 2L due to higher genetic barrier than PIs.
Children and adolescents weighing $\geq 30\text{kg}$	TDF+3TC+DTG	AZT+3TC+ATV/r ABC+3TC+ATV/r	
<b>Note:</b>			
ATV/r can be used as an alternative to LPV/r in children above six years old if pediatric formulation is available but adolescents $>30\text{kg}$ can take adult formulation.			

**Note:** Delayed diagnosis of treatment failure by using non-virological criteria results into accumulation of resistance associated mutations (RAMs). These RAMs compromise efficacy of drugs with similar resistance pattern (TDF and ABC) for future use. In case of previous AZT use, the accumulation of multiple Thymidine Associated Mutations (TAMs) compromise efficacy of all NRTIs and NtRTIs. AZT associated mutations limit future treatment options making future use of ABC and TDF ineffective.

#### 2.5.4 Third-line Antiretroviral Therapy

All clients Failing 2nd line regimens who have undergone an Enhanced Adherence Counselling and documented HIV virologic failure ( $\text{VL} >1000$ ) on a PI regimen; except children below 3 years are eligible for third line.

The National Guideline for Management of HIV and AIDS 2019 recommends the use of Integrase Inhibitors DTG and RAL, Second generation PIs (DRV/r) as third line. The criteria for diagnosing second-line failure are the same as those used for diagnosing firstline failure. In the event of treatment failure, a comprehensive evaluation to ascertain the cause of failure should be conducted. Efforts must be made to assess and optimize adherence and rule out any significant drug interactions. When this has been done and there is still evidence of failure, patients should have a regimen change that will include at least two active agents as follows.

a) Integrase Strand Transfer Inhibitors (INSTIs) or Integrase Inhibitors:

- Dolutegravir (DTG).
- Raltegravir (RAL).

- b) Second generation PI:
  - Boosted Darunavir (DRV/r)
- c) Non-Nucleoside Reverse transcriptase inhibitor
  - Zidovudine and Lamivudine (AZT/3TC)

**Table 7: Recommended third line regimens for Adults and Adolescents**

Patient group	Preferred (Default) Regimen	Alternative Regimen
Adults, adolescents (>15 years)	DTG+DRV/r+ AZT/3TC	RAL + DRV/r + AZT/3TC
Pregnant women/breastfeeding mothers	(DTG or RAL)+DRV/r+ AZT/3TC	DTG + DRV/r (AZT/3TC)
HIV and TB co-infection	DTG (BD) + LPV/r+ (AZT/3TC or TDF/FTC)	RAL+(AZT/3TC or TDF/FTC)+LPV/r
People Who Inject Drugs (PWID)	DTG+DRV/r+ AZT/3TC	DTG+ATV/r+ AZT/3TC
Note: (1) DTG in third line regimen should be given twice daily for clients who were previously exposed to INSTIs. (2) For TB and HIV co-infected patients on LPV/r should be switched to DRV/r after completion of TB treatment (3) For second and third line regimens which are non TDF based, in case of new Hepatitis B co - infection TDF with FTC should be added to the new regimen as treatment of Hepatitis B.		

**Table 8: Recommended third line regimens for Pediatric and adolescents**

Patient group	3L Options	Justification
Children <20kg	RAL + DRV/r + AZT/3T	DRV/r -High genetic barrier, Effective for patients with resistance to LPVr and ATVr, cannot be used in children <3 years of age
Children >20kg and above	DTG + DRV/r + AZT/3TC	RAL-Can be used for children <20 kg DTG-Can be used for children >20 kg

**Table 9: ARV Regimen Codes**

<b>ARV COMBINATION REGIMENS</b>		
<i>Adult Code</i>	<i>Regimen</i>	<i>Pediatric Code</i>
<b>First line</b>		
1g-A	TDF+3TC+EFV	1g-P
1b-A	AZT+3TC+NVP	1b-P
	ABC+3TC+LPV/r	1n-P
	AZT+3TC+LPV/r	1t-P
1c-A	AZT+3TC+EFV	1c-P
1k-A	ABC+3TC+EFV	1k-P
1p-A	ABC+3TC+DTG	1p-P
1q-A	TDF+FTC+DTG	
1r-A	TDF+3TC+DTG	1r-P
	AZT+3TC+DTG	1u-P
1x-A	Other 1st line	1x-P
<b>Second line</b>	<i>Regimen</i>	
2f-A	TDF+FTC+LPV/r	
2h-A	TDF+FTC+ATV/r	
2s-A	AZT+3TC+ATV/r	
2g-A	ABC+3TC+LPV/r	2g-P
2k-A	ABC+3TC+ATV/r	2j-P
2n-A	AZT+3TC+LPV/r	2n-P
	AZT+3TC+NVP	2t-P
	AZT+3TC+EFV	2c-P
	ABC+3TC+EFV	2k-P
	ABC+3TC+DTG	2p-P
	TDF+3TC+DTG	2r-P
2u-A	AZT+3TC+DTG	2u-P
2x-A	Other 2nd line	2x-P
<b>Third line</b>	<i>Regimen</i>	
3y-A	DTG+DRV/r+ AZT/3TC	
3w-A	RAL+DRV/r+ AZT/3TC	
3t-A	DTG + LPV/r+ TDF/FTC	
3k-A	DTG + LPV/r+ AZT/3TC	
3h-A	RAL+LPV/r+AZT/3TC	
3d-A	DTG+DRV/r+ AZT/3TC	3d-P
3e-A	RAL + DRV/r + AZT/3TC	3e-P
3g-A	RAL+LPV/r+ TDF/FTC	
3z-A	DTG+ATV/r+ AZT/3TC	
3x-A	Other 3 <sup>rd</sup> line	3x-P

## **2.5.5 ARV for HIV Post Exposure Prophylaxis (PEP)**

Post Exposure Prophylaxis (PEP) is the immediate provision of preventive measures and medication following exposure to potentially infected blood or other bodily fluids in order to minimize the risk of acquiring infection.

PEP should be started as soon as possible preferably within 2 hours post exposure. When given after 24-36 hours post exposure may be substantially less effective and not effective after 72 hours.

### **Recommended PEP Regimen:**

TDF+3TC/FTC+DTG for adult and adolescents once a day for 4 weeks and for children (based on body weight) AZT + 3TC + LPV/r twice daily for 4 weeks. Children whose weight is more than 20kg DTG can be used instead of LPV/r and maintain AZT+3TC as backbone.

**Note:** If the source is using PI based regimen, then the PEP regimen should be PI based (similar to the source's regimen).

## **2.5.6 ARV for Pre –Exposure Prophylaxis (PrEP)**

Pre-Exposure Prophylaxis (PrEP) is the use of ARV drugs daily by HIV-uninfected persons to prevent the acquisition of HIV before the person becomes exposed to HIV. PrEP is used by people who are at a substantial risk for HIV acquisition to lower their chances of getting HIV infection.

The recommended PrEP regimen in Tanzania is: Emtricitabine (FTC) 200mg/Tenofovir Disoproxil Fumarate (TDF) 300mg (Truvada) PO Daily.

## **2.5.7 TB Preventive Therapy (TPT)**

TB Preventive Therapy (TPT) is an intervention that should be part of the package of care for PLHIV. Currently, TPT involves giving Isoniazid (INH) tablets to eligible individuals in order to prevent progression to active TB disease.

Dosage:

- TPT in Children: Isoniazid 10 mg/kg (10-15 mg/kg) daily for six months.
- TPT in Adults: Isoniazid 300 mg daily for 6 months to complete one cycle of IPT

- Other alternative short regimens recommended to be used when available are Rifapentine+INH weekly for 3 months and Rifampicin+INH daily for 3 months

Note:

- IPT should only be given in one cycle in life time and no repeat cycle is needed
- IPT should be initiated only after TB disease has been ruled out. Neuropathy due to INH should be treated with pyridoxine.

### **2.5.8. Prophylactic Treatment of Common Opportunistic Infections in HIV and AIDS**

Many opportunistic infections can be prevented by using cotrimoxazole prophylaxis, particularly in the case of:

- Bacterial infections e.g. pneumonia,
- Skin infection
- Sepsis
- Pneumocystis Jiroveci Pneumonia (PJP)
- Malaria
- Toxoplasmosis

#### **Indication for Prophylactic Treatment Using Cotrimoxazole**

Prophylactic treatment using Cotrimoxazole should be provided if any of the following criteria applies:

- Adults, adolescents, and pregnant women with CD4 cell count  $\leq 350$  cells/mm<sup>3</sup>.
- Initiate CPT in all children  $< 5$  years of age regardless of CD4 and WHO clinical stage.
- All HIV exposed uninfected infants (initiate in all starting 4-6 weeks after birth).
- All HIV-infected persons with active TB.

**Note:**

Caution should be taken when initiating Cotrimoxazole Preventive Treatment (CPT) during the first trimester of pregnancy in women who may not have access to good nutrition and anaemic patients, because Cotrimoxazole causes deficiency in folic acid.

Pregnant women who are receiving CPT do not need sulfadoxine pyrimethamine (SP), an additional medication to prevent malaria.

CPT will continue to be provided to virologically suppressed patients (<50 copies/mL) with low CD4 cell counts (immunological non-responders).

**Dosage:**

For adults: One double strength Cotrimoxazole tablet (960mg) or two single strength tablets once a day on a daily basis. For those whose weight is <60kg, see ARV dosing chart under Cotrimoxazole dosing.

Criteria for stopping:

Occurrence of severe side effects such as severe cutaneous reactions or fixed drug reactions.

If ART is initiated and CD4 cell count is above 350 cells/ml in adults and adolescents and virological suppression (<50 copies/mL).

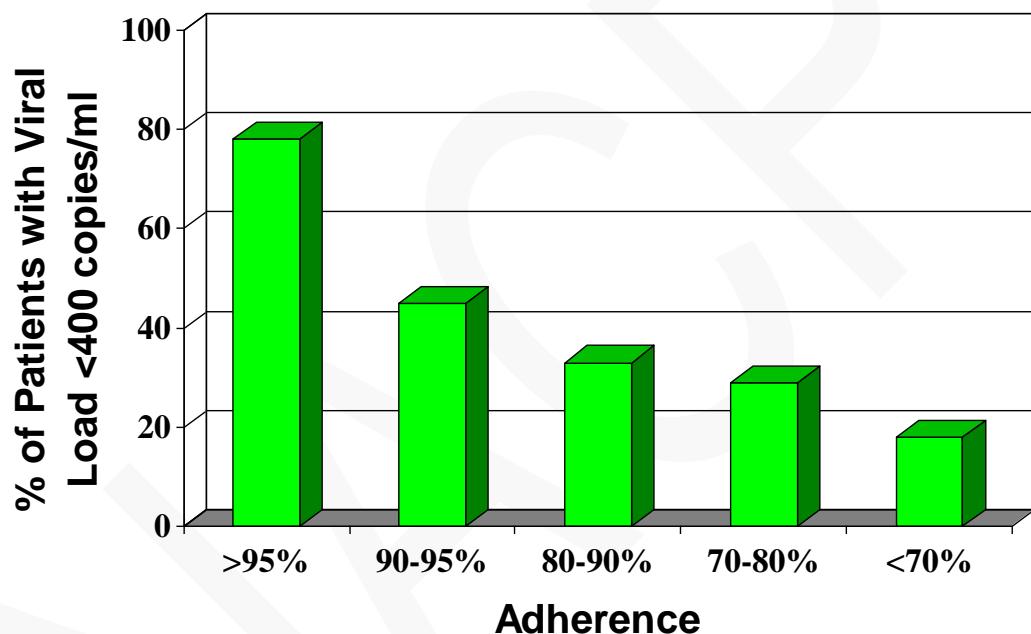
## **2.6 Initiation of ART**

All HIV infected individuals regardless of age, clinical stage, CD4 level, HIV risk group, pregnancy status, associated comorbidities are eligible for ART.

Early initiation of combination antiretroviral treatment (ART) is associated with health benefits in terms of reduced morbidity and mortality in all age groups. In addition, ART is effective in prevention of HIV transmission and also helps to drastically reduce TB incidences. Therefore, the Ministry of Health has adopted the Treat All approach where all individuals who are infected with HIV are started on ART regardless of CD4 cell count and clinical stage. **Other factors to be considered before initiating ART refer to the National guideline for Management of HIV and Aids:**

## 2.7 Adherence to ART

Adherence means sticking firmly to treatment regimen by taking the right medicine, with the right dose, at the right time, in the right frequency, in the right way every day and exactly as agreed between healthcare providers, clients and care givers. High level of sustainable adherence is crucial for achieving viral suppression needed for attainment of ART benefits which include immune restoration, prolonged survival, reduced resistance, improved quality of life and treatment as prevention. Studies indicate that adherence rates >95% are required to maintain maximal viral suppression with ART. Good adherence is adherence > 95% and anything below is poor adherence see the adherence tool table 10.



Adherence Formula

$$\% \text{ of pills missed} = \left( \frac{\text{no. of pills missed}}{\text{total no. of pills prescribed}} \right) \times 100$$

$$\% \text{ adherence} = 100 - \% \text{ of pills missed}$$

**Table 10: Adherence tool**

TWICE DAILY ART REGIMEN		ONCE DAILY ART REGIMEN	
Pills missed	Adherence %	Pills missed	Adherence %
0	100% (G)	0	100% (G)
1	98% (G)	1	97%(G)
2	97% (G)	2	94%(P)
3	95% (G)	3	90%(P)
4	94% (P)	4	87%(P)
5	92% (P )	5	83%(P)
6	90% (P )	6	80%(P)
7	89% (P )	7	78%(P)
8	87% (P )	8	73%(P)

*Summarize the session by telling participants that*

- Antiretroviral medications work through several different mechanisms
- Effective treatment requires use of at least 3 drugs
- The first line is most effective and should be preserved as long as possible
- Adherence is the most important factor in achieving viral suppression
- When in doubt, consult an experienced HIV clinician

## **CHAPTER 3: THE LOGISTICS SYSTEM FOR ARVS AND OI'S**

### **3.1. Introduction to logistics:**

Logistics system is the process of getting goods through the supply chain from the point of origin to the point of consumption/usage. Logistics system aims to get the product to the customers thereby providing good and reliable customer service.

This chapter intends to empower health care providers with knowledge and skills on the definition of key logistics terms; components of the logistics cycle including product selection, quantification, procurement, inventory management (storage, distribution and stock levels), Logistics management information system and serving the customer; inventory management tools; the flow of information and commodities in the supply chain; components of the prescription and the ordering cycles (A, B, C Groups), however there is a current transition to only A and B groups following the Re-designed logistic system.

### **3.2. Specific Objectives:**

At the end of this session participants will be able to:

1. Describe the purpose of logistics systems.
2. Define the key logistics terms.
3. Explain the components of logistic cycle.
4. Describe the flow of information and commodities in the supply chain.
5. Describe inventory management including assessing stock status and determining months of stock.
6. Describe the inventory management tools.
7. Understand the ordering cycles (A, B, C groups)/ (A and B groups for logistics system redesigned) as well as the reporting, ordering and inventory management in the redesigned logistic system.

#### **3.2.1. Purpose of logistics system**

The purpose of a logistics system is to ensure that the right goods, in the right quantities, in the right condition, are delivered to the right place, at the right time, for the right cost. In logistics, these rights are called the six rights.



### 3.2.2. Definition of key logistic terms

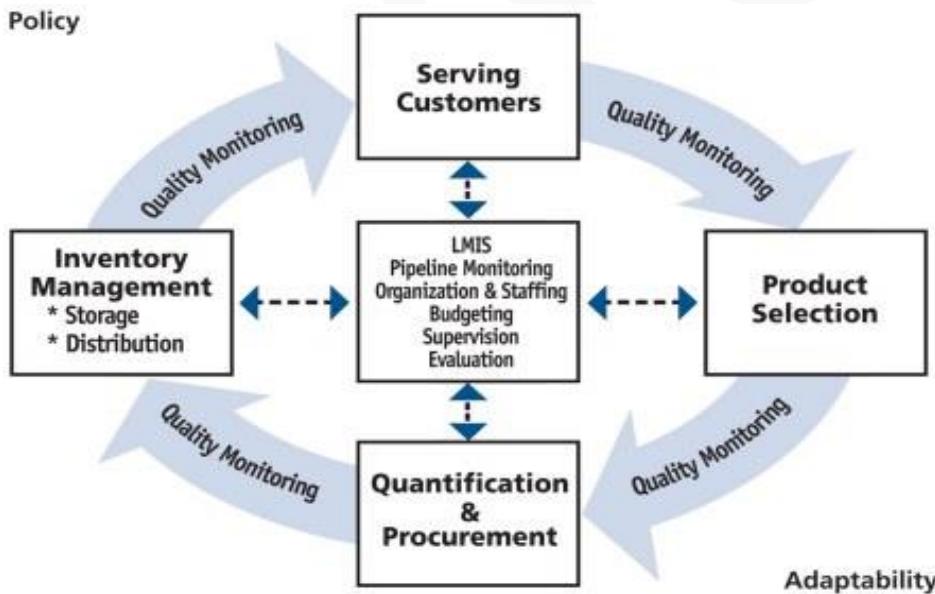
- Service Delivery Point (SDP):** is a facility that serves clients directly and where clients (users) receives supplies e.g. Clinics, hospitals, health centers and dispensaries.
- Pipeline:** is the entire chain of storage facilities and transportation links through which supplies moves from manufactures to consumers, including port facilities, central warehouse, regional warehouses, district warehouses, all service delivery points and transport vehicles.
- Lead-time:** The time when the new stock is ordered to when is received and available for use.
- Pull system:** is the distribution system in which personnel who receives the supplies determines the quantities to be issued.
- Push system:** is the distribution system in which the personnel who issues the supplies determines the quantities to be issued.
- Shelf life:** the length of time a product may be stored without affecting its usability, safety, purity or potency.

- g) **Consumption data/ consumption records:** is the record kept on product consumed.
- h) **Dispensed to user data:** Is the information on the quantities of products actually given to customers.
- i) **Issue data:** is the information on quantity of goods shifted from one level of a system to another.
- j) **Physical inventory:** is the process of counting by hand the total number of usable units of each commodity in a store or health facility at any given time.

### 3.2.3. The logistics cycle

The components of logistic cycle describe interrelationship among themselves as they relate to the logistics cycle. The components include Product selection, Quantification and procurement, Inventory Management and Serving customer. Between each component Quality Monitoring is done to ensure the quality in each component.

The LMIS act as a drive engine for Logistic components. It provides information to other logistic component for decision making. Without the information, logistic system would not be able to run smoothly.



#### **Components of a Logistic Cycle:**

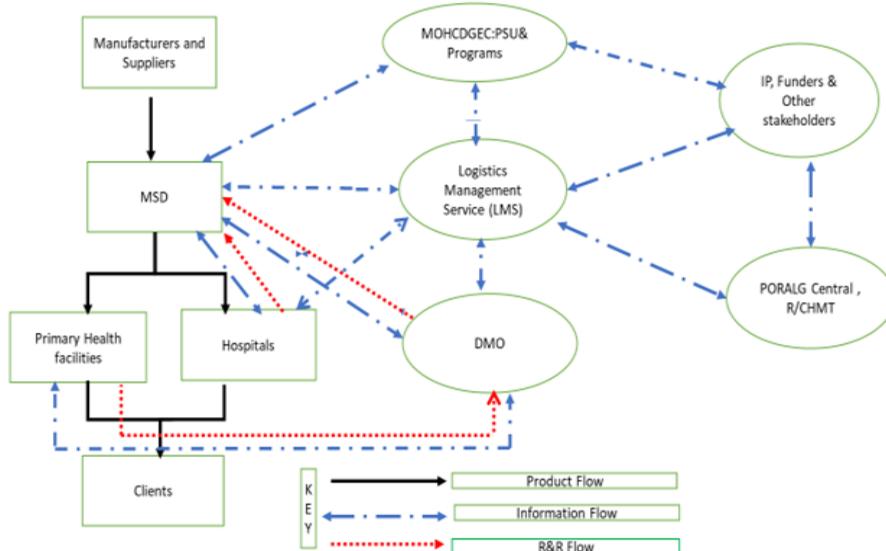
- **Product selection:** In any logistics system product must be selected. In Health logistic system, product selection is done by SDP.

- **Quantification (Forecasting and supply planning) and procurement:** After product selection, the quantity of each product must be determined and procured.
- **Inventory Management:** Is concerned with maintaining stock at sufficient levels to satisfy demand and keep cost reasonable. Once the product is procured it must be stored until the customer needs it.
- **Serving customers:** This is the primary function of the logistic cycle and it is done by selecting, procuring, storing or distributing products to meet customer needs.
- **Quality monitoring:** The quality of procurement decision should be monitored because it plays an important role in forecasting and procuring the right product based on the product selection.
- **Policy:** Logistic manager should be aware and updated on current policies and follow them as specified by the government.
- **Adaptability:** Is the logistic system's ability to obtain the resources that are necessary to address changes in demand. Policy and Adaptability have strong influence on the logistic system.

### 3.2.4. Flow of information and commodities in the supply chain

The figure below gives a basic overview of movement of health commodities and information by all levels in the ILS (Dispensaries, Health centers and Hospitals).

#### Flow of commodities and information in the ILS system (ARV and Essential health commodities)



### **3.2.5. Inventory Management**

Inventory management is the process of efficiently overseeing the constant flow of commodities into and out of existing inventory. The process involves controlling the transfer in of commodities in order to prevent the overstocking or diminishing of commodities which can lead to expiry or stock outs respectively.

By using calculations, one determines the correct amount of commodities to order and store at a given interval to avoid stock out, under-stocking or over-stocking.

The correct amount to order can be computed by using the following three essential data items which are:

- i. Stock on hand
- ii. Loss and adjustment
- iii. Consumption data

Apart from these essential data items other data to be considered are;

- i. The beginning balance.
- ii. Commodities received during the review period.
- iii. Stock out days.

#### **3.2.1.1 Stock assessment**

The purpose of assessing stock status is to determine how long supplies will last. When you review your stock status, you determine how much of each product you have at your facility and how long these stocks last. You review your stock status by counting the usable stock available, as you do during a physical count. By doing this, you will have an absolute quantity of stock available.

But, it is much more important to know **how long the stocks will last**. We refer to this as **months of stock**.

**Months of Stock:** Is the number of months a product will last based on the present consumption rate. For example: Three months of stock means that your stock will last three months, as long as consumption remains at the current rate.

By reviewing your stock status, you will be able to determine if your facility is understocked, overstocked, or adequately stocked.

If you are under-stocked of a particular product, and you know that a recently ordered shipment is not on the way, you may need to place an emergency order or seek an assistance from nearby health facility through borrowing.

If you are over-stocked, you may need to inform higher authority or transfer to a nearby facility through redistribution.

A system to control supplies so that quantities in stock fall within an established range is called the **Max-min Inventory Control System**.

By definition the:

**Maximum inventory level:** Is the level of inventory that should never be exceeded. Calculating the Maximum inventory level is one method of inventory control.

**Minimum inventory level:** Is the level below which the inventory should never drop.

**NB:** In the re-designed logistics system maximum inventory level will be 4 months instead of 6 months while the Minimum inventory level will be 2 months instead of 3 months.

### 3.2.1.2 Determining Months of Stock

By calculating the months of stock, a facility can determine if the right quantities of commodities are in stock. To determine how long stock will last, the following simple formula can be used:

$$\frac{\text{Stock on hand (SOH)}}{\text{Average Monthly Consumption (AMC)}} = \text{Months of Stock (MOS)}$$

Before calculating Months of stock, the formula above requires you to have two pieces of information: Stock on Hand and Average Monthly Consumption.

To determine Average Monthly Consumption (AMC), add the latest three months' consumption of a particular product, then divide by three.

**Use the following formula to determine AMC:**

$$\frac{\text{Previous three month's consumption}}{3} = \text{AMC}$$

**Follow these steps when assessing stock status:**

- Step 1** Conduct physical count of the item you wish to assess its stock (This will give you the first piece of Information-Stock on Hand). Include only those usable stocks.
- Step 2** Add all the consumption data for the past three months. This is obtained from past three months' issues from dispensing register. If a stock out has been experienced in any of those quarters, either adjust the data for stock out or use data from next most recent complete quarterly consumption for which there was no stock out
- Step 3** Divide the figure obtained in step 2 above by three. Round up to the nearest whole number, using normal math rules (4 and lower round down, 5 and higher rounds up). This will give you the second piece of information i.e. Average months of consumption)
- Step 4** Divide the figure obtained in step 1 above by the figure obtained in step 3 above and round to the first decimal using normal math rules (4 and lower round down, 5 and higher rounds up). See formula for determining stock status (Months of stock) above.

**NB:** Under the logistics system redesigned consumption will be obtained from dispensing register.

The number you get is the months of stock and this tells you how long stocks will last. For example, if the figure obtained in step 4 above is 7.37, then round up to 7.4 (**one decimal place**), this means you have enough stock to last for seven months and 12 days at the current consumption rate, that is **[7 months plus (0.4 x30)] = 7 months and 12 days.**

Health facilities are not allowed to have more than the stock set through maximum level. If you have more stock than the set maximum stock levels, consider redistributing to other facilities which may need the stocks.

#### **Stock status assessment and products near their expiration date:**

Be concerned when the remaining shelf life is short. If you have assessed stock and determined that the stock, you have will expire before the next ordering period consider redistribution and place an emergency order regardless of the month of stock you have. Make sure not to receive the same batch with the same expiry date.

#### **When to Assess Stock Status**

The stock status for a facility should be assessed at any time you suspect that the stock levels do not fall within the recommended maximum and minimum stock levels for your

facility. This may occur if there is a loss of supplies due to damage, expiry, or theft, or if there is an unexpected increase or decrease in consumption.

### **3.2.6. Logistics Management Information System (LMIS) Tools**

Logistics management information system tools collect, organize, and report data that enables people to make logistic system decisions. The tools used include the following:

- Stores ledger and bin cards
- Prescriptions
- Daily Dispensing register
- Ordering and reporting: Form A3 (Monthly R & R) and Form A2 (Quarterly), 2A,2B & 2C Bimonthly R &R)
- Requisitions and issue vouchers
- MSD sales invoices
- Claim and verification forms

Additional forms used in the Logistics system redesigned

- ILS monthly reporting form
- Register for rapid test

**NB:** Following the implementation of the re-designed logistics system Form A3 will no longer be used as the facilities will be ordering directly to **MSD** also form A2 will no longer be used as the ARV system will be integrated with ILS system and thus form 2A, 2B and 2C will be used to order bimonthly essential health commodities including ARVs.

#### **Store Ledger and Bin cards**

Stores ledger is a stock keeping records that keeps the information about all lots transactions of a Product. Stock card/ bin card- is stock keeping record that keeps information of a single lot transaction for a single product.

WIZARA YA AFYA, MAENDELEO YA JAMII, JINSIA, WAZEE NA WATOTO



LEJA YA MALI

NAMBA YA UTAMBULISHO: \_\_\_\_\_

JINA LA KITUO: \_\_\_\_\_

AINA (GOV/FBO/NGO/NYINGINE): \_\_\_\_\_

JINA LA HALMASHAURI/WILAYA: \_\_\_\_\_

TAREHE YA KUANZA: \_\_\_\_\_

TAREHE YA KUISHA: \_\_\_\_\_

NAMBA YA LEJA: \_\_\_\_\_

MPANGO WA TAIFA WA KUDHIBITI UKIMWI (NACP)  
WIZARA YA AFYA, MAENDELEO YA JAMII, JINSIA, WAZEE NA WATOTO  
S.L.P. 743  
DODOMA, TANZANIA.

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DESCRIPTION OF SUPPLY ITEM	MSD CODE	
UNIT OF ISSUE	DISPENSING UNIT	MINIMUM STOCK QUANTITY

## Prescription

Prescription is a legal written order from a qualified prescriber to a qualified dispenser which contains instructions to dispenser to compound and administer specified medicines to a clearly mentioned patient.

MINISTRY OF HEALTH AND SOCIAL WELFARE PRESCRIPTION FORM			
		Date: 02/06/2013	
Patient ID: 02505	Age: 30	Sex: F	
Weight: 50 kg			
No	Medicines		Quantity issued
1	Rx TDF300 / 3TC300 / EFV 600 I Tab Nocte x 1 / 12		30
2	Rx Cotrimoxazole 480mg II Tabs OD x 1 / 12		60
Prescribed by:	Mary L.	Signature:	Date: 2/6/13
Dispensed by:	Joseph Andrew	Signature:	Date: 2/6/13
A Joseph			

## Daily Dispensing register

Daily dispensing register is the record that gives the quantity of each product dispensed to user by user name or user number and by date at the Service delivery point.

## **Reporting and Requesting: Form A3 (Monthly R&R) and Form A2 (Quarterly R&R) for ARVs**

- Ordering of commodities requires the use of combined logistics Report and Request (R&R) forms for commodities. The R&R forms provides the full report of all three essential logistic data and demonstrate the order quantity calculations
  - If the order quantity is a negative number, then the Health Facilities is overstocked and the stock status should be assessed. Stocks may need to be redistributed if they will expire before they can be used.
  - If a larger than normal order quantity is required, then the Health Facilities may be understocked and should be advised to monitor and assess its stocks more frequently to avoid the need for an emergency order.
  - If a facility is submitting frequent emergency orders, work to identify the reason for the emergency orders and take other action as required.

- There are two types of R&R which are used to order commodities for the facilities. Form A3 (Monthly R&R) for non-ordering facilities and Form A2 (Quarterly R&R) for ordering facilities.

**NB:** Following the implementation of the re-designed logistics system Form A3 will no longer be used as the facility will be ordering directly to msd (ARV will be integrated to ILS) and ordering will be bimonthly.

## A: Report and Request Form for quarterly ordering facilities

### FOMU A2: TAARIFA NA MAOMBI YA DAWA ZA ARV NA MAGONJWA NYEMELEZI

Jina la Kituo \_\_\_\_\_ Namba ya Kituo \_\_\_\_\_ Aina ya Kituo (Gov/NGO/FBO/Ingne) \_\_\_\_\_

Wilaya \_\_\_\_\_ Kipindi cha Taarifa: Mwezi \_\_\_\_\_ hadi \_\_\_\_\_ Mwaka \_\_\_\_\_

#### I: MAOMBI YA DAWA ZA ARVs

Na. ya MSD	Maelezo ya Bidhaa	Kipimo cha Ugavi	Salio la Mwanzo	Kiasi kilichopokewa	Kiasi Kilichotumika	Upotevu/ Marekebisho D = E+C-A-B	Salio la Mwisho (Hesabu kwa mokino) E	Makisio ya Dawa kwa Wagonjwa Wapya F = Na. Ya wagonjwa wapya x idadi ya vidlonge vya mwezi x 3	Makisio ya Jumla ya Matumizi G = F + C	Kiasi cha Juu cha Shehena H = G X 2	Kiasi cha Kuagiza I = H - E	Kiasi kilichoom bwa J = I + U	Kiasi kilichoidhi nishwa K	Maelezo L
10157	TDF/FTC/EFV (300/200/600mg)Tab	Bottle 30 Tabs												
10140	AZT/3TC (300mg/150mg) Tab	Bottle 60 Tabs												
10139	3TC/d4T/NVP (150/30/200mg) Tab	Bottle 60 Tabs												
10156	3TC/AZT/NVP (150/300/200mg)Tab	Bottle 60 Tabs												
10136	Efavirenz 600 mg Tabs	Bottle 30 Tabs												
10137	Efavirenz 200 mg Tabs	Bottle 90 Tabs												
10138	Nevirapine 200 mg Tabs	Bottle 60 Tabs												
10141	Lamivudine 150mg Tabs	Bottle 60 Tabs												
10143	Zidovudine 300 mg Tabs	Bottle 60 Tabs												

## B: Report and Request form for monthly reporting Facilities

### FOMU A3: TAARIFA YA MWEZI YA MATUMIZI YA ARV KWA VITUO TEGEMEZA

Jina la Kituo: \_\_\_\_\_ Aina ya Kituo: (Gov/NGO/FBO/Other) \_\_\_\_\_ Jina la Kituo Mama: \_\_\_\_\_

Wilaya: \_\_\_\_\_ Kipindi cha Taarifa: Mwezi \_\_\_\_\_ Mwaka \_\_\_\_\_

Maelezo ya Bidhaa	Kipimo cha Ugavi U	Salio la Mwanzo A	Kiasi kilichopokelewa B	Kiasi kilichotumika C	Upotevu / Marekebisho D = E + C - A - B	Salio la Mwisho (Hesabu kwa mokino) E	Kiasi cha juu cha Shehena F (F=Cx2)	Kiasi cha Kuagiza G (G=F - E)	Kiasi kinachoomb wa H (H=G + U)	Maelezo

MUHTASARI WA IDADI YA WAGONJWA KULINGANA NA DAWA MCHANGANYIKO (REGIMENS) WANAZOTUMIA

Dozi Mchanganyiko	Idadi ya Wagonjwa waliopatiwa ARVs kwa mwezi huu	Makisio ya Wagonjwa wapya	Idadi ya Wagonjwa waliofariki/walioacha tiba	Maelezo
<b>Watu Wazima</b>				
3TC + AZT + EFV				
3TC + AZT + NVP				
TDF + FTC + EFV				
TDF + FTC + NVP				
TDF + 3TC + EFV				
TDF + 3TC + NVP				
ABC + 3TC + NVP				
ABC + 3TC + EFV				
d4T + 3TC + NVP				
TDF + FTC + LPV/r				
TDF + FTC + ATV/r				
TDF + 3TC + ATV/r				
TDF + 3TC + LPV/r				
ABC + 3TC + LPV/r				
ABC + 3TC + ATV/r				
AZT + 3TC + ATV/r				
AZT + 3TC + LPV/r				
ABC + 3TC + LPV/r				
<b>Watoto</b>				
AZT + 3TC + NVP				
AZT + 3TC + EFV				
d4T + 3TC + NVP				
d4T + 3TC + EFV				
ABC + 3TC + EFV				
ABC + 3TC + NVP				
AZT + 3TC + LPV/r				
ABC + 3TC + LPV/r				

Imetayarishwa na: \_\_\_\_\_ Sahihi: \_\_\_\_\_ Tarehe: \_\_\_\_\_

Imewasilishwa na: \_\_\_\_\_ Sahihi: \_\_\_\_\_ Tarehe: \_\_\_\_\_

Imepokewa na: \_\_\_\_\_ Sahihi: \_\_\_\_\_ Tarehe: \_\_\_\_\_

## Requisitions and Issue Vouchers

Requisition and Issue Voucher is the transaction records used in the pull distribution system that list the items and quantities requested by a facility and the quantity actually issued.

**LOCAL STORES ISSUE VOUCHER**

- (1) To: \_\_\_\_\_  
(2) Issued Voucher No: \_\_\_\_\_  
(3) Date: \_\_\_\_\_

A REQUISITION/ISSUE VOUCHER  
ALLOCATED STORES ONLY

NOT FOR USE IN CONNECTION WITH UNALLOCATED STORE OR LOCAL PURCHASE

No: .....

(4) Description of Article	(5) Unit	Quantity		Ledger Folio	
		(6) Required	(7) Issued	(8) Issuer	(9) Receiver

**(10) REQUESTING OFFICER**

Signature: \_\_\_\_\_ Designation: \_\_\_\_\_ Station: \_\_\_\_\_

**(11) ISSUING OFFICER**

Signature: \_\_\_\_\_ Designation: \_\_\_\_\_ Station: \_\_\_\_\_

**(12) CERTIFIED**

- A. RECEIVED IN GOOD ORDER  
B. TAKEN ON CHARGE IN MY STORES LEDGER/FOR IMMEDIATE USE  
(DELETE WHICHEVER IS APPLICABLE)

**(13) RECEIVING OFFICER**

Signature: \_\_\_\_\_ Designation: \_\_\_\_\_ Date: \_\_\_\_\_

**MSD Sales Invoice**

Sales Invoice is the document which provides the information regarding the purchased commodities, the unit of measure, the quantity purchased, batch details and the cost of those commodities.

For MSD, the document accompanies the shipment during delivery to the facilities and upon counter-checking the commodities, the supplier and receiver need to sign the document for reference.

Invoice No: 86933

## Sales Invoice

Zone: Dar es Salaam  
Plant

Sold to: DR310004 Temeke Hospital P.O.BOX 45232 Dar es Salaam
D20001 DAR ES SALAAM TANZANIA

Ship to: DR310004 Temeke Hospital P.O.BOX 45232 Dar es Salaam
D20001 DAR ES SALAAM TANZANIA

Sales Order no: 65504

Invoice date: 26/09/2013

Cust Ref:

Ship via: Customer Own Collect

Sales Cat: VP Sales

Payments Terms: On Account

Sales Person: Yonah Msengi.

Del Term: EX- Works (Named place)

Item Code	Description	UOM	Batch/Serial/Number	Batch/Serial Qty	Batch Expiry date	Unit Price	Amount(TZS)
10010158AB	TENOFOVIR 300MG+EMTRICITABINE 200MG (FTC/TDF) TABLETS	30TB	1111449	1,000	30/05/2014	600	600,000
10040026BA	LAMIVUDINE 30mg + ZIDOVUDINE 60mg + NEVIRAPINE 50mg TABLETS	60TB	1082612	1,215	31/10/2013	2,800	3,402,000

Invoice Line Total: 4,002,000.00

Invoice Line Discount: 0.00

Invoice Miscellaneous Charge 0.00

Invoice Total: 4,002,000.00

Invoice Total Amount in Words: four million two thousand and xx / 100

### Missed items

Item code	Description	UOM	Missed QTY	Reason
10010158AB	TENOFOVIR 300MG+EMTRICITABINE 200MG (FTC/TDF) TABLETS	30TB	1,200	Out of Stock

### Missed items

### GOODS RECEIVED IN GOOD CONDITION

Prepared by  
(MSD)

Authorized Signature  
(MSD)

Invoice acceptance

Shipping Person

Delivery acceptance

Macrina Nchimbi

Legal Number: INDR-008899

Page 1 of 1

### **3.2.1.3 Claim and Verification forms**

**UNITED REPUBLIC OF TANZANIA**

**MINISTRY OF HEALTH**

#### **VERIFICATION AND CLAIMS FORM**

Name of Health Facility .....

Name of supplier .....

Supplier delivery note .....

Supplier Invoice No. ....

Supplier receipt no. ....

Transporter .....

Driver .....

#### **Physical Control of Received Items**

Items ordered but not received accordingly			
Order form	Item description	Quantity ordered	Quantity received
034	Tablets Lamivudine 150mg	500	400

Items with close expiry date (3 months )		
Item description	Quantity	Expiry date
Abacavir 300mg tablets	3	30 <sup>th</sup> , September 2009.

## DISCREPANCY

Breakages					
Invoice No.	Code	Item description	unit	Quantity	Remarks

Invoiced but missing					
Invoice No.	Code	Item description	Unit	Quantity	Remarks
Over Issued					
Item description	Code	Item description	Unit	Quantity	Remarks

1 Name of Witness 1 Signature Date .

2 Name of Witness 2 Signature Date .

3 Name of Witness 3 Signature Date .

### DMO Office:

Seen and forwarded to MSD/ZMS

Name Signature Date.....

### **3.2.1.4 ILS Monthly Reporting form and Form 2A, 2B & 2C (Bimonthly R&R)**

The ILS monthly reporting form is used by facilities implementing the logistics system redesigned to report Stock on hand (SOH) and stock out days (SOD). Form 2A is for Health center and dispensary bimonthly Report and Request form for essential health commodities, form 2B is for Hospital Bimonthly Report and Request form for essential health commodities and form 2C is used by Health center and dispensary as Bimonthly Report and Request form for additional commodities.

***Health facility monthly report form for ILS commodities***

Facility Code: \_\_\_\_\_ Facility Name: \_\_\_\_\_

Type (GOV/NGO/FBO/OTHER): \_\_\_\_\_

Name of Council \_\_\_\_\_ Reporting Month: \_\_\_\_\_  
Date Submitted: \_\_\_\_\_

MSD Code	Item	Unit of Issue (U)	Closing Balance (A)	Number of stock out days (B)
ANAESTHETICS, ANALGESICS AND NSAIDS				
10010022MD	DICLOFENAC TABLETS 50 MG	100TB		
10010176MD	PARACETAMOL 500MG (10X10) TABS	100TB		
10010044MD	PARACETAMOL TABLETS 500 MG	1000TB		
10040012MD	PARACETAMOL SYRUP 120MG/5MLS,100MLS	24BT		

Prepared by (Name)..... Approved by (Name).....

Signature..... Signature.....

Date..... Date.....

**Forms 2A and 2B**

Facility Code:							Group (A/B)											
Facility Name:							Date Submitted:											
Name of Council							Reporting Period:		Start (Month/Year)									
Type (GOV/NGO/FBO/OTHER):									End: (Month/Year)									
MSD Code	Item	Unit of Issue	Beginni ng Balanc e	Received This Period	Lost/ Adjus ted	Num ber of stock out days	Clos ing Balanc e	Quant y Consum ed	Adjus ted consum ption (E x 60)/(60-X)	Maximum Quantity Needed Z x 2	Actual Quantity needed Y - D	Quant y Requ ested F/U	Actual Quant y Request ed (G)	Pri ce (H)	Cost (I)	Re mar ks (J)	App rov ed qua ntit y (K)	App rov ed cost (M)
(U)	(A)	(B)	(C)	(X)	(D)	(E)	(Z)	(Y)	(F)	(G)	(H)	(I)	(J)	(K)	(N)	(M)		
1001003 7MD	ALBEND AZOLE 200MG	100TB																
4007000 SAB	HIV SD BIOLINE	K/25																
1001016 4AB	TLE	B/30																
2002000 6MD	GLOVES SURGICA L LATEX RUBBER STERILE	P/100																
TOTAL PAGE COST							SIGNATURE				APPROVED PAGE COST				SIGNATURE			
<b>COST SUMMARY</b>																		
PAGE	COST	APPROVED COST	FUNDS		CATEGORY OF FUNDS		AMOUNT		APPROVED AMOUNT									
1			AVAILABLE ALLOCATION															
2			SUPPLEMENTAL SOURCES															
3			BASKET FUND															
4			USER FEES															
5			ICHF															
6			NHIF															
7			OTHER INSURANCE SCHEMES															
8			COUNCIL OWN SOURCE															
9			RBF															
SUB TOTAL			OTHERS (SPECIFY)															
COST OF COMMODITIES FROM FORM 2C				TOTAL FUNDS														
TOTAL COST																		

PREPARED BY (NAME).....  
SIGNATURE.....  
DATE.....

APPROVED BY (NAME).....  
SIGNATURE.....  
DATE.....

### 3.2.6.9: Register for Rapid test

REGISTER FOR RAPID TESTS																				
		Facility name		Facility type		Service provided		District		TYPE OF TEST										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
DN	Date	Client registration number	Age (years)	Sex (Male)	Purpose of use (check one)	HIV Test 1 Expiry date LotBatch No _____	HIV Test 2 Expiry date LotBatch No _____	HRDT Expiry date LotBatch No _____	OBS-POC Cards Expiry date LotBatch No _____	SD Syphilis Expiry date LotBatch No _____	Determine for Syphilis Expiry date LotBatch No _____	DP-T Expiry date LotBatch No _____	Results	Results	Results	Results	Results	Results		
1					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
2					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NR	POS	INV	W	NR	POS	INV
3					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
4					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
5					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
6					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
7					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
8					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
9					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
10					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
11					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
12					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
13					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
14					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
15					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
16					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
17					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
18					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
19					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
20					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
21					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
22					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
23					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
24					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
25					Edo Training ICD	NR	R	INV	W	NR	R	INV	W	NEQ	POS	INV	W	NEQ	POS	INV
Total of the results																				
Total of tests used																				
Total NR	Total R	Total INV	Total W	Total NR	Total R	Total INV	Total W	Total NR	Total R	Total INV	Total W	Total NR	Total R	Total INV	Total W	Total NR	Total R	Total INV	Total W	
Total POS	Total P	Total INV	Total V	Total S	Total T	Total INV	Total V	Total POS	Total P	Total INV	Total V	Total S	Total T	Total INV	Total V	Total POS	Total P	Total INV	Total V	

REGISTER FOR RAPID TESTS																														
			Facility name _____			Facility type _____			Service provided _____			District _____																		
TYPE OF TEST																														
1	14				15				16				17				18				19			20			21		22	
ON	Rapport B test Lot/Batch No. _____ Expiry date _____ Results				Rapport C test Lot/Batch No. _____ Expiry date _____ Results				Hemoccult® Pyron test Lot/Batch No. _____ Expiry date _____ Results				Cryptococcal Antigen test Lot/Batch No. _____ Expiry date _____ Results				Final results				Indicate with (V) if sample was taken for external quality check			Results or external quality test			Remarks		Name of the provider	
1	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
2	NR	POS	INV	W	NR	POS	INV	W	NR	POS	INV	W	NR	POS	INV	W	NR	POS	IND		NEG	POS	IND							
3	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
4	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
5	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
6	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
7	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
8	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
9	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
10	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
11	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
12	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
13	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
14	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
15	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
16	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
17	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
18	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	INV	W	NEG	POS	IND		NEG	POS	IND							
19	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	IND		NEG	POU	IND							
20	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	IND		NEG	POU	IND							
21	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	IND		NEG	POU	IND							
22	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	IND		NEG	POU	IND							
23	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	IND		NEG	POU	IND							
24	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	IND		NEG	POU	IND							
25	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	INV	W	NEG	POU	IND		NEG	POU	IND							
	Total NEG	Total POS	Total INV	Total W	Total NEG	Total POS	Total INV	Total W	Total NEG	Total POS	Total INV	Total W	Total NEG	Total POS	Total INV	Total W	Total NEG	Total POS	Total IND		Total NEG	Total POS	Total IND							

### 3.2.7. Ordering cycles

Ordering facilities are divided into three (3) groups i.e. Group A, B and C. Each group orders quarterly as indicated in the table of ordering cycles below.

It is important for each ordering facility to submit their order at the scheduled time. The facility's order must be submitted to MSD by 14<sup>th</sup> of the reporting month and for non-ordering facilities' orders must be submitted to the district level by the 5<sup>th</sup> of the reporting month.

**NB:** The implementation of the Re-designed logistics system will involve only two groups (A and B) and facilities will be ordering bi-monthly.

## ORDERING GROUP CYCLES (Current ILS)

Summary of activities for the whole year would be

Order being...	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
• Prepared R & R completed by facility based on data from past 3 months and submitted in Week 1 of the month. District approval and submission to MSD by Week 2 of the month (2 weeks)	A	B	C	A	B	C	A	B	C	A	B	C
• Processed Orders packed by MSD in 3 <sup>rd</sup> and 4 <sup>th</sup> week of the month (2 weeks)	A	B	C	A	B	C	A	B	C	A	B	C
• Received MSD prepares to deliver to the District by Week 1 of the following month (1weeks) District and arranges delivery to the facilities by Week 2 of the month (1 week)	C	A	B	C	A	B	C	A	B	C	A	B

## ORDERING GROUP CYCLES (Re-designed Logistics system)

<u>Group A</u>												
<u>Months</u>	<u>Jan</u>	<u>Fe b</u>	<u>Mar</u>	<u>Apr il</u>	<u>Ma y</u>	<u>Jun e</u>	<u>Jul y</u>	<u>Au g</u>	<u>Sep.</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
<u>Order Month</u>	1	-	2	-	3	-	4	-	5	-	6	-
<u>MSD Delivery Month</u>	<u>Jan 31st</u>		<u>Marc h 31st</u>		<u>Ma y 31s t</u>		<u>July 31st</u>		<u>Sept 30th</u>		<u>Nov 30th</u>	
<u>Group B</u>												
<u>Months</u>	<u>Ja n</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr il</u>	<u>Ma y</u>	<u>Jun e</u>	<u>Jul y</u>	<u>Au g</u>	<u>Sep.</u>	<u>Oct</u>	<u>Nov</u>	<u>De c</u>
<u>Order Month</u>	-	1	-	2	-	3	-	4	-	5	-	6
<u>MSD Delivery Month</u>		<u>Feb 28th</u>		<u>Apri l 30th</u>		<u>June 30th</u>		<u>Aug 30th</u>		<u>Oct 30th</u>		<u>Dec 31s t</u>

## Reporting, Ordering and Inventory Management in redesigned logistic system

Levels/Inventory level	ILS System	TB Logistics System	Lab Logistics System
Health facilities (primary health facilities, dispensaries and health centers – DOT centers for TB logistics system)	<p>Submit <b>reports monthly</b> and <b>orders bimonthly (every two months)</b> to the district for approval by the <b>5<sup>th</sup> of the month</b>, except for DOT centers who only report, (orders are calculated at the district level).</p> <p><b>Note:</b> DOT centers will need to submit 2 reports (a report for first line and drug resistant TB medicines and another for drug resistant TB medicines)- depending on the presence of medicines and or patients of both categories</p>		
Hospitals	<b>report monthly and Submit orders bimonthly to MSD by the 10<sup>th</sup> of the month</b>	<b>report monthly to the district by the 5<sup>th</sup> of the month</b>	<b>report monthly and Submit orders bimonthly to MSD by the 10<sup>th</sup> of the month</b>
MIN-MAX	<b>MIN=2; MAX=4; EOP= 1</b>	<b>MIN=1; MAX= 2, NO EOP</b>	<p><b>Category 1&amp; 2: MIN=2; MAX=4; EOP= 1</b></p> <p><b>Category 3: Need Basis (Shelf life&lt; 6 months)</b></p>
<u>Districts/councils</u>			
<p><u>Review reports monthly, review and approve orders bimonthly to submit them to MSD by the 10<sup>th</sup> of the month.</u> For TB medicines, calculate orders bimonthly and submit to MSD by the 10<sup>th</sup> of the month.</p> <p><u>Note: For TB logistics system, the report should include SOH of both district store and health facilities</u></p>			
MIN-MAX		<u>MIN=2; MAX=4; EOP= 1</u>	
<u>MSD</u>			
<p><u>Process and deliver to the facilities in 20 days (from 11<sup>th</sup> to 30<sup>th</sup>) after receiving approved orders</u></p>			

### Difference between current and re-designed logistic system

SN:		Current	Redesigned Recommendations
1.	Period of Reporting	Quarterly – R&R	Monthly – SOD and SOH Bimonthly – R&R
2.	Grouping	A, B & C	A & B
3.	R&R Flow	LMU review and approve/Reject	LMU does not approve/reject can only view it
4.	Beginning Balance	Editable	Locked
5.	R&R consumption data	Calculated Consumption	Real consumption data from dispensing registers
6.	Max – Min level	Max (6 Months) – Min (3 Months)	Max (4 Months ) – Min (2 Months)
7.	Emergency Order Point	1.5 Months	1 Month
8.	Stock out days	Stock out days $\leq$ 90 days	Stock out days $\leq$ 60 days for Bimonthly reports  Stock out days $\leq$ 30 days for monthly reports
9.	R&R Stages	<u>Five</u> stages (Submission, Authorization, In approval, Approved and Convert to order/Released)	<u>Four</u> Stages (Submission, Authorization, Approved and Convert to order/Released)  In the redesigned system R&R will not pass to LMU.
10	Rejection	Rejection is done without selecting reason for rejection	Rejection of R&R/Reports require reason to be provided

### **New features in the Logistics system re-designed**

<b><u>SN:</u></b>	<b><u>Feature</u></b>	<b><u>Description</u></b>
1.	<u>Tracking allocated budgets (receipt in kind) from MSD</u>	<u>Will be made available in eLMIS</u>
2.	<u>Tracking other sources of fund (NHIF, iCHF, UF) from FFARS</u>	<u>The redesigned system will need a facility to indicate the source of funds for the stock ordered</u>

# CHAPTER 4: BASIC COMPUTER SKILLS

## 4.1 Session Goal

Participants will gain basic computer knowledge and skills to enable them use CTC Pharmacy module database.

## 4.2 Session Objectives

After completing this session, participants will be able to:

1. Define what is a computer
2. List and describe computer components
3. Describe input and output devices
4. Demonstrate how to turn the computer on and off
5. List some of the functions of a computer
6. Demonstrate the use of a keyboard and a mouse
7. Describe how to manage computer dialog boxes i.e. close, minimize and maximize
8. Provide some examples of backup devices
9. Describe how to maintain a computer and keep it safe i.e. using ant virus

## 4.3 Introduction

### What is computer?

A **computer** is an electronic device that manipulates information, or "data." It has the ability to **store**, **retrieve**, and **process** data. You can use a computer to type documents, send email, and browse the internet. You can also use it to handle spreadsheets, accounting, database management, presentations, games, and more.

### So why use a computer?

Compared to manual desk work, a computer can be of a great advantage. Learn to use it and it will help you to:

- Work faster and more precise
- Use one piece of information in different documents
- Make calculations without mistakes and correct your English spelling
- Present your work better and more professional
- Make as many copies and different versions of documents as you like

- Store and keep track of your (electronic) documents
- Send (electronic) mail and documents to distant relatives and business relations within a matter of minutes
- Find information you need, available on one of the millions of computers that are worldwide connected to the Internet



### **Components of a computer**



## **Input Devices**

<b>Device</b>	<b>Function</b>
Keyboard	The computer keyboard is used to enter text information into the computer, as when you type the contents of a report. The keyboard can also be used to type commands directing the computer to perform certain actions
Mouse	This is the other way to interact with your computer. Most mice have a right button, a left button and a scrolling wheel
Camera	Is a hardware device used to take photographs, consisting of a lightproof box with photosensitive film or plate within the box

## **Output Devices**

<b>Device</b>	<b>Function</b>
Monitor	The monitor looks like a television screen and is where you see what is happening on your computer. It's how you interact with your computer by seeing a visual representation of what you are doing.
Printer	An external hardware device responsible for taking computer data and generating a hard copy of that data. Printers are one of the most used peripherals on computers and are commonly used to print text, images, and photos.
Speaker	A hardware device connected to a computer's sound card that outputs sounds generated by the computer.

## **Turning the Computer On**

Before turning on the computer, check the following;

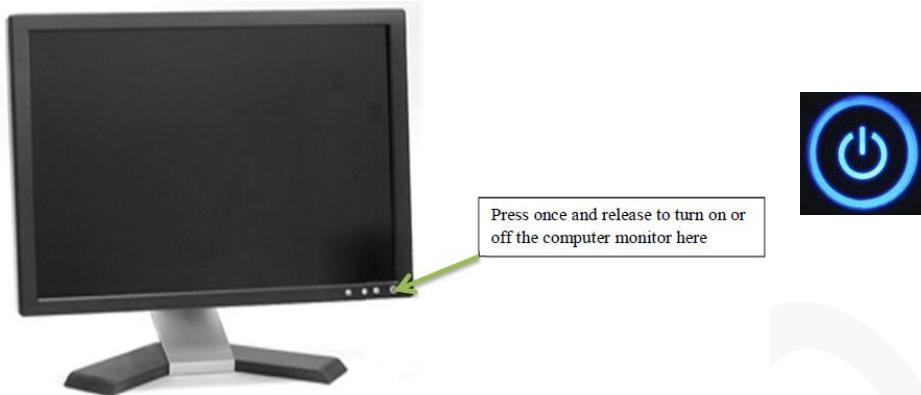
- The power cable is connected to the power supply
- The switch at which the power cable of the computer is connected is turned on.
- The computer monitor is turned on.

Turning on and off the computer monitor

Before turning on the computer system unit first turn on the computer monitor, this will allow a display of the information from the system unit. After turning off the system unit, also turn off the computer monitor.

Turning on and off the computer system unit and monitor is illustrated below.

## The computer monitor

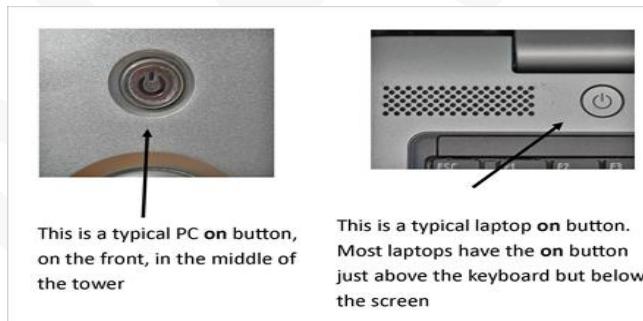


## The system unit

**OFF:** The computer is off, and no parts are running or working. **ON:** When a computer is on, you should see icons (Images) on the monitor (Screen), and the pointer on the screen (the small white arrow) should respond when you move the mouse.

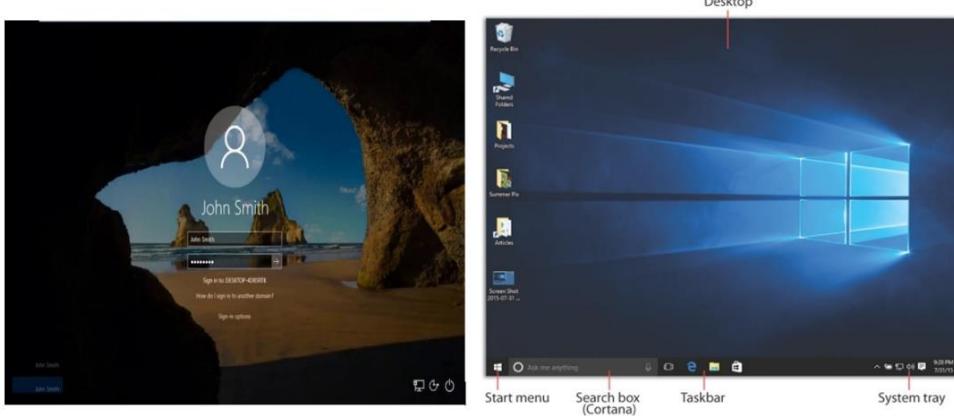
### Steps to turn on computer

To turn a computer on, simply press the power button once (no need to hold the button just press and release). We will go over how to turn off a computer later in this handout.



### Turning On

Once you turn the computer on, the computer will go through a series of automated tasks before it is ready for you to interact with it; this process is called “startup.” This process will last for few seconds... If the computer is performing as it should, you will land on either login window or will display desktop icons.



This is called a “Log On” window, and it means that the computer is password protected. If you do not see this window upon starting the computer, you can assume that your computer is NOT password-protected and may be used by anyone. To log on, you simply enter your user name and password.

After you log on, the computer will display what is known as your desktop. The desktop is what appears on your screen after you’ve first logged on and before you have opened any documents or programs.

The desktop includes

- Icons and shortcuts
- The Start menu
- A task bar
- System tray

### **Icons and Shortcuts**

- Icons are small pictures on your desktop that indicate a shortcut to a file
- Shortcuts provide direct access to a file or program

### **Start Button**

- Find the Windows 10 Start Button on your desktop in the lower left corner.
- Left-click on the button once it will open start menu
- The Start button (which opens the menu) is located in the lower left corner of your screen. LEFT-CLICK once on the Start Button to open the menu.

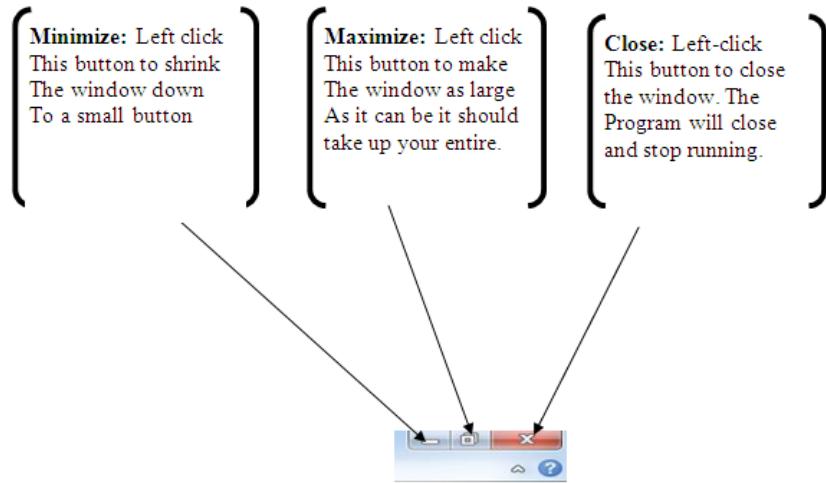
This is the Start Menu as it appears in Windows 10.



## Managing Windows

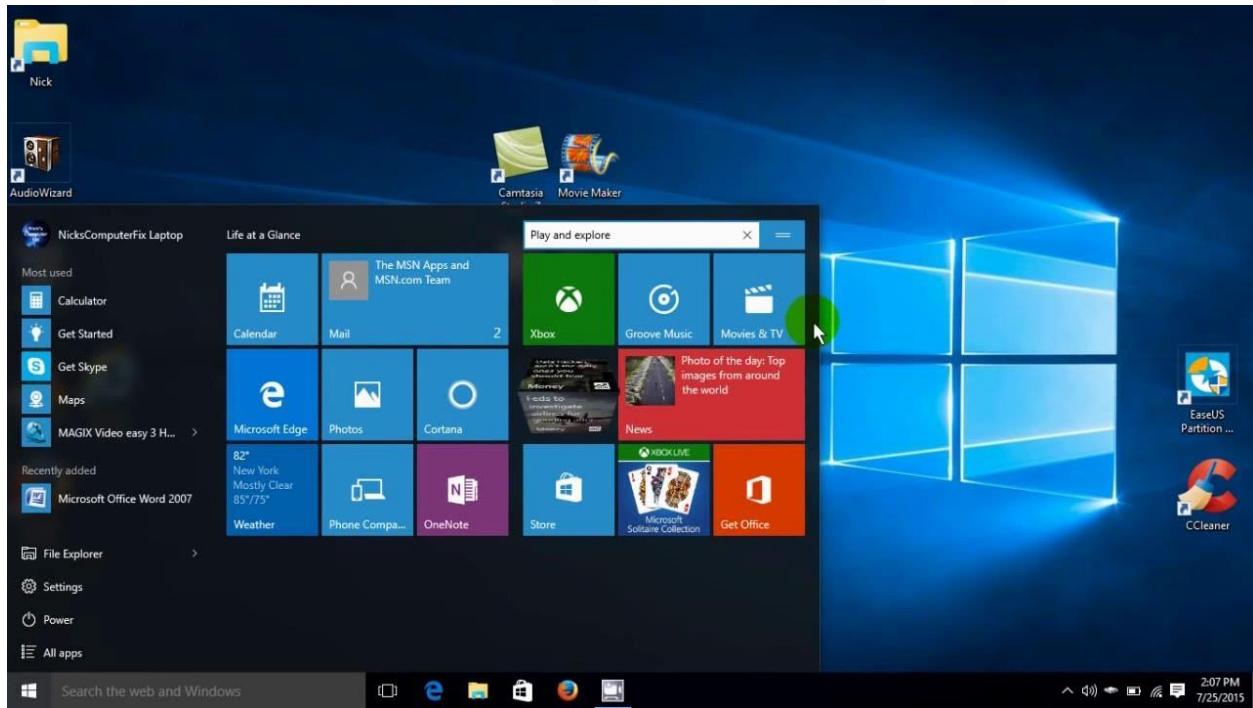
The desktop is your work surface, and all of your open windows appear on top of it. If you can see a window, which means the program is *open* and running. It is possible to make the window bigger, smaller, or close it using the buttons in the top right corner of any window.





## The Task Bar

A **taskbar** shows which programs are currently running. The specific design and layout of the **taskbar** varies between individual operating systems



## Steps to turn off computer

- Click the Start button, and then click Shut Down. Do not press the power button to turn off your computer!
- After you have clicked Shut Down, your computer will begin a shut-down process in which it saves things you have been working on, and ends all programs that are

running. You may see a window that says, “Windows is shutting down.” It is not advised to press the power button—your computer will turn off automatically.

- Then press the screen power button.

## **How Computer Operates (Hardware/Software): Basic Operations**

Computers use both hardware and software to perform their work. Think of hardware as the physical pieces of a computer—the monitor, the system unit, all the pieces and parts inside the system unit, the mouse, the keyboard, etc. Software, on the other hand, consists of programs that we use to interact with the computer. You can’t physically touch software like you can for the keyboard, but you can still interact with it. A word processing program like Microsoft Word is a piece of software that you could use to type a grocery list. Games that you play on your computer are also considered software—it doesn’t have to be work-Related!

### **What is hardware?**

Physical or tangible part of a computer. E.g. System unit, monitor (screen), mouse, keyboard and printers.

### **The Keyboard**

In order to use your computer effectively, you must interact with it using both the mouse and the keyboard. The above image of a keyboard may closely resemble (if it is not



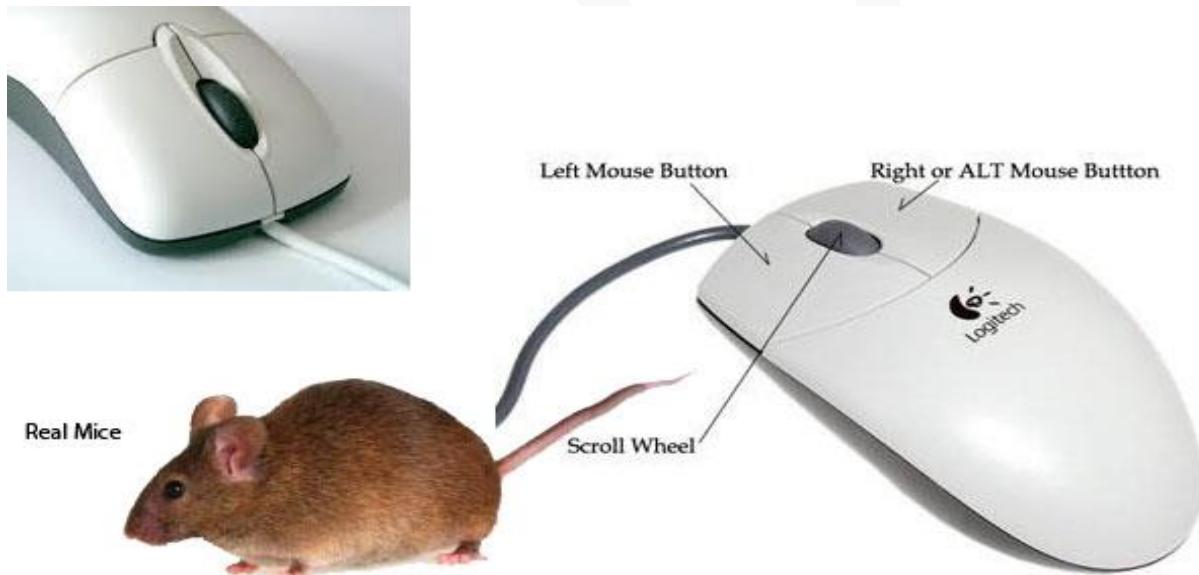
identical to) the keyboard in front of you; learning the function of just a few keys will help you to interact better with your computer and individual programs. The following is a list of commonly used keys that have special functions (keep in mind that key functions can change depending on which program you are using):

1. **Backspace:** This key deletes letters backward
2. **Delete:** This key deletes letters forward.

3. **Shift:** This key, when pressed WITH another key, will perform a secondary function.
4. **Spacebar:** This key enters a space between words or letters.
5. **Tab:** This key will indent what you type, or move the text to the right. The default indent distance is usually 1/2 (half) inch.
6. **Caps Lock:** Pressing this key will make every letter you type capitalized.
7. **Control (Ctrl):** This key, when pressed WITH another key, performs a shortcut.
8. **Enter:** This key either gives you a new line, or executes a command (pressed in a Word processing program, it begins a new line).
9. **Number Keypad:** These are exactly the same as the numbers at the top of the keyboard; some people find them easier to use in this position.
10. **Arrow Keys:** Like the mouse, these keys are used to navigate through a document or page.

### The mouse

While the keyboard is primarily used to insert/input and manipulate text and numbers on computer, the mouse is used mostly for navigating around the screen. Mouse comes in different shapes and sizes.



### Mouse's Moving Parts

Mouse part	Functions(What is does)
Left Mouse button	Used to issue commands, select items, or open files
Right Mouse button	Used to access special menu
Scroll wheel	Allow for quick movement up and down in a document

The mouse controls a “pointer” on the screen. The pointer is called a **cursor**

The cursor can indicate:

- Where your mouse pointer is, and
- Where you will interact with the information on your screen.

### Basic functions of a computer Mouse

- To open a program.
- Left and right click.
- Drag and drop

## 4.4. What is software?

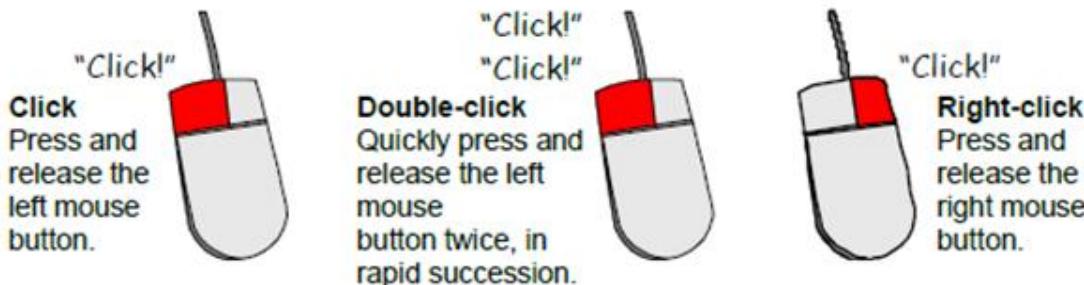
**Software** is any **set of instructions** that tells the hardware what to do. It is what guides the hardware and tells it how to accomplish each task. Some examples of software are web browsers, games, and word processors such as Microsoft Word.

### 4.3.1 How to Open a Program

- To open a program you will usually double click on a program name if you are selecting it from the desktop by using the left mouse button to click.
- If you are selecting the program from the start menu you will usually only need the click on the program name once, again using the left mouse button.

### 4.3.2 Left and Right Clicks

- When using a mouse, there are typically two buttons – a left button and a right button.
- The left mouse button is usually used to open up programs and folders.



- The left mouse button is also used when interacting with the various tools inside an open program.
- The right mouse button is used more to view information about things such as files and folders.

### **4.3.3 Drag and drop**

In computer graphical user interfaces, drag and drop is a pointing device gesture in which the user selects a virtual object by "grabbing" it and dragging it to a different location or onto another virtual object.

# CHAPTER 5: ADMINISTRATION OF THE CTC PHARMACY MODULE

## 5.1 Introduction

The CTC pharmacy module is used for managing information on the stocks and logistics of ARV and OI drugs, and is based on the official logistic information management system tools including the Report and Request form.

## 5.2 Specific Objectives

- To Install and configure system, including configuration for ordering sites and non-ordering satellite sites, and linking front ends with back end
- To set a lists of dispensers, system users, and link them where appropriate
- To set lists of non-ordering satellite facilities that are being catered for by the ordering site.
- To locate and manage user privileges
- To demonstrate how to Link the CTC pharmacy module with CTC2 database data file
- To demonstrate how back up of Pharmacy Module data base is done

## 5.3 Opening, configuration and navigating through the menus

Installation:

Note: For installation/upgrading and migration please refer to [annex 1](#)

### 5.3.1 Opening the CTC Pharmacy Module

Open the **CTC Pharmacy Module** by double clicking the shortcut icon on the desktop.



The following Login screen will appear

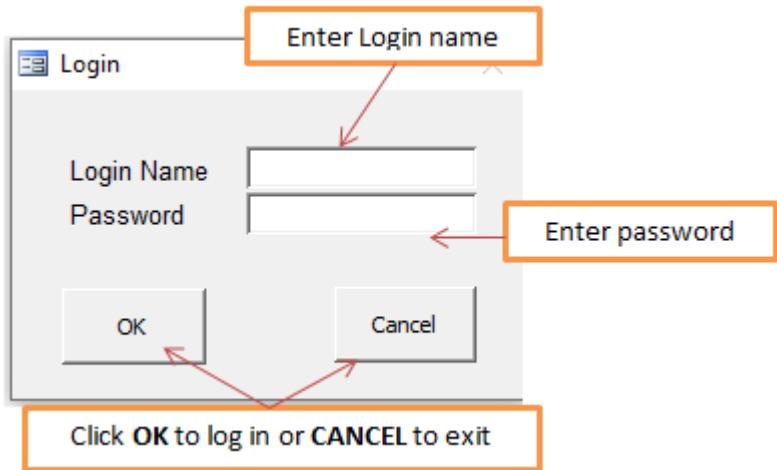
The default login details are:

Login name: admin

Password: ----- (*blank/empty* for the first time)

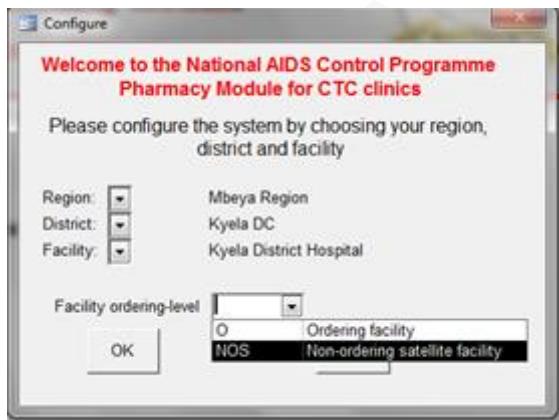
**Second Edition, October 2019**

NB: This password can be changed by the administrator when assigning user roles in the utilities section



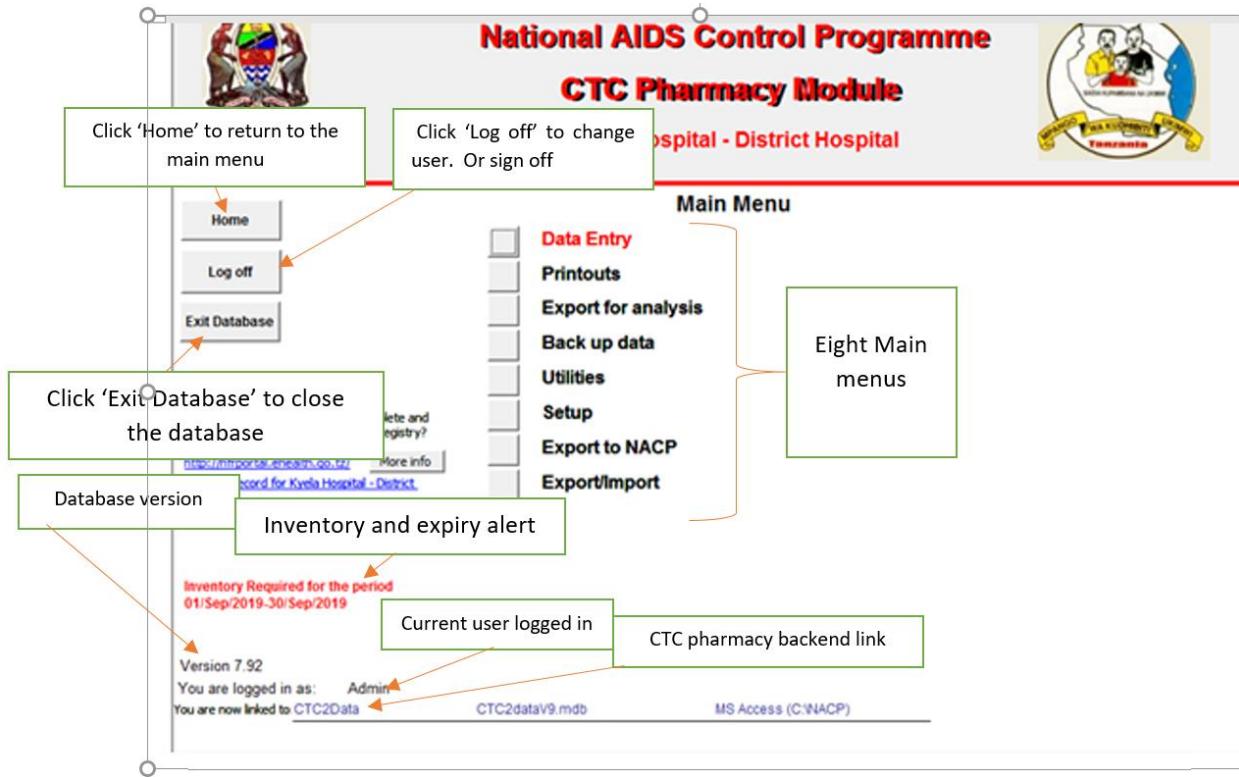
### 5.3.2 Configuring the CTC Pharmacy Module

Only during the first time installation, after successful login the following configuration screen will appear.



### 5.3.3 Carefully select your site as ordering “O” or non-ordering “NOS” facility. Navigating through the menu system

After successful login the CTC pharmacy module switch board menu will be displayed as seen below:



Some of the buttons lead to a sub menu (for example the data entry submenu). If you wish to return from a submenu to a higher level menu or from another screen to a menu, use the return button  **Return**

## 5.4 Setup

There are six types of setup procedures as shown in the diagram.



### 5.4.1 Setup dispensers

To assign dispensers you must go to Setup then select Setup dispensers.

Enter the names of dispensers on each line. The ID number is assigned automatically. If the dispenser is also a database user you can choose the user from the drop down list (See "Manage Users" section of the database).

When setting up dispensers, go to setup > setup dispensers (complete the required information related to first name, surname and linked to user)

ID number	First name	Surname	Linked to user
1	Mary	Kamugisha	Mary Kamugisha
2	Abdallah	Khatib	Abdallah Khatib

Only logged in users who are also setup as dispensers can enter dispensing records

Yes      Return     

If at your pharmacy the dispensers also normally enter records directly into the dispensing register in the pharmacy module, choose “Yes” in the box in the bottom of the screen. If at your pharmacy drugs are normally dispensed by one person but then another person (e.g. a data entry clerk) enters them into the pharmacy module dispensing register, choose “No”.

If “Yes” is selected during data entry in the dispensing register there will be no option for selection of dispenser as the person entering the data is the default dispenser.

#### 5.4.2 Setup non ordering sites

If you have configured your facility as an “ordering” facility, you may or may not have “non-ordering satellite facilities” which are facilities that place their orders via your facility. If your facility has satellite facilities you should list them in the setup screen.

Choose a list of facilities which your facility supports orders ARVs and OI drugs on behalf of	HFR Number	CTC ID	Is Active	Deactivation Date
Ipinda Health Center	101830-8	12-03-0101	<input checked="" type="checkbox"/>	
Njisi Dispensary	106498-9	12-03-0102	<input type="checkbox"/>	

Return

In order to set Non Ordering satellite facility follow the following instructions

- Choose Setup from the main switchboard menu.
- Choose “Setup non-ordering satellite facilities”.
- Click on the combo box and select a non-ordering satellite facility
- Repeat on the next row until you have selected all your satellite facilities.
- After setting all non-ordering satellite facilities make them active by ticking the check box

Note that only those with administrative privileges can alter the lists of dispensers and non-ordering satellite facilities.

#### 5.4.3 Setup Dispensing Area/Store

The system allows the user to setup dispensing areas and stores, the dispensing area can be the same with store or separate depending on the facility. To setup a dispensing area or store follow the steps below;

Click Setup → Setup dispensing areas.

Note the facility must have one Pharmacy main store

LocationID	Dispensing Area/Store Name	Is Store	Can Dispens	Is Active
105189-5-ISL-001	Pharmacy Main store	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
105189-5-ISL-002	CTC Pharmacy	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
105189-5-ISL-003	RCH	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

#### 5.4.4 Activate/Deactivate product

The CTC pharmacy module database user can activate or deactivate medicines that are either phased out or not in use at a particular facility.

To do that, click Setup → Activate/Deactivate Products

MSD Code	Description	(De)activation Date	Comment	Is Active	
				<input checked="" type="checkbox"/>	<input type="checkbox"/>
10010163	3TC/AZT Tablet 30mg/60mg			<input checked="" type="checkbox"/>	<input type="checkbox"/>
10010156	3TC/AZT/NVP FDC tablet 150/300/200			<input checked="" type="checkbox"/>	<input type="checkbox"/>
10010541	ABC/3TC FDC Tablet 120mg/60mg			<input checked="" type="checkbox"/>	<input type="checkbox"/>
10010540	ABC/3TC FDC Tablet 600mg/300mg			<input checked="" type="checkbox"/>	<input type="checkbox"/>
10010354	ABC/3TC FDC Table 60mg/30mg			<input checked="" type="checkbox"/>	<input type="checkbox"/>
10010001MD	ACETYL SALICYLIC ACID (ASPRIN) 300 mg TABLETS			<input checked="" type="checkbox"/>	<input type="checkbox"/>
10050004MD	BENZOIC ACID COMPOUND (WHITFIELD'S) OINTMENTS 6%+3%, 40G			<input checked="" type="checkbox"/>	<input type="checkbox"/>
10060014MD	BENZYL PENICILLIN PDR F INJ 5 MU Injection			<input checked="" type="checkbox"/>	<input type="checkbox"/>

Record: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93

Return

#### 5.4.5 Setup other Medication source/Suppliers

Database allows setting of other medicine suppliers apart from MSD to capture supplier's transaction recorded in ledger, in order to do these settings follow the illustration below.

**Setup**

- Setup dispensers
- Setup non-ordering satellite facilities
- Setup Dispensing Areas/Stores
- Activate/Deactivate Product
- Setup Other Medication Sources/Suppliers**
- Configuration Options

Other Sources/Suppliers of Medication		
SourceID	Source/Supplier Name	Is Active
105189-5-ESL-00	Keko pharmaceuticals	<input checked="" type="checkbox"/>
105189-5-ESL-00	Bahari pharmaceuticals	<input checked="" type="checkbox"/>
*		<input type="checkbox"/>

Return

#### 5.4.6 Configuration option

A user can configure the system to generate report and request (R&R) monthly, bimonthly or quarterly

To do that click, Setup → Configuration Options as shown below

**Setup**

- Setup dispensers
- Setup non-ordering satellite facilities
- Setup Dispensing Areas/Stores
- Activate/Deactivate Product
- Setup Other Medication Sources/S**
- Configuration Options

System Configuration	
RnR generation interval (Months)	Select reporting period
<input type="button" value="1"/>	<input type="button" value="1"/>
<input type="button" value="2"/>	<input type="button" value="2"/>
<input type="button" value="3"/>	<input type="button" value="3"/>

Return

## 5.5 User administration

It is the role of the administrator to manage users. **It is very important to assign different users levels for performing different tasks.** This means assigning user names and passwords to different staff who do not have access to the system.

If you are the administrator, you can access the ‘manage users’ screen from the Utilities menu.



There are several levels of access that can be assigned:

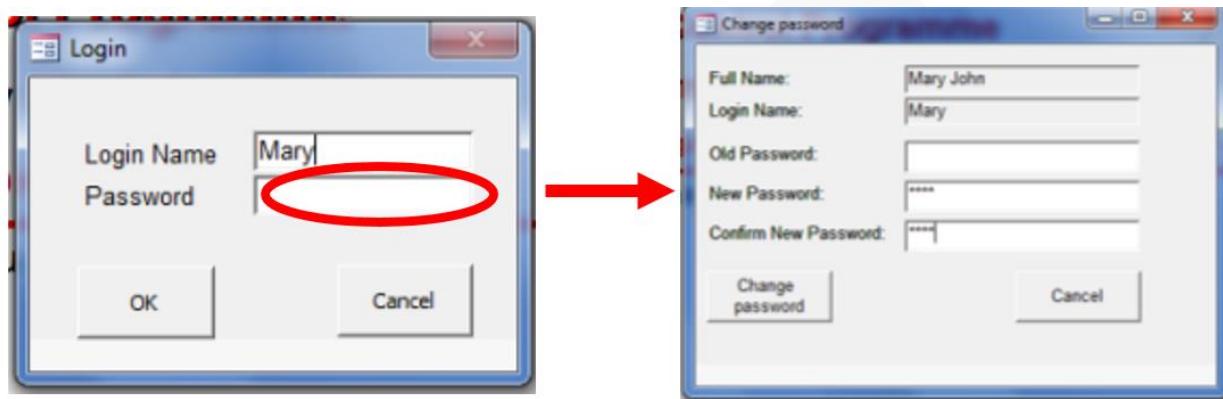
Access Level	Description	Enter Security	Enter Utilities	Enter Printouts	Enter Setup	Enter Data Entry	Data Dispensing	Enter Data Entry other
1	Printouts only	No	Yes	Yes	No	No	No	No
2	Data entry dispensing only,	No	Yes	Yes	No	Yes	No	No
3	Data entry all, printouts	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	Administrator - all rights	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- Level 1 is for users who can print information from the system but cannot make any changes.
- Level 2 is for users who can perform dispensing data entry and print.
- Level 3 is for users who can perform all normal data entry (including dispensing and other) and print.
- Level 4 is for a system administrator. This person can perform all the functions in the system including setting up lists of dispensers and creating new users.

To create a new user, follow the below steps:

- Type their full name (for your future reference)
- Enter system user login name (which is the name they will enter in the login screen) then
- Choose the access you are assigning to them.

When you create a user, the user will initially have no password. Therefore, the new user should log in with their login name with no password and will be prompted to set a new password.



The initial login will take the participant to the change password screen. The password used during login in for the first time will be assigned to the respective user and MUST be kept at a secure place. Administrator's password must be documented and stored in a safe place.

You can change the access level for a user by simply choosing a new access level next to their login details. You can also update or correct their full names. If you change a login name you should inform the user, otherwise they will not be able to login using their old login names.

## 5.6 Back up of CTC Pharmacy Module data

It is very important to have a system of backing up data routinely. The pharmacy module provides two options for data backup. There is an internal automatic backup and the backup to external device.

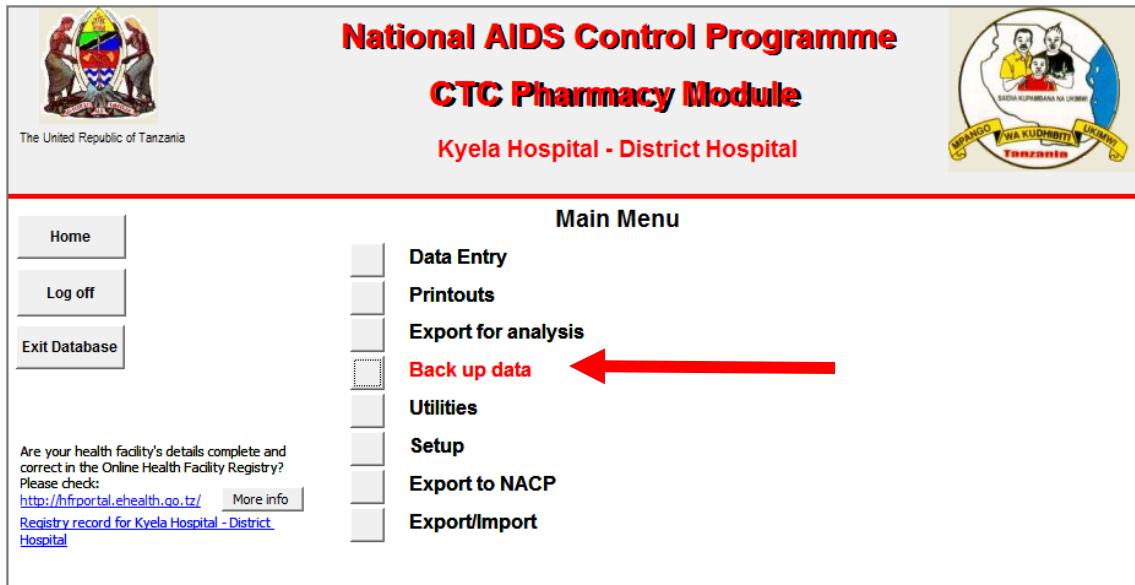
Automatic Back up is created every time the user exits the system. This file is placed in sub folder "Auto-Backup" and within that, in subfolders for the days of the week. A back up created on Monday will replace a backup created on previous Mondays etc. so that no more than five to seven backups are stored at a time.

Routine Back up to external device is essential to safe guard data in case of any damage to the computer hard drive due to virus, fire, theft etc.

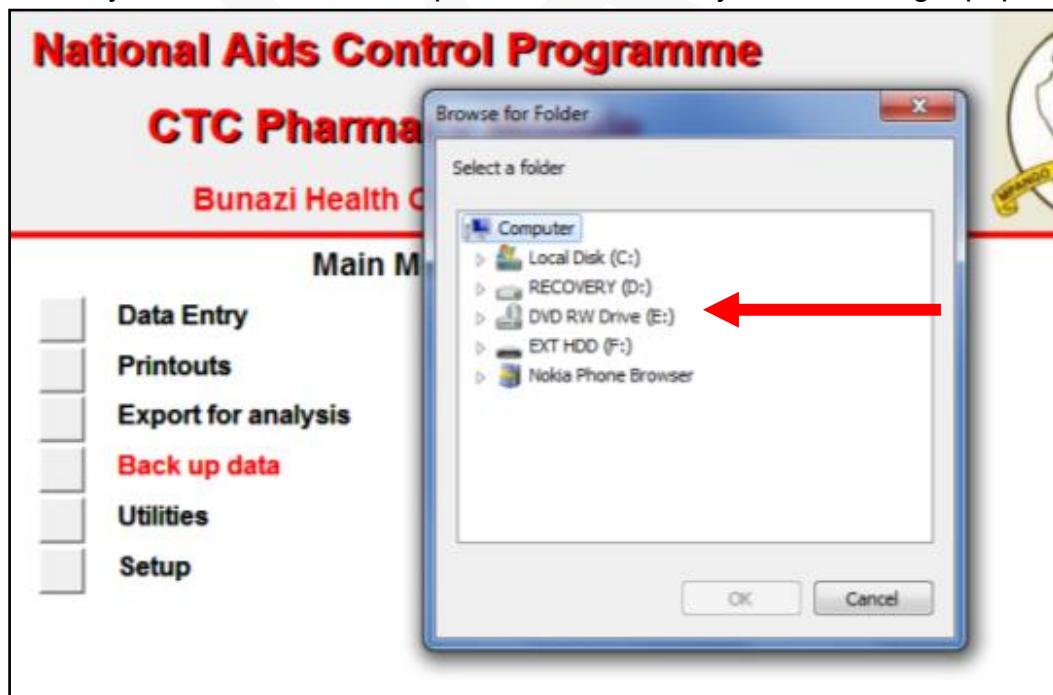
External device used for backup should be stored in a separate place away from the dedicated pharmacy module computer.

It is preferable to use CD-W/external Hard Drive, a flash drive as the external back up device and be stored in a secured location within the health facility.

The use of this computer/s are exclusively limited to supply chain activities. This will help to protect the system from corrupting due to introduction of malicious viruses.



When you click the “Back up data” button a system message pop up as below: -



Select the external flash/hard drive by “double clicking” and choose folder to save.

# CHAPTER 6: DATA ENTRY

## 6.1 Introduction

Data is factual information, especially information organized for analysis or used to reason or make decisions. In computers, data is information represented in a form suitable for processing by computer. Data are input, stored, and processed by a computer to generate usable information as output.

**Data Entry:** Is the act of transcribing some form of information into another medium, usually through input into a computer program. Forms of data that people might transcribe include handwritten documents, information off spread sheets, and sequences of numbers, as well as codes and even names.

Importance of data entry:

- The issue of entering accurate data for generation of quality reports.
- The essence of entering data on time for timely submission of data to macro database and R&R to higher levels.

## 6.2 Specific Objectives

At the end of this session participants will be able to:

- Define data and data entry
- Explain the importance of data entry
- Complete data entry for physical inventory, ledger, batches, forms from NOS facilities and requests
- Complete data entry for dispensing activities
- To compute and print out electronic report and request [Form A2 and A3] from the pharmacy database and manually adjust quantities ordered if necessary

## 6.3 Data entry overview

The data entry screens are where you routinely enter records. The data entry submenu has the following options:

## Data Entry



**Physical Inventory**

**Ledger**

**Batches**

**Dispensing Register**

**Forms from non-ordering satellite facilities**

**Report and Request**

**Patients' Status and Movement**

- The **Physical Inventory screen** is used whenever a physical inventory, or stock-taking, is done on monthly basis and when deemed necessary for NOS and ordering facilities.
- The **Ledger screen** is used whenever medicines are received from MSD/district or elsewhere or to enter losses and adjustments (damaged, expired, given to other related or unrelated facility and lost).
- The **Batches screen** is used when medicines are received, to record batch numbers and expiry dates. It is also updated when inventories are done to show how much of each batch remains.
- The **dispensing register screen** is used to enter daily records of medicines dispensed to each patient.
- The **Forms from non-ordering satellite facilities screen** is used by ordering facility for entering monthly A3 R & R reports received from the respective NOS.
- The report and **requests screen** is used for making manual adjustments to the automatically generated report and request form, and for entering some additional information needed for printing of the report and request. The R&R is monthly for NOS facilities and bi-monthly for ordering facilities.
- **Patient's status and movement** is used to track the client services received along with the client's status in terms of regimen use trends. The report is obtained from Macro national database when the computer with Pharmacy module is connected to the internet.

### 6.4 Physical Inventory

Physical inventory is usually done on monthly basis, and when starting to use the pharmacy module for the first time before entering any data in the system

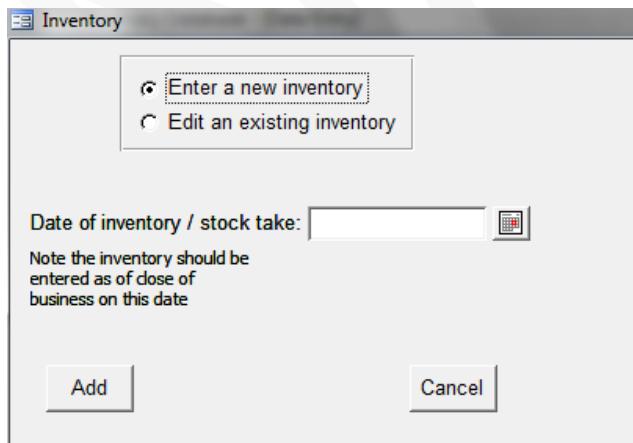
<b>Job:</b>	Doing a physical count of all ARV and OI medicines stored in all dispensing areas and stores in the facility, and filling physical inventory in the pharmacy database properly.
<b>Responsible person:</b>	<ul style="list-style-type: none"> <li>- Pharmacy in-charge</li> <li>- CTC dispenser</li> <li>- Any authorized personn</li> </ul>
<b>When to update:</b>	<ul style="list-style-type: none"> <li>- NOS and Ordering facilities update physical inventory at the end of every month (last day of the month or within 7 days before the end of the month).</li> </ul>
<b>Resources needed:</b>	<ul style="list-style-type: none"> <li>- Access to all the pharmacy stores and dispensing areas where ARVs and OIs medicines are kept.</li> <li>- Updated ledger and/bin card</li> <li>- Calculator</li> </ul>

### Steps in entering data

1. Click on “physical inventory” to enter a new inventory, or edit an existing one.

**Note:** Conduct physical inventory, when starting to use the pharmacy module for the first time before entering any data in the system.

2. For a new inventory, select “enter a new inventory” and enter the date of an inventory and click “Add”. Once you click the “Add” button the date cannot be edited. For an existing inventory select “edit an existing inventory”



**Note:** If you are editing an existing inventory, select the date of the inventory in the list and click “Edit”.



3. After completing step one and two do the following as instructed on diagram below:

Inventory Date: 28-Jan-2019 Enter the total quantities of the medications in stock as of the end of business on this date.			
Location: Pharmacy Main store Include stock in storerooms and in pharmacie:			
Medication	Batch Number	Quantity (Units)	Quantity (Packs)
10010157 TDF/R	CTC Pharmacy	mg	276,000 tablets
10010140 AZT/3TC FDC tablet 300mg/150mg		tablets	bottles
10010156 3TC/AZT/NVP FDC tablet 150/300/200		tablets	bottles
10010136 Efavirenz Tablet 600mg		tablets	bottles
10011022 Cotrimoxazole Tablet 400mg/80mg (pack of 100)		tablets	packs

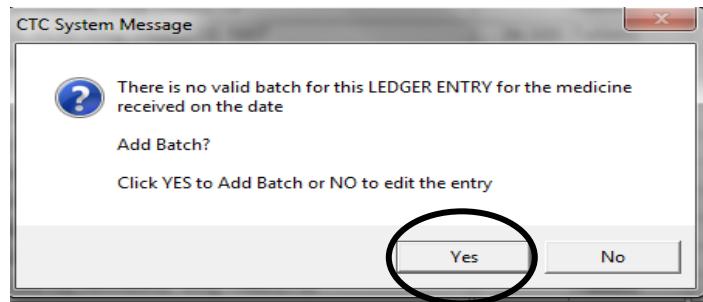
(1) Select Location      (2) Select Product      Click to add or edit batches

(3) Select /enter batch number      (4) Enter Quantity (Dispensing units or Packs)      Click "Delete" to remove row      Click to view reconciliation report      Click to delete the current inventory

Add/Edit batches      Delete inventory      Reconcile      Return

**Note:**

- The system assumes that the inventory is conducted at the end of the day after any dispensing or ledger entries for that day.
- For existing system batch number will be selected from drop down list.
- For first time Pharmacy database usage the batch number will be entered into batch number box where a popup message for adding batch number will appear, Select Yes to proceed and fill commodity expired date.



- The same item with different batch numbers will be entered separately.
- If you wish to delete the inventory, click “Delete inventory”. This will remove all the records of the inventory and the system will be as if no inventory was done.

## 6.5 Ledger

A ledger is used for entering information when medicines are received either from msd (for ordering facilities) or from ordering facilities (for NOS facilities), or elsewhere. It is also used for entering information when medicines are transferred to other facilities, or lost/damaged/expired. It is used for entering all transactions of medicines in and out of the facility.

**Note:** Receipts of medicines are positive entries in the ledger. Medicines which have expired, damaged, lost or transferred to another health facility (non-ordering satellite facility or unrelated facility) are regarded negative entries in the ledger

**Job:** Filling the ledger properly

- Pharmacy in-charge
- CTC dispenser
- Any authorized personnel

**When to update:**

- When ARVs and OI medicines are received from MSD, donation, related or unrelated facility.
- When ARVs and OI medicines are issued to non-ordering satellite facilities or to unrelated facilities.
- When medicines are damaged, expired or lost.

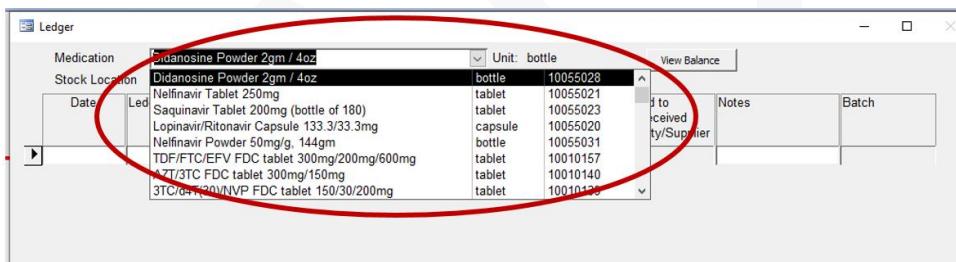
- Resources needed:**
- MSD sales invoice
  - Suppliers invoice
  - Stores ledger
  - Requisition and issue voucher

### Steps in entering data

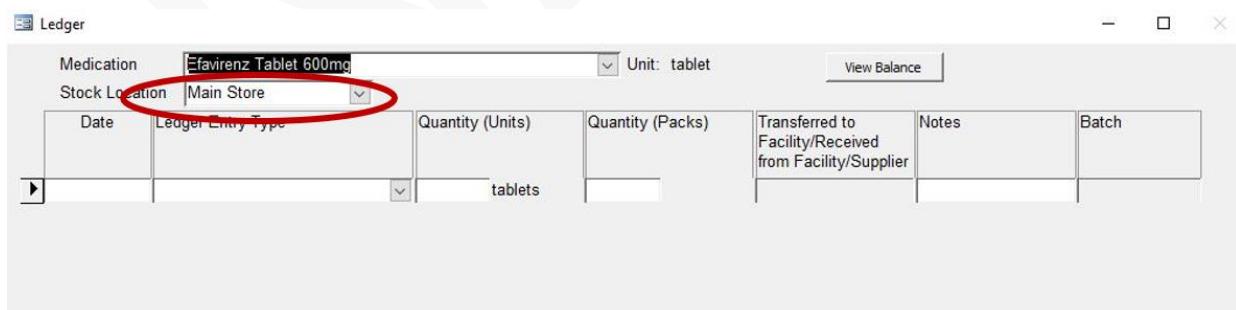
1. From the data entry screen click on Ledger



2. Choose a medicine from the drop down list at the top of the screen



3. Choose stock location from the drop down list.



4. Enter the date at which the transaction has been effected.
5. Choose a ledger entry type from the list.
6. Enter the quantity in dispensing unit or packs.

7. Enter the appropriate facility/supplier name based on where the medicine is transferred to or received from.

The screenshot shows a software interface for managing stock ledger entries. At the top, there are three red boxes highlighting the 'Date' field (containing '01-Oct-2019'), the 'ledger entry type' dropdown menu, and the 'quantity' field (containing '1 bottles'). Below these, a table lists various ledger entry types with their corresponding positive or negative signs. The 'Received or procured from elsewhere' option is selected, showing a positive sign.

Date	Ledger Entry Type	Quantity (Units)	Quantity (Packs)
01-Oct-2019	Received from other store/disp. Unit in this facility	Positive	bottles
	Received from MSD	Positive	
	<b>Received or procured from elsewhere</b>	<b>Positive</b>	
	Damaged	Negative	
	Expired	Negative	
	Transferred to other (unrelated) facility	Negative	
	Transferred to other store/disp. Unit in this facility	Negative	
	Lost	Negative	

Click "return" button, a pop up batches screen will appear.



8. Enter batch reference code/number, expiry date, invoice number and notes if any

The screenshot shows a 'Batches' dialog box. It includes a dropdown for 'Medication' (set to 'Efavirenz Tablet 600mg') and a radio button group for selecting either 'All batches' or 'Batches received on date'. The date '08-Oct-2019' is selected. A note on the right says to tick 'finished?' if the entire batch is no longer available due to being dispersed, damaged or expired etc. Below this, a table has three rows highlighted with red boxes and arrows pointing to them: 'Batch Number' (containing '08-Oct-2019'), 'Expiry Date' (containing '08-Oct-2019'), and 'Notes' (containing 'Invoice').

Date received	Batch Number	Expiry Date	Finished?	Invoice Number	Notes
08-Oct-2019	08-Oct-2019	08-Oct-2019	<input checked="" type="checkbox"/>		
					Invoice

**Note:**

- The sign (positive or negative) of the ledger entry will appear automatically so that it corresponds to the ledger entry type.

- If you choose that medicines have been transferred to a non-ordering satellite facility, you must specify which one.
- In order to delete a wrong ledger entry, select the respective record and then click the delete ledger entry button
- If you receive several batches at the same time, use a different raw for each with the same date.

When doing physical inventory, open a batch screen and tick “finished” for all the batches which are no longer available. For example, the medicines have been completely used up by dispensing, damaged, expired, or lost.

Date	Ledger Entry Type	Quantity	Transferred to Facility	Notes
14-Aug-2009	Received or procured from elsewhere	120 tablets		Received from Newala
17-Aug-2009	Received from MSD	1,200 tablets		Received from Tanda
21-Aug-2009	Received or procured from elsewhere	570 tablets		D-26197
06-Oct-2009	Received from MSD	1,800 tablets		NAIZ-1500329
11-Dec-2009	Received from MSD	390 tablets		Sokoine Hospital
14-Dec-2009	Transferred to other (unrelated) facility	-600 tablets	Makukwe Dispensary	
01-Jan-2010	Transferred to satellite non-ordering facility	-10 tablets		Un explainable gain
28-Feb-2010	Received or procured from elsewhere	47 tablets		A32228
15-Mar-2010	Received from MSD	900 tablets		NASZ-1500373
20-Apr-2010	Received from MSD	1,800 tablets		1500395
26-May-2010	Received from MSD	2,730 tablets		NAIZ 1500438
20-Aug-2010	Received from MSD	150 tablets		phirimini
25-Aug-2010	Received or procured from elsewhere	900 tablets		
*	Received from MSD	Positive		
	Received or procured from elsewhere	Positive		
	Damaged	Negative		
	Expired	Negative		
	Transferred to other (unrelated) facility	Negative		
	Lost	Negative		
	Transferred to satellite non-ordering facility	Negative		

**Note:**

- There is a shortcut to view the balance of the selected medicine as shown in the table below.

**Balance**

Medication	Triomune(30) 3TC/d4T(30)/NVP Fixed dose combination tablet	Unit:	tablets
View balance for date:		04-Apr-2008	Today
<input type="button" value="Calculate balance"/>			
Last Inventory Date:	01-Apr-2008		
Quantity on last inventory date:	300		
Consumption between inventory date and balance date:	20		
Received from MSD / district between inventory date and balance date:	0		
Other ledger entries between inventory date and balance date:	-100		
<b>Balance on balance date:</b>	<b>180</b>		
Average monthly consumption last three months:	22		
<b>Number of months supply in stock:</b>	8.2		
<input type="button" value="Return"/> <input type="button" value="Print"/>			

### How to view balance:

1. Enter a balance date, or click the “today” button to enter today’s date as the balance date.
2. Then click the “Calculate Balance” button. The screen will show the last inventory date before the balance date and the quantity of the selected medicine on the balance date.

### Entries that will be seen:

1. The “transactions” between the last inventory date and the balance date – consumption/dispensing, medicines received from MSD/ordering facility, other ledger entries.
2. The balance on the balance date which is the last inventory quantity minus consumption plus medicines received from MSD/ordering facility plus or minus other ledger entries.
3. The average monthly consumption/dispensing over the past three months and based on this, the number of months’ supply in stock (which is the balance divided by the average monthly consumption)

## 6.6 Dispensing register

Dispensing register is the register used to enter medicines dispensed to specific patients. The dispensing register screen can be viewed in two ways:

1. Register view
2. Transactional view

## 6.6.1 Register view:

Date dispensed: 09-Oct-2019 Today Switch to transactional view Dispensing Area: CTC

Patient ID	PEP?	Hepatitis?	Transit	Previous records	Repeat prescr.	Total:	Dispensed by
01-01-0111-002277	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Transit			30	
01-02-0200-000125	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Transit			30	
*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Transit			30	

Ol drugs

Dispensed by

The advantage of register view is that it looks exactly like the paper-based register and so is useful for new users.

## 6.6.2 Transactional view:

Date dispensed: 09-Oct-2019 Today Records entered by: baina Switch to Register View Dispensing Area: CTC

Patient ID:	Name:	Date of Birth:	Age:	Sex:	Weight:	ARV regimen:
01-01-0111-002277	[REDACTED]	15-Jul-1994	25	Male	Kg	1k-P - ABC 3TC (ped dose)
01-02-0001-003901	[REDACTED]					

Transit patient?  Repeat prescr.  Previous records  Treatment Supporter

Medication: Medication Quantity  
ABC/3TC FDC Tablet 30 tablets  
120mg/60mg

Dispenser: New dispense record Delete this dispense record

New dispense record Add new dispensing record Save records for 09-Oct-2019 Return

The advantage of the transactional view is that;

1. It is faster for entering data as it eliminates the need for tabbing through many unused boxes.

2. The medicines can easily be searched in the medication option using the drop down list or shortcut keys
3. In this view; name, age, sex and ART regimen are displayed in the dispensing screen.
4. It allows the dispenser to enter multiple entries without entering the CTC unique ID of the same patient during dispensing.

**Note:** You can easily switch between the views by using the shortcuts on the top of the screen.

**Job:** Filling dispensing register [form A1] properly.

**Responsible person:**

- Pharmacy in-charge
- CTC dispenser
- Any authorized personnel

**When to update:** - Whenever medicines are dispensed to patients.

**Resources needed:**

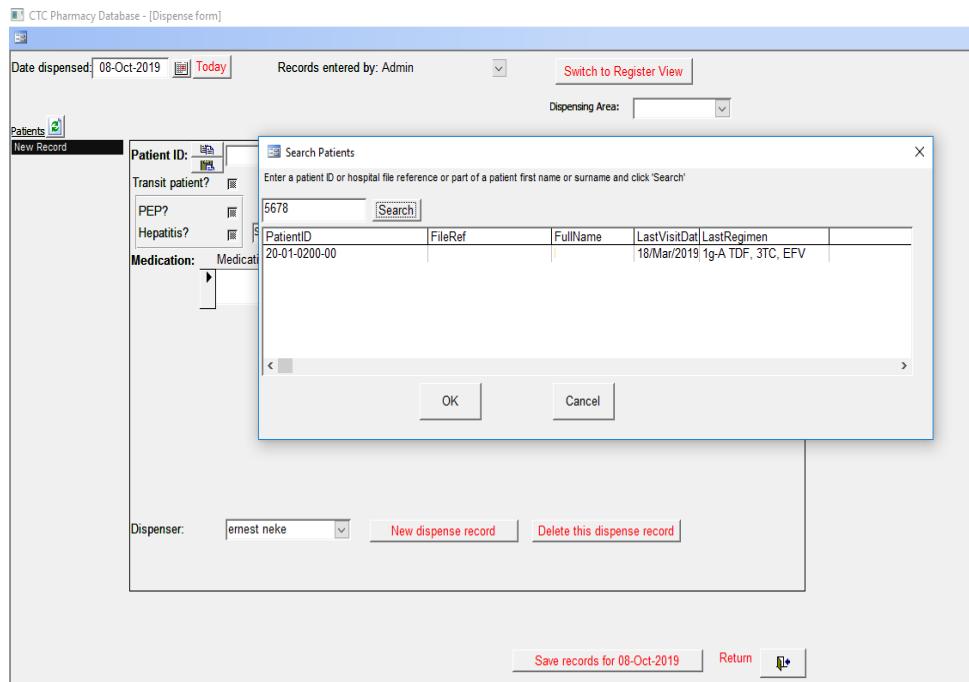
- Prescription

#### **Steps in entering data:**

1. Enter the date at which the medicines are dispensed at the top. You can use the “today” shortcut button to insert today’s date.
2. Enter patient ID number as it appears on CTC1 card or prescription

#### **Note:**

- To search a patient, click the search button  then enter patient ID or part of patient name or file reference number, in the search box and click “search”
- Choose a patient and click “OK” and the patient information will be shown including patient ID in the dispensing register.



Instead of searching, you may enter the patient ID directly

- For all patients currently on treatment, the patient ID number is recorded as a 14-digit number in the format 00-00-0000-000000.
  - If the patient is a PEP, Hepatitis or transit patient, tick respective box and proceed with entering other dispensing records.
  - Click the button “previous records” which is a shortcut to a printout showing a full history of dispensing records for that patient. This can be useful when finding previous patient records/ details.
  - You can also use the button “repeat prescribe” which will retrieve the last regimen and amounts picked up by the patient and copy those into today’s record.
3. Select the medication from the drop-down list and enter the quantity of tablets/capsules/bottles dispensed.

**Note:**

- In register view; enter the quantity in the box of the relevant medication heading or headings (if the patient is collecting more than one type of medicine).
- In transactional view; for each type of medicine dispensed, select the medicine from the drop-down list and enter the quantity.

- If a patient is being dispensed three separate medicines on a date, they will have three rows in the transactional view, but only one row in the register view with three boxes filled in [all quantities should be entered using the “smaller units” such as tablets or capsules] and bottles for paediatric suspension.
4. Click “new dispensing record” to enter dispensing data for the next client on the same day

## **6.7 Forms for non-ordering satellite facilities**

If your site is an ordering site, you will have the option to enter paper forms received from your non-ordering satellite facilities. This form resembles form A3 of the paper-based tools for ARVs logistics system in the approved forms used in Tanzania.

The form has 2 parts:

1. Consumption part whereby consumption and stock on hand data are entered.
2. Regimens part whereby numbers of specific regimen are entered.

**Job:** Filling of forms from NOS facilities.

**Responsible person:**

- Pharmacy in-charge
- CTC dispenser
- Any authorized personnel

**When to update:**

- When the NOS facilities prepare monthly reports and submit to Ordering facilities.

**Resources needed:**

- Updated ledger.
- Requisition and issue voucher
- Form A3

### **Steps in entering data: consumption and end balance form**

1. In the data entry screen; click “forms for non-ordering satellite facilities”, you will be prompted to choose “Consumption and end balance” or “Regimens”.

CTC Pharmacy Database - [Forms from non-ordering satellite facilities]

**National AIDS Control Programme**  
**CTC Pharmacy Module**

The United Republic of Tanzania

Mwananyamala Hospital - Regional Referral Hospital

Forms from non-ordering satellite facilities

- Consumption and end balance
- Regimens

Are your health facility's details complete and correct in the Online Health Facility Registry?  
Please check:  
<http://hrportal.ehealth.go.tz/> More info  
[Registry record for Mwananyamala Hospital - Regional Referral Hospital](#)

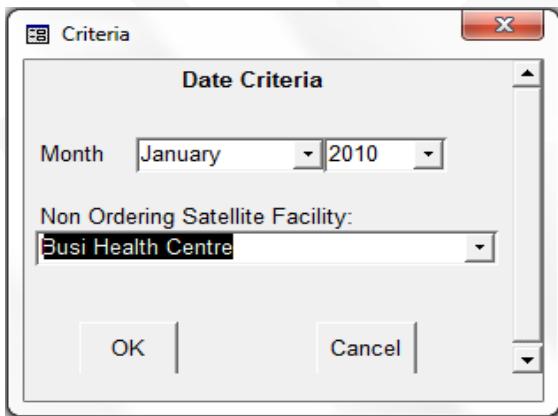
Inventory Required for the period  
01/Sep/2019-30/Sep/2019

Version 7.92  
You are logged in as: Admin  
Form View

Return to data entry menu

FLTR

2. Click consumption and end balance, a pop window will display.
3. Choose the month and the year of the report.
4. Select which non-ordering Satellite facility is reporting and click OK. If the site is not in the drop down list, you must setup the site as a satellite facility (see setup part of this manual).



5. Form A3 will appeared automatically as shown below

CTC Pharmacy Database - [Non-ordering satellite facility report]

Ministry of Health, Community Development, Gender, Elderly and Children					
FORM A3: MONTHLY REPORT ON CONSUMPTION OF ARV/OI DRUGS BY NON-ORDERING SATELLITE FACILITIES					
Non Ordering Satellite Facility <b>Bunju Dispensary</b>			Ordering Mother Facility <b>Mwananyamala</b>		
Name of District: <b>Kinondoni</b>			Month: <b>January 2019</b>		
MSD code	Supply item / Maelezo ya bidhaa	Unit of issue / Kipimo cha Ugavi	Received from mother site / Kiasi kilichopokelewa	Actual dispensed / Kiasi kilichotumika	Lost / Adjusted / Upotevu / Marekebisho
(B)	(C)	(D)	(E)		
00108491	CHLORPHENIRAMINE 4mg TABLETS	Tin 1000 Tablets	0 Tablets	Tablets	Tablets
00500311	MUPROGIN 2% OINTMENT 15GM	Tube	0 Tubes	Tubes	Tubes
0050017	MICONAZOLE CREAM 2%, 20GM	Pack 12 Tubes	0 Tubes	Tubes	Tubes
0050010	ORAL REHYDRATION SALTS (ORS) FOR 1	Pack 100 Sachets	0 Sachet	Sachet	Sachet
0050008	HYDROCORTISONE 1% 15GM CREAM	Tube	0 Tubes	Tubes	Tubes
0050004	BENZOIC ACID COMPOUND	Tube	0 Tubes	Tubes	Tubes
0040123	ANTI ACIDS LIQUID PREPARATION 250-	Bottle	0 Bottles	Bottles	Bottles
0040009	VITAMIN B COMPLEX SYRUP 100ML	Pack 24 Bottles	0 Bottles	Bottles	Bottles
0040008	COUGH EXPECTORANT ADULT	Pack 24 Bottles	0 Bottles	Bottles	Bottles
0030005	MICONAZOLE VAGINAL CREAM 50GM	Pack 3 Packets	0 Pack of	Pack of	Pack of

[Delete form](#)      [Return](#)

### Note;

- In this screen, column (A) is the ending balance of the last month, which is the beginning balance this month. If this is the first month being reported, column A is not needed and is hidden.
  - Column (B) is the amount of medicines received from the ordering facility during the month.
6. For the remaining columns (C), (D) and (E) which are consumption (dispensed), losses/adjustments and ending balance, enter this information as shown from the paper form A3 received from the respective NOS.

### Steps in entering data: Regimens form

- Click the second form “Regimens” on the screen, a pop window will display.
- Choose the month and the year being reported on.
- Select which non ordering Satellite facility is reporting.

**Note:** Regimens form will appear automatically as shown below.

CTC Pharmacy Database - [Non-ordering satellite facility report]

Ministry of Health, Community Development, Gender, Elderly and Children				
SUMMARY OF REGIMENS DISPENSED				
MUHTASARI WA IDADI YA WAGONJWA KULINGANA NA DAWA MCHANGANYIKO (REGIMENS) WANAZOTUMIA				
Non Ordering Satellite Facility		Ordering Mother Facility Mwananyamala		
Name of District: Kinondoni		Month: January 2019		
Adults / Regimen	Regimen		Idadi ya Mahudhurio ya Wagonjwa walilipatiwa ARVs kwa mwezi huu	Number of patient-visits on this regimen this month
Children / code				
Watu wazima / Watoto				
Adult	1r-A	TDF/3TC/DTG (adult)	First line	
Adult	1g-A	TDF, 3TC, EFV	First line	
Adult	1b-A	AZT, 3TC, NVP (adult dose)	First line	
Adult	1c-A	AZT, 3TC, EFV (adult dose)	First line	
Adult	1e-A	TDF, FTC, EFV	First line	
Adult	1f-A	TDF, FTC, NVP	First line	
Adult	1h-A	TDF, 3TC, NVP	First line	
Adult	1k-A	ABC, 3TC, EFV (adult dose)	First line	
Adult	1m-A	ABC, 3TC, NVP (adult dose)	First line	
Adult	1a-A	d4T, 3TC, NVP (adult dose)	First line	
Adult	1a(30)L	d4T (30), 3TC, NVP loading dose	First line	
Adult	1d(30)	d4T (30), 3TC, EFV	First line	
Adult	1x-A	Other first line (adult)	First line	
Adult	5a	AZT prophylaxis	Prophylaxis	
Adult	5b	AZT, 3TC, sdNVP prophylaxis	Prophylaxis	
Adult	5c	AZT, 3TC prophylaxis	Prophylaxis	
Adult	5d	TDF, FTC, lowline	Lowline	
			<a href="#">Delete form</a>	<a href="#">Return</a>

- Enter the number of times each regimen was dispensed this month at the NOS from the information received on the form A3.

## 6.8 Report and Request

This form resembles form A2 and A3 of the paper-based tools for ARVs logistics system that is used for report and request ARV medicines and related supplies from MSD and ordering facilities respectively. For ordering facilities, it is quarterly/bimonthly and for non-ordering satellite facilities it is monthly.

**Job:** Filling Report and Request form

**Responsible person:**

- Pharmacy in-charge
- CTC dispenser
- Any authorized personnel

**When to update:**

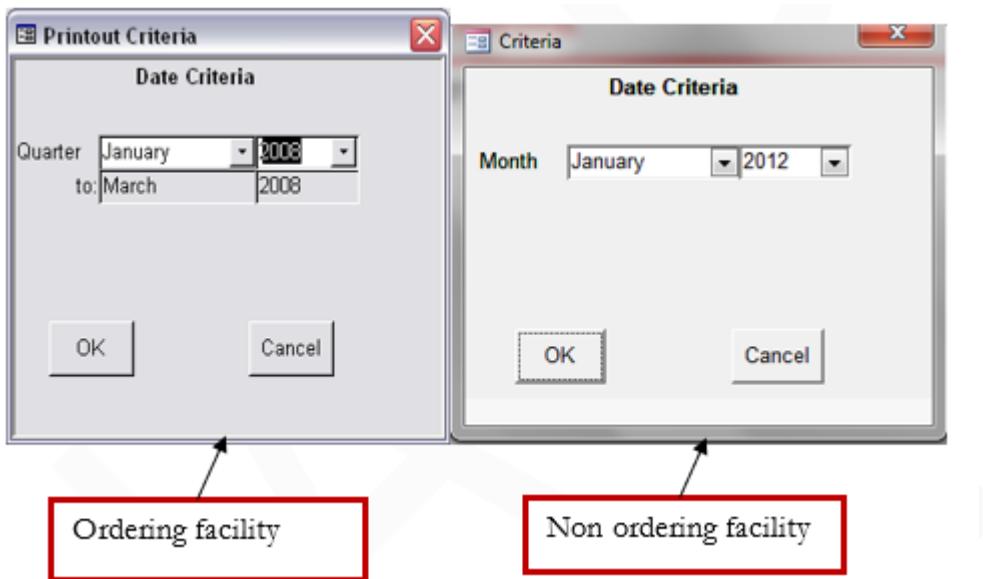
- At the end of each reporting period

**Resources needed:**

- Updated ledger
- Information regarding number of clients expected to be eligible for ART for the next month or quarter for NOS and ordering facility respectively.
- Calculator

## Steps in entering data:

1. Calculate the quantity of medicines required for new clients
2. On the data entry screen, click the request button. A pop-up window which prompts to date criteria will appear.



3. For ordering facility, choose the beginning month and year then the end month and year will be shown automatically based on the report and request configuration interval (months). When clicking OK, R&R report will appear automatically.

Ministry of Health FORM A2: QUARTERLY REPORT & REQUEST FOR ARV AND OI DRUGS													
Facility Code:	24010100	Facility Name:	Bububu Military Hospital		Type:	GOV							
Name of District:	Unguja West				Report for Quarter: February 2013 to April 2013								
Date prepared:	27-Sep-2013				Submission date:								
Last inventory date: 29-Apr-2013													
MSD code	Supply item	Unit of issue	Beginning Balance	Received from MSD during period	Actual dispensed during period	Lost / Adjusted	Ending Balance (Stock on hand)	Quantity Required for new patients	Total estimated consumption	Maximum Stock Quantity	Quantity to order	Quantity Requested	Remarks
			(A)	(B)	(C)	(D=E+C-A-B)	(E)	(F)	(G=F+C)	(H=Gx2)	(I = H - E)	(J)	(K)
10055049	TDF/FTC/EFV FDC tablet 300mg/200mg/600mg	bottle 30 tablets	5,040 tablets	16,200 tablets	1,470 tablets	-16,800 tablets	2,970 tablets	0 tablets	1,470 tablets	2,940 tablets	0 tablets	0 bottles	0 bottles
10055009	AZT/FTC FDC tablet 300mg/150mg	bottle 60 tablets	100,266 tablets	17,400 tablets	19,820 tablets	318,314 tablets	416,160 tablets	0 tablets	19,820 tablets	39,640 tablets	0 tablets	0 bottles	0 bottles
10055008	3TC/4AT(30)NVP FDC tablet 150/300/200mg	bottle 60 tablets	18,992 tablets	0 tablets	0 tablets	15,568 tablets	34,560 tablets	0 tablets	0 tablets	0 tablets	0 tablets	0 bottles	0 bottles
10055048	3TC/AZT/NVP FDC tablet 150/300/200	bottle 60 tablets	-91,500 tablets	0 tablets	44,100 tablets	232,500 tablets	96,900 tablets	0 tablets	44,100 tablets	88,200 tablets	0 tablets	0 bottles	0 bottles
10055001	Eflavirenz Tablet 600mg	bottle 30 tablets	19,638 tablets	0 tablets	9,882 tablets	69,864 tablets	79,620 tablets	0 tablets	9,882 tablets	19,764 tablets	0 tablets	0 bottles	0 bottles
10055002	Eflavirenz Tablet 200mg	bottle 90 tablets	13,230 tablets	0 tablets	164 tablets	-13,066 tablets	0 tablets	0 tablets	164 tablets	328 tablets	328 tablets	4 bottles	0 bottles
10055004	Nevirapine Tablet 200mg	bottle 60 tablets	6,466 tablets	16,380 tablets	254 tablets	-21,512 tablets	1,080 tablets	0 tablets	254 tablets	508 tablets	0 tablets	0 bottles	0 bottles
10055010	Lamivudine Tablet 150mg	bottle 60 tablets	-3,000 tablets	132,900 tablets	120 tablets	-85,440 tablets	44,340 tablets	0 tablets	120 tablets	240 tablets	0 tablets	0 bottles	0 bottles

Set quantities requested equal to quantities to order | Language English | Print | Return | Help

4. For the NOS; choose month and year of the reporting period, when clicking OK, Form A3 will appear automatically

Ministry of Health FORM A3: MONTHLY REPORT & REQUEST FOR ARV AND OI DRUGS													
Facility Code: 04010101			Facility Name: Mlalo Health Centre			Report for month: June 2013			Type: GOV				
Name of District: Lushoto						Submission date:							
Date prepared: 11-Jul-2013						Last inventory date: 30-Jun-2013							
MSD code	Supply item	Unit of issue	Beginning Balance	Received from MSD during period	Actual dispensed during period	Lost / Adjusted	Ending Balance (Stock on hand)	Quantity Required for new patients	Total estimated consumption	Maximum Stock Quantity	Quantity to order	Quantity Requested	Remarks
(A)	(B)	(C)	(D=E+C-A-B)	(E)	(F)	(G=F+C)	(H=Gx2)	(I = H - E)	(J)	(K)			
0055049	TDF/FTC/EFV FDC tablet	bottle 30 300mg/200mg/600mg tablets	3,570 tablets	0 tablets	120 tablets	150 tablets	3,600 tablets	0 tablets	120 tablets	240 tablets	0 tablets	0 bottles	0 bottles

Most of the columns of the report and request form are calculated automatically

**Column A** is the beginning balance or previous ending balance of the last month/quarter. For ordering facilities, added to this are the ending balances of the month before the reporting quarter.

**Column B** is the total amount received from MSD (for ordering facilities) or from the ordering facility (for NOS facilities) during the period.

**Column C** is the total amount dispensed during the period from the dispensing register. For ordering facilities, added to this is the total amount dispensed at NOS facilities according to the forms received.

**Column D** is the quantity of losses and adjustments [received from elsewhere, damaged, expired or lost] in the facility.

If an inventory has been conducted during the period, column D will also include any inventory “discrepancies” between the previous inventory and that inventory which have not been resolved, although it is recommended that discrepancies should be zero for all inventories

**Column E** is the ending balance of the reporting period. For ordering facilities, added to this are the ending balances from NOS facilities in the last month of the reporting quarter.

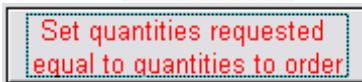
5. Enter the estimated quantity needed for new patients under Column F – These figures must be entered by the user as they cannot be calculated. You should forecast the number of new patients you expect during the coming month/quarter and the regimens they will need, based on your experience.

**Column G** – estimated consumption – this is column C (medicines needed for existing patients) plus column F (medicines needed for new patients).

**Column H** – maximum stock quantity – it is recommended by the NACP to have two reporting periods supply (6 months' supply for ordering facilities, 2 months' supply for NOS facilities) as the maximum stock level.

**Column I** – the recommended quantity to order is the maximum stock quantity minus the existing balance at the end of the period, i.e. the quantity needed to top up to the maximum stock quantity. This is displayed both in small units (e.g. tablets), and underneath it is also displayed in large units (e.g. bottles).

6. Set the quantity requested equal to the recommended quantities under Column J by clicking the button – Set quantity requested equal to quantities to order as shown below.



7. You may also change these figures based on your own judgement due to your knowledge of the situation in your facility.
8. Write some short notes under Column K if any.

**Note:**

Columns F, J and K require data entry from the user.

If you enter data in these columns and later close this screen and open the screen again for the same period, the quantities entered will be remembered by the system, but the calculated columns will be re-calculated in case of any changes to the inventory, ledger or dispensing records.

9. Enter the date the report is being sent in the submission date box.

The report MUST be printed on the last business day of reporting month or quarter for A3 and A2 respectively.

10. Then print the report and request for that month/quarter accordingly.

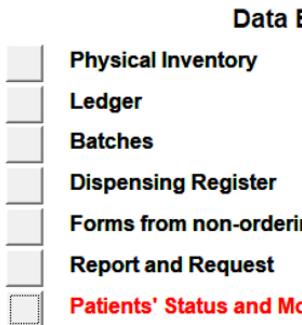
**Note:**

The Print Preview button takes you straight to a printable version of the report and request form for that month/quarter.

The screen version shows all medicines, but the printout shows only medicines for which there is non-zero dispensing, ledger or request data.

## 6.9 Patients' Status and Movement

To be able to use the movement feature, the computer has to be connected to internet and CTC2 data file uploaded to NACP CTC3 Macro database. To get into the movement tab Go to **Home → Data Entry → Patients' Status and Movement**



Entering in patient movement status for the first time, the form will be blank. Enter CTC ID number in the search box and click “Search”. Click show all patients to see all patients. In the search box you can enter part of a patient ID, patient name and or patient status such as “Attending this clinic”.

By default, records are sorted by listing the patients who have not visited for the longest time at the top. However, you can also sort by any of the other columns by clicking on the column heading. You can specify whether to sort ascending or descending using the sort option at the top right of the screen.

You can also print the list which you see on the screen using the print preview button



Status of registered patients								
PatientID to be searched:					List of clients		Search patients	
Search text:							Sort selected field header	
Patient ID	First name(s)	Surname	Date of Birth	Sex	Most recent visit	On ARVs	Status	Date of Death
01-02-0200-001240	Wesxh Vthvb	Askeu	06-Sep-2001	Female	01-Jul-2008	<input checked="" type="checkbox"/>	Transferred to another clinic	
01-02-0200-001260	Yeoogqu Exbjwcm	Irwilkap	12-Dec-1968	Male	14-Nov-2008	<input checked="" type="checkbox"/>	Transferred to another clinic	
01-02-0200-001431	Uncrlj Yqrury	Xfyot	01-Feb-1970	Female	10-Sep-2008	<input checked="" type="checkbox"/>	Attending this clinic	
01-03-0100-000231	MBKAL GRIFRP	THOHUP	15-Jul-1992	Female	01-Jul-2008	<input type="checkbox"/>	Attending this clinic	
01-03-0100-001566	UZJAKLOE	TEGTMARA	15-Jul-1969	Male	06-Aug-2008	<input checked="" type="checkbox"/>	Attending this clinic	
01-03-0200-000227	Cujc Uckf	Wdiaz	15-Jul-1962	Female	27-Aug-2008	<input checked="" type="checkbox"/>	Attending this clinic	
01-04-0100-000028	Njd	Xhzole	16-Jun-1954	Male	07-Feb-2006	<input checked="" type="checkbox"/>	Lost to follow-up	
01-04-0100-000533	Nbsz	M Ndrprper	01-Jan-2002	Female	02-Sep-2008	<input checked="" type="checkbox"/>	Attending this clinic	
01-04-0100-000583	fgrym	Iwpdewo	12-Jun-1973	Female	24-Sep-2008	<input checked="" type="checkbox"/>	Attending this clinic	
01-04-0100-000763	Lvehxt	Cszdy	31-Jul-1954	Female	04-Jan-2011	<input checked="" type="checkbox"/>	Attending this clinic	
01-04-0100-001183	Stpxpf	Hrz	10-Sep-1972	Female	16-Sep-2008	<input checked="" type="checkbox"/>	Transferred to another clinic	
01-04-0100-001575	Gcsvt	Plylmgdx Khrnjid	08-Sep-1970	Female	25-Jan-2008	<input checked="" type="checkbox"/>	Transferred to another clinic	
01-04-0100-002351	Aipg Esluqbe	Eughch	12-Apr-1970	Male	08-Nov-2007	<input checked="" type="checkbox"/>	Transferred to another clinic	
01-04-0100-003346	Vboeym Jinaf	Paruwpo	15-Jul-1972	Male	23-May-2008	<input checked="" type="checkbox"/>	Transferred to another clinic	
01-04-0100-003740	Xnyabgs	Vmjczjh Trrodn	15-Jul-1970	Male	07-Jan-2011	<input checked="" type="checkbox"/>	Attending this clinic	
01-04-0100-004210	Chaoik	Nqee Tlz	15-Apr-1968	Female	19-May-2009	<input checked="" type="checkbox"/>	Lost to follow-up	
01-04-0100-004731	Glusifrn	Frltqxpg Tfwnrt	15-Jul-1965	Male	14-Jul-2010	<input type="checkbox"/>	Attending this clinic	
01-04-0104-001229	Jxzhwxo	Hzepta Zkuj	07-Jan-1972	Female	05-Jan-2011	<input checked="" type="checkbox"/>	Attending this clinic	
02-01-0100-000111	DISWY	AFYPJCQ	15-Jul-1980	Female	07-Oct-2008	<input type="checkbox"/>	Attending this clinic	

To edit a patient's status click  button beside their status.

Click the  button to view client registration details

Click the  button to track individual client movements

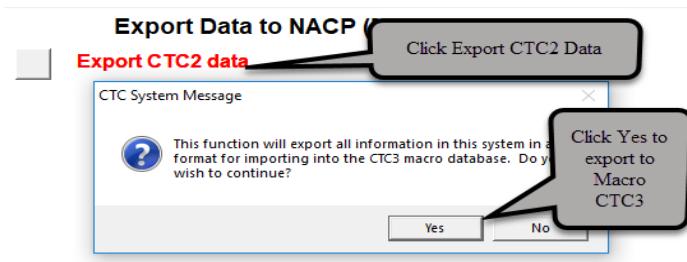
Click the  button to track movement for all selected clients

The movement's tabs can be used to track client movement and behavior. Internet access is needed to be able to track client movement(s). By clicking this movement(s) buttons, it will prompt a security alert dialogue. Click yes to proceed and wait for client movement records to display. Print out the movement records for further actions. For more detail on how to perform client movement refer to annex 6.

## 6.10. Export to NACP

### 6.10.1. Export CTC2 Data

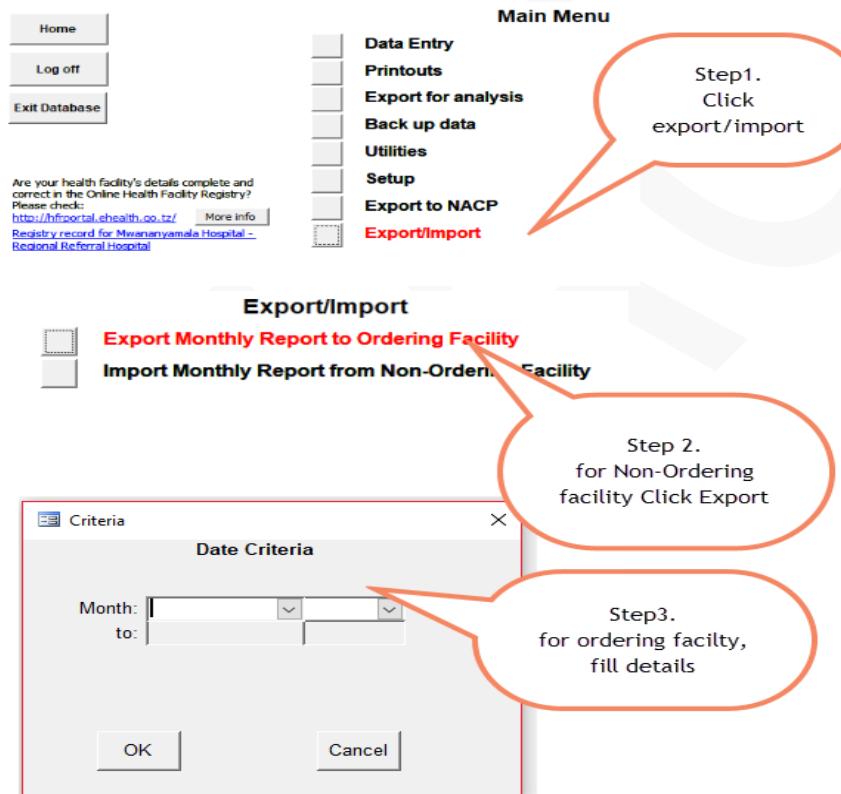
Data from CTC2 database has to be exported to NACP CTC3 Macro database on quarterly basis. This process sends only patient level data without patient identification fields to the National HIV Repository. It requires internet connection to perform export.



OR, data export can be performed when exporting quarterly report to CTC3 as shown below

## 6.11. Import / Export

This is a new feature added in the current version of Pharmacy Module that enables non-ordering facilities to export (Monthly R&R data) and send to ordering facilities by email. And ordering facilities to import the same exported R&R data from non-ordering facility.



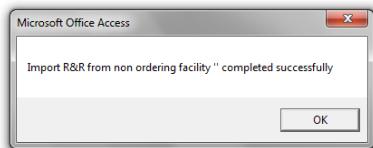
Importing access file from non-ordering facility, click import monthly report and browse to the location where the file has been saved and select it, then click Open. If the file has been imported successfully the message below will appear.

---

**Export/Import**

**Export Monthly Report to Ordering Facility**

**Import Monthly Report from Non-Ordering Facility**



# CHAPTER 7: PRINTOUTS AND ANALYSIS

## 7.1. Introduction

CTC Pharmacy module database provides an opportunity to generate and print various reports of ARVs and OIs drugs dispensed and stock management. These reports can be exported in excel or unsecured MS-Access formats in which various analysis can be made depending on user's needs. The reports generated from pharmacy module tool can help to reconcile inventories, dispensing and ledger records, remind on un-reconciled inventories/unused batches with drugs that are close to expiry. Furthermore, the tool can be used to perform calculations and produce electronic Reports and Requests (R&R).

The following reports can be generated from the Pharmacy Module database:

1. Printout Administrative
2. Inventory reconciliation printout
3. Un-reconciled inventories printout
4. Unfinished batches printout
5. Dispensing register printout
6. Dispensing daily summary printout
7. Report and Request printout
8. Request outcome printout
9. Time series printout
10. Matching ARV Regimens and Drugs
  - a. Dispensed drugs which match with regimen
  - b. Dispensed drugs which don't match with regimen
  - c. Regimen recorded but no drugs dispensed
  - d. Dispensed drugs but no regimen in CTC2 – not explained
  - e. Dispensed drugs but no regimen In CTC2- explained
11. Matching Cotrimoxazole
12. List of other regimens printout
13. Patient dispensing record printout

14. The number of drugs dispensed printout
15. Number of regimens dispensed printout
16. number of patient by regimen printout
17. Stock status
18. Patient type summary
19. Patient starting new medications
20. Printouts CTC related reports

## **7.2. Specific Objectives:**

At the end of this session participants will be able to:

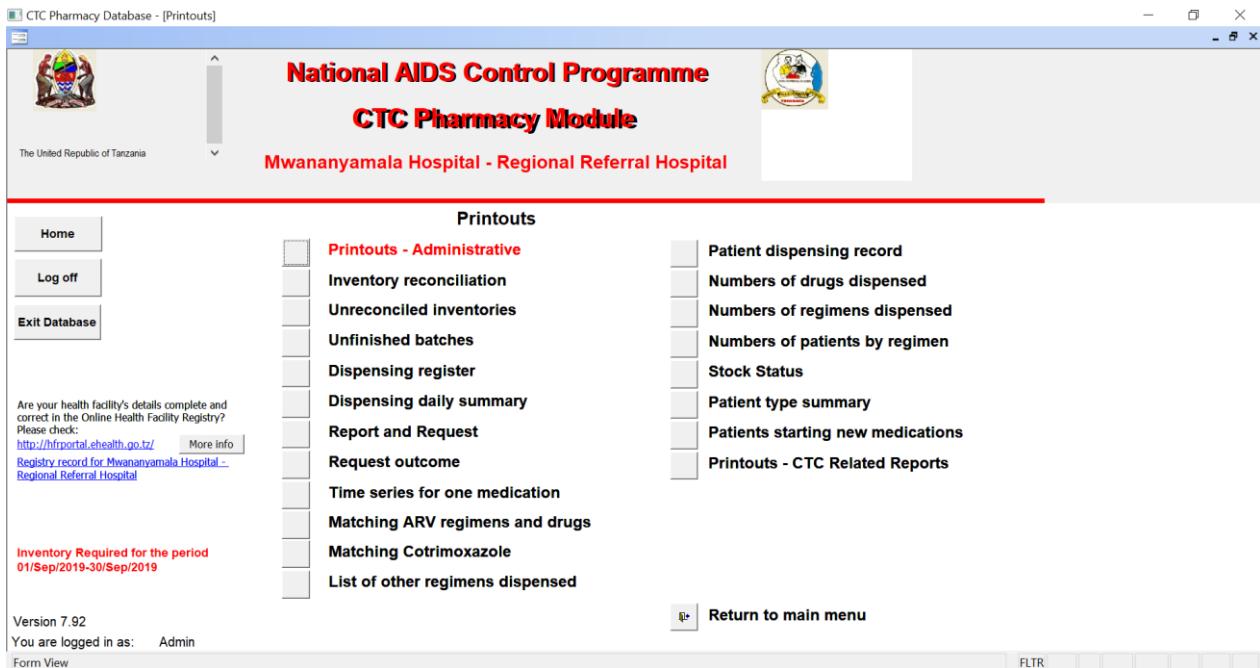
- Describe various reports which can be generated from the Pharmacy Module database
- Describe the importance of the various reports generated from the Pharmacy Module database and how to use the data for better planning and decision making at facility level Explain how to produce various reports from the Pharmacy Module database
- Explain how to export various reports for further analysis using MS-Access or MS-Excel

## **7.3. Printouts**

### **7.3.1. Steps for extracting reports from Pharmacy Module database**

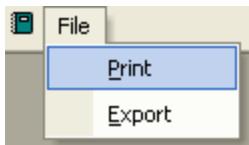
In order to extract a report, the following general points should be followed:

1. Log in into the system by entering user name and password. The main menu will be displayed on the screen
2. From the main menu, click “Printouts”. Various reports will be displayed on the screen.



3. You can then select the specific reports that you wish to see. Section below provides a summary explanation for each report.

Once you have selected the report, you have the option of printing it out.



4. To return to the switchboard menu press the escape key on your keyboard.

**Note:** Most of the reports will require entry of certain parameters such as client ID and dates depending on the printout chosen.

### 7.3.2. Description of various printouts

#### **Printout Administrative**

This report gives the summary of the users work in a specified period. The reports are generated as it appears in the below pictures.

Tarime Hospital							
Data Entry work done during period							
01-Jan-19 to 08-Oct-19							
User	No of Stock Receipts/Issue Doc Batches	No of Inventory Drugs	No of Ledger Entry Drugs	No of Requested NOS Drugs	No of Drugs Dispensed	No of NOS Regimen Entries	No of Requested Drug Items
Admin	613	184			67		
Admin	613	184			67		
Admin	613	184			67		
Admin	613	184			67		
Admin	613	184			67		
Admin	613	184			67		
Admin	613	184			67		

Tarime		
Consultations by each staff member during period		
01-Jan-19 to 08-Oct-19		
Staff member	Number of Client Visits	Number of Drug Items Dispensed
Jacob Kirina	11,684	19,307
Bhoke Birai	2,119	2,406
Happyness Saliji	872	872
Bakari Shem bughu	20	20
Florence Nyamale	2	2

### ***Inventory reconciliation***

The inventory reconciliation printout is used to put together data entries for inventories, ledger and dispensing registers in order to address any discrepancies. It shows the previous inventory date before this inventory, the previous inventory quantity, how much was dispensed, received and other ledger entries between the previous inventory and this one, the expected quantity for this inventory (i.e. the previous inventory plus or minus the consumption, receipts and adjustments in the ledger between the previous inventory and this one) and the actual quantity entered in this inventory. The difference between the expected quantity and the actual quantity is a discrepancy. All discrepancies should be zero. If there are discrepancies, you should make adjustments in the ledger or correct the inventory quantities so that the discrepancy is zero. Below is an example of an inventory reconciliation printout.

Tarime Hospital										
Inventory reconciliation										
Current Inventory taken on 31-Aug-2019										
MSD code	Medication	Previous Inventory Date	Previous Inventory Quantity	Dispensed between inventories	Received from MSD between inventories	Other ledger entries between inventories	Expected quantity for this inventory	Actual quantity for this inventory	Difference / discrepancy SHOULD BE ZERO	G=F-E
		(A)	(B)	(C)	(D)	E=A+B+C+D	(F)			
10050004	BENZOIC ACID COMPOUND (WHITFIELD'S) OINTMENTS 6%+3% 40G	31-Aug-19	0 Tubes	0 Tubes	0 Tubes	0 Tubes	0 Tubes	Tubes	Tubes	
10010188	FOLIC ACID 5mg TABLETS 100T	31-Aug-19	0 Tablets	0 Tablets	0 Tablets	0 Tablets	0 Tablets	Tablets	Tablets	
10090001	PLUMPY NUT (THERAPEUTIC FOOD) 92G X 150 SACHETS	31-Aug-19	0 Sachets	0 Sachets	0 Sachets	0 Sachets	0 Sachets	Sachets	Sachets	

### ***Un-reconciled Inventory***

The purpose of this printout is more or less similar to the inventory reconciliation report. While inventory reconciliation report aims to reconcile the selected inventory with the immediate previous inventory, the un-reconciled inventories printout shows basic details

of all un-reconciled inventories, i.e. all inventories where there are non-zero discrepancies.

### Monduli District Hospital

#### Unreconciled Inventories

**Inventory date: 01-Apr-2008**

MSD Code	Drug	Expected Quantity*	Inventory quantity	Discrepancy
10055008	Triomune(30) 3TC/d4T(30)NVP Fixed dose combination tablet	780 tablets	300 tablets	-480 tablets
10055009	AZT/3TC Fixed dose combination 300mg/150mg tablet	180 tablets	200 tablets	20 tablets

#### ***Unfinished batches (First Expiry First Out - FEFO Concept)***

Unfinished batches printout shows all batches which are no longer available due to have been completely used up by dispensing, damaged, expired, lost etc. This allows you to ensure that the batches closest to expiry are shown on the top and should be used first. In this print out, all batches of drugs which are not ticked as finished from data entry for batches will be displayed. Below is an example of Unfinished Batches printout.

### Monduli District Hospital

#### Unfinished Batches

MSD code	Drug	Batch Number	Date Received	Expiry Date	Notes
10055008	Triomune(30) 3TC/d4T(30)NVP Fixed dose combination tablet	4618	01-Jan-2008	01-Jan-2009	
10055008	Triomune(30) 3TC/d4T(30)NVP Fixed dose combination tablet	def123123	01-Apr-2008	01-Jan-2010	
10055008	Triomune(30) 3TC/d4T(30)NVP Fixed dose combination tablet	23423423	01-Mar-2008	01-Feb-2010	

#### ***Dispensing Registers***

The dispensing register shows all the dispensing transactions conducted on daily basis. This printout is the same as the ARV dispensing register (A1). It allows keeping of a paper record of the dispensing records as well as computerized record. Below is view of the dispensing register.

Monduli District Hospital	
Dispensing Register	
02-Jan-2008	
Tablets or capsules	
Rifamain 100mg tablet	
Neritapine 200mg tablet	
Neflauvir 250mg tablet	
Lopinevir/Rifomycin 200mg tablet	
Lopinevir/Rifomycin 100mg tablet	
[33.933.100] mg capsule	
Lamivudine 150mg tablet	
Eferenz 200mg tablet	
Eferenz 500mg tablet	
Eferenz 500mg EC tablet	
Dihydroxy 250mg EC caps	
Dihydroxy 100mg tablet	
Dihydroxy 25mg tablet	
Opacauer 300mg tablet	
TDFFTC Fixed dose combination 300mg/200mg	
TDFFTC/Fixed dose combination	
WZ/TSTC Fixed dose combination 300mg/150mg	
Trimoxamol 300	
ST/CH447(30)NAP-Fixed	
123	
444	50
4	30
13	38
	40
	50

## ***Dispensing daily summary register***

The dispensing daily summary shows one line for each date within a date range, and the total amount of drugs dispensed of each type on that date

Note that the less common OI drugs which are only available in the stacked view are not displayed in this printout.

## ***Report and Request printout***

This is the electronic Report and Request printout generated from Pharmacy module database which resembles the paper based R&R form from the LMIS tools for ARVs and OIs.

There are two forms of R&R, these are:

- Quarterly/bimonthly R&R (A2) for ordering facilities directly from MSD
  - Monthly R&R (A3) for non-ordering satellite facilities that order from mother sites.

To print out R&R, you will be required to choose a quarter or a bimonthly period (for ordering facilities) or a month (for non-ordering facilities). Note that before producing these printouts ensure that data entry for columns F (Quantity Requested for new clients), J (Quantities to order) and K (Remarks if necessary) has been completed. Below is an example of these printouts. There is also a new feature (Fresh request) that enable to

order medications with no inventory records for the specified periodThe request outcome printout is used to compare the quantities of commodities ordered against deliveries (Demand vs Supply). It also shows the number of days between the R&R submission date and the date the requested drugs were received. The figure below depicts an example of a Request outcome printout.

Tarime						
Request outcome						
Requests for quarter Feb-2019 to Mar-2019						
Date submitted: 09-Apr-2019						
MSD code	Medication	Quantity Requested	Earliest MSD delivery date	Number of days	Earliest MSD delivery quantity	Total MSD deliveries from ordering site in next quarter
10050004	BENZOIC ACID COMPOUND (WHITFIELDS) OINTMENTS 6%+3%, 40G	0 Tubes 0 Tubes			Tubes	0 Tubes 0 Tubes
10010188	FOLIC ACID 5mg TABLETS 100T	0 Tablets 0 Packs			Tablets	0 Tablets 0 Tablets
10090001	PLUMPY NUT (THERAPEUTIC FOOD) 92G X 150 SACHETS	0 Sachets 0 Packs			Sachets	0 Sachets 0 Sachets
10010228	OMEPRAZOLE 20mg CAPSULES	0 Capsules 0 Packs			Capsules	0 Capsules 0 Capsules
10040009	VITAMIN B COMPLEX SYRUP 100ML	0 Bottles 0 Packs			Bottles	0 Bottles 0 Bottles

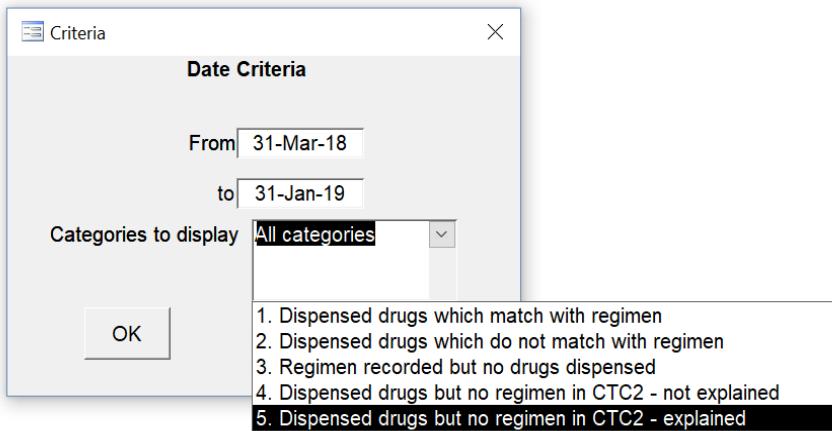
### ***Time Series printout***

The time series printout shows the trend of consumption of particular item for a specified period of time. The following table shows time series of TDF/FTC (Truvada) tablets 300mg/200mg for a period of March 2018to January 2019

Tarime										
Dispensing and Ledger Summary by Month										
TDF/FTC FDC tablet 300mg/200mg										
Units: tablet										
March 2018 to January 2019										
Month	Received from MSD	Received from ordering facility	Received from other (unrelated) facility	Dispensed	Transferred to satellite non-ordering facility	Transferred to other (unrelated) facility	Damaged	Expired	Lost	Overall Change
Apr-2018				-120						-120
May-2018				-90						-90
Jun-2018				-44						-44
Jul-2018			600	-148						452
Aug-2018				-164						-164
Sep-2018				-202						-202
Oct-2018	3,360		1,080	-314						4,126

### ***Matching ARV regimen and drugs***

The matching ARV Regimen and drugs printout is a tool for matching dispensing data from the Pharmacy Module with client's records data from the CTC2 database.



There are five categories of printouts one can select from the dropdown menu of the ARV matching printout. You have the option of selecting one or all categories. The categories are described in detail below:

- Dispensed drugs which match with regimen:** This printout presents the dosage regimen prescribed to a client and recorded in the dispensing register of the pharmacy module database. This record should match the medicines dispensed at a particular visit as prescribed in the CTC 2 card.

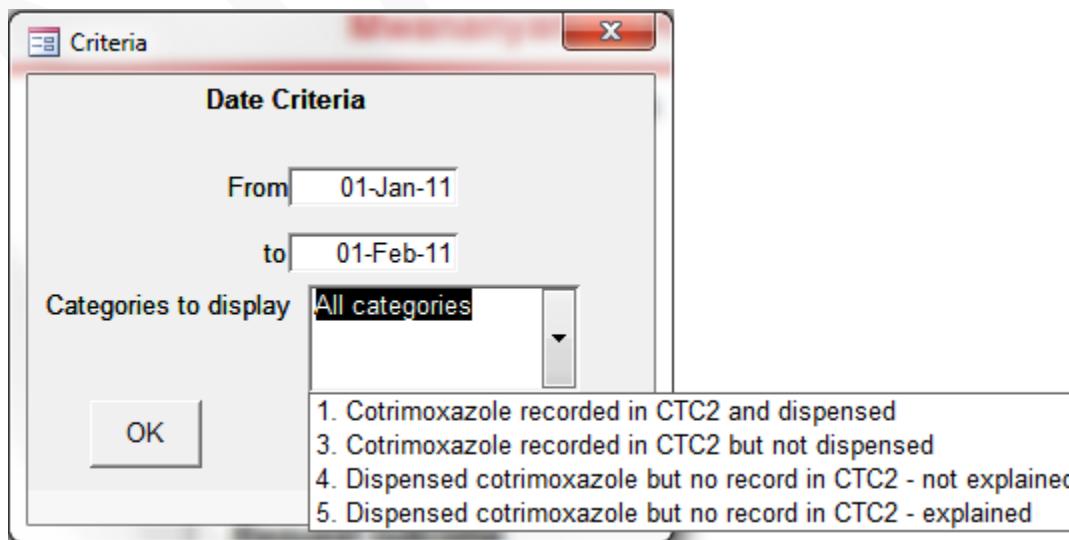
Tarime						
Matching of regimens recorded in CTC2 card and ARV drugs dispensed at pharmacy						
01-Jan-2019 to 31-Jan-2019						
Patient ID (transit tick)	Date	Regimen in CTC2 card	Num Days dispensed in CTC2 card	Drugs dispensed		
<b>1. Dispensed drugs which match with regimen</b>						
19-05-0100-007286	<input type="checkbox"/> 02-Jan-2019	1g-A TDF, 3TC, EFV	60	10010164 TDF/3TC/EFV Tablet 300mg/300mg/600mg	60	tabs
19-08-0106-000831	<input checked="" type="checkbox"/> 02-Jan-2019	1g-A TDF, 3TC, EFV	30	10010164 TDF/3TC/EFV Tablet 300mg/300mg/600mg	30	tabs
20-01-0100-003725	<input checked="" type="checkbox"/> 02-Jan-2019	1b-A AZT, 3TC, NVP (adult dose)	30	10010156 3TC/AZT/NVP FDC tablet 150/300/200	60	tabs
20-01-0200-001315	<input checked="" type="checkbox"/> 02-Jan-2019	1c-A AZT, 3TC, EFV (adult dose)	30	10010136 Efavirenz Tablet 600mg 10010140 AZT/3TC FDC tablet 300mg/150mg	30	tabs
20-01-0200-002310	<input checked="" type="checkbox"/> 02-Jan-2019	1g-A TDF, 3TC, EFV	90	10010164 TDF/3TC/EFV Tablet 300mg/300mg/600mg	90	tabs
20-01-0200-002780	<input type="checkbox"/> 02-Jan-2019	1c-A AZT, 3TC, EFV (adult dose)	60	10010136 Efavirenz Tablet 600mg 10010140 AZT/3TC FDC tablet 300mg/150mg	60	tabs
20-01-0200-003491	<input type="checkbox"/> 02-Jan-2019	1b-A AZT, 3TC, NVP (adult dose)	60	10010156 3TC/AZT/NVP FDC tablet 150/300/200	120	tabs

- Dispensed drugs which do not match with regimen:** This printout presents the mismatch between the dosage regimen prescribed to a client and the medicines dispensed in the dispensing register of the pharmacy module database.

3. **Regimen recorded but no drugs dispensed:** This printout presents a situation where there is a visit record in the CTC2 database for a client showing that drugs were prescribed, but there is no corresponding record in the dispensing register of the pharmacy module for the same client and the same date.
4. **Dispensed drugs but no regimen recorded – not explained:** This printout presents a situation where there is a dispensing record in the dispensing register of the pharmacy module showing drugs were dispensed but there is no corresponding visit record in the CTC2 database for the same client and date. This means that drugs were dispensed with no explanation i.e. the client should have a CTC2 record.
5. **Dispensed drugs but no regimen recorded – explained:** This printout presents a situation where there is a dispensing record in the dispensing register of the pharmacy module showing drugs were dispensed but there is no corresponding visit record in the CTC2 database for the same client and date. This means that drugs were dispensed and explained by the fact that the client is either from Hepatitis, PEP or on-transit.

#### ***Matching Cotrimoxazole printout***

The Matching Cotrimoxazole printout is a tool for matching dispensing data from the Pharmacy Module with client's records data from the CTC2 database. There are four categories of printouts one can select from the dropdown menu of the Matching Cotrimoxazole printout. You have the option of selecting one or all categories. The categories are described in detail below:



1. **Cotrimoxazole recorded in CTC2 and dispensed:** This printout presents the Cotrimoxazole prescribed to a client and recorded in the CTC 2 database. This

record should match the medicines dispensed at a particular visit and recorded in the dispensing register of the pharmacy module database.

2. **Cotrimoxazole recorded in CTC2 but not dispensed:** This printout presents the situation where Cotrimoxazole was prescribed to a client and recorded in the CTC 2 database but no records exist in the dispensing register of the pharmacy module database.
3. **Dispensed cotrimoxazole but no record in CTC2 – unexplained:** This printout presents a situation where there is a dispensing record of cotrimoxazole in the dispensing register of the pharmacy module showing the drug was dispensed but there is no corresponding visit record in the CTC2 database for the same client and date. This means that drugs were dispensed with no explanation i.e. the client should have a CTC2 record.
4. **Dispensed cotrimoxazole but no record in CTC2 – explained:** This printout presents a situation where cotrimoxazole was dispensed but there is no corresponding visit record in the CTC 2 database for the same client and date. This means that drugs were dispensed and explained by the fact that the client is either of Hepatitis, PEP or on-transit.

#### ***List of other regimens dispensed***

This printout shows a list of dispensing records where the dispensed drugs do not match any regimen in the NACP CTC2 card, i.e. they are classified as “other”. This may occur when:

- a. The prescriber selects the wrong regimen
- b. New regimens have been introduced but not yet included in the CTC2 card
- c. Clients received PMTCT or PEP medicines.

#### ***Patient dispensing record***

This printout shows you the entire dispensing history of a specific client. When you select the patient dispensing record icon, it prompts you for a client ID. When you select the patient ID, you are able to see the dispensing history of that patient.

#### ***Number of drugs dispensed***

This printout presents the number of times and quantity a particular drug was dispensed (and recorded in the pharmacy module) in a specific period. This printout presents the information for both the mother site and the satellite facilities and also presents the total. This printout also disaggregates the dispensed quantity by the section from which the drug was dispensed, i.e. on-transit, PEP or PMTCT clients. This is noted by “of which”.

Tarime								
Drugs dispensed during period								
31-Jan-19 to 31-Mar-19								
Drug	At this facility			At satellite facilities			Total	
	Number of times this drug was dispensed	Quantity dispensed in units of dispensing	Quantity dispensed in units of issue	Quantity dispensed in units of dispensing	Quantity dispensed in units of issue	Quantity dispensed in units of dispensing	Quantity dispensed in units of issue	Quantity dispensed in units of issue
10010157 TDF/FTC/EFV FDC tablet 300mg/200mg/600mg <i>of which</i> Transit	119	4,736 tablets	157.9 bottles	tablets	bottles	4,736 tablets	157.9 bottles	
10010140 AZT/3TC FDC tablet 300mg/150mg <i>of which</i> Transit	160	13,218 tablets	220.3 bottles	tablets	bottles	13,218 tablets	220.3 bottles	
10010156 3TC/AZT/NVP FDC tablet 150/300/200	299	25,062 tablets	417.7 bottles	tablets	bottles	25,062 tablets	417.7 bottles	

### Number of regimens dispensed

This printout presents the number of times a particular dosage regimen was dispensing at a facility over a period of time. The printout presents the frequency information of a dosage regimen for both the mother site and the satellite facilities.

Ngorongoro District Hospital				
ARV regimens dispensed during period				
01-Aug-08 to 01-Aug-09				
Regimen	Number of times this regimen was dispensed at this facility	Number of times this regimen was dispensed at non-ordering satellite facilities	Total	
1e TDF, FTC, EFV	2	76	78	
1b ZDV(AZT), 3TC, NVP	1	117	118	
1a d4T, 3TC, NVP (paediatric dose)	1	10	11	
1c ZDV(AZT), 3TC, EFV	1	100	101	
99 Other - please specify	1		1	
1a(30) d4T (30), 3TC, NVP	1	179	180	
1a(30)L d4T (30), 3TC, NVP loading dose		107	107	
1d(30) d4T (30), 3TC, EFV		177	177	
2a ABC, ddI, LPV/r		26	26	
2b ABC, ddI, SQV/r		813	813	
1d d4T, 3TC, EFV		14	14	
1g TDF, 3TC, EFV		4	4	
1h TDF, 3TC, NVP		5	5	
2d ABC, ddI, ATV/r		85	85	
2e TDF, 3TC, LPV/r		153	153	
2f TDF, FTC, LPV/r		82	82	
2g ABC, 3TC, LPV/r		17	17	
1x Other first line		25	25	
2x Other second line		27	27	
1f TDF, FTC, NVP		5	5	
Total number of dispensing records:	7	2,022	2,029	

### Number of patients by regimen

This printout presents the information about the number of clients that are currently receiving a certain regimen at a given facility. If the site is an ordering facility with non-

ordering sites reporting to this mother site the print out will display the information for the two categories of sites

Tarime					
Current ARV regimens of patients during period					
				31-Mar-19 to 31-May-19	
Regimen		Number of patients currently on this regimen at this facility	Number of patients currently on this regimen at non-ordering satellite facilities	Total	% Of total patients
1b-A	AZT, STC, NVP (adult dose)	Unknown	242	242	12%
1b-P	AZT, STC, NVP (ped dose)	Unknown	34	34	2%
1c-A	AZT, STC, EFV (adult dose)	Unknown	114	114	8%
1e-A	TDF, FTC, EFV	Unknown	74	74	4%
1g-A	TDF, STC, EFV	Unknown	887	887	61%
1k-A	ABC, STC, EFV (adult dose)	Unknown	11	11	1%
1k-P	ABC, STC, EFV (ped dose)				

### Stock Status

This printout shows the stock on hand, average monthly consumption and estimates how long the existing stock will last of selected products.

Tarime Hospital					
Stock Status					
08-Oct-19					
Drug		Dispensing Unit	Balance on date	Average monthly consumption	Number of months of stock
10050004MD	BENZOIC ACID COMPOUND (WHITFIELD'S) OINTMENTS 6%+3% 40G	Tube	-3	124	0.0
10010188MD	FOLIC ACID 5mg TABLETS 100T	Tablet	0	73	0.0
10090001MD	PLUMPY NUT (THERAPEUTIC FOOD) 92G X 150 SACHETS	Sachet	-470	318	-1.5
10010228MD	OMEPRAZOLE 20mg CAPSULES	Capsule	-28	14	-2.0
10040009MD	VITAMIN B COMPLEX SYRUP 100ML	Bottle	0	0	
10010001MD	ACETYL SALICYLIC ACID (ASPIRIN) 300 mg TABLETS	Tablet	0	0	
10010157	TDF/FTC/EFV FDC tablet 300mg/200mg/600mg	tablet	-30	298	-0.1
10010140	AZT/3TC FDC tablet 300mg/150mg	tablet	62,078	5,178	12.0
10010156	3TC/AZT/NVP FDC tablet 150/300/200	tablet	47,250	8,289	5.7

### Patient type summary

This printout presents a summary of patients in various categories; including CTC, PMTCT, PEP and on-transit. The information is broken down by the number of times the medication was dispensed to the patients in that specific category and the number of distinct patients being dispensed with those medications.

**Tarime**  
**Types of patients being dispensed medication during period**  
**01-Feb-18 to 28-Sep-19**

Patient type	Number of times medications were dispensed to this type of patient	Number of distinct patients of this type being dispensed medications
CTC	24,403	3,929
Transit	156	149
PEP	103	87
<b>Total:</b>	<b>24,662</b>	<b>4,165</b>

### ***Patients starting new medications***

This printout shows the number of new patients who used a particular drug for the first time during a period. It can be used for forecasting purposes, as drugs which many patients have started will need to have the orders adjusted upwards together with the information of eligible clients for ART initiation (in the new patients column in the R&R).

**Tarime**  
**Patients dispensed medication for first time during period**  
**01-Feb-18 to 28-Sep-19**

	Number of patients who received this medication for the first time during the period	Number of new patients	Number of patients who changed regimen
10010028M FOLIC ACID 5mg TABLETS 1000T D	4	0	4
10010188M FOLIC ACID 5mg TABLETS 100T D	7	1	6
10010228M OMEPRAZOLE 20mg CAPSULES D	2	0	2
10050004M BENZOIC ACID COMPOUND (WHITFIELDS) OINTMENTS 6%+3%, 40G D	20	1	19
10090001M PLUMPY NUT (THERAPEUTIC FOOD) 92G X 150 D SACHETS	18	4	14
10055039 Lopinavir/Ritonavir Tablet 200/50 mg (old code)	9	1	8
10010157 TDF/FTC/EFV FDC tablet 300mg/200mg/600mg	235	198	37
10010140 AZT/3TC FDC tablet 300mg/150mg	331	293	38
10010139 3TC/d4T(30)/NVP FDC tablet 150/30/200mg	9	4	5

### 1. Printout CTC Related reports

This report gives summary of the available TB/HIV patients and clients served with Isoniazid as a prophylaxis treatment.

Tarime	
TB summary for period 01-Jan-18 to 31-Jul-19	
Patient suspected to have TB for first time during period	Number of patients
Adult Female	108
Adult Male	54
Child Female	5
Child Male	8
Patient suspected to have TB any time during period	213
Adult Female	134
Adult Male	61
Child Female	7
Child Male	11
Started TB treatment for first time during period	28
Adult Female	12
Adult Male	14
Child Male	2
On TB treatment at any time during period	42
Adult Female	20
Adult Male	20
Child Male	2

Tarime							
IPT summary as of 31-Jan-2019							
Age	Month of IPT						Total
	1	2	3	4	5	6	
Adult (5+ yrs)	166	73	41	38	39	17	374
Children (<5 yrs)	1	1	2				4
Total	167	74	43	38	39	17	378

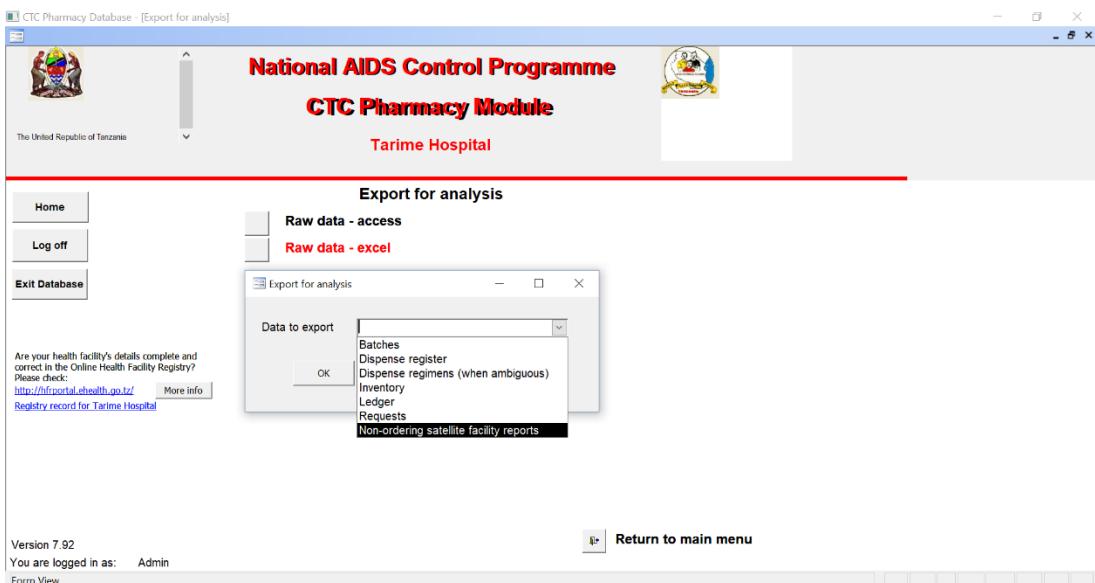
## 7.4. Export for Analysis

In some instances, one may need to conduct further analysis of the data collected in the pharmacy module database. In such instances, the following steps can be followed:

**Step 1:** Create first a new folder where you want to save the exported data for further analysis in the drive disk of your preference.

**Step 2:** Click the “Export for Analysis” tab on the home page

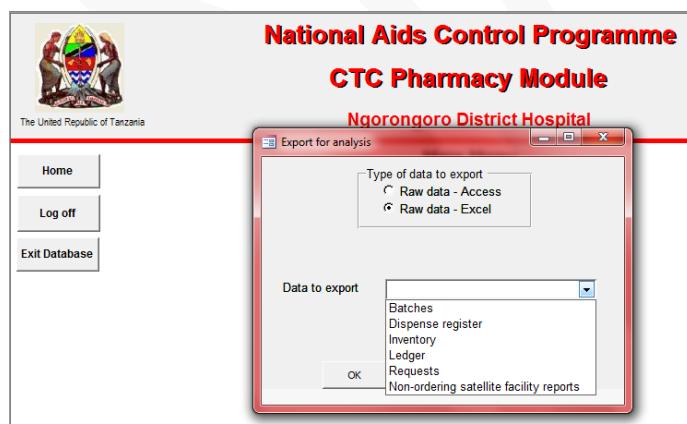
**Step 3:** A window will pop up asking you to specify if you want to export your data to Excel or Access.



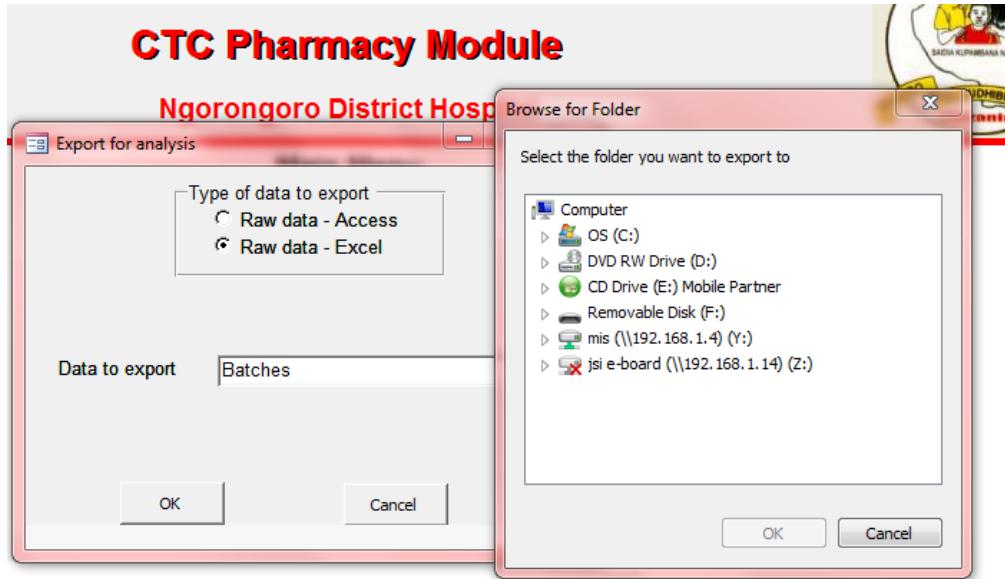
#### Step 4: Select export to Excel or export to Access

Once you specify the export format, another section will appear prompting you to specify the data to export. Currently, you are only able to export:

- Batches
- Dispensing register
- Dispense regimen (when ambiguous)
- Inventory
- Ledger
- Requests
- Non-ordering satellite facility report



**Step 5:** Find the folder that you created in order to save the exported file then click OK to export the data as seen below.



### Step 6: Open the file

You will need to go to the folder that you saved the export data and open the file. At this point, you may also transfer the data to any other analysis software.

# **CHAPTER 8: MONITORING AND EVALUATION**

## **8.1. Overview of Monitoring and Evaluation of pharmacy Module System**

### ***Objectives***

The objective of this chapter is to enable participant/health worker to:

- Define monitoring and evaluation in the pharmacy module system.
- Describe the importance of monitoring and evaluation of the pharmacy module system.
- Describe the process of collecting, flow and reporting of data for the pharmacy module system.
- Describe the roles and responsibilities of pharmacy module system providers in monitoring and evaluation at each level
- Identify the benefits of good record keeping, data dissemination, and use

### ***Definition of Terms***

#### **Monitoring:**

It is a routine tracking of priority information about a programme or service and its intended outputs and outcomes.

OR: A routine process of collecting data relating to performance indicators identified to achieve program objectives

OR: The process of tracking the status of the implemented program, project or activity

#### **Evaluation:**

Is an assessment of the value of a program or service through a detailed study of process, outcomes or impact.

OR: The systematic and objective assessment of an on-going or completed project, program or policy, its design, implementation, and results.

OR: The process of determining the worth or significance of an activity, policy or whether the set goals of an activity, program or project have or have not been met

#### ***Definition: Monitoring and Evaluation***

Monitoring and evaluation (M&E) tools measure the results of programs, services or policies.

Monitoring and Evaluation responds to the following questions

- To what extent are planned activities actually carried out?
- What services are provided, to whom, when, how often, for how long, and in what context?

- What is the quality of the services provided?
- What is the cost per unit of service?
- Has the Pharmacy Module increased access to ART, improved timely commodity ordering, and/or eliminated stock out events?

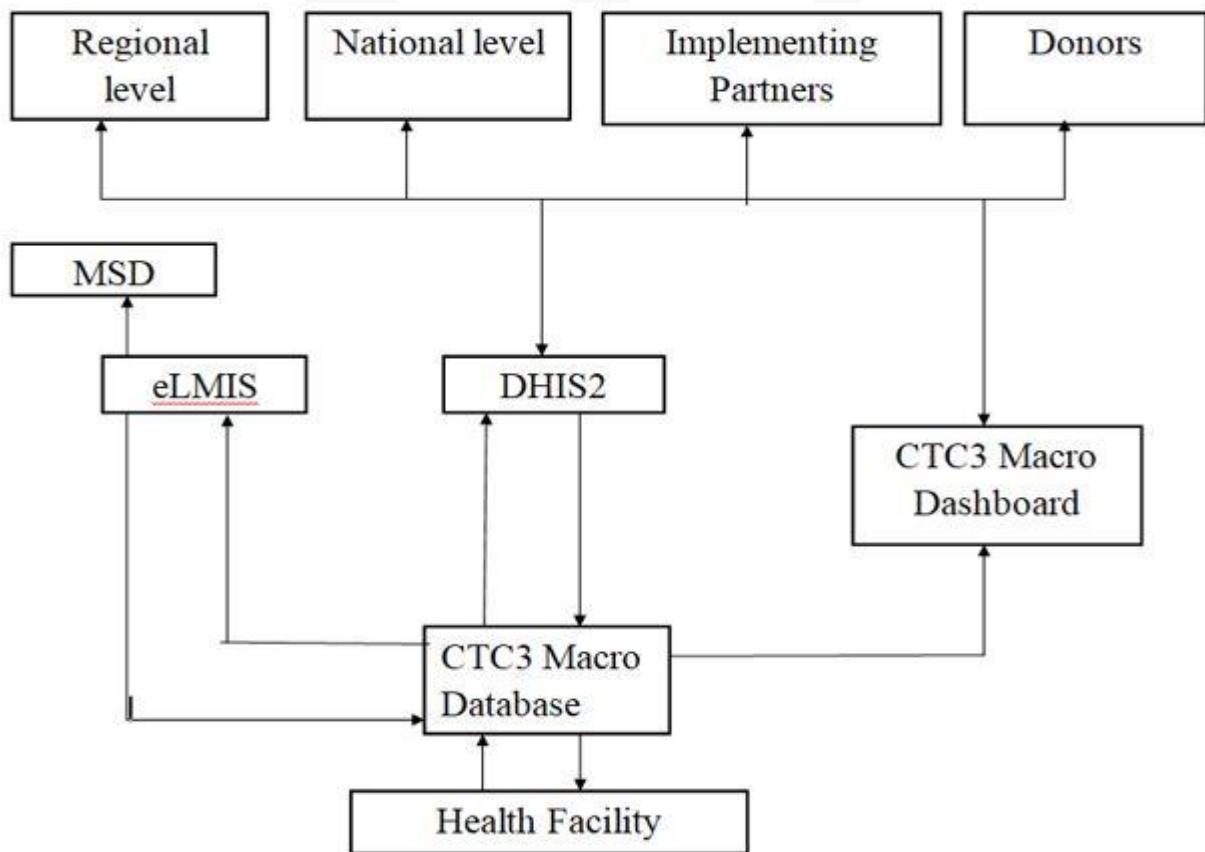
### **Rationale for Monitoring and Evaluating Pharmacy Module System**

The importance of monitoring and evaluating Pharmacy Module System include:

- Identifies areas of improvement in ARV and OIs' medicines dispensing
- Helps to ensure safe and effective HIV related Pharmaceutical interventions
- Informs decisions to maintain high-quality medicines ordering, dispensing and reporting services
- Enables planning for supplies to ensure uninterrupted service
- Provides guidance on lessons learned to improve health activities and planning
- Identifies weaknesses in data quality in pharmaceutical Module recording and reporting system

### **Data Flow and Feedback Mechanisms**

This diagram shows the process of data flow starting from the Health Facility to National level and from the National level to Health Facility.



Reporting of pharmacy data is done on a monthly, bimonthly and/ or quarterly basis depending on the destination at the national level (MSD for report and ordering and NACP for earmarked reports/information which is expected to aligned with illustrated information flow above)

Examples of reports that can be generated from the pharmacy module database include but not limited to; inventory reconciliations, unfinished batches, dispensing records, periodic Report and Request, and outcome reports and patient dispensing records.

### ***Pharmacy Module Data Collection and Reporting Tools***

**Data** is a plural of datum, originally a Latin noun meaning “something given.” in short it means “facts or pieces of information”. Pharmacy Module data collection and reporting tools include:

- CTC1 client Card
- Dispensing register
- R&R form and
- ARV/OIs Prescription form

### ***Roles and Responsibilities in Implementing Pharmacy Module System***

- i. CTC Dispensers
  - ii. Facility/CTC- Pharmacy In-charge
  - iii. District- District pharmacist
  - iv. Region- Region pharmacist
  - v. NACP- Pharmaceutical and Laboratory services unit
- i) **CTC Dispensers**
- a. Daily, fills “Dispensing register for each and every client he/she attends.
  - b. Understands prescriptions and dispenses medicines
  - c. Records all the medicines dispensed through dispensing registers
  - d. Prepares a monthly/quarterly R&R from his/her dispensing point and submits to the in-charges of the sections for verification
- ii. **Facility/CTC Pharmacy In-charge:**
- a) Supervises all dispensing services within his/her jurisdiction
  - b) Verifies the PHARMACY MODULE reports are prepared from sections he/she supervises
- iii. **Overall health facility-In-charge:**
- a) Supervises all HIV related services within his/her jurisdiction (within the facility)
  - b) Verifies the PHARMACY MODULE reports prepared by In-charge of the Pharmacy on behalf of the facility
  - c) Make one monthly, bimonthly, or quarterly report of the health facility and send another copy to DACC/ Council Pharmacist.

### **For quality and prompt flow of information:**

- The in-charge of the unit, ward, department, and clinic will ensure Pharmacy Module system is integrated into daily services: e.g. information regarding ARVs and OIs medicines should be included in the daily report.

**iv. Council Pharmacist:**

- Reviews R&R from health facilities, approve and enters into the e-LMIS
- Coordinated along with other interventions by the Council AIDS Control Coordinator (DACC) to enter facility summaries into DHIS2 which will be sent to the regional and national levels.
- Aggregate facility reports on ARV and OIs medicines making a district report.

**v. Regional Pharmacist:**

- Coordinated along with other interventions by the Regional AIDS Control Coordinator (RACC) to address issues related to ARVs and OI medicines.
- Aggregate all council summaries on ARV and OIs medicines to make a regional summary and compile one region report.

**vi. NACP- Pharmaceutical and Laboratory services unit**

**Coordinated and facilitated alongwith other NACP Units through Strategic Information Unit and Administration Unit through IT expert.**

- Will aggregate all the reports related to ARV and OIs medicines from the regions and prepare one national report.
- Will provide analysis of the ARVs and OIs medicines data together with the feedback report to regional, district, facility levels.

## **8.2. Records keeping, Data use and Dissemination Principles of Good Record Keeping**

### **What is Records Keeping?**

- Records** could be histories of one's activities, by entering data (manually in hard copy or electronic) in registers, database for example in pharmacy module and/ or putting data into clients' files.
- Record keeping** therefore involves; the maintenance of a history of one's activities, by entering data (manually in hard copy or electronic) in registers, databases such as pharmacy module and/ or, putting documents in clients' files.

### **Principles of Good Record Keeping**

- Understand the system you work in
- Be Honest,
- Accuracy in Recording

4. Be Non-offensive in what you record
5. Protect patients' confidentiality

### **Key Considerations**

- Legible handwriting, and competency with electronic systems,
- Signing into all new record entries,
- Date the entries and time as close to the actual time of the events as possible,
- Avoid **un-announced abbreviations** – only abbreviation that are agreed upon to be used within the system, should be used.
- Records **facts** only, not **speculations**
- Records should be made using indelible prints, to avoid accidental deletion,
- Records should be stored properly to facilitate retrievability.

### **Benefits of Good Recordkeeping**

- Maintain patient confidentiality
- Inform the patient that records will only be shared with other healthcare workers
- Easy to access for future reference
- Makes the M&E process easy and efficient if it is done regularly.

### ***Why data use and Dissemination?***



### **Data Management, Analysis and Utilization**

**Data Management-** Refers to administrative process by which the required data is acquired, validated, stored, protected, and processed, and by which its accessibility, reliability and timeliness is ensured to satisfy the needs of the data users.

**Data Analysis-** Refers to the process of evaluating data using analytical and statistical tool to discover useful information and aid in decision making.

**Data Utilization** – Refers to the use of the data in the decision making or during planning, improving the on-going programs using the current data.

Therefore:

- Data utilization and management starts with compiling the monthly summaries at every level
- Each level should be able to analyse, interpret and utilize the data for relevant improvement of services at their level
- The monthly summary form should be filled out by age group and sex for each indicator, unless otherwise indicated
- Double check the data to ensure it is accurate
- This is essential because it will help to highlight best practices and identify areas that need to be strengthened
- The completed forms will be submitted to the regional office and keep a copy at the district-level, for record

### **Data Storage**

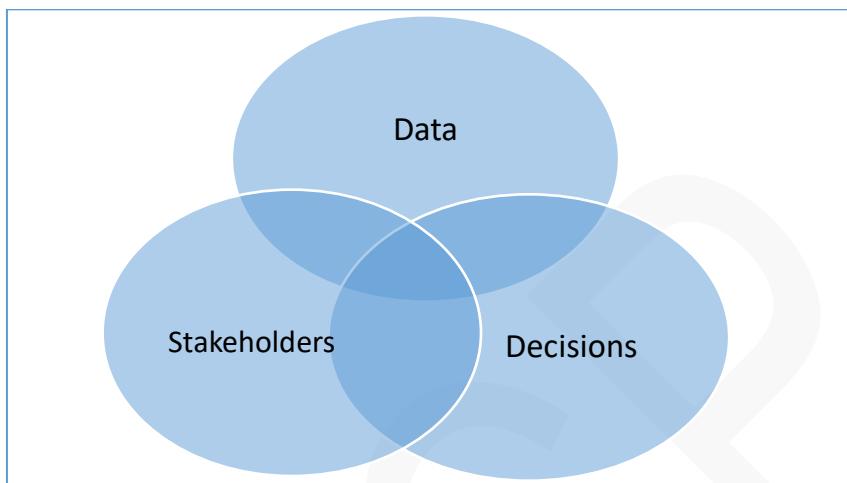
- Data collected at pharmacy module sites are confidential and shall be stored and treated with same level of protection as all other medical records
- Records will not be accessible to persons other than those who are authorized to do so
- Back up of the data shall be done periodically to avoid wastage of reports in case of interruptions
- Monthly data clients register and other related documents shall be stored at the facility as long permitted by MOHCDGEC
- National database to remain the only repository for all information forwarded from all pharmacy module databases to MOHCDGEC

### **Data storage and backup is important because:**

- Properly storing data is a way to safeguard your services statistics for further intervention.
- Data may need to be accessed in the future to explain various interventions.
- Other providers might wish to evaluate or use the results of your programs.
- Stored data can establish precedence in the event that similar work is to be implemented.

### **8.3. How can we ensure that information is being used to make diagnoses, treatment and inform decisions?**

#### **The Context of Decision Making**



#### **Who are Stakeholders?**

**Any person, group, or organization with a particular interest in a policy or program**

- Government agencies
- Policymakers
- Funding agencies
- Civil society

#### **Importance of Knowing Your Stakeholders**

- Different perspectives
- Different degrees of understanding
- Need /want different information
- Different intensities of interest
- Different roles in the decision-making process

#### **Decision making**

- Consider what the program wants, and the outcomes you have at hand
- Program management strategies that you had set and improvements you made
- Strategic planning: What did you plan to do?
- Advocacy and policy development: What policies in a country that supports what you are doing?

#### **Importance of Information Sharing and Feedback**

- Information needs to be shared:
- At timely and regular intervals

- Within, between, up, and down
- Sharing paves path between data collectors and users at all levels of the health Information system needs to be shared

### **Examples of feedback**

- Sharing information within a facility or district
- Sharing aggregated service provision data from facilities within a district or between regions
- Meetings between facility and implementing partner to review and discuss information.

### **Important Considerations for feedback**

- The information being shared
- Who will benefit from feedback
- The format of the feedback mechanism
- The forum in which the feedback will be shared
- How often the feedback will be provided
- How the feedback will move to the next level
- Document the process

In the service delivery setting, you may be called upon to work with others in the facility to develop a feedback mechanism. In this case, there are issues to consider that will improve the usefulness of the mechanism. They include:

- Consider the data being shared. What is the best way to summarize and present them?
- Consider who – or which stakeholders – will benefit from the information being shared. Is it your fellow providers? Facility management? District leadership? The recipients of the information will affect how you package it.
- What is the best format for your information? Will your feedback be written or verbal? Will it be a formal or informal feedback system?
- Consider the forum in which the feedback will be presented. Will it be presented at facility meetings? At district health management team meetings?
- How often will the feedback be provided? Weekly? Monthly? Quarterly?
- Consider how the information will move to the next level. For example, program managers always should review data before they send them up to the next level.
- Last, document the process for implementing and maintaining the feedback mechanism so that it will be standardized and shared with others.

### ***Key Issues in Use of Pharmacy Module Data in Different Levels (Health Facilities, Districts Council, Regional National)***

Besides ARV and OIs medicines data capturing and transfer to MSD for the report and ordering through ELMIS different levels facilitated by Macro database and DHIS2 should play crucial roles as follows:

- HCWs should ensure that registers and monthly summary forms are up-to-date, complete, accurate, and confidential.
- Each facility should enter data Pharmacy Module data on time and export/submit to high level (macro3, DHIS2 and eLMIS).
- Report feedback from all levels is very important.
- Occasionally data quality assessment/data verification is conducted in order to improve quality of data.

## **ANNEX 1**

### **System installation guide**

#### **Objectives**

In this manual, you will learn on how to install or upgrade the CTC2 database for patient monitoring version 10.06 on a server and client at the health facility.

The manual include how to:

- Install CTC2 database version 10 on a server machine / computer
- Install CTC2 database on a client machine/Computer
- Migrate data from CTC2 database access version 9 and pharmacy module version

#### **Overview of the CTC2 database**

The CTC2 database is an electronic system used routinely to capture patient level data at health facilities providing HIV services. CTC2 database is divided into two parts: Front-end which has the user interface, and Back-end which is data repository. The CTC2 database captures the information from the following sources: -

- HTS registers
- CTC2 cards
- HIV Exposed Infants cards (HEI)
- HIV CTC Pharmacy tools
- Recency tools

### **CTC2 Database Installation and Navigation**

#### **System Requirement:**

- The minimum operating system requirements for the CTC2 Version 10 are one of the following:
  - Windows Server 2019
  - Windows Server 2016
  - Windows Server 2012 R2
  - Windows Server 2008 R2 SP1
  - Windows Server 2008 SP2
  - Windows 10
  - Windows 8.1
  - Windows 7 Service Pack 1

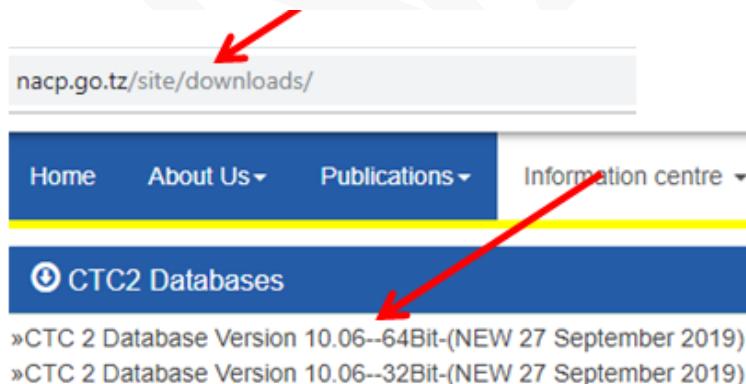
- Computer System type requirement (32-Bit and 64 Bit), to know your computer system type: - (Right-click **My Computer** and then click Properties. Under system if you see **64-bit Operating System, x64-based processor** listed, means you're running **the 64-bit version of Windows**. If "**32-bit Edition**" is listed under System, you're running **the 32-bit version of Windows**.)
- During installation, Setup creates temporary files on the system drive. Before you run Setup to install or upgrade SQL Server, verify that you have at least 10.0 GB of available disk space on the system drive for these files. This requirement applies even if you install components to a non-default drive.
- Memory: At least 10 GB.
- Processor Speed: Minimum 2.0 Ghz or faster.
- If you have more than one computer.
  - One computer must be defined as server.
  - Have a well configured Local Area Network.

**NOTE:** Microsoft Access is not a mandatory requirement. CTC2 databases come with its own Microsoft Access Runtime. If MS Access is missing in the target computer, the CTC2 database will use its runtime version.

## Installing CTC2 database

CTC2 database version 10 is freely available at NACP website, before downloading make sure you know your computer system type.

Visit NACP website [www.nacp.go.tz/site/downloads](http://www.nacp.go.tz/site/downloads). And download the software you have chosen

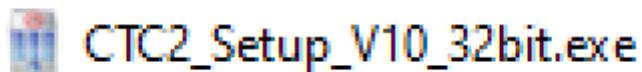


CTC2 database version 10 is made up of Microsoft Access front end and Microsoft SQL backend.

## CTC2 database installation steps.

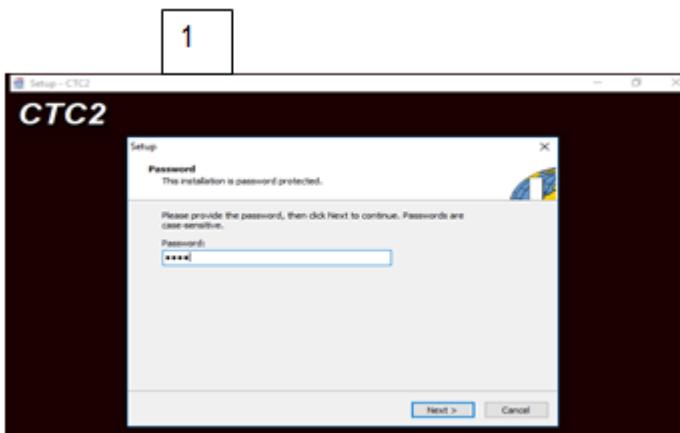
### Installing on a single computer or server machine

- Find the installation file that you have downloaded and double click on it

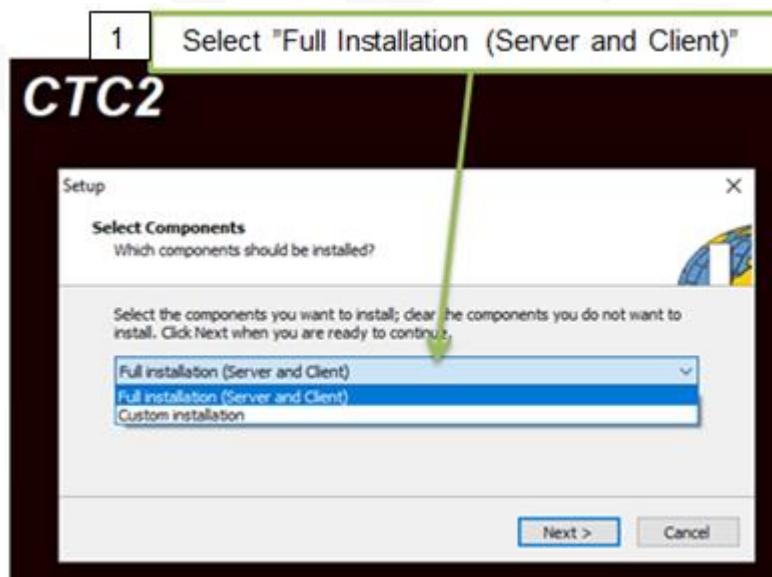


**Note:** - a window protection / security message might display, just click continue

- In setup or CTC2 window enter the installation password: "----" then click next  
*(Note: Password is case sensitive, please contact NACP to get the password to proceed with Installation)*



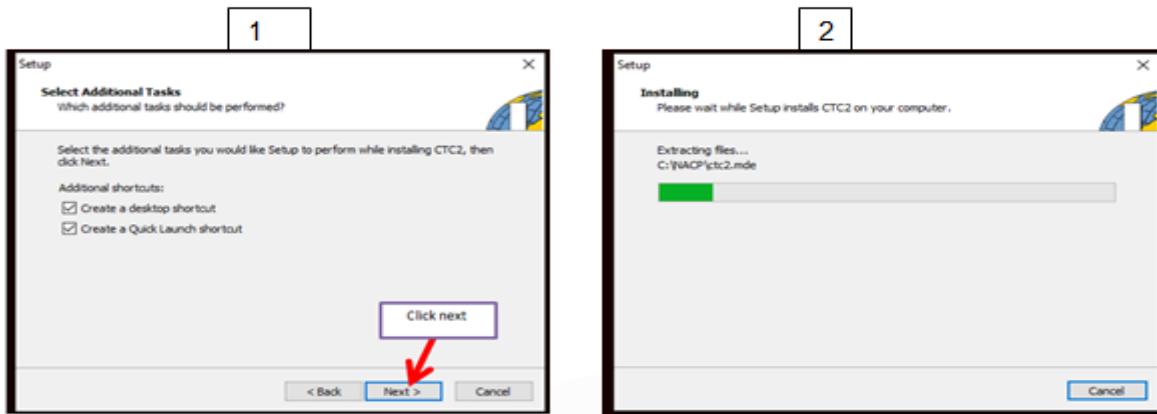
- A new window will pop up and follow the instructions



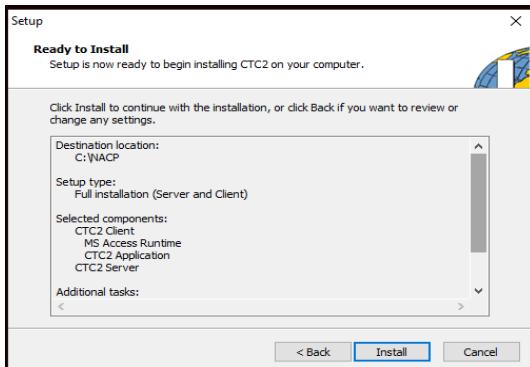
- Click next



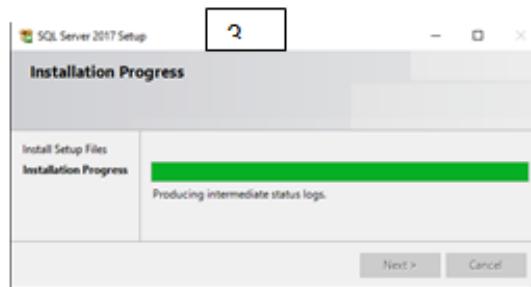
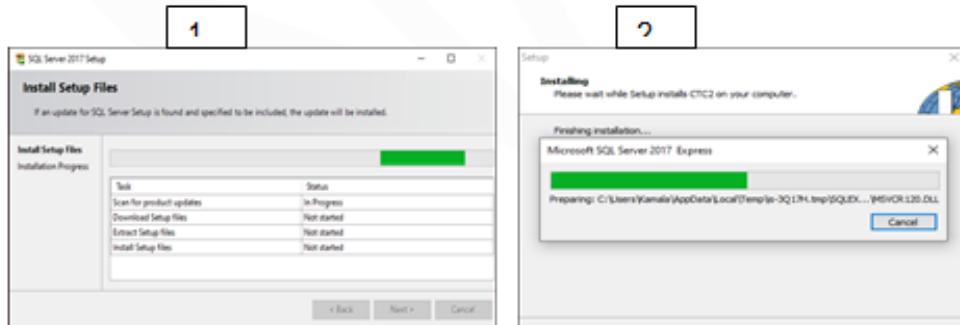
- You will land on a new window, select the appropriate and click next to continue



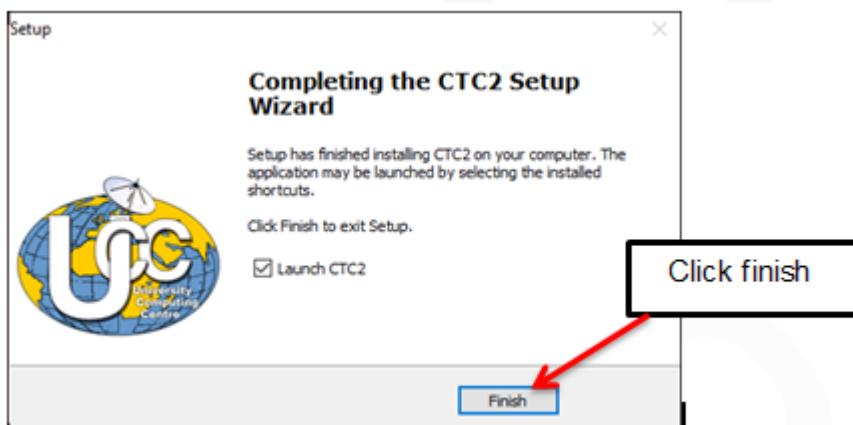
- Read the new landed message and click install



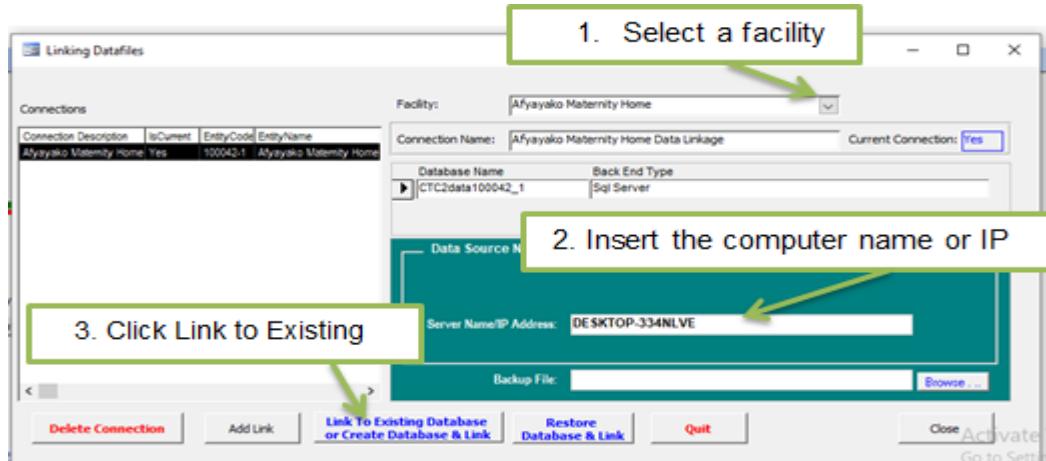
- During the installation process several windows will pop up and as captured below. The installer will install MS SQL in full, no internet connection needed at a time of installation



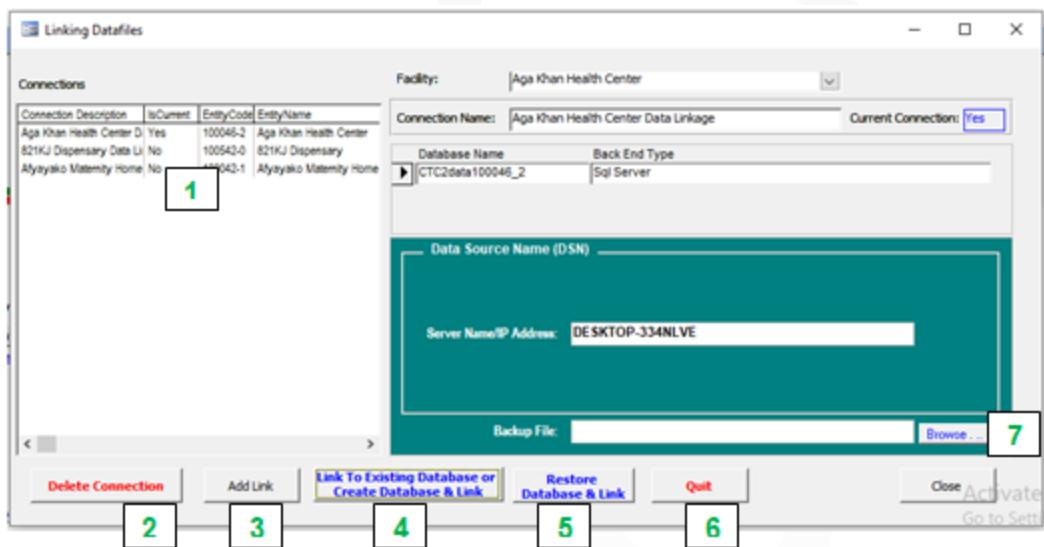
- After all the installation is complete then you will land on the below window.



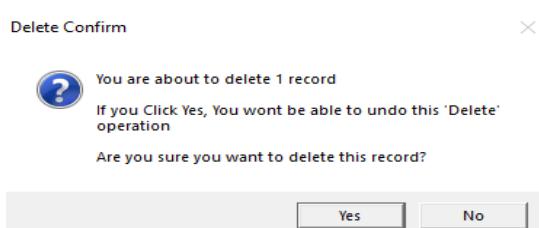
- After you click finish a link data file window will popup. User must select a facility name and enter the name of a computer/server or the IP (If its static) and click link (Illustrated below)



1. Select a facility and press Enter
2. Insert the computer name or server name and press enter
3. Click “Link to Existing Database or Create Database and Link” to link to a database



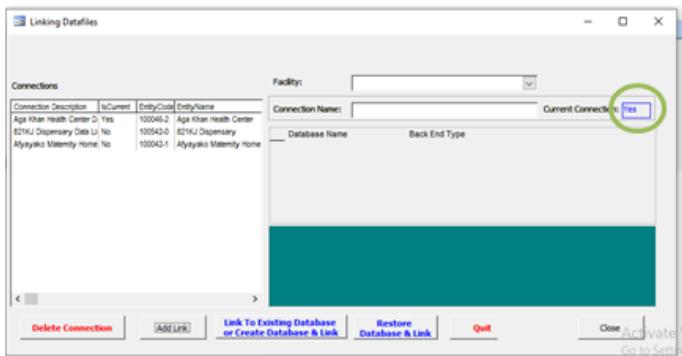
- 1** List of facility linked in the same computer
- 2** Click on number two to delete a connection, if you want to delete a connection that you have created ready, to the following, 1. Select the connection; click “Delete Connation” the database will display a window confirm by clicking “Yes” and an existing link will be deleted



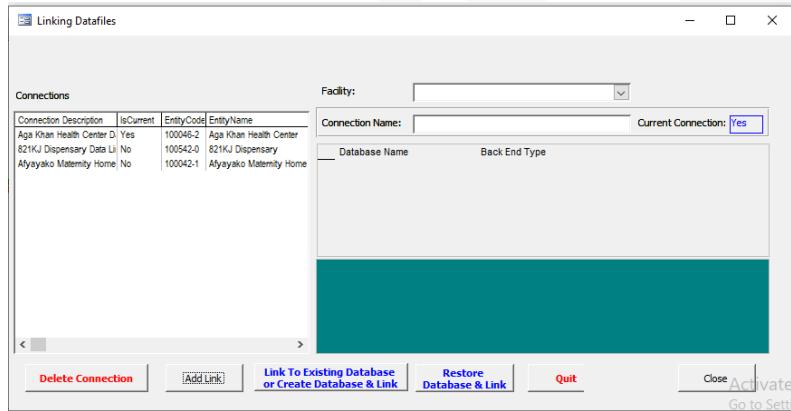
Note: you must have at least one connection

**3** To add a link click on box number 3, and you will land on a blank page as shown below, Select a facility, enter the server name/IP and click on “Link to Existing Database or create Database and link”.

The linked facility will display on the left corner on the linking database window, the active database will be marked yes on the current connection.



Note: Each time you need to activate an existing database do the following, select the facility on the left part named connections then click on Link to Existing Database or create database and link.



**4** Button for creating a new backend file or linking the existing file

**Link To Existing Database  
or Create Database & Link**

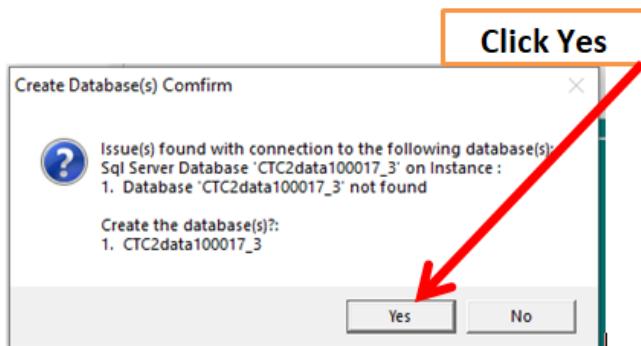
**5** Restore database and link, this button works properly if the user has a backup file created, to restore data a user will need to browse **7** for a file then click on the restore database and link

**Backup File:**  **Browse ...**

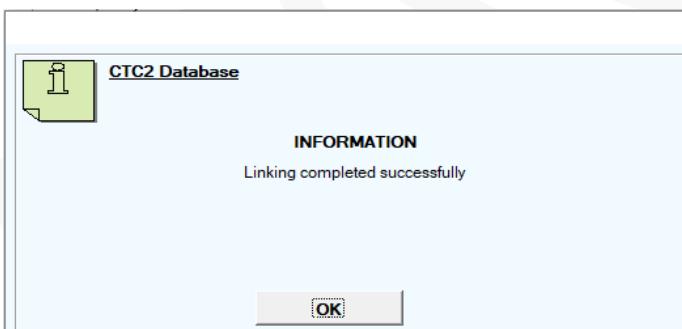
**Restore  
Database & Link**

**6** Click Quit closing / shutting down the database 

- Note: - after entering all the information correctly, and you have clicked link button, wait for a while until create database confirm window appears. If your region, district or facility is not in the lists you should contact DACC for NACP follow up.
- Read it carefully and select yes



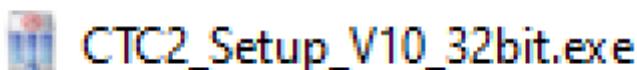
- After you have selected Yes a progress bar will appear, wait until you get the CTC2 database information window stating “Linking completed successfully” and click okay and click close on the close button as shown above (On linking data file screen shot).



- Note:- for the first time the database my take some minutes to display

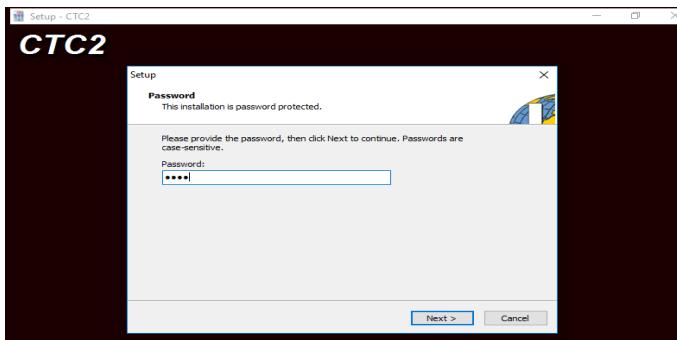
## Installing on a Client computer

- Find the installation file that you have downloaded and double click on it.

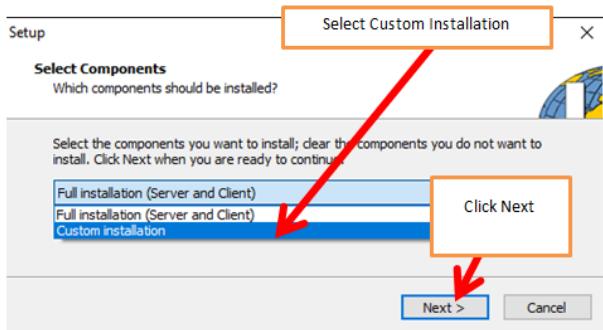


**Note:** - a window protection message might display, just click continue

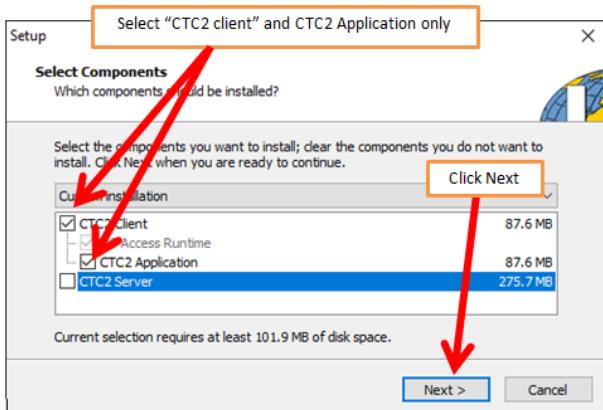
- In setup or CTC2 window enter the installation password: “-----” then click next  
(Note:Password is case sensitive)



- A new window will pop up and follow the instructions.



- A new setup window will pop up.



- A new setup window will pop up, it's about additional shortcuts, make sure all options are checked, and then click next.
- A set up window ready to install will pop up.  
Click install.

Two screenshots of the setup process. The left window, "Ready to Install", shows the destination location as "C:\NACP", setup type as "Custom installation", and selected components as "CTC2 Client", "MS Access Runtime", and "CTC2 Application". The right window, "Select Additional Tasks", shows two checked options: "Create a desktop shortcut" and "Create a Quick Launch shortcut". Both windows have "Next &gt;" buttons at the bottom right.

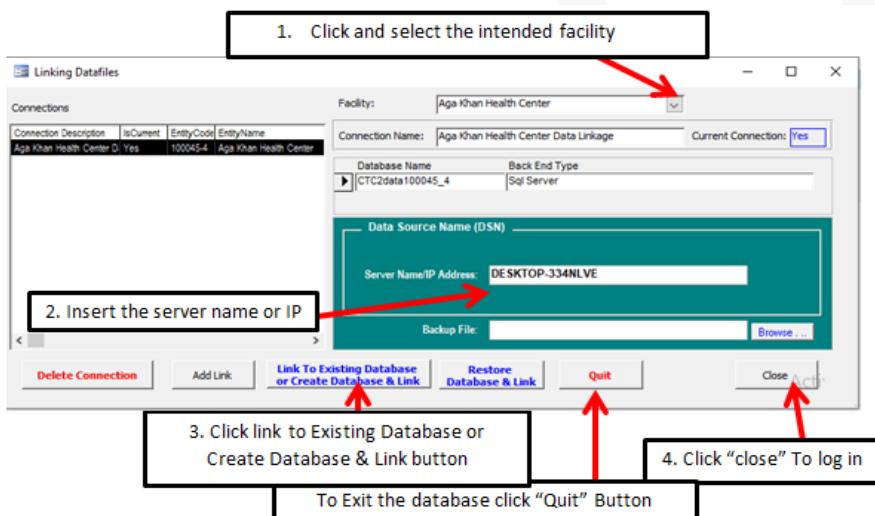
- Installation progress bar will pop up



- Click Finish to complete installation.

- For the first time the data link file will popup, fill in the proper information as illustrated below.

**NOTE:** - Make sure you have a local network with static IP or all computers are in the same workgroup and if your region, district or facility is not in the lists you should contact DACC for NACP follow up.



## Updating the CTC2 database

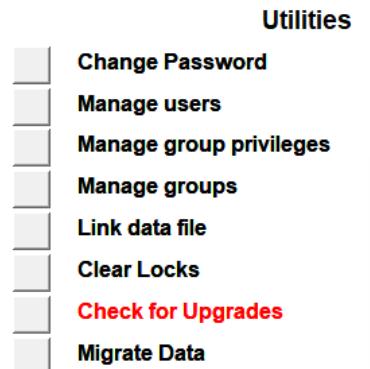
- Upgrading / Updating the CTC2 database can be done in two ways

### Directly from the internet and Manual Upgrading

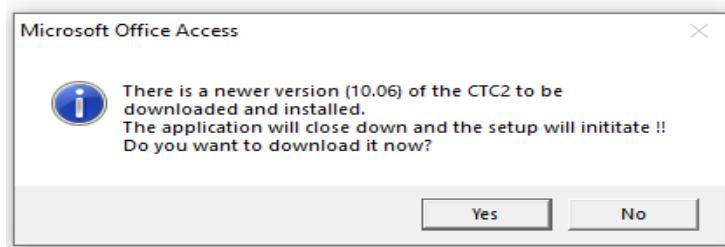
#### Directly from the internet (Make sure you're connected to the internet)

Open the CTC2 database

- Click the Utilities button
  - Click Check for upgrade button



If your Database is in lower version window will pop up



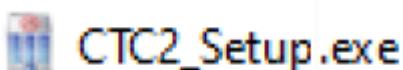
Click yes and follow the instructions

### Manual Upgrading

Download the CTC2 database

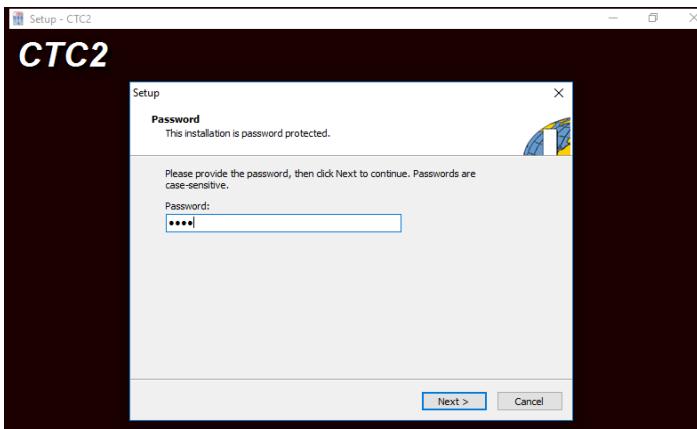
Close the CTC2 database.

- Find the installation file that you have downloaded and double click on it.

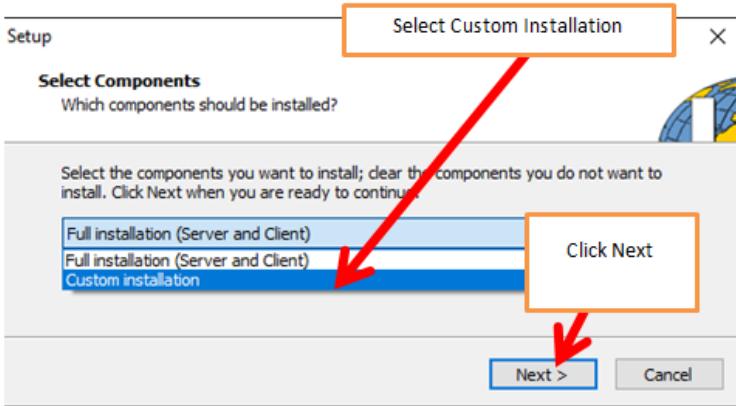


**Note:** - a window protection message might display, just click continue

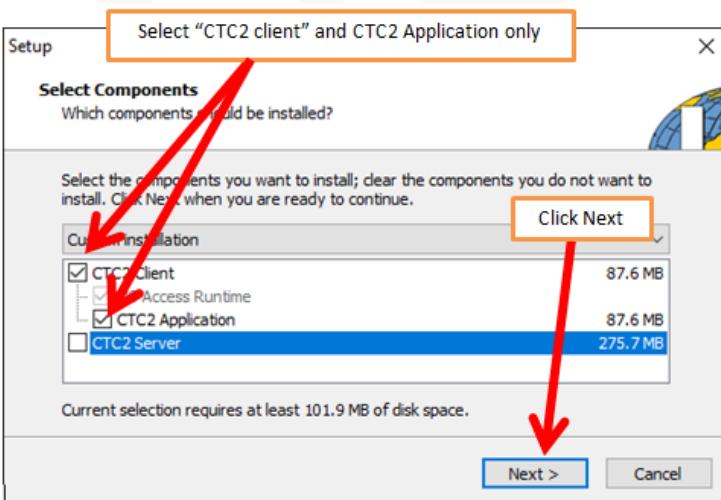
- In setup or CTC2 window enter the installation password: "----" then click next  
(Note: Password is case sensitive)



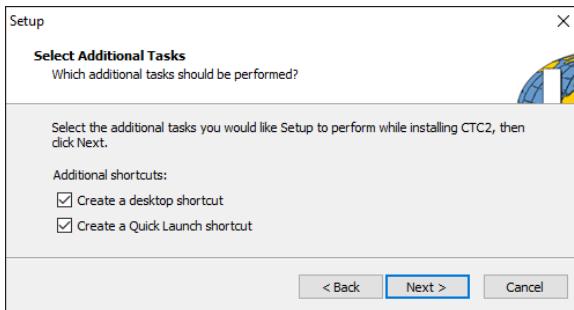
- A new window will pop up and follow the instructions



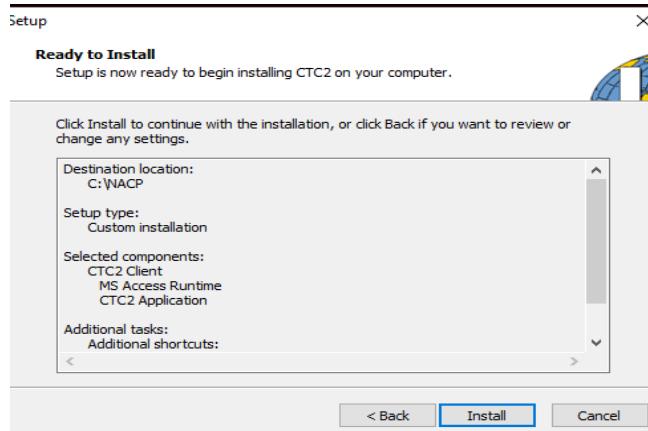
- A new setup window will pop up.



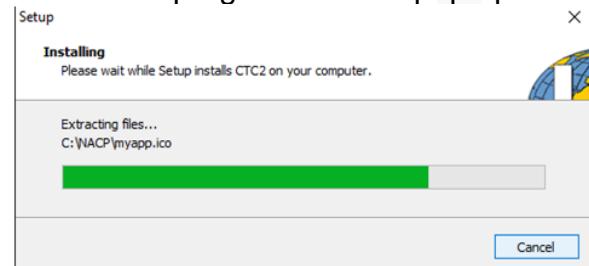
- A new setup window will pop up, it's about additional shortcuts, make sure all options are checked, and then click next.



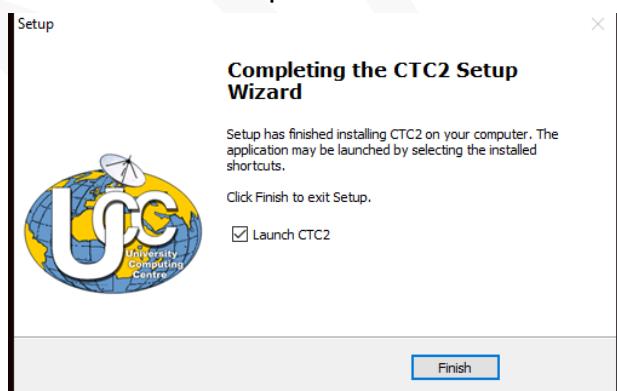
- A set up window ready to install will pop up. Click install



- Installation progress bar will pop up

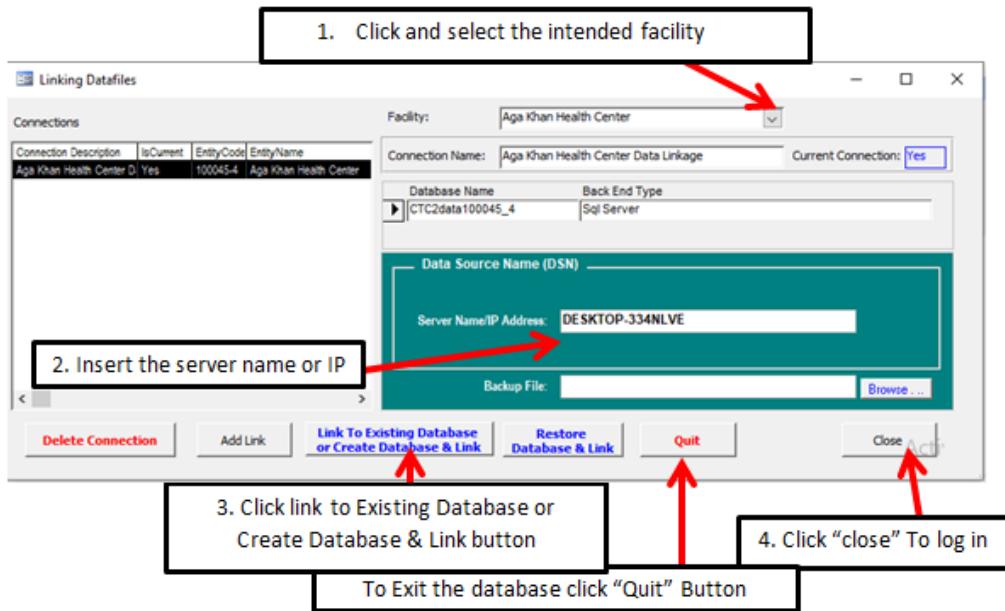


- Click Finish to complete installation.



- For the first time the data link file will popup, fill in the proper information as illustrated below

**NOTE:** - Make sure you have a local network with static IP or all computers are in the same workgroup and if your region, district or facility is not in the lists you should contact DACC for NACP follow up.



## Navigating through CTC2 database menus

### Opening the CTC2 database

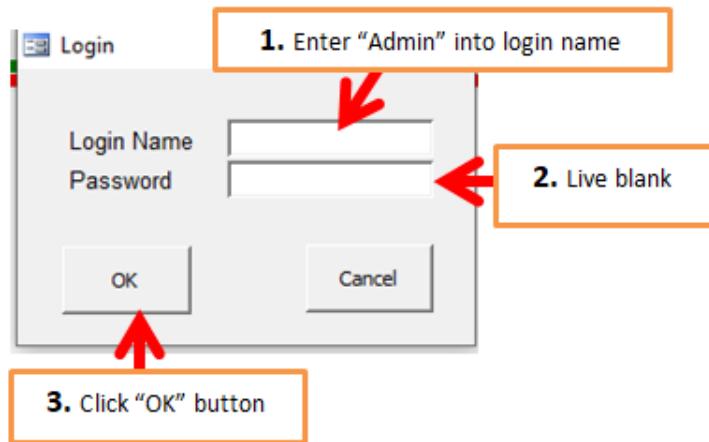
If “Launch CTC2” was checked during the final CTC2 Setup window, the database will open directly. Otherwise locate the CTC2 icon on your desktop and open or double click it.



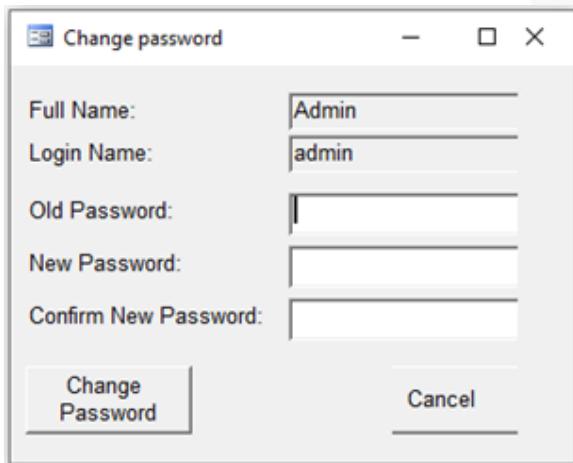
If you are logging in for the first time after installation, use login name “**admin**” and there is no password. After successful login, insert “admin” password for security purpose.

#### **NOTE:**

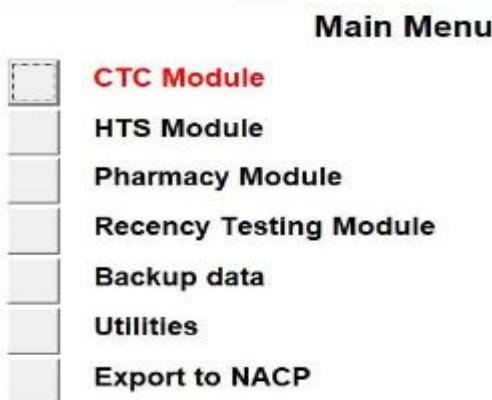
1. “**Admin**” user account won’t be able to enter data or save data, each CTC2 database user should have his/her account.



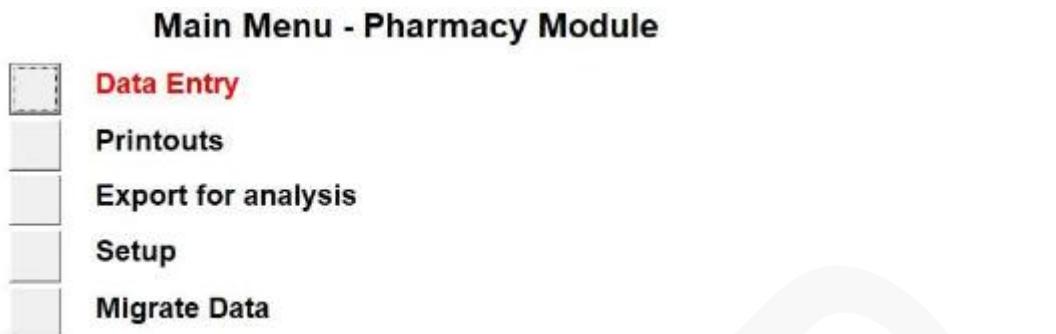
After successful login, for the first time and the user have used the default passwords the database will pop up a change password window for user to change the default passwords



After successful change of the password the main menu of the CTC2 database will pop up as shown below



A user will need to choose a module to work on, for our case we chose CTC Pharmacy Module and pharmacy module will display as show below

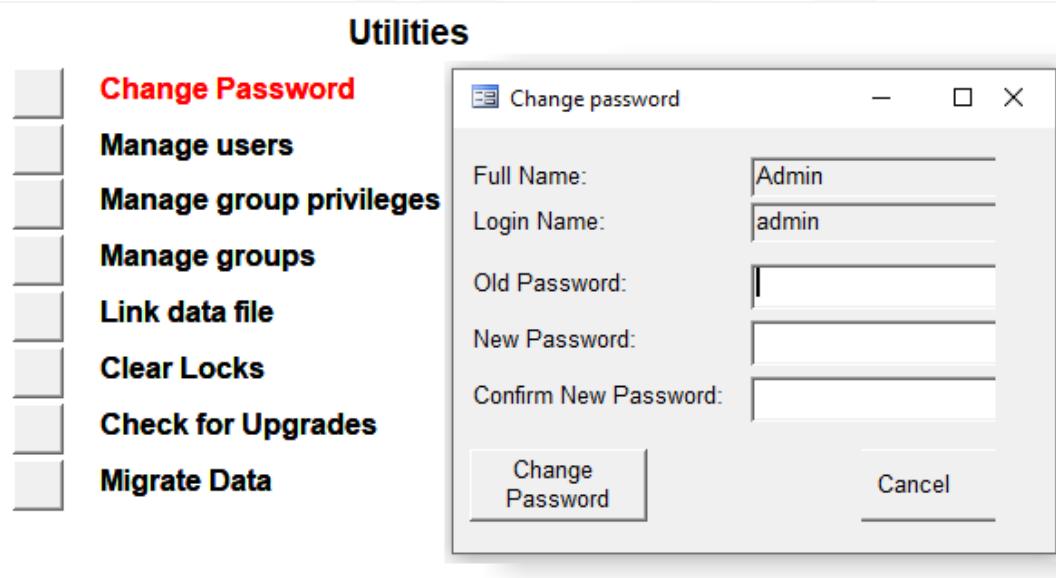


## Utilities

### Change user password

When user forgets login credentials, system administrator can reset user password under utilities → manage user.

New user can change password immediately when they login, with default password being “blank”. Current user can change password via Utilities>>change password.



### Manage Users

It is the role of the administrator to manage users. This means assigning user names and passwords to different people who have access to the system.

The administrator, can access the manage users form from the Utilities menu:

The screenshot shows a software interface for managing users. At the top, there are input fields: 'Enter full name' (with 'Full Name' and 'Login Name' sub-fields), 'Insert a user e-mail address' (with 'Email' sub-field), and 'Cell Phone Number'. Below these are two rows of user data:

Full Name	Login Name	Group	Email	Cell Phone Number	Receive Submission Alerts	Receive Clinical Alerts	Active
Admin	admin	Administrator with all privileges			<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Japhet Kamala	jkamala	Data Clerk	japhetkamala@pmd.co.tz	0787123115	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sinda Maganga	Maganga	Pharmacy Module	sindamaganga@pmd.co.tz	0087123116	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Maganga Walter	walter	Pharmacy Module	magangaw@pmd.co.tz	0007123117	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Below the table are several buttons and labels with callouts:

- 'Click to reset (delete) existing password'
- 'Click to select a group for user group'
- 'Insert Mobile number'
- 'Tick to allow user to receive clinical alert and submissions'
- 'Tick to activate or deactivate user'

**NOTE:** There should be at least one person in facility who has administrative privilege. If user(s) forget their login names or passwords it is necessary to contact the administrator to reset your password.

Administrator can change user(s) group access by choosing a new group next to their login details. Administrator can also update or correct users' full name and login name. If you change a login name you should inform the user, otherwise they will not be able to login using their old login name.

## Manage groups

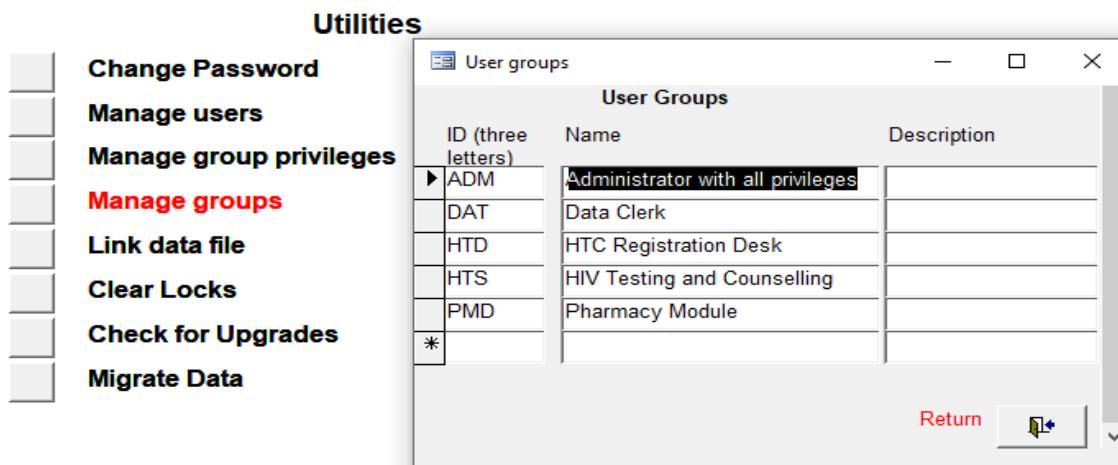
Administrator can manage groups by changing group names, creating a new group, write group description and assign group privilege.

The screenshot shows a software interface titled 'User groups'. On the left, there is a sidebar with the title 'Utilities' and several menu items: 'Change Password', 'Manage users', 'Manage group privileges', 'Manage groups' (which is highlighted in red), 'Link data file', and 'Clear Locks'. The main window is titled 'User Groups' and contains a table with the following data:

ID (three letters)	Name	Description
ADM	Administrator with all privileges	
DTE	Data entry clerk	
DTU	Data user - including patient data	
DTV	Data user - aggregate data only	
*		

## Manage group privileges

Administrator can create a group privileges that every user in a certain group can have access to.



## **. Back up data**

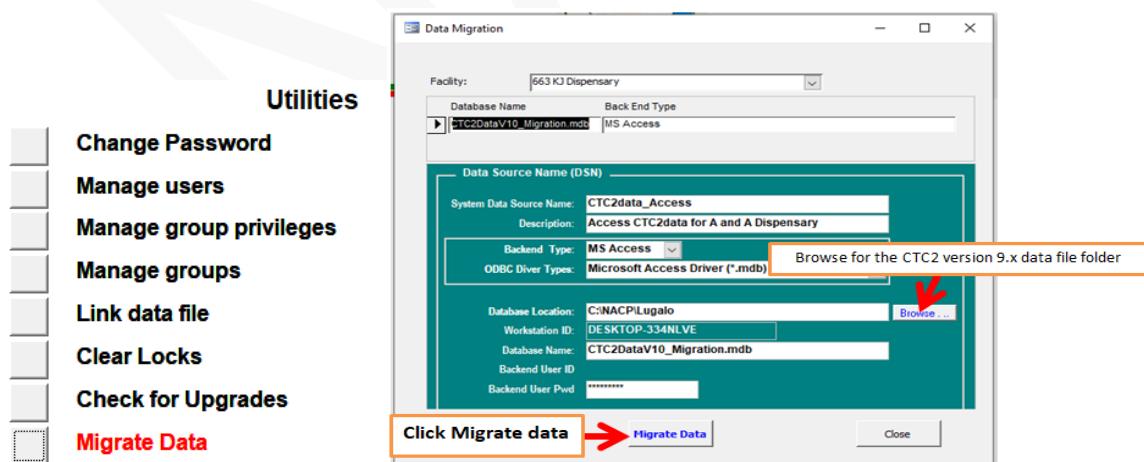
A manual backup has to be performed after every data entry activity. Backups must be stored in the external storage device (e.g. flash, external hard disk, CD) and kept secured offsite.

### **Backup**

### **Migrating data**

Migrating data from CTC2 database version 9.x to CTC2 database version 10 do the following

- Click Utilities,
- Select Migrate data (a data migration window will pop up)



Wait for migration data to complete

NOTE: - For assistance contact UCC or Kamala (UCC) for Assistance +255787123115