FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

MINISTRY OF HEALTH

GOOD DISPENSING PRACTICE AND PHARMACEUTICAL SUPPLY CHAIN MANAGEMENT

PARTICIPANT'S MANUAL

January, 2019

Addis Ababa,

Ethiopia

Approval Statement of the Ministry

The Federal Ministry of health of Ethiopia has been working towards standardization and institutionalization of In-service Trainings (ISTs) at national level. As part of this initiative the ministry developed a national in-service training directive and implementation guide to implement trainings in a well standardized manner. The directive requires all in-service training materials fulfill the standards set in the implementation guide to ensure the quality of in-service training materials.

Accordingly, the ministry reviews and approves existing training materials based on the IST standardization checklist annexed on the implementation guide.

As per the national IST quality control process, this national Good Dispensing Practice and Pharmaceutical Supply Chain Management training package has been reviewed using standardization review checklist and approved by the ministry in January, 2019.

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Foreword

The Federal Ministry of Health (FMOH) has been coordinating sector wide reforms that aim to improve equity and quality of health services. As part of these efforts, the ministry is also exerting concerted efforts to improve accessibility and quality of pharmaceutical products and services. It is widely known that; the sector is growing in line the overall growth and transformation plan of the country and the sector is being guided by the health sector transformation plan (HSTP). HSTP is the fifth-round implementation of such five-year plans.

The pharmacy service in the country has had several gaps, among these were: poor human resource planning, deployment and capacity building; poor infrastructure; lack of and poor implementation of service standards; poor counselling and low patient satisfaction; and lack of monitoring and evaluation framework. Likewise, the supply management of pharmaceuticals has had a number of challenges such as poor availability of essential pharmaceuticals and wastages of valuable resources.

To alleviate these problems, FMOH has been leading several interventions including Auditable Pharmaceutical Transactions and Services (APTS), clinical pharmacy, drug and therapeutics committee (DTC), and integrated pharmaceuticals logistics system (IPLS). There have also been numerous capacity building activities aimed at improving the knowledge, skills and attitude of pharmacy professionals.

This training manual is intended to build the capacity of professionals in good dispensing practice and supply chain management. It was designed as an answer to observed gaps. It is aimed at improving the dispensing service and availability of pharmaceuticals. The manual will also be used for orientation of employees at dispensing outlets and pharmaceutical stores. It will also be used as reference material for professionals working in these areas and as a teaching aid for colleges. I would like to take this opportunity to thank all who participated in the development of this training manual

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Acknowledgments

The Good Dispensing Practice and Pharmaceutical Supply Chain Management Training Manual has been developed to be used for training of professionals working at medicine dispensaries, pharmaceutical stores, drug supply management units at health facilities and respective administrative bodies. The manual has been designed and developed by a team of experts drawn from the Pharmaceuticals and Medical Equipment Management Directorate (PMED) at the Federal Ministry of Health (FMOH), Clinton Health Access Initiative (CHAI), and the Global Health Supply Chain Program- Procurement and Supply Management (GHSC-PSM) Project.

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The Ministry would like to thank the following experts for their unreserved efforts to materialize this important training intervention in a very short period of time. The materials are also standardized as per the national in-service training directive of FMOH.

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Acronyms

ADR/E	Adverse Drug Reactions/Events
AMR	Antimicrobial Resistance
APTS	Auditable Pharmaceutical Transactions and Services
BC	Bin card
DTC	Drug and Therapeutics Committee
DTP	Drug Therapy Problem
DU	Dispensing Unit
EMF	Ethiopian Medicines Formulary
FMOH	Federal Ministry of Health
GDP	Good Dispensing Practice
HCMIS	Health Commodities Management Information System
HSDP	Health Sector Development Plan
HSTP	Health Sector Transformation Plan
IFRR	Internal Facility Report and Resupply Form
IPLS	Integrated Pharmaceutical Logistics System
IV	Intravenous
LMIS	Logistics Management Information System
M & E	Monitoring and Evaluation
PFSA	Pharmaceuticals Fund and Supply Agency
RHB	Regional Health Bureau
RRF	Report and Requisition Form
SCM	Supply Chain Management
SOP	Standard Operating Procedure
SRC	Stock Record Card
STG	Standard Treatment Guidelines
VEN	Vital, Essential, and Non-essential
WoHO	Woreda Health Office
ZHD	Zonal Health Desk

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Introduction

The Federal Ministry of Health (FMOH) is leading a sector wide reform to improve accessibility and quality of health services. The country has successfully implemented four successive health sector development plans (HSDP) which have contributed a lot in addressing the priority healthcare needs of the population. The country has now embarked upon its fifth plan, namely, the health sector transformation plan (HSTP) which aims to transform the health sector so as to further improve equity, coverage and utilization of essential health services, improve quality of health care, and enhance the implementation capacity of the health sector at all levels of the system.

To have successful health programs, ensuring sustainable availability of medicines, medical supplies, and equipment and strengthened pharmacy service is very crucial. The country needs a robust pharmaceutical sector that can respond to the ever-increasing needs of the population for better services and improved availability of health commodities. To this end, different pharmacy service initiatives such as Auditable Pharmaceuticals Transaction and Service (APTS), Clinical pharmacy, Drug and Therapeutics Committee (DTC), Drug Information Service (DIS), Rational Medicine Use (RMU), etc. have been undertaken by different agency organizations.

The FMOH has recently conducted an assessment to look into the performance, gaps, and challenges of the pharmaceutical sector in meeting its objectives. The assessment has indicated that some facilities do not have pharmacy professionals at all. They do not have adequate space and organization in both dispensary and pharmaceutical store. There is generally, inconsistent Report and Requisition Form(RRF) reporting and poor utilization of Internal Facility Report and Resupply form (IFRR) and bin cards. With respect to the service provided, it was identified that dispensaries were not convenient for patient counselling. The medicine use counselling practices were also very poor. And prescriptions were poorly handled. There was also no special adherence follow up for chronic patients. Facilities do not conduct studies to measure dispensing practice.

Gaps identified in hospitals also include poor functionality of APTS, drug and therapeutics committee, clinical pharmacy, drug information services, and the like. Moreover, APTS is not

implemented in all emerging regions. There is also capacity building gap in the areas of APTS, SCM, DTC, and good dispensing practice and related areas.

Accordingly, building the capacity of staff working at hospitals and health centres was identified to be one of the interventions that ministry planned to implement to address these gaps. Two of the critical areas recognized to be urgent were dispensing practice and supply management activities. Hence this training manual was developed to address these areas. Specific knowledge and skills gaps were identified and used as input for the development of this good dispensing practice (GDP) and supply chain management (SCM) training. The training is envisioned to be as practical as possible and address real life issues faced by the dispensers, store keepers/managers, and pharmacy coordinators.

Core competency

At the end of this course, participants will acquire the following core competencies: -

- **Provide compassionate, respectful, and caring pharmaceutical service**
- **Promote rational use of medicines through implementing good dispensing practice, prevention and containment of AMR, and ensuring medicine safety**
- **Improve availability of pharmaceuticals through developing medicines list, using essential data items for informed SC decisions, and good storage practices**
- **Monitor and evaluate pharmaceutical services *and* supply chain management.**

Course Syllabus

Course Description

This five days training is designed for pharmacy dispensers, store managers/keepers and pharmacy coordinators who are involved in the supply planning, storage and dispensing of pharmaceuticals at health facilities. The training program contains relevant and practical topics that will enhance trainees' knowledge, skills and attitude on GDP and SCM.

Course Goal

The goal of this training course is to equip relevant professionals with knowledge, skills, and attitude on GDP and SCM with the ultimate aim of improving medicine dispensing practices and the supply management of pharmaceuticals at health facilities

Learning objectives

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

- Describe current dispensing practices
- Identify pre-dispensing activities
- Demonstrate skills to perform good dispensing practice
- Demonstrate good communication skills
- Apply basic medicine dispensing principles
- Report ADEs based on National recording and reporting system
- Discuss the prevention and containment of Antimicrobial Resistance
- Apply quantitative methods of measuring medicine use problem
- Describe supply chain management system
- Describe the components of logistics cycle
- Describe the national supply chain system
- Utilize indicators to improve SCM

Learning Methods & Activities

This course adopts a participatory and interactive training approach. The course is designed following adult leaning principles to maximize involvement of all participants. Accordingly, interactive presentations, individual reading and reflection, power point presentation, group activities, practice exercises, case studies, small and large group discussions, brainstorming, and demonstrations are used. Also, the training uses health facility visit to enhance practicality of the training.

Learning Materials and Resources

Material used as inputs for successful implementation of the training program include: flip chart, flipchart stand, markers, LCD projector, laptop computer, masking tape, pencil, eraser, participant manual, trainer guide, note book, pen, name tag, and paper.

Participant Selection Criteria

- Health professionals working at pharmacy dispensaries (OPD, IPD & emergency), logistics officer, store keeper and pharmacy head in the health facility
- Logistics and pharmacy service officers in WoHO, ZHD, and RHBs

Facilitator / Trainer Selection Criteria

Trainers for this course are selected based on these criteria:

- Minimum of first degree in pharmacy or logistics or supply chain related fields, plus
- Successfully completed training of trainers (TOT) courses on GDP and SCM.

Methods of Evaluation

A. Course Evaluation

- Daily evaluation
- End of training evaluation
- Participant oral feedback

B. Trainees Evaluation

- *Formative*
  - Direct observation with feedback
  - Group activities and presentations
  - Individual reflections for questions
- *Summative*
  - *For basic training*
    - Progressive assessment (trainee daily performance): -10%
    - Review of trainee's work using assignments -20%
    - Written exam (post-test) - 70%
  - *For TOT training*
    - *Progressive assessment*(trainee daily performance):- 5%
    - Review of trainee's work using assignments:- 5%
    - Teach back:- 10%
    - Posttest:- 80%

Certification Criteria

The participants of this training course will be evaluated during the course delivery and at the end of the course. During course delivery, participants understanding will be checked through group and individual exercises and interactive presentation. Pre- and post-tests will be provided to participants at the beginning and end of the course, respectively.

To earn certificate of successful completion, participants should full fill the below criteria:

- Participants who fully attended the course Score of 70% and above for the basic training and 80% for the TOT (80% post test and 20% continuous assessment)

Course Duration

Five days.

Suggested Class size

- The number of trainees per class will be 25.
- The number of trainers per class/event will be 4. Moreover, one facilitator shall be selected from the health facility to lead the site visit.

Training Venue

The training will be conducted at the nationally recognized IST centers/CPD providers having appropriate facilities, trainers, and attachment health facilities.

Course Schedule

Training Course on Drug and Therapeutics Committee for Professionals

Organized by: _____

Venue: _____   **Date:** _____

Training Course on Good Dispensing Practice and Pharmaceutical Supply Chain Management			
Date	Time	Session	Trainer/Facilitator
Day One	8:30- 9:00am	Registration	
	9:00- 9:15am	Welcome and Opening Speech	
	9:15 am- 10:00	Introductory Activities	
	10:00- 10:30am	Pre test	
	10:30- 10:45am	**Tea Break**	
	10:45-11:30 am	Current Dispensing Practices: Limitations, Root Causes, and Consequences	
	11:30- 12:30pm	Pre-dispensing Activities	
	12:30-2:00pm	Lunch	
	2:00- 3:00pm	Communication Skills for Dispensers	
	3:00-3:30pm	Introduction to Dispensing Steps, Receiving, Interpreting, and Evaluation of Prescription	
	3:30-3:45 pm	Tea break	
	3:45- 4:45pm	Introduction to Dispensing Steps, Receiving, Interpreting, and Evaluation of Prescription, Contd.	
	4:45- 5:30pm	Selection, Labelling, and Packaging of Medicines	
	5:30-5:40pm	Wrap-up and Daily Evaluation	
Day Two	8:30- 8:45am	Recap of Day One	
	8:45-10:15am	Counselling, Recording the Transactions, and Prescription Filing	
	10:15- 10:30am	Dispensing for In-patients	
	10:30- 10:45am	Tea Break	
	10:45- 11:30am	Dispensing for In-patients, contd.	
	11:30- 12:30am	Adverse Drug Events (ADEs)	
	12:30-2:00pm	Lunch	
	2:00- 2:30pm	Adverse Drug Events (ADEs)	
	2:30-3:30pm	Prevention and Containment of Antimicrobial Resistance (AMR)	
	3:30-3:45pm	Tea break	
	3:45- 4:30pm	Medicines Use Education	
	4:30-5:20pm	Measuring Medicine Use Problems	

	5:20-5:30pm	Wrap-up and Daily Evaluation	
Day Three	8:30- 8:45am	Recap of Day Two	
	8:45-10:30	Measuring Medicine Use Problems (**including visit to HFs)**	
	10:30- 10:45 am	Tea Break	
	10:45-12:30pm	Measuring Medicine Use Problems (**including visit to HFs**)	
	12:30-2:00pm	Lunch	
	2:00- 3:00pm	Pharmaceutical Ethics	
	3:00-3:30pm	Introduction to Supply Chain Management	
	3:30-3:45pm	Tea break	
	3:45- 4:30pm	Introduction to Supply Chain Management, Contd.	
	4:30-5:20pm	Logistics Cycle	
	5:20-5:30pm	Wrap-up and Daily Evaluation	
Day Four	8:30- 8:45am	Recap of Day Three	
	8:45- 9:30 am	Logistics Cycle	
	9:30 – 10:30 am	Developing Facility Specific Pharmaceuticals List	
	10:30-10:45am	Tea Break	
	10:45- 11:45 am	Developing Facility Specific Pharmaceuticals List, Contd.	
	11:45-12:30pm	National Supply Chain System	
	12:30-2:00pm	Lunch	
	2:00- 3:30pm	National Supply Chain System, Contd.	
	3:30- 3:45pm	Tea break	
	3:45-5:00pm	National Supply Chain System, Contd.	
	5:00-5:10pm	Wrap-up and Daily Evaluation	
Day Five	8:30- 8:45am	Recap Day Four	
	8:45-9:45am	Data Quality	
	9:45-10:30am	Pharmaceuticals Storage	
	10:30-10:45am	Tea break	
	10:45-11:30am	Disposal for Pharmaceuticals Wastes	
	11:30-12:30pm	Monitoring and Evaluation of Supply Chains	
	12:30 – 2:00pm	Lunch	

2:00– 9:00 pm	Monitoring and Evaluation of Supply Chains, Contd.	
3:00- 03:15pm	Tea break	
03:15-3:45pm	Pos ttest	
3:45-4:00pm	Course Evaluation	
4:00-4:30pm	Closing Speech and Certification	
End of Program			

Chapter One: Caring, Respectful and Companionate Healthcare Service

Chapter Description: This chapter is designed to equip healthcare professionals and senior management in health facilities to increase core competencies of compassionate, respectful, holistic, scientifically and culturally acceptable care for patients and their families.

Chapter Objective: By the end of this chapter the participants will be able to describe Compassionate, respectful and Caring (CRC) healthcare service delivery

Enabling Objectives: By the end of this chapter participants will be able to:

- Describe Compassionate, respectful and caring (CRC)

- List principles of health care Ethics

- Discuss components of compassionate care

- Explain principles of respectful care

- Discuss characteristics of Compassionate leader

Chapter Outline:

This chapter has the following outlines:

- Introduction to CRC
- Healthcare Ethics
- Compassionate care
- Respectful care
- Compassionate leader
- Summary

Allocated Time: 160 minutes

1. Introduction to Compassionate, Respectful and Caring (CRC)

1.1.1. Definition of CRC

Compassion (ፋህፋህ)

Is a feeling of deep sympathy and sorrow for the suffering of others accompanied by a strong desire to alleviate the suffering? Therefore, we can say it is being sensitive to the pain or suffering of others and a deep desire to alleviate the suffering.

Respectful (ተገልጋይንየሚያከብር)

Is the kind of care, in any setting, which supports and promotes, and does not undermine a person's self-respect, regardless of any differences?

Caring (ተንከባካቢ)

Caring is an intensification of the affective dimension of empathy in the context of significant suffering. It is coupled with effective interventions to alleviate that suffering.

Compassionate, respectful and caring (CRC) - means serving patients, being ethical, living the professional oath, and being a model for young professionals and students. It's a movement that requires champions who identify with their profession and take pride by helping people.

1.1.2. Why CRC a Transformation agenda?

Helping health professionals' to become compassionate and respectful practitioners remains a major challenge for the healthcare. Compassionate and respectful care is not only morally and financially essential, but it is required in many countries through national legislation and/or national health policy.

The notion that healthcare services must be expanded beyond the prevention of morbidity or mortality is only one aspect of the agenda. It must encompass respect for patients' basic human rights, including respect for patients' autonomy, dignity, feelings, choices, and preferences. It must include choice of companionship wherever possible.

Taken from the United Nations human rights declaration, 'All human beings are born free and equal in dignity and rights.' The Ethiopian constitution of human rights article 25 and 26 states that the rights to equality and privacy.

In the Ethiopian health system, there are many health professionals who have dedicated their entire career to public service and are respected by the public they serve. However, a significant proportion of health professionals see patients as just 'cases' and do not show compassion. Lack of respect to patients and their families is also a common complaint.

A three-year report of the Ethics Committee and relevant documents in Addis Ababa showed that 39 complaints were related to death of the patient and 15 complaints were about disability. The committee verified that 14 of the 60 claims had an ethical breach and/or negligence and other study also indicated that forwarding bad words, shouting on patients, mistreatment, insulting and hitting of clients are some of unethical practices showed by the health professionals.

Studies showed the need for CRC

- Lack of role models in many health facilities.
- Measuring the worth of a profession by how much it pays.
- Senior physicians cancel their outpatient clinics without informing their patients.
- Elective surgeries get cancelled.
- Admitted patients are by default getting the care they need from relatives.
- Nurses, for various reasons, have limited their role to providing injections and securing IV lines.
- Proper counseling during dispensing of drugs is also becoming a rarity.
- The quality of lab tests and the quality assurance process that lab professionals have to take before issuing results is not practiced as expected.
- Lack of compassion, respect and care is the common source of grievances in health facilities.

1.1.3. The Benefits of CRC

Table 1.The benefits and beneficiaries of Compassionate and Respectful Care

Beneficiaries	Who	How
First	Patients	• When health professionals are compassionate, patients are less anxious • Adherence to medical advice and treatment plans • Compassionate care correlates positively with both prevention and disease management. Diabetic patients, for example, demonstrate higher self-management skills when they self-report positive relationships with their providers • Hostile emotional states in patients delay the healing processes • Quality of health professionals –patient communication with increased physical functioning, emotional health and decreased physical symptoms of pain in patients
Second	Health Professionals	• Health care Professionals satisfaction with their relationships with patients can protect against professional stress, burnout, substance abuse and even suicide attempts • Burnout is strongly associated with poorer quality of care, patient dissatisfaction, increased medical errors, lawsuits and decreased expressions of compassion • Participation in a mindful communication associated with short-term and sustained improvement in well-being and attitudes associated with patient care • A major predictor of patient loyalty • When health professionals are compassionate, they achieve earlier and more accurate diagnoses because the patient is better able to reveal information when he or she feels emotionally relaxed and safe • Respect from the client/patients • Health professionals will find their work more meaningful and gratifying
Third	Students	• Good role modeling is essential for students • Increased motivation to be CRC health professionals
Fourth	Health care facilities	• Patient satisfaction will rise • Quality of health care will be improved • Lower malpractice suits • Staff will be more loyal to their hospital or health care system • Patient adherence to treatment will rise • Resources can be conserved • Greater employee satisfaction and reduced employee turnover.

1.1.4. National Strategy and Approach of CRC

The development of caring, respectful and compassionate health workers requires a multi-pronged approach in order to make CRC as a culture, self-driven inner motive and a legacy that the current generation of practitioners leaves to their successors.

NATIONAL STRATEGY AND APPROACHES FOR CRC

- *Reforming the recruitment of students for health science and medicine programs.*
- *Improving the curriculum of the various disciplines.*
- *Ownership and engagement of the leadership at all levels of the system.*
- *Inspirational leadership that aims to create an enabling environment.*
- *National, regional and facility level ambassadors.*
- *An advocacy campaign through mass media will also be launched to project positive images of health professionals.*
- *Patients and the general public will also be engaged in this movement.*
- *An annual health professional recognition event will be organized*
- *Putting in place a favorable legislative framework to reinforce CRC which would include regulation on patients' rights and responsibilities (PRR)*
- *Measurement of health care providers on CRC*
- *Comprehensive projects will be designed.*
- *Conducting national assessment related to CRC.*
- *Provision of continuous CRC trainings.*
- *Engagement and ownership of professional associations.*
- *Experience sharing from national and international best practices*.

1.1. Healthcare Ethics
1.1.1. Principles of health care ethics

Individual reflection

❖ What is ethics?

❖ What is health care ethics?

Time: 5 Minutes

Ethics:

Ethics is derived from the Greek word *ethos*, meaning custom or character. Ethics is the study of morality, which carefully and systematically analyze and reflect moral decisions and behaviors, whether past, present or future. It is a branch of philosophy dealing with standards of conduct and moral judgment.

Health care ethics:

It is a set of moral principles, beliefs and values that guide us to make choices about healthcare. The field of health and healthcare raises numerous ethical concerns, including issues of health care delivery, professional integrity, data handling, use of human subjects in research and the application of new techniques.

Ethical principles are the foundations of ethical analysis because they are the viewpoints that guide a decision. There are four fundamental principles of healthcare ethics.
1. Autonomy
2. Beneficence
3. Non-malfeasance
4. Justice

1. **Autonomy**

Autonomy is the promotion of independent choice, self-determination and freedom of action. Autonomy implies independence and ability to be self-directed in one's healthcare. It is the basis of self-determination and entitles the patient to make decisions about what will happen to his or her body.

Case one:

A 49-year-old client with diabetic finding came with right foot second finger gangrene to a hospital. The surgeon decided that the finger should be removed immediately. But the patient refused the procedure.

Question: How should the surgeon handle this case?

Time: 5 Minutes

2. Beneficence

Beneficence is the ethical principle which morally obliges health workers to do positive and rightful things. It is "doing what is best to the patient". In the context of professional-patient relationship the professionals are obliged to always and without exception, favor the wellbeing and interest of their patients.

Case two:

Ms. X was admitted to adult surgical ward with severe excruciating right flank pain with presumptive diagnosis of renal colic. Nurse Y was the duty nurse working that day. The physician who saw her at OPD did not write any order to alleviate the pain.

Question: What should the attending nurse do for Ms. X?

Time: 5 Minutes

3. Non-malfeasance

The principle refers to "avoid doing harm". Patient can be harmed through omitting or committing interventions. When working with clients, healthcare workers must not cause injury or distress to clients. This principle of non-malfeasance encourages the avoidance of causing deliberate harm, risk of harm and harm that occurs during the performance of beneficial acts. Non-malfeasance also means avoiding harm as consequence of good.

Case Three:

Mr "X" is admitted to internal medicine ward with cardiac failure. The physician admitted Mr "X" and prescribed some medication which should be given regularly by the ward nurse. A nurse in charge of the ward does not give a patient medication timely and appropriately.

Question: What should the ward nurse do for Mr "X"

Time: 5 Minutes

4. Justice

Justice is fair, equitable and appropriate treatment. Justice refers to fair handling and similar standard of care for similar cases; and fair and equitable resource distribution among citizens. It is the basis for treating all clients in an equal and fair way. A just decision is based on client need

and fair distribution of resources. It would be unjust to make such decision based on how much he or she likes each client.

Example:

- Resource scarcity is the common issue in healthcare settings. For example, there may be only one or two neurosurgeons and many patients on the waitlist who need the expertise of these neurosurgeons. In this case we need to serve patients while promoting the principle of justice in transparent way. Example, the rule of first come first serve could be an appropriate rule.
- Justice requires the treatment of all patients equally, irrespective of their sex, education, income or other personal backgrounds.

1.1.2. Confidentiality and informed consent.

Confidentiality

Confidentiality in healthcare ethics underlines the importance of respecting the privacy of information revealed by a patient to his or her health care provider, as well the limitation of healthcare providers to disclose information to a third party. The healthcare provider must obtain permission from the patient to make such a disclosure.

The information given confidentially, if disclosed to the third party without the consent of the patient, may harm the patient, violating the principle of non-malfeasance. Keeping confidentiality promotes autonomy and benefit of the patient.

The high value that is placed on confidentiality has three sources:

- *Autonomy:* personal information should be confidential, and be revealed after getting a consent from the person
- *Respect for others:* human beings deserve respect; one important way of showing respect is by preserving their privacy.
- *Trust:* confidentiality promotes trust between patients and health workers.

The right of patient to confidentiality

- All identifiable information about a patient's health status, medical condition, diagnosis, prognosis and treatment and all other information of a personal kind must be kept confidential, even after death. Exceptionally, family may have a right of access to information that would inform them of their health risks.

- Confidential information can only be disclosed if the patient gives explicit consent or if expressly provided for in the law. Information can be disclosed to other healthcare providers only on a strictly "need to know" basis unless the patient has given explicit consent.

- All identifiable patient data must be protected. The protection of the data must be appropriate to the manner of its storage. Human substances from which identifiable data can be derived must also be protected.

Exceptions to the requirement to maintain confidentiality

- Routine breaches of confidentiality occur frequently in many healthcare institutions. Many individuals (physicians, health officers, nurses, laboratory technicians, students, etc) require access to a patient's health records in order to provide adequate care to that person and, for students, to learn how to practice care provision.

- Care providers routinely inform the family members of a deceased person about the cause of death. These breaches of confidentiality are usually justified, but they should be kept to a minimum and those who gain access to confidential information should be made aware of the need not to spread it any further than is necessary for descendants benefit. Where possible, patients should be informed ahead that such a breach might occur.

- Many countries have laws for the mandatory reporting of patients who suffer from designated diseases, those deemed not fit to drive and those suspected of child abuse. Care providers should be aware of the legal requirements to be able to disclose patient information. However, legal requirements can conflict with the respect for human rights that underlies healthcare ethics. Therefore, care providers should look carefully at the legal requirement to allow such an infringement on a patient's confidentiality and assure that it is justified.

Case four:
An HIV-positive individual is going to continue to have unprotected sexual intercourse with his spouse or other partners.
Question: 1. How do you manage such an individual?
            2. Discuss situations that breach confidentiality.
Time: 5 Minutes

Ethiopia Council of ministers' regulation 299/2013, Article 77 Professional Confidentiality

Informed Consent

Informed consent is legal document whereby a patient signs written information with complete information about the purpose, benefits, risks and other alternatives before he/she receives the care intended. It is a body of shared decision making process, not just an agreement. Patient must obtain and being empowered with adequate information and ensure that he/she participated in their care process.

For consent to be valid, it must be voluntary and informed, and the person consenting must have the capacity to make the decision. These terms are explained below:

A. *Voluntary*: the decision to either consent or not to consent to treatment must be made by the person him or herself, and must not be influenced by pressure from medical staff, friends or family. This is to promote the autonomy of the patient.

B. *Informed*: the person must be given all of the information in terms of what the treatment involves, including the benefits and risks, whether there are reasonable alternative treatments and the consequences of not doing the treatment. This will help to avoid harm—patients may harm themselves if they decide based on unwarranted and incorrect information.

C. *Capacity*: the person must be capable of giving consent, which means they understand the information given to them, and they can use it to make an informed decision.

General principle of Informed consent

Should be given by a patient before any medical treatment is carried out. The ethical and legal rationale behind this is to respect the patient's autonomy and their right to control his or her life. The basic idea of personal autonomy is that everyone's actions and decisions are his or her own. The principles include:

1. Information for patients
2. Timing of consent process
3. Health Professionals responsibility for seeking consent
4. Decision making for incompetent patients
5. Refusal of treatment

Ethiopia Council of minister's regulation 299/2013, Article 52. Patient's informed consent

1.1.3. Preventive ethics in the aspect of CRC

What is preventive ethics?

Preventive Ethics is a systematic application of ethical principles and values to identify and handle ethical quality gaps, dilemmas, challenges and errors to appropriately and fairly. It could be carried out by an individual or groups in the health care organization to identify prioritize and systematic address quality gaps at the system level.

Why is preventive ethics important for CRC healthcare workers?

First and foremost, the CRC health workforce, patients, families and the community at large should have a common understanding that the experience of illness and the practice of medicine lead to situations where important values and principles come to conflict and ethical dilemmas and challenges arise everywhere. Moreover, the CRC health worker should always understand the context in which She/he operates (like the services, the clients, the providers, values, norms, principles, culture, religions, socio-economic-geographic…) as the way in which ethical dilemmas are handled vary from case to case and place to place.

Preventive ethics helps the CRC health workforce to predict, identify, analyze, synthesize and manage ethical dilemmas, challenges and errors to make the appropriate and fair decisions. Hence, preventive ethics enhances honesty and transparency between healthcare workers, patients, families and relevant others to make a deliberated joint decision. Moreover, it inspires mutual understanding and trust amongst the healthcare provider, recipient and the community at large.

Preventive ethics brings all efforts together productively and leads to the satisfaction of clients, providers and the community even if when the decisions are sometimes painful and outcomes are negative.

1.1.4. Ethics and law as enablers of CRC

The Relation between Ethics and Law

	Individual reflection
	❖ What is the relationship between ethics and law?
	Time: 5 Minutes

Ethics as discussed in the previous sessions, is considered as a standard of behavior and a concept of right and wrong beyond what the legal consideration is in any given situation.

Law is defined as a rule of conduct or action prescribed or formally recognized as binding or enforced by a controlling authority. Law is composed of a system of rules that govern a society with the intention of maintaining social order, upholding justice and preventing harm to individuals and property. Law systems are often based on ethical principles and are enforced by the police and Criminal justice systems, such as the court system.

Ethics and law support one another to guide individual actions; how to interact with clients and colleagues to work in harmony for optimum outcome; provision of competent and dignified care or benefits of clients/ patients. Ethics serves as fundamental source of law in any legal system; and Healthcare ethics is closely related to law. Though ethics and law are similar, they are not identical.

Often, ethics prescribes higher standards of behavior than prescribed by law; and sometimes what is legal may not be ethical and health professionals will be hard pressed to choose between the two. Moreover, laws differ significantly from one country to another while ethics is applicable across national boundaries.

The responsibilities of healthcare professionals and the rights and responsibilities of the patient is stipulated in legal documents of EFMHACA like regulation 299/2013, directives and health facility standards.

1.2.   Principles and Standards of Compassionate Care
1.2.1. Qualities of compassionate care

Compassion can be defined as: "sensitivity to the suffering of self and others with a deep wish and commitment to relieve the suffering".

Developing more compassion can be a way to balance emotions to increase the well-being of patients, healthcare professionals and facilitation of healthcare delivery. For patients, compassion can help prevent health problems and speed-up recovery. Compassion can improve staff efficiency by enhancing cooperation between individuals and teams and between patient and healthcare professionals.

Qualities of Compassionate Care

Figure 1: Qualities of compassion

Role play on qualities of compassionate care:
Instructions:
One participant will take the role of a healthcare provider and another participant will take the role of a mother [with limited mobility] of a sick child with a feeding problem. Other participants should observe and note the discussion.
Roles
Healthcare provider
A mother (with limited mobility) of a sick child:

Situation:
A mother with limited mobility brings her 3-month-old baby girl with cough and fever to the outpatient clinic. The healthcare provider seemed tired. By the time the mother enters the examination room, he was talking with his subordinate about last night's football game. He had already

noticed her but did not let her to sit. Her child was crying and she was trying to quiet her.

All of a sudden the healthcare provider shouted loudly at the mother to quiet her child or they would have to leave.

While waiting and calming her child, the mother told the healthcare provider that her child is very sick and needs an urgent care. While facing to his friend, the healthcare provider told the mother that he would see her child in five minutes.

After waiting for 10 minutes, the healthcare provider started to examine the child and felt sad about the condition of the child; apologized to her for having let her wait so long. The healthcare provider evaluated the child gently, gave the child a proper treatment, reassured the mother, and the child went home better.

Discussion Questions

Did the health provider demonstrate the characteristics of compassion?

If not, what are the areas /conversation that show poor characteristics of compassion?

If yes, what are the areas /conversation that show good characteristics of compassion?

Time allowed: 30 minutes

1.2.2. Elements of compassionate care

According to researches the key elements of compassionate care has categories, each contains theme and subthemes.

1. **Virtue:** It is described as ''good or noble qualities embodied in the character of the health care provider

2. **Relational space:** is defined as the context and content of a compassionate encounter where the person suffering is aware of and is engaged by, the virtues of the health care provider.

The category of relational space comprised two themes.

- Patient awareness which describes the extent to which patients intuitively knew or initially sensed health care provider capacity for compassion.

- Engaged care giving which refers to tangible indicators of health care provider compassion in the clinical encounter that established and continued to define the health care provider-patient relationship over time.

3. **Virtuous Response:** It is the "Enactment of a virtue toward a person in suffering," and it is both an individual category and an overarching principle of care that functions as a catalyst to the three core categories of compassionate care giving: ''**seeking to understand, relational communicating, and attending to needs**'' The category of virtuous response contain three broad themes within it:

   - **Knowing the person** refers to the extent to which healthcare providers approached their patients as persons and view their health issues and suffering from this point of view.
   - **Seeing the person as priority** involves healthcare providers' ability to priorities patient needs, setting aside their own assumptions and healthcare system priorities in the process.
   - **Beneficence** refers to healthcare providers wanting the best for the patient, informing the three more targeted core categories of compassionate care giving.

4. **Seeking to Understand:** refers to healthcare providers trying to know the patient as a person and his or her unique needs.

The need to understand a person's desires and tailor his or her care is identified by most patients as a fundamental feature of compassion.

   - Seeking to Understand the Person.
   - Seeking to Understand the needs of the Person

5. **Relational Communication:** is an important element of compassion identified by patients consisting of verbal and nonverbal displays conveyed by the healthcare provider's engagement with the person suffering.

There are four specific themes and associated subthemes that convey compassion within clinical communication:

   - **Demeanor** (''being'')
   - **Affect** (''feeling for'')
   - **Behaviors** (''doing for'')
   - **Engagement** (''being with'')

Attending to Needs

It refers to ''a timely and receptive desire to actively engage in and address a person's multi-factorial suffering''. Attending to patients' needs has three interrelated themes:

- **Compassion-Related Needs:** refers to the dimensions of suffering that patient feel compassion: physical, emotional, spiritual, familial and financial.
- **Timely** refers to addressing suffering in a ''timely'' manner.
- **Action** refers to the initiation and engagement of a dynamic and tangible process aimed at alleviating suffering. Compassion is more action.

1.2.3. Principles of compassionate care

Individual reflection
- ❖ **What are the principles of compassionate care?**
  Time Allowed: 5 Minutes

The universal principles of compassion will help us know one another in a more meaningful way where we discover one another respectfully. They create the conditions that allow a person who is suffering to experience the healing power of compassion.

1. **Attention:** is the focus of healthcare provider. Being aware will allow the healthcare provider to focus on what is wrong with a patient; or what matters most to the patient.

2. **Acknowledgement:** is the principle of what the healthcare professional says. The report of the examination or reflection on the patient's message. Positive messages of acknowledgment are buoyant; they let someone know that you appreciate them as a unique individual.

3. **Affection:** is how healthcare providers affect or touch people. Human contact has the ability to touch someone's life. It is the quality of your connection, mainly through warmth, comfort, kindness and humor. Affection brings joy and healing.

4. **Acceptance**: is the principle of being with mystery – how you stand at the edge of your understanding or at the beginning of a new experience, and regard what is beyond with equanimity. It is the quality of your presence in the face of the unknown, in the silence. Like the sun in the north at midnight, acceptance welcomes the mysteries of life and is at peace with whom we are and where we are, right now. It is the spirit of Shalom.

- The principle of acceptance is: being at peace with the way things are allows them to change.

1.2.4. Threats to compassionate care

There are factors preventing compassion and compassionate behavior for individual members of staff, teams and units and health facility. Most research discusses compassion at the individual level. In general, the most common threats for compassionate care are:

- **Compassionate fatigue:** Physical, emotional and spiritual fatigue or exhaustion resulting from care giving that causes and a decline in the caregivers' ability to experience joy or feel and care for others.
  - ➢ A form of burnout, a kind of "secondary victimization" what is transmitted by clients or patients to care givers through empathetic listening.

- **Unbalanced focus between biomedical model (clinical training) and person:** Effective clinical care is clearly fundamentally important, but human aspects of medicine and care must also be valued in training and in terms of how to be a good healthcare professional.

- **Stress, depression and burnout:**
  - ➢ **Self-reported stress** of health service staff is reported greater than that of the general working population.
  - ➢ **Burnout** (or **occupation burnout**) is a psychological term referring to general exhaustion and lack of interest or motivation to work.

- **Overall health facility context:** Attention by senior managers and health facility boards to achieve financial balance that affects priorities and behaviors of staff in health facility.

Addressing Threats of compassion
- Overcoming compassion fatigue
- Developing an inner compassionate self
- Compassion to yourself
- Teaching compassion to professionals through, training and education
- Dealing with staff stress and burnout
- Dealing with wider health facility context

1.3. Respectful care
1.3.1. Definition of Concepts of Respectful and Dignified Care

Think Pair Share	1. Can you share us your experience with regard to respect and dignity in the health care setting? 2. What does respectful care mean to you? **Time Allowed: 10 minutes**

Definition of Dignity (ልእልና)

The word dignity originates from two Latin words: 'dignitus' which means merit and 'dignus' meaning worth. It is defined from two perspectives:

- Dignity is a quality of the way we treat others.
- Dignity is a quality of a person's inner self.

Types of Dignity

There are four types of dignity: dignity of human being, personal identity, merit and moral status.

1. Dignity of human being

This type of dignity is based on the principle of humanity and the universal worth of human beings their inalienable rights-which can never be taken away.

2. Dignity of personal identity

This form of dignity is related to personal feelings of self-respect and personal identity, which also provides the basis for relationships with other people.

3. Dignity of merit

This is related to a person's status in a society.

4. Dignity of moral status

This is a variation of dignity of merit, where some people have a personal status because of the way they perceived and respected by others.

Attributes of Dignity

There are four attributes of dignity:

1. **Respect:** self-respect, respect for others, respect for people, confidentiality, self-belief and believe in others
2. **Autonomy:** having choice, giving choice, making decisions, competence, rights, needs, and independence

3. **Empowerment**: Feeling of being important and valuable, self-esteem, self-worth, modesty and pride

4. **Communication (may be verbal or non-verbal):** explaining and understanding information, feeling comfort, and giving time to the patients / families

Definition of Respect (አክብሮት)

- It is a term which is intimately related to dignity
- It is probably the most important action verb used to describe how dignity works in practice.

The action meanings of the word respect are:

- Pay attention to
- Honoring
- Avoiding damage e.g. insulting, injuring
- Not interfering with or interrupting
- Treating with consideration
- Not offending

People can vary by their skills, educational background, gender, age, ethnicity, and experiences. But, as human being, all are entitled to get dignified and respectful care. Every human being must respect others and get respect from others. Therefore, dignity is brought to life by respecting people:

- Rights and freedoms
- Capabilities and limits
- Personal space
- Privacy and modesty
- Culture
- Individuals believes of self-worth
- Personal merits
- Reputation
- Habits and values

Dignity and respect in the health care setting

Treating clients with dignity implies treating them with courtesy and kindness, but it also means:

- Respecting their rights
- Giving them freedom of choice
- Listening and taking into consideration what they say and
- Respecting their wishes and decisions, even if one disagrees.

Treating clients with dignity implies being sensitive to clients' needs and doing one's best for them, but it also means:

- Involving them in decision making
- Respecting their individuality
- Allowing them to do what they can for themselves and
- Giving them privacy and their own personal space

1.3.2. Principles of Respectful Care

Individual reflection

❖ Think of a person who gave you the most respectful care/service.

- Describe the situation?
- What are the qualities of that person?
- What did you value most?

Time: 5 Minutes

The principles of respectful care guide actions and responsibility of care providers in ensuring dignified care for their service users. Dignified care has seven core principles.

- Recognize diversity and uniqueness of individuals
- Uphold responsibility to shape care
- Meaningful conversation
- Recognize the care environment
- Recognize factors affecting dignity
- Value workplace culture
- Challenge dignity barriers

1.3.3. Characteristics of Disrespectful Care

The situation where you received disrespectful care?

1. Describe the incident?

2. What was your reaction?

Time: 5 Minutes

The Seven categories of Disrespect and abuse

Category	Example
Physical Abuse	Slapping, pinching, kicking, slapping, pushing, beating,
Non-consented care	Absence of informed consent or patient communication, forced procedures
Non-confidential care	Lack of privacy (e.g. Laboring in public or disclosure of patient information
Non-dignified care	Intentional humiliation, rough treatment shouting, blaming, treating to withhold services laughed at patients, provider did not introduce themselves, patients not called by their names throughout the interaction.
Discrimination based on specific patient attributes	Discrimination based on ethnicity, age, language, economic status, education level, etc.
Abandonment of care	Women left alone during labor and birth Failure of providers to monitor patients and intervene when needed
Detention in facilities	Detention of patients/family in facility after delivery, usually due to failure to pay

1.3.4. Factors affecting Respectful Care Provision

Individual reflection

1. What do you think hinders you from providing respectful care in your health facility?

2. What are the factors that facilitate provision of respectful care in your health facilities?

Time: 5 Minutes

Different Factors have a significant impact on hindering or facilitating the provision of respectful care service. These factors can be broadly classified in to three major groups; Health care environment, staff attitude & behavior and patient factors

Positive attributes of the physical environment which helped health professional to provide dignified care are related to aspects maintaining physical and informational privacy and dignity, aesthetically pleasing surroundings and single sex accommodation, toilet and washing facilities. Aspect of the environment that maintain physical and informational privacy are listed below

- **Environmental privacy** (for example curtains, doors, screens and adequate separate rooms for intimate procedures or confidential discussions (auditory privacy).
- **Privacy of the body**: covering body, minimizing time exposed, privacy during undressing and clothing are some of the enabling factors to ensure bodily privacy done by health professionals.
- **Aesthetic aspects** of the physical environment (for example space, color, furnishing, décor, managing smells); and the provision of accommodation, toilet and washing facilities
- **Managing peoples in the environment:** such as other patients, family and ward visitors/public contribute positively to maintain dignity in the health
- **Adequate mix and proficient Staffing**: adequately staffed with appropriate number and skill mix, as high workload affects staff interactions, and have strong leaders who are committed to patient dignity.

Physical environment which hinders health professional form providing respectful care are related to the overall health care system, lack of privacy, restricted access to facility /service and lack of resources. Aspect of the environment that hinders the provision of respectful care are listed below,

- **The healthcare System:** Shortage of staff, unrealistic expectations, poorly educated staff, 'quick fix' attitude, low wage, pay 'lip service' to dignity, low motivation, lack of respect among professionals, normalization/tolerance of disrespectful care, lack of role model, management bureaucracy and unbalanced staff patient ratio and skill mix.

- **Lack of privacy:** Lack of available single rooms, bath rooms and toilets without nonfunctional locks, use of single rooms only for infectious cases and lack of curtains or screens
- **Restricted access to facility/service:** Badly designed rooms, inadequate facilities (e.g. toilets, bath rooms), Cupboards with drawers that does not open, toilet and bath rooms shared between male and females.
- **Lack of resource:** Run out of hospital, gowns and pyjamas, Lack of medical equipment and supplies

The A, B, C, of respectful health care, is a tool designed to consider the attitudes and behaviors of health care providers

A –Attitude

Ask yourself:

- How would I be feeling if I was this person?
- Why do I think and feel this way?
- Are my attitudes affecting the care I provide and, if so, how?
- Are my personal beliefs, values, and life experiences influencing my attitude?

Action to be taken

- Reflect on these questions as part of your everyday practice.
- Discuss provider attitudes and assumptions and how they can influence the care of patients with the care team.
- Challenge and question your attitudes and assumptions as they might affect patient care
- Help to create a culture that questions if and

B- Behavior

- Introduce yourself. Take time to put the patient at ease and appreciate their circumstances.
- Be completely present. Always include respect and kindness.
- Use language the patient/family can understand

C-Communication

- Communication revolving around the patient's needs.
- Patient centered communication with defined boundaries
- Objectivity is an important attribute when assessing the clients' needs

Ten Mechanisms to mitigate threats to respectful care -

1. Support clients with same respect you would want for yourself or a member of your family
2. Have a zero tolerance of all forms of disrespect
3. Respect clients' right to privacy
4. Maintain the maximum possible level of independence, choice, and control
5. Treat each client as an individual by offering personalized care
6. Assist clients to maintain confidence and a positive self esteem
7. Act to alleviate clients' loneliness and isolation
8. Listen and support clients to express their needs and wants
9. Ensure client feel able to complain without fear of retribution
10. Engage with family members and care givers as care partners?

1.4. Compassionate leader
1.4.1. Quality of Compassionate Leadership

Group exercise
Discuss in a group of 4-5 and share your experience to the larger group.

- What does it mean for you to lead, and manage?
- Can you give an example of a leader whom you know in your professional or personal life? What makes him or her good leader for you?
- Do you know of any individuals in high positions or authority who demonstrate compassionate, respectful and caring practices when they deal with their staff and clients?

Duration: 20 minutes

Brief description of leadership theories

Introduces transactional, transformational, and servant leadership theories. It will also provide a better understanding of qualities of CRC leaders, which will enable participants to provide better service and increase awareness of CRC leadership.

- **Transformational leaders**: lead employees by aligning employee goals with their goals. Thus, employees working for transformational leaders start focusing on the company's well-being rather than on what is best for them as individual employees.
- **Transactional leaders**: ensure that employees demonstrate the right behaviors because the leader provides resources in exchange.
- **Servant Leadership**: defines the leader's role as serving the needs of others. According to this approach, the primary mission of the leader is to develop employees and help them reach their goals. Servant leaders put their employees first, understand their personal needs and desires empower them and help them develop their careers.

Characteristics of compassionate leaders

- **'In-tune' feeling**: Their actions abide by their words – and they always have the time to engage with others.
- **Manage their moods**: They know feelings affect others and they use positive emotions to inspire, not infect others with negative feelings.
- **Put people before procedures**: They are willing to set aside or change rules and regulations for the greater good.
- **Show sincere, heartfelt consideration**: They genuinely care for the well-being of others and have a humane side that puts other people's needs before theirs.
- **Are mindful**: They are aware of their own feelings and their impact on others. They are also attentive and sympathetic to the needs of others.
- **Are hopeful**: They move others passionately and purposefully with a shared vision that focuses on positive feeling of hope.
- **Courage to say what they feel**: They communicate their feelings, fears, even doubts which builds trust with their employees.
- **Engage others in frank, open dialogue**: They speak honestly with humility, respect and conviction, and make it safe for others to do the same.
- **Connective and receptive**: They seem to know what other people are thinking and feeling.
- **Take positive and affirming action**: They carry out compassion. They do not just talk about it; they make a promise, act on it and keep it.

What does compassionate leadership do for the organization?

- Positively affects sufferers, clients, employees

- Increases people's capacity for empathy and compassion

- Promotes positive relationships

- Decreases the prevalence of toxic viral negative emotions and behavior

- Increases optimism and hope

- Builds resilience and energy levels

- Counteracts the negative effects of judgment and bias

Self-evaluation of compassionate behavior

Good leaders can evaluate their own behavior using different methodologies. The self-assessment of compassionate leaders should be conducted every six months to enhance self-compassion through mindfulness.

Mindfulness begins with self-awareness: knowing yourself enables you to make choices how you respond to people and situations. Deeper knowledge about yourself enables you to be consistent, to present yourself authentically. You will learn and practice different ways to develop mindfulness and explore how it can contribute to developing compassionate leadership practices through:

- Enhancing attention and concentration

- Increasing creativity and flexibility

- Working efficiently in complex systems and uncertain environments

- Creating meaning and purpose

- Making effective and balanced decisions

- Responding effectively to difference and conflict

- Acting with compassion and kindness

- Enhancing relationships and partnerships

- Enabling genuine and courageous action

- Working ethically and wisely

- Developing cultural intelligence

1.4.2. Systems Thinking for CRC

	Group activity in healthcare system thinking
	Discuss in a group of 4-5 and share your experience to the larger group.
	• Discuss concepts of Health System and how it relates with your Health Facility /Hospital and Health Center/ functions.
	• Take your Health Facility/Hospital and Health Center/ and list the various department/core processes/support processes. Using a systems thinking approach, discuss how they interact with each other?
	• Take in to account the CRC concepts and identify gaps you may have experienced in your facilities?
	Duration: 20 minutes

System: A system is a set of interacting or interdependent components forming an integrated whole.

Health System: A health system consists of all the organizations, institutions, resources and people whose primary purpose is to improve health.

Fully functional health system: A point which various management systems and subsystems are connected and integrated to provide the best possible health services to all the intended beneficiaries of those services.

Management systems: The various components of the overall health system that managers use to plan organize and keep track of resources. Management systems are run by people living in different contexts.

Integrate CRC into Existing System

Integration of new initiatives into existing system has paramount importance in expediting the process of implementation and ensuring sustainability of CRC in a health system. Integration can be done using "AIDED" model.

Assess: Understand the capacity of the unit structure, especially in regards to the availability of resources, as well as human resource; also to assess the level of human capability when integrating and sustaining the CRC by determining the level of support the unit requires before or after carrying out CRC.

Innovate: Design and package the CRC to fit with the existing quality of unit structure and their environmental context to spread the CRC throughout the hospital departments.

Develop: Build upon existing knowledge of main stakeholders and opinion leaders by encouraging hospital policies, organizational culture, and infrastructure to support the implementation of principles of CRC.

Engage: Use existing roles and resources within the hospital units to introduce, translate, and integrate CRC principles into each employee's routine practices.

Devolve: Capitalize on existing organizational network of index user groups to release and spread the innovation to new user groups.

1.4.3. Organizational culture

Organizational culture consists of the values and assumptions shared within an organization. Organizational culture directs everyone in the organization toward the "right way" to do things. It frames and shapes the decisions and actions of managers and other employees. As this definition points out, organizational culture consists of two main components: shared values and assumptions.

1. ***Shared Values:*** are conscious perceptions about what is good or bad, right or wrong. Values tell us what we "ought" to do. They serve as a moral guidance that directs our motivation and potentially our decisions and actions.

2. ***Assumptions:*** are unconscious perceptions or beliefs that have worked so well in the past that they are considered the correct way to think and act toward problems and opportunities.

Five key systems influence the hospital's effective performance with respect to improving the safety and quality of patient care, as well as sustaining these improvements. The systems are:

1. Using data
2. Planning
3. Communicating
4. Changing performance
5. Staffing

Leaders create and maintain a culture of safety and quality throughout the hospital. Rationale

- CRC thrives in an environment that supports teamwork and respect for other people, regardless of their position in the organization.

- Leaders demonstrate their commitment to CRC and set expectations for those who work in the organization. Leaders evaluate the culture on a regular basis.

- Leaders encourage teamwork and create structures, processes, and programs that allow this positive culture to flourish. Disruptive behavior that intimidates others and affects morale or staff turnover can be harmful to patient care.

- Leaders must address disruptive behavior of individuals working at all levels of the organization, including management, clinical and administrative staff, licensed independent practitioners, and governing body members.

Creating an Organizational culture of empowering employees for CRC

Having empowered employees is the aim of many leaders. Literature has reported that creating an organizational culture will empower employees to increase customer satisfaction levels, as well as to improve employee morale and productivity.

Employee empowerment encourages communication, participation in shared decision-making and enabling physicians and staff to reach their full potential by creating and optimal healing environment.

There are many different ways to build employee empowerment and engagement, but all share six fundamental actions to promote CRC on the part of leadership:

Share information and communication: Sharing information with employees is important because it not only helps to build trust; it gives employees important information to allow them to make the best possible decisions in critical situations when providing CRC services.

Create clear goals and objectives: Inspire employees to embrace the mission or changes of the organization by appealing to their innate desire to help patients and provide an efficient CRC service. Great leaders share important information in a structured and consistent manner.

Teach, accept and encourage: If you empower employees to make decisions that will help keep customers happy, then you have to be willing to allow them to make mistakes and learn from those mistakes.

Reward Self-Improvement: Create an environment that celebrates both successes and failures. A good leader celebrates successes; and employees who take risks for the benefits of patients/client; also, a good leader will assist employees to develop a plan for growth and reward them as they advance.

Support a learning environment: Listen to the voice of physicians, nurses and other staff to understand key barriers, issues, and opportunities to allow them to have a voice in crafting solutions for CRC challenges.

Create a clear role of autonomy: Enable frontline workers to execute change by supplying resources (education, funding, access to other skill sets within the health facility, etc.) and removing obstacles themselves.

1.4.4. Leading CRC Health Teams

	Group activity Discuss in a group of 4-5 and share your experience to the larger group. • What principles do you think of when implementing CRC? • Do you think there are differences between your current "leading" style and leading based on CRC? If yes, list the differences. **Time allowed: 10 minutes**

Health facility leaders have intersecting roles as public servants, providers of health care, and managers of both healthcare professionals and other staff.

- **As public servants**, health facility leaders are specifically responsible for maintaining the public trust, placing duty above self-interest and managing resources responsibly
- **As healthcare providers**, health facility leaders have a fiduciary obligation to meet the healthcare needs of individual patients in the context of an equitable, safe, effective, accessible and compassionate health care delivery system.
- **As managers**, leaders are responsible for creating a workplace culture based on integrity, accountability, fairness and respect.

Ethical healthcare leaders apply at least the following six specific behavioral traits:

1. **Ethically conscious:** Have an appreciation for the ethical dimensions and implications of one's daily actions and decisions or, as described by author John Worthily, the "ethics of the ordinary" (reference?).
2. **Ethically committed:** Be completely devoted to doing the right thing.
3. **Ethically competent:** Demonstrate what Rush worth M. Kidder, president and founder of the Institute for Global Ethics, calls "ethical fitness," or having the knowledge and understanding required to make ethically sound decisions (reference).

4. **Ethically courageous:** Act upon these competencies even when the action may not be accepted with enthusiasm or endorsement.

5. **Ethically consistent:** Establish and maintain a high ethical standard without making or rationalizing inconvenient exceptions. This means being able to resist pressures to accommodate and justify change inaction or a decision that is ethically flawed.

6. **Ethically candid:** Be open and forthright about the complexity of reconciling conflicting values; be willing to ask uncomfortable questions and be an active, not a passive, advocate of ethical analysis and ethical conduct.

Problem-solving in healthcare

Steps of Scientific Problem Solving Skills

1. Define the problem
2. Set the overall objective
3. Conduct a root cause analysis
4. Generate alternative interventions
5. Perform comparative analysis of alternatives
6. Select the best intervention
7. Develop implementation plan and implement plan
8. Develop evaluation plan and evaluate

Best Practice Identification

Criteria to select best practices

- **New/Novel idea-** not much practiced in other hospitals in Ethiopia
- **Effectiveness:** has brought empirical change to the implementation of CRC specifically to patient satisfaction and quality of service provision. The practice must work and achieve results that are measurable.
- **Relevant/impact:** improved CRC and quality of patient experience (Explain the relevance of the innovation using a clear baseline and current performance of CRC)
- **Diffusible:** implemented at low cost in other facilities or implemented innovation in other hospitals.
- **Sustainable:** Innovation is easy to understand, easy to communicate and works for long time.

- **Political commitment:** The proposed practice must have support from the relevant national or local authorities.
- **Ethical soundness:** The practice must respect the current rules of ethics for dealing with human populations.

By definition, "Best Practices" should be "new/novel", "effectiveness" and "relevance".

Monitoring and Evaluation of CRC Health Team

Potential focus areas where leaders focus to evaluate their CRC staff

- **Quality of work**: Provide accuracy and thorough CRC service
- **Communication and interpersonal skills**: listening, persuasion and empathy to clients/patients and teamwork and cooperation in implementing CRC
- **Planning, administration and organization**: setting objectives, and prioritizing CRC practice
- **CRC knowledge**: knowledge-based training, mentoring, modeling and coaching
- **Attitude**: dedication, loyalty, reliability, flexibility, initiative, and energy towards implementing CRC
- **Ethics**: diversity, sustainability, honesty, integrity, fairness and professionalism
- **Creative thinking**: innovation, receptiveness, problem solving and originality
- **Self-development and growth**: learning, education, advancement, skill-building and career planning

Summary

- *Dignity of human being is the basis for healthcare delivery*
- *Clients should be treated as human being not as cases*
- *Disrespect and abuse is a problem in Ethiopia.*
- *Zero Tolerance to Disrespectful care shall be a motto for all health workers in the health facilities.*
- *Improving the knowledge of ethics is important to boost the ethical behavior in practice*

Chapter Two: Current Dispensing Practices: Current Dispensing Practices:

Chapter Description: This chapter provides an overview of the current dispensing practices. It starts by defining what rational use of medicines means and the importance of good dispensing practice in ensuring rational use. Then the chapter dwells on the limitations, root causes and consequences of current dispensing practice. Finally, it lists initiatives the government is engaged in to improve pharmacy service in general and dispensing in particular.

Chapter Objective: The primary objective of the chapter is to enable participants describe current dispensing practices.

Enabling Objectives: At the end of this chapter, participants will be able to:

- Define rational use of medicine and good dispensing practice
- Describe the limitations, root causes and consequences of current dispensing practice
- List opportunities to improve current dispensing practice

Chapter Outline:

This chapter has the following outline:

- Introduction to rational use of medicines and good dispensing practice
- Current Dispensing Practices: limitations, root causes, and consequences
- Opportunities to improve current dispensing practice
- Summary

Allocated Time: 65 minutes

2.1 Introduction to Rational Use of Medicines and Good Dispensing Practice

Rational Use of Medicines

	Group activity Discuss in a group of 4-5 and share your experience to the larger group. Discuss about the rational use of medicine and good dispensing practice interdependency **Time allowed : 10 minutes**

Essential medicines are one of the most cost-effective ways of saving lives and improving health of the community. It is also widely accepted that access to health care and, therefore, to essential drugs is a human right. Accordingly, health systems exert maximum efforts to avail required medicines to the population. Figures show that most developing countries spend as much as 40% of their health care budget on medicines.

Essential medicines as defined by World Health Organization (WHO) are those that satisfy the priority health care needs of the majority of the population. They are selected with due regard to public health relevance, evidence on efficacy and safety, and comparative cost-effectiveness. They are intended to be available at all times in adequate amounts, should be of appropriate dosage forms, with assured quality and adequate information, and need to be affordable to the individual and the community

WHO's 2011 report noted that "Each year, an estimated 5.3 trillion dollars is spent worldwide on providing health services. It is estimated that 25% of total health expenditure is spent on pharmaceuticals. Regrettably, and for a variety of reasons, a significant proportion of these resources are resulting in significant losses, in terms of both health and economics."

Particular areas of inefficiency in medicine management include:

- Poor selection of medicines
- Inefficient procurement and inventory management practices,
- Lack of adherence to standard treatment protocols
- Poor dispensing practices resulting in medication errors and patients' lack of knowledge about dosing schedules

- Patients not adhering to dosing schedules and treatment advice

To alleviate these problems and improve the medicine use process, governments encourage all actors in the health sector to make rational use of resources.

Definition: The rational use of medicines requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community.

According to this definition, rational medicine use requires:

- Appropriate indication
- Appropriate medicine considering efficacy, safety, suitability for the patient, and cost
- Appropriate dosage, administration and duration
- Appropriate patient
- Correct dispensing including appropriate information to patient
- Patient adherence to treatment
- Outcome monitoring/Follow-up

In a health service delivery setting, there are three important actors responsible for ensuring the rational use of medicines. These include: prescribers, dispensers and patients.

Prescribers ensure rational use by:

- Examining the patient to reach at the correct diagnosis of the problem
- Defining the therapeutic goal
- Deciding the particular treatment (medicines) required to achieve the therapeutic goal
- Determining the dose, route, and duration of treatment
- Providing adequate information to the patient about the medical problem and treatment regimen
- Monitoring treatment outcomes, etc.

Dispensing practice plays a central role in the provision of rational medicine use. Dispensers ensure rational use of medicines by:

- The right medicines are stocked for dispensing
- Appropriately interpreting and evaluating the medicines prescribed by the prescriber
- Providing the medicines to the patient with appropriate information

- Making sure that patients understand how to use the medicines

- Following treatment outcomes (goals of therapy and adverse drug events)

- Availing affordable medicines, etc.

Patients contribute to rational use of medicines when they take their medicines as per the instructions given by the prescriber and dispenser. They need to appreciate that adherence to treatment is required to achieve treatment goals. Patients also need to understand that non-adherence to medications has negative implications to their health and the wellbeing of their families, the community and the wider public in general.

Good Dispensing Practice

Dispensing refers to the process of preparing medicines and distributing to users with provision of an appropriate information, counselling and follow up. It may be based on a prescription or an oral request of users (patients or care providers) depending on the type of medicines to be dispensed. The dispensing process involves the correct interpretation of prescription or oral request, accurate preparation and labelling of medicines with provision of appropriate information and follow up. The medicine should be dispensed in a safe and hygienic manner, making sure that the patient or care provider understands and appreciates the value of taking specific medicines for specific indications.

Good dispensing practice ensures that the correct medicine is delivered to the right patient, in the required dosage and quantities, with clear instructions, and in package that maintains an acceptable potency and quality of the medicine. Dispensing includes all the activities that occur between the time theprescriptionororalrequestofthepatientorcareproviderispresentedand the medicine or other items are issued to them.

2.2 Limitations, Root causes, and Consequences of Current Dispensing Practices

Inappropriate or incorrect dispensing can negatively affect the health care system. Regardless of careful diagnosis, proper medication must be dispensed to the patient and the patient must comply with therapy for the health system to have accomplished its task.

However, the pharmacy service in general and dispensing in particular is often overlooked by health managers during the development of health service delivery. It is usually considered of secondary importance to diagnosis, procurement, inventory control, and distribution. It is not adequately understood that poor or uncontrolled dispensing practices can have very detrimental

impacts. The resources required to bring a medicine to the patient may be wasted if dispensing does not ensure the right medicine is issued to the right patient in an effective dosage and amount, with clear instruction, and in packaging that maintains the integrity of the medicine. Since the dispenser is often the last person to see the patient before the medicine is used, it is important that the dispensing process be understood as it affects medicine use.

Below are the limitations, root causes and consequences of current dispensing practices.

Limitations:
- Prescriptions are not evaluated properly to confirm appropriateness of therapy for the individual patient
- Prescribed medicines are not adequately available in health facility dispensing outlets
- Medicines are dispensed to clients without proper counselling
- Inaccurate processing of medicines (selection, counting, compounding, etc.)
- Medicines are dispensed without due consideration of affordability to the patient
- The labelling practice is so poor that it is common to find dispensed medicines without any information
- Dispensed medicines are not properly repackaged in containers that ensure their quality and potency during the course of treatment
- Prescriptions are not properly filed, timely audited and disposed of.
- Medicines are not prescribed and dispensed using standard prescription papers.
- Dispensing done based on inadequately written prescriptions
- Patient inconvenience due to billing of medicines in an area located away from the dispensing pharmacy
- Poor dispenser-patient communication
- Errors during dispensing
   - Misreading the prescription
   - Errors during verbal communication
   - Picking error –e.g. picking the next medicine
   - Counting error i.e. dispensing the wrong quantity of medicines,
   - Similarity error,
   - Expiry error,

- o Billing error
- o Packing error
- o Delivery error, etc.

Root Causes

- Lack of clinical training at pre service level (poor knowledge of disease processes and their pharmacotherapy)
- Deployment of inadequate type and number of pharmacy professionals
- Lack of capacity building opportunities for dispensers
- Updates on treatment modalities are not communicated timely (STGs, formularies, etc.)
- Unavailability of dispensing equipment (counting trays, vials, bottles, syringes, labels, etc.).
- Lack of job aids (guidelines, SOPs, etc.)
- Poor teamwork and communication between pharmacy professionals and other health professionals
- Dispensary workflow is not designed to ensure good dispensing practice
- Dispensing environment and facilities are not conducive for the patient as well as for the professional working in the premises (space, privacy, accessibility, etc.)
- Poor inventory management at the dispensary
- Lack of acceptance and support of the service by management and other healthcare professionals
- Lack of standard medicine registers and vouchers that facilitate transactions
- Lack of job descriptions for dispensers
- Poor performance management system (e.g. BSC is not used, etc.)
- The dispensing practice is not timely measured and feedback is not given to improve services
- Lack of motivation and commitment of professionals

Consequences

- Patients do not know how to take their medicines appropriately
- Harm to patients (adverse drug events)
- Patients receive unnecessary treatments
- High out of pocket payments by patients

- Wastage of resources due to theft and pilferages, unnecessary treatments, and non-adherence by patients
- Poor credibility of the service by patients

Poor patient satisfaction in the dispensing practice

> **Dispensing error can kill!**
>
> - Prescribers' unreadable handwriting can cause dispensing errors. Guessing the wrong name or dose can be fatal.
> - If you have any doubt about what is prescribed, you must crosscheck with the prescriber.

2.3 Opportunities to Improve Current Dispensing Practices

The previous section has indicated that a number of limitations do exist in the current dispensing practice and these have had adverse consequences to the patient, the health system, and the country. Recognizing this and based on the national health policy and drug policy, the government has been leading a number of initiatives to address the problems. Some of the initiatives that are aimed at improving the pharmacy service in general and the dispensing practice in particular are listed below:

Inclusion in Health Sector Transformation Plan (HSTP), by FMOH.

- o Increase proportion of patients who know how to take their medicines from 68% to 100%.
- o Increase percentage of adequately labelled medicines from 43% to 90%.
- o Reduce percentage of wastage due to expiry from 8.24% to 2%.
- o Decrease prescriptions containing antibiotics from 58% to 25%.
- o Decrease proportion of health facilities with stock-out (essential medicines) from 35% to 0%.

The Health Sector Development Plan (HSDP) has been updated for the years from 2015/16-2019/20 under the name HSTP and includes pharmaceutical related initiatives including, Auditable Pharmaceutical Transactions and Services (APTS), clinical pharmacy, Drug and Therapeutic Committee (DTC), pharmaceutical logistics and related issues.

The Ethiopian Hospital Reform Implementation Guideline (EHRIG) by FMOH. The EHRIG sets standards and provides implementation guidance for all pharmacy services such as DTC, Medicines Formulary, Drug Information Services (DIS), clinical pharmacy, and others. The recent edition of the EHRIG, Ethiopian Hospital Services Transformation Guideline (EHSTG), also provides guidance on all areas of pharmacy services including APTS. Recently FMOH also issued Ethiopian Health Centre Reform Implementation Guideline (EHCRIG) which also includes pharmacy service activities to be conducted in health centres.

Manual on Good Dispensing Practice, by the Food, Medicines and Healthcare Administration and Control Authority (FMHACA). The manual further standardized the dispensing process by adopting and further elaborating the dispensing steps indicated in EHSTG. It also uses standardized checklists and guides to make dispensing safer and effective. It also encourages great sense of professionalism.

APTS by FMOH and Regional Health Bureaus (RHB). APTS is a package of interventions designed to establish accountable, transparent and responsible pharmacy practice. It enables health facilities to optimize utilization of medicines budget, improve access to medicines, and decrease wastages. APTS continuously monitors the number, mix & performance of pharmacy workforce. It also improves pharmacy premise design and workflow. Through improving recording and documentation, it generates reliable and consistent information for decision making. As a result, APTS improves overall quality of pharmacy services thereby increasing patient knowledge and satisfaction. Ultimately it contributes to better health outcomes. APTS has five result areas:

- Transparent and accountable transactions
- Efficient budget utilization
- Effective workforce deployment and development
- Reliable information
- Improved customer satisfaction

Clinical pharmacy services are patient-oriented services developed to promote the rational use of medicines, and more specifically, to maximize therapeutic benefits (optimize treatment outcomes), minimize risk, reduce cost, and support patient choice and decisions thereby ensuring the safe, effective and economic use of drug treatment in individual patients. The initiation of

clinical pharmacy services at all hospitals is expected to contribute to the national effort to standardize medicine dispensing and counselling services.

Standard treatment guidelines (STGs), formularies, SOPs, and training materials on pharmacy services standardize pharmacy service provision has also been regularly issued and being used to improve the pharmacy service provision.

Summary.

- Essential medicines are one of the most cost-effective ways of saving lives and improving health of the community
- Rational use of this medicine is of paramount importance in order to make the best use of medicines
- Prescribers, dispensers, and patients are actors in the medicine use process and contribute to rational or irrational use of medicines.
- There are a number of limitations of the current dispensing process which can be traced back to various root causes.
- And there are various types of negative consequences due to the limitations. The government of Ethiopia is doing its level best to improve dispensing services.

Chapter Three: pre-dispensing Activities

Chapter Description: This chapter introduces participants to the requirements that are critical for rational dispensing of medicines. The chapter starts by listing premises, facilities, and equipment requirements. Then it goes on describing the dispensing workflow, bin management, requesting, physical inspection, and shelving of medicines, and availing references to aid the dispensing process.

Chapter Objective: The chapter enables participants identify pre-dispensing activities.

Enabling Objectives: At the end of this chapter, participants will be able to:

- List premises, facilities, equipment, reference, and personnel requirements
- Explain the importance of preparing the dispensing workflow
- Discuss bin management at the dispensary
- Describe how to request, physically inspect, and shelve medicines

Chapter Outline:

This chapter has the following outline:

- Introduction
- Premises, Facilities, Equipment, and Personnel
- Preparing the Dispensing Workflow
- Bin Management at the Dispensary
- Requesting, Physical inspection, and Shelving of medicines
- Availing References to Aid the Dispensing Process
- Summary

Allocated Time: **65 minutes**

2.1. Introduction

In order to provide quality dispensing services, the dispensing unit has to be equipped with the necessary facilities and the premises should allow a logical flow of the dispensing process. The process should be performed by qualified professionals who must be provided with the necessary job aids and equipment for effective dispensing. The dispensing unit need to also avail all required pharmaceuticals and control their inventory in a timely manner. Without properly fulfilling these requirements, it will be very difficult to carryout proper dispensing activities leading to sub-optimal patient care resulting in poor treatment outcomes.

3.2. Premises, Facilities, Equipment, and Personnel

The premises on which a dispensing service is provided should reflect the quality of service and inspire confidence inpatients about the use of pharmaceutical service delivered. Therefore, working conditions are recommended to take in to considerations the safety and health of the public and people working on the premises.

Premises and Facilities

- The walls, floors, windows, ceiling, and all other parts of the premises should be as per the requirement set by the regulatory body.
- Rooms (with minimum area specified) are required for dispensing, storing and compounding medicines.
- The dispensing room should allow a logical workflow of the dispensing process. Dispensing through a window should be discouraged at times and places. The dispensing room should be arranged in a manner that patients use different doors for entry into and exit from the dispensary.
- The dispensing counters should be adequate for performing all dispensing activities. It should be of adequate size having a smooth, impervious working surface.
- Waiting area should be arranged in front of the dispensaries according to the patient load
- All parts of the premises should be maintained in an orderly and tidy condition.

- Pharmaceutical products should be protected from the adverse effect of light, freezing or other temperature extremes and humidity.

- There should be adequate lighting in the room

- The room should be adequately ventilated and fitted with windows

- The security of the room should also be protected always.

- Special attention must be paid to controlled medicines and flammables, which must be kept separately from other medicines and be locked properly.

The dispensing unit should also have the following facilities:

- Cold storage facilities (refrigerators equipped with thermometer)

- Adequate number and type of shelves

- Lockable cabinet for narcotic medicines, psychotropic substances, and poisons

- Toilet with water supply and drainage system

- Chairs for dispensers

- Fire extinguisher

Equipment

- Dispensing aids such as tablet counting trays, spoons/spatula, tablet cutting devices

- Labelling materials, such as stickers, etc.

- A suitable range of dispensing containers for pharmaceutical products with separate sets for internal and external use.

Note that:

- Although the dispensary must be accessible to patients, care should be taken to locate it in a protected place and not besides, or open to, a road or other area where dust, dirt, and pollution are common.

- Maintaining a clean environment requires regular cleaning of shelves and a daily cleaning of floors and working surfaces.

- There should be a regular schedule for checking, cleaning, and defrosting the refrigerator.

- Spills should be wiped up immediately, especially if the liquid spilled is sticky, sweet, or attractive to insects and flies.

- Food and drink must be kept out of the dispensing area, with the refrigerator used strictly for

medicines.

- Dispensing equipment used for measuring liquids or counting tablets or capsules should be kept clean at all times. For example, uncoated tablets normally leave a layer of powder on any surface they touch, which can easily be transferred to other tablets or capsules counted on the same surface. This is called cross contamination and could be dangerous if the contaminating substance (e.g. aspirin or penicillin) is one to which a patient is sensitive.

- Use of stainless steel and glass is recommended.

- All persons engaged in dispensing should observe high standards of personal cleanliness and wear gowns that should be laundered regularly.

- Smoking should be prohibited in any area where medicines are dispensed, sold or supplied.

- Direct contact between the operator's hands and the dispensed products should be avoided.

Personnel

The dispensing unit should be staffed with adequate type and number of pharmacy professionals. Number of dispensers should be determined by workload analysis. Workload analysis takes into account the average number of patients served or the average number of medicines dispensed per day. Accordingly, 48 patients per day or 68 counselling services (medicines) per day per dispenser is taken as a standard for workload analysis. The number of dispensing staff should also consider supporting staff such us cashiers, porters, cleaners, and accountants. The dispensing unit should also have a coordinator.

The pharmacy unit should put in place a performance management system to objectively evaluate the performance of its dispensing staff. The performance management system shows how a dispenser's job contributes to the success of the organization and helps the dispenser know what needs to be done to be successful on the job by setting clear performance expectations. The balanced scorecard (BSC) is one such system that can be used for the purpose.

Interventions should be designed and implemented to address identified performance gaps. Accordingly, the dispensing staff should be provided with capacity building opportunities based their practical needs. Capacity of staff can be built through onsite or offsite in-service training, mentoring, or working under supervision. Other interventions can be also be designed to address various components of the dispensing process.

3.3. Preparing the Dispensing Workflow

Optimum workflow in dispensaries should allow logical flow of activities. Health facilities should redesign and renovate premises as per APTS requirements as much as possible. According to APTS requirements, workflow in dispensaries should be arranged in such a way that a patient enters through an entrance/door on one side, passes through successive stages of services (prescription evaluation/billing by a dispenser, payment to a cashier and finally medicines use counselling by a second dispenser) and exits on the other side. This arrangement combines all services together in one room so that the patient gets one stop shopping service. The dispensing workflow shall be designed to realize good dispensing practice. The APTS dispensing workflow is shown below. Note that facilities can improve premises to improve dispensing services until APTS standards are implemented.
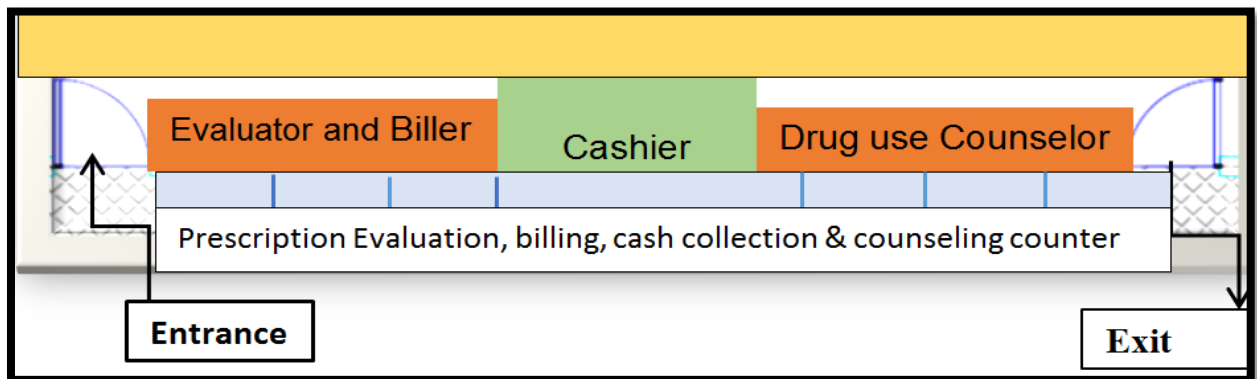
Figure 3.2. Dispensing workflow design

3.4. Bin Management at the Dispensary

Dispensers are given separate bins (sections of shelves) with a list of medicines to manage. The purpose of bin ownership at dispensary is to ensure accessibility of medicines and increase work efficiency. It also ensures collective responsibility and results in reduced pilferage of medicines. A person responsible to manage assigned bins performs the following activities:

- Receives medicines issued from the store
- Labels the codes, selling prices and/or retail prices on each package
- Shelves the medicines into the bin location
- Follows the expiry dates of medicines in each bin assigned to him/her
- Provides all the necessary information required to complete IFRR or Model 20/☐☐
- Follows the movement of stocks (fast moving, slow moving, dead stock, near expiry, etc.)

and report to head of the dispensing unit for action

- Ensures that his/her bin location is adequately stocked and is accessible to other dispensers all the time

- Controls the stock from theft, pilferage, and other losses, take inventory when there is suspicion, and perform random audit (whenever necessary) along with head of pharmacy unit and other relevant staff

- During the quarter inventory, fills-in the inventory sheet and makes it ready for physical inventory

- Keeps up-to-date information on stock status, price changes, availability of different choices of medicines

- Reports average monthly consumption of medicine in his/her bins to head of the dispensing unit

3.5. Requesting, Physical inspection, and Shelving of medicines

Requesting Pharmaceuticals from the Store

The requisition of medicines by different dispensary from the pharmacy store should be carried out using an internal facility reporting and requisition form (IFRR or Model 20/□□). The responsible person from dispensary completes part of IFRR or Model 20/□□ and submit to the store manager. In situations where there are more than one bin owners, each bin owner should identify items to be requested and stocked in their respective bin locations.

The dispensary unit coordinator ensures the proper completion of the model. Then the store manager calculates consumption, the amount needed to arrive at maximum for the requisition period, fills in the quantity to be approved and submits it to the chief pharmacist (pharmacy head) of the facility for approval. The store manager transcribes the list from the approved IFRR or Model 20/□□ into the issuing voucher, Model 22/□□.

Receiving and Physical Inspection

Pharmaceuticals are received into the dispensing unit and shelved at assigned bins after a thorough physical inspection. Physical inspection involves carrying out physical checkups on the products to identify quality defects and discrepancies in quantity. The process of physical inspection includes:

- Comparing list of names of medicines with their names on Model 22/□□

- Checking whether the correct number of containers /package are delivered

- Making sure quantity in each package is correct

- Confirming dosage form (tablet, capsule, suspension, etc.) and strength is correct

- Ensuring products do not have quality problems. Examples include:
  - Color changes for tablets and capsules
  - Cracking/chipping for tablets
  - Caking for suspensions
  - Not easily dispersible emulsions (broken phases)
  - Quickly settling suspensions/emulsions (enough time for measuring)
  - Odor changes
  - Damaged packaging, wrong or illegible labelling on the package
  - Spills and cracks on bottles
  - Documentation of the amounts received for each item on respective bin cards

Shelving of pharmaceuticals

Once the medicines are received into the dispensary, they have to be appropriately shelved to allow FEFO (First Expiry First Out) rule. Following FEFO minimizes wastage from product expiry. This arrangement also prevents from dispensing expired products to patients. The shelving of pharmaceuticals should always be in an orderly manner that inspire confidence in patients, make the best use of available space, and the dispensing process easier by allowing easier identification and picking of pharmaceuticals. Shelving should also allow easier stock management. Bin cards should always be placed in the respective bins for controlling stock movement.

3.6. Availing References to Aid the Dispensing Process

The evaluation of prescriptions and counselling processes should be supported by authoritative sources of information to ensure the rational use of medicines by patients. Dispensers should never engage in guess work and should always consult references to ensure patients obtain adequate information about their medication. This results in optimum therapy and patients will be protected from harm due to inadvertent adverse drug events. Accordingly, the pharmacy departments should ensure availability and utilization of updated drug lists, good dispensing manual, STGs, formulary, etc.

Summary

- In order to provide quality dispensing services, the dispensing unit has to be equipped with the necessary facilities, premises, personnel and other requirements to provide quality services

- The dispensary should be designed in a way that allows a logical flow of the dispensing process.

- The shelves in the dispensary are classified into bins which are managed by separate dispensers for shelving and keeping of required pharmaceuticals.

- Dispensers must follow standard procedures during requesting, physical inspection and shelving of medicines supported by proper documentation.

- To facilitate rational dispensing and use of medicines, the pharmacy unit should avail important references such as STGs, formularies and manuals

Chapter four: Communication Skills and Medicines Use Education

Session 4.1: introduction to communication skills for dispensers

Session Description: This session provides an overview of communication skills for dispensers. It starts by describing the basic principles and processes of communication. Then it goes on to explain the means of communication. The session also deals with barriers to communication and how to make communication effective.

Session Objective: The primary objective of this session is to help pharmacists demonstrate good communication skills

Enabling Objectives: By the end of this chapter, participants will be able to:-

- Describe the basic principles and processes of communication
- Explain verbal and non-verbal communications
- Identify the different barriers and strategies to effective communication
- Describe approaches to effectively communicate with healthcare providers

Chapter Outline:

This chapter has the following outlines:

- Introduction
- The Communication Process
- Verbal and Non-verbal Communications
- Barriers and Strategies to Effective Communication
- Effective Communication with other Healthcare Providers
- Session Summary

Allocated Time: 55 minutes

4.1.1. Introduction

Communication is the sharing of information, ideas, thoughts, and feelings. It involves not just the spoken word, but also what is conveyed through change of tone of voice, facial expression, body posture, and other behavioural responses.

Communication is a vital skill, necessary for success in personal and professional settings. Dispensers often serve as the guardians of appropriate drug therapy. Dispensers communicate with patients and a wide variety of health care professionals on a daily basis. Regardless of knowledge or expertise, dispensers cannot actively participate in patient care unless they can communicate effectively and hence communication skills are of paramount importance to effective dispensing practice.

4.1.2. The Communication Process

There are three major parts of the communication process: the **sender** the **message** and the **receiver**. Communication takes place only if the **receiver** understands the **sender's message**. The following figure shows the actual flow of communication.
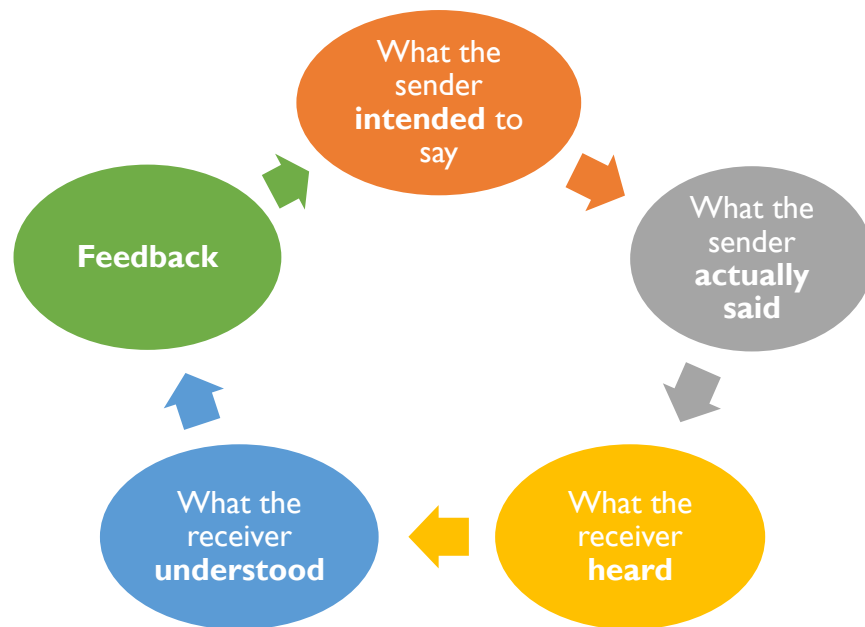
Figure 4.1.1: **The Communication Process**

The goal of all communication is understanding. For one person to understand a message composed by another, the receiver must do more than recognize the words used in the message

by the sender. Effective communication occurs only when the meaning of a message is held in common by the participants.

When a person wishes to share information with another, the sender must choose how to transmit that message. The **medium** of the message can be written, oral, nonverbal, or electronic. If the sender decides to transmit the message through words, the sender must encode the message by choosing the words that best convey the intended meaning to the receiver.

Once the information is encoded and transmitted, the sender loses control of the message because its meaning comes from the receiver's decoding of it. If the receiver responds to the message, that response acts as feedback to the sender. This gives the sender as an opportunity to clarify and correct any misunderstanding. This sequence of encoding, transmitting, and decoding messages continues as long as sender and receiver continue to communicate.

4.1.3. Verbal and Non-verbal Communications

Communication usually takes place through multiple non-verbal channels as well. For example, as the words of a message are transmitted, facial expressions, gestures, vocal quality, and other nonverbal signs also are sent. These signs may modify the intended meaning of a message. A mixed message may result when the intended verbal and nonverbal message are not understood as having similar meaning. It is generally agreed that in any communication the actual words convey about 10% of the message. This is called verbal communication. The other 90% is transmitted by non-verbal communication which consists of how it is said (40%) and body language (50%).

It is common for a dispenser to be approached by several different individuals (with varying backgrounds), regarding a multitude of situations, in a single day. Dispensers should be encouraged to remember that any type of question or interaction, regardless of how informal it may seem, is an important method of professional communication. Whether responding to a question concerning compatibility of intravenous medications from a nurse, a drug dosing question from a physician, or a request about the adverse effects of a medication from a patient; all of these interactions require excellent verbal and non-verbal communication skills. The most

common verbal communications that pharmacists engage in involves counselling of patients and responding to drug therapy questions.

As dispensers, we are constantly trying to build up a complete picture of a patient's problems. In many instances, one of the most important information at our disposal is the patient. Good communication will provide much useful information which can then be used to the benefit of the patient.

4.1.4. Barriers and Strategies to Effective Communication

Barriers to Effective Communication

Individual reflection

❖ What is communication barriers?

❖ What are the communication barriers?

Time: 15 Minutes

In pharmacy settings, there are a number of factors which can be barriers to effective communication. Common barriers which exist can be identified under four main headings:

- Environment
- Patient factors
- Time

The Environment

Lack of privacy*:* Some dispensaries have counselling rooms or areas but many do not have such facilities. For good communication to occur it is often necessary for the consultation to take place in a quiet environment, free of interruptions. The conditions in which pharmacists frequently work require additional skills to overcome the lack of suitable facilities.

Noise*:* Noise levels within the working environment are an obvious barrier to good communication. Understanding is made more difficult if people cannot hear what is being said. This is especially true for patients with hearing problems.

Physical barriers*:* The distance between people when communication occurs is very important. Dispensing through windows is a very important physical barrier prevalent in most health facilities in Ethiopia.

The Patient Factors

One of the main barriers to good communication in a health facility can be patients' expectations. In today's world people have busy and hectic lifestyles. In many cases, they have become used to seeing a 'good' pharmacy as one where their prescription is dispensed quickly. They are not expecting time to be spent with them checking and understanding of medication or other health-related matters. Once the purpose of the communication is explained, most patients realize its importance and are happy to enter into discussion.

Inferiority

Patients commonly feel themselves to be in the weaker position in a medical interview. This may be exacerbated by their own problems or by their health care provider. The aim of shared care is to overcome this inequality.

Low-literacy

Low-literacy patients commonly hide their difficulty. You can't tell by looking. Patients can mask the signs of limited health literacy, as there is a great deal of shame associated with this. Patients with limited health literacy skills may be very articulate, and smart enough to navigate through life and the health care environment with these limitations.

Excuses are one of the possible indicators for low health literacy. Some excuses you may hear from patients with low health literacy include:
- o "I forgot my glasses. I'll read this when I get home."
- o "I forgot my glasses. Can you read this to me?"
- o "Let me bring this home so I can discuss it with my children."
- o Patients cannot describe how to take their medications, have difficulty explaining medical concerns, or seldom have any questions

Because one can't tell by looking who is affected by low health literacy, it is better to simplify information for everyone, independent of their perceived health literacy abilities. By simplifying information for all we are paving the way for improved communications, improved adherence, and better health outcomes.

Anxiety

Most patients are anxious to some extent and often try to hide it. Anxiety can affect patients' behaviour, mental power, and memory. Anxiety may cause ideas which are worse than reality and contribute to complex misconceptions. The pharmacy professional should work with the patient to try to identify the source of the anxiety and address it instead of ignoring and jumping to the main discussion.

Misconceptions

Anxiety and medical ignorance commonly create misconceptions in patients' minds about their illnesses which in turn profoundly affect their symptoms and the ability to recover. Such misconceptions need to be identified and dealt with by the dispenser. Providing more information will only create confusions. Remember that simple reassurance will not displace a misconception.

Conflicting information

Apart from friends, family and the media, patients get varied information from many different health care professionals. Health care providers seldom record what they tell patients. Conflicting information can lie long undetected whilst it contributes to misconceptions. It is always good to identify what patients know about the subject of discussion and correct any conflicting information.

Forgetfulness

Patients tend to forget a lot of information unless care is taken to aid their memory. This is compounded if they are told information in language they do not understand. However, if information is given carefully, 70-80% of the facts will be remembered by a patient after 6 weeks, or even indefinitely. Providing written information is one of the ways to aid patient remember facts after medicine counselling.

Lack of Interest to Share their Concerns

Patients may not disclose all their concerns if they feel nothing can be done, or feel that they are wasting the providers' time. They are less likely to be open about their problems if their first questions are blocked or answered incomprehensibly, if they fear their effective treatment may be withdrawn, if they are distracted or distressed, or if they do not like or trust their health care provider. The dispenser needs to encourage the patient to talk and show interest in what is being told.

Impaired Vision, Speech, Hearing or Mental Problems

Patients with impaired hearing or speech or vision or mental function or whose health care provider does not speak their language all experience substandard healthcare as a direct result of their inability to communicate. One in five medical patients has psychiatric illnesses, diagnosed or otherwise, which may affect their ability or inclination to communicate. The dispenser should be mindful of these difficulties and address them accordingly.

Time

In many instances, time or the lack of it, can be a major constraint on good communication. It is always important to check what time patients have before starting any communication. That way you will make the best of what time is available.

Strategies to Improve Communication

All patients, not just those with low health literacy, will benefit from the following strategies:

- Explain things clearly in plain language.
- Focus on key messages and repeat.
- Use a "teach back" or "show me" technique to check understanding
- Effectively solicit questions
- Use patient-friendly educational materials to enhance interaction

Together, these strategies and others will help ensure the environment is patient-friendly and shame-free for ALL patients.

Explain things clearly in plain language.

Make effort to avoid medical/pharmaceutical jargons and vague instructions. Present new information a little more slowly. Practical examples can help give a sense of reality to abstract concepts or things that patients can't see in their own body. Also pay attention to the patients' own terminology and use those terms yourself in the discussion. Just what *exactly* does it mean to take a medication on an empty stomach? Be as specific as possible when providing instructions.

Focus on key messages and repeat

Keep it short and simple. Only tell patients what they need to know, not what is nice to know. Don't try to explain everything to a patient at one visit. Select just a few key points, reinforcing and repeating them during the discussion. Less is more. Identify the one or two most important things to the patient and address those. Patients are far more likely to remember the answers to their own questions and concerns. Combine the patient's priority items with your top one or two things to develop a manageable list of just a few things to discuss. Focus on behaviors- what do you want the patient to do and review each point at the end- summarize and reinforce.

Use a "teach back" or "show me" technique to check understanding

Asking patients to "teach back" what they have learned improves medical outcomes. Teach back is used to assess patient understanding. Asking patients to repeat something in their own words is a far better way to gauge comprehension than simply asking, "Do you understand?" After explaining a new concept, we should assess the patient's recall and understanding, clarify our explanation as needed, reassess comprehension, and continue to clarify until the patient expresses satisfactory understanding.

Effectively ask questions

Most health professionals probably feel that they give patients a chance to ask questions, but some simple techniques can enhance patients' comfort level in asking questions. As a provider wrap up a patient encounter, they often collect questions from the patient, in part to check patient's comprehension of the information that has been covered. Unfortunately, we often do this in a closed-ended way with a yes/no prompt such as:
- "Do you have any questions?" or

- "Any questions?"

Remember, patients are often hesitant to admit that they don't understand something or they're afraid to ask what might be considered a "stupid question." This is most true for patients with low health literacy. Open the door for them by effectively soliciting patient questions. Ask, "What questions do you have?"

Use patient-friendly educational materials to enhance interaction

Because everyone has different learning styles, verbal messages should be reinforced with written information and pictures whenever possible. Everyone learns better if information is reinforced in multiple ways. Provide easy-to-understand information for ALL patients.

Written materials are easy-to-read if they use:
- Few messages
- Short, simple, and familiar words
- Easy-to-understand phrasing of numeric information
- Large fonts
- Short lines and lots of white space
- Simple illustrations that are directly applicable to the text

Be a good listener

Listening appropriately to the patient is hard work, but it is extremely important to effective communication. The dispenser must allow the patient to speak without interruption and concentrate on the words and meaning of the patient's message. He/she should avoid distractions, ask clarifying questions where appropriate, and avoid jumping to conclusions or judging the patient's word.

Good listening skills on the job help you get better information, save time, solve problems, and reduce errors. On the other hand, poor listening creates misunderstandings, wastes time, and creates mistakes. In the health care profession mistakes have the potential for serious effects on the lives of patients.

The following are keys to effective listening:

- Take personal responsibility for understanding what you hear.

- Concentrate and make a good effort to focus on the person speaking.

- Listen without interrupting, disagreeing, or offering explanations.

- Use body language (nonverbal gestures) to show that you are involved in the conversation.

    o Example: nod your head, keep eye contact, and keep hands at side.

- Ask questions to be certain you are interpreting the message correctly.

    o Example: summarize and paraphrase what you heard.

- Take notes as necessary. This will help you remember or document what was said. But avoid focusing on only your writing.

4.1.5. Effective Communication with other Healthcare Providers

Pharmacy professionals work in teams of health providers who have unique professional responsibilities in managing patients' health problems. Poor communication with the healthcare team leads to frustration and lack of interest between professionals as well as compromise of patient care. Remember that professionals may have trouble communicating with one another. As much as it depends on them, dispensers should strive to make the communication smooth. To communicate effectively, dispensers must be comfortable with their role on the health care team and confident in their unique knowledge and contributions to patient care.

The dispenser should be prepared with specific questions or facts and recommendations and stay within the pharmacist's area of expertise. It is important that dispensers choose the right time and place for the conversation. Also make sure that you never interrupt a physician-patient interaction, except in a life-threatening situation.

When communicating with other providers:
- Begin by identifying yourself
- Identify the patient you are to discuss
- Present the issue or concern that you have identified
- Do not be judgmental
- Use professional rapport to gain respect
- Be prepared to discuss the issue at a professional level
- Propose a solution

- Await feedback

Note that:

- You may not always have all the answers to the questions that follow

- Be comfortable saying that you do not know the answer now, that you will look into it and get back to the provider as soon as you can

- The provider will respect that you provide only information about which you are confident

- Over time, you will build a working relationship with the healthcare team members that you work with.

Summary

- Successful communication of information, ideas, and concepts is an integral skill that must be learned, developed, and used by all health professionals

- There are three major parts of the communication process: the sender, the message, and the receiver

- There are verbal and no-verbal types of communication. Dispensers must master both types to effectively communicate with patients and providers.

- Common barriers to communication can be categorized under dispensing environment, patient factors, and time. . Dispensers should be aware and utilize effective strategies to improve communication.

- Irrational medicines use causes huge negative impacts on health and economy.

- The prescriber, dispenser and clients have major roles in ensuring rational medicines use.

- Healthcare professionals should be able to identify specific problems and their causes in order to properly tackle them

- The provision of pharmaceutical care requires a collaborative relationship and team work with other providers and good communication with providers is critical for establishing successful team relationships.

Session 4.2: Medicine Use Education

Session Description: This session provides a review of general guide for medicines use education to clients. The session briefly deals with the principles to guide public education, Preparations needed for client education, assessing effectiveness of the education provided and communication skill with clients.

Session   Objective: To enable participants follow the general guide for medicine use education.

Enabling Objectives: At the end of this chapter, participants will be able to:

- Discuss general guidance on medicines use education
- Plan for medicine use education
- Report medicine use education.

Chapter Outline:

This chapter has the following outlines:

- Introduction
- General guide for medicines use education to clients
- Planning for medicine use education
- Reporting of medicine use education
- Session summary

Allocated Time: **150 minutes**

4.2.1. Introduction

Consumer education about medicines use is an important area. Health facilities tend to place greater emphasis on the supply of essential medicines and the training of health care practitioners to prescribe properly than on promoting rational use of medicines by consumers. However, drug use studies show that people commonly use medicines without health practitioners' advice, that their drug use pattern is shaped by their own experiences with medicines, and that they obtain their medicines from various sources, including the informal sector. Given this situation, more attention should be paid to educating consumers on the appropriate use of drugs. Patients should be given information about the medicines that they are taking. This is important to promote adherence to treatment and achieve the maximum benefit from the treatment. On a wider scale, public education is needed so that people have the skills and knowledge to make informed decisions about how to use medicines (and about when not to use them) and to understand the role of medicines in health care, with their potential benefits and risks.

Interventions directed towards consumers are most relevant if they focus on patterns of irrational drug use that are common, and cover problems that consumers themselves consider to be important. Useful criteria for prioritizing problems include: the scale of the problem, the seriousness of health consequences, the costs, and the appropriateness and feasibility of a community intervention.

4.2.2. General guide for medicines use education

Empowering clients not only on the proper use of antimicrobials but also other medicines and to demand quality health service is essential. To do this, community education in general and patients education in the waiting areas in particular have paramount importance and sustainable.

Principles to guide public education should include the following:

- Public education should address important drug use issues that consumers should be appropriately informed about rational use of medicines
- Public education should encourage informed decision-making and cover basic concepts related to medicines action; how to choose when to self-medicate and when to seek medical advice; which conditions do not require medication; how to read a drug label or patient information.

- Public education on medicines should recognize and take account of cultural diversity and the influence of social factors.
- Public education should have clear and measurable objectives. It should be recognized that to change deep-rooted beliefs and practices requires a sustained effort and a stepwise process which moves from creating awareness, to acquiring knowledge and finally changing behaviour.

4.2.3. Planning for medicine use education

For effective medicine use education planning is very important. Consider the following points during planning of medicine use education.

- Topic selection
- Date of health education conducted
- Responsible person
- Resource material to be used during medicine use education
- Duration of the plan

Table 7.1: Medicine Use Education schedule for pharmacy department of a referral hospital in Ethiopia

Desssie Referral Hospital Medicine Use Health Education Schedule for Pharmacy Department

Weekly program (From 19/03/2007 to 30/10/ 2007 E.C)

DESSIE REFRRAL Hospital, AMHARA Region, DESSIE Town, Tel 0331117670

S. No	Topic	Date	Responsible person	Resource material to be used	Remark
1.	Antimicrobials Use and Resistance including anti malarias, ARVs	19/03/2007	Yared Andarge	Medicines Use Education Manual, page 24	
2.	How to store medicine at the home	26/03/2007	Ermias Birhanu	Medicines Use Education Manual, page 50	
3.	Pregnancy and Medicines Use	3/04/07	Solomon Molla	Medicines Use Education Manual, page 17	
4.	Over-the-counter (OTC) medicines	10/04/07	Mulugeta Nigatu	Medicines Use Education Manual, page 17	
5.	Family Planning: safe use of contraceptives and Fefol supplementation	Weekly	Tadesse Mebratu,S/r Alemtsehay	Poster	Separately at MCH OPD
6.	How to avoid harmful medicine interactions?	17/04/07	Getachew Agegn	Medicines Use Education Manual, page 13	
7.	Rational use of ARVs and Adherence counseling	Daily	Fiseha Yihenew,Haima not T/Mariam	Medicines Use Education Manual, page 26	Daily separately at ART OPD
8.	የጿረ-ተህዋሲያንመድኃኒቶችበጀርችመለመድ 'የአለማችንስጋት' መከላከያመንገዶች	24/04/07	Demis Mohamed	Poster	
9.	What is the medicine advantage of full dose taken and drug resistance including anti malarias, ARVs	1/5/07	Yared W/Michael	Medicines Use Education Manual, page 24	Possibly with every session
10.	Patients at risk of medication error	8/05/07	Zerihun Asefa	Medicines Use Education Manual, page 14	

Preparations needed for client education

- Semi-structured patient education material on proper use of medicines

- Adequate preparation by the educator on the day's topic.

- Wear neat gown, be supportive, introduce yourself, explain the objective of the day's session

- Respect clients

- Convenient location and free from disturbance to conduct medicines use education; this may be at the patients waiting areas.

- Ideal time suggested for medicines use education is early in the morning during patient waiting time that is between clients' arrival to the health facility and entry to the health care providers.

- Try to make it interactive as much as possible

- Always encourage clients to raise questions regarding medicines use; acknowledge questions however simple or there is nothing non-sense, it is only the way we see it.
- Towards the end of the session ask some questions from the day's education
- Know about the myths and facts
- Medicines that require special emphasis during client education programs: medicines for chronic diseases, antibacterial and antiretroviral
- Document encounters and issues

Note that: Seriously ill clients or caretakers are not expected to do the above

Expected outputs:
- Clients will not have myths about medicines use
- Gaps identified above will not be there or narrowed down.
- Clients will be proactive in their own health (provide information to and receive information form health care providers). these will assist provision of quality health service
- Clients will take their medicines properly and result in improved treatment outcomes.

Assessing effectiveness of education provided
- Patient often are eager to listen
- Patients ask questions on the topic and other issues of interest
- Ask 2 to 3 key questions the patients on their understanding at every session
- Knowledge and satisfaction on the prescribed and dispensed medicines.
- Signs for effectiveness of client education:
  - clients will attentively follow your education
  - clients will raise queries and questions
  - clients will respond the questions you may raise

4.2.4. Reporting of medicine use education

After conducting medicine use education reporting is very important. Use this reporting form after conducting medicine use education.

Table: Medicines Use Education to Clients at Health Facilities Recording Format

Name of health facility: _____

#	Date	Time		Specific topics covered	Issues raised by attendees	Attendees		Location/ Targets*	Educator & initial	Remarks
		Start	End			F	M			
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

*Who were the targets such as diabetes, hypertension, mental health, obs/gyn, pediatric, general OPD, TB/HIV, etc

Summary

- Health communicators have a unique opportunity to provide meaningful input in improving and saving lives.

- Health education on medicines use is important for: Promoting rational use of medicine by consumer , Promotion of adherence to medication and used to achieve the maximum benefit from treatment

- Health education should be planned by identifying relevant topics and resources, among others.

- For continuity of the service and quality improvement purposes medicine use education should be recorded and reported.

Chapter five: Dispensing Process Session

Session 5.1: Introduction To Dispensing Steps, Receiving, Interpreting   And Evaluation Of Prescription

Session Description: This session provides a review of the basics of dispensing steps, concepts and components of reception, interpretation and evaluation of prescription. The chapter briefly deals with the main steps of dispensing, legality, legibility, completeness, corrections and safety of prescriptions.

Chapter Objective: To enable participants to apply basic medicine dispensing principles

Enabling Objectives: At the end of this chapter, participants will be able to:-

Define concepts and skills required for reception of clients

- Define the six steps of dispensing
- Describe the eight steps used for prescription evaluation
- Demonstrate exercise for ensuring legality, legibility, completeness, correctness, and safety of prescriptions

Chapter Outline:

This chapter has the following outlines:

- Introduction to the six steps of dispensing
- Receiving the client
- Interpretation and evaluation of prescription
- Chapter summary

Allocated Time: 150 minute

5.1.1. Introduction to Dispensing Steps

There are ample evidences that show the current practice of dispensing practices are not satisfactory.

- Dispensers do not usually take time to ensure prescriptions are authentic, complete and correct.
- Likewise, the status of counselling and documentation of the services given are below the expectations.

Consistent application of the six steps of dispensing approved nationally can bring dispensing practice to the standard level in a dispensary with a required flow furnished with resources and assignment of required number and mix of professionals

The six steps of dispensing approved nationally are: -

Step 1. The interpretation and evaluation of a prescription

Step 2. The selection and manipulation of the medicine

Step 3. Labelling and packaging of the medicine in an appropriate container

Step Make a final check

Step 4. The provision of information and instructions to a patient

Step 5. Recording the transaction

Step 6. Prescription filing

Before medicines are handed over to clients, the pharmacist should ensure that the prescription is valid, that the medicine is clinically appropriate for the patient, and that information is provided to ensure safe and appropriate use of the medicine using the six steps of dispensing.

Case 1.

W/ro.BizuneshTessema is a 39 years old female who is a mother of 7 children and expects the 8th child as she is now in the 2nd months of pregnancy.

- She told the dispenser that she got married to a daily labourer when she was a 5th grade student.
- W/roBizunesh complains of bone and UTI infections with some abrasions on her skin and presents to the dispensary with the following prescription.

<u>PRESCRIPTION PAPER</u>   Code: **0124**

Institution Name: **xyzt Hospital**   Tel. No **047362...**
Patient's full Name: **Bizunesh Tessema**
Sex: **F** Age: **39** Weight: **68** Card No. **10 964/98**
Region: **Oromia** Town: **Arity** Woreda **Robi** Kebele **01**
House No. **6245** Tel. No: **09123...** ☐ Inpatient ☐ **Outpatient**
Diagnosis, if not ICD: **Osteomyelitis, Vaginal candidiasis, minor skin abrasion**

**Drug Name, Strength, Dosage Form, Dose, Frequency, Duration, Quantity, How to use & other information	Price (dispensers use only)
℞ 1. Ampicillin capsule, 2 qid # 56	
2. Gentian violet solution # 1 bottle	
3. Clotrimazole 500 mg *PV*, 100mg once a day for seven consecutive days	
4. Diclophenac e/c 50 mg # 10 tabs	
Total Price	

Prescriber's   Dispenser's
Full name   Taddese Tilahun   _____
Qualification   HO   _____
Registration # 675899000   _____
Signature   _____   _____ Date: **March 6,2013**

- When asked, W/ro Bizunesh discloses that there are occasions where she **discontinued medicines** (Amoxycillin) given her for UTI as she became symptom free within few days of starting treatment. The client confesses that she would take medicines at any time of the date **doubling their amount** to save time and reducing burden of taking medicines many times a day. When the UTI symptoms **relapsed,** the client confidently speaks that she used 6 tablets of medicines **left over by her husband before 2 years**.

- She said that had any such left over medicines be present at home or had they been available at Ato Fentahun's shop, she should not have wasted her time and money in coming to hospital and pharmacy. Bizunesh still worries that she may not complete all medicines now given her.

- Moreover, she is saying that she feels pain in her stomach when using the pain killer currently commonly sold in pharmacies (diclophenac e/c tablet) with antacids which according to her is even worse when the pills are **swallowed chewed/crushed** on the assumption that doing this will make the pain killer **work faster**.

Probing questions on case 1.

1. How many problems are there with this prescription?

2. How do you manage the prescription for case 1 under the current situation?

3. What should be the step by step technique employed by the dispenser to capture all relevant information on the prescription and from the case herself before the Prescription is processed hastily?

4. What may be the outcome of treatment if this prescription was dispensed as it is now?

The problems of case 1 would all be captured if the six steps of dispensing are to be strictly followed.

5.1.2. Interpreting and Evaluation of Prescription

This is step 1 of dispensing. It is a critical step where prescriptions are evaluated for legality, legibility, completeness, correctness and safety. It also involves the taking of detailed and a relevant medication history to help the dispensers judge the medicine is appropriate for the patient.

- Under the current practice, dispensers do not take time to validate prescriptions.
  - o They do not evaluate prescriptions fully or not at all.
  - o They do not have/do not use checklist to evaluate prescriptions as one method of ensuring legality, legibility, completeness, correctness and safety of prescribed medicines.
  - o As result, unevaluated prescriptions are dispensed in majority of cases.

In dispensing a prescription, a pharmacist must exercise an independent judgement to ensure the medicine is safe and appropriate for the patient, as well as that it conforms to the prescriber's intentions.

At all times the dispensing of a prescription or any other action taken by the dispenser, must be consistent with the safety of the patient. Appropriate documentation should be kept to support the action taken.

In conforming to the above principle, dose, frequency and route of administration, duration of treatment, the presence or absence of other medicines, the patient's illness, medication history, allergies, and other relevant circumstances need to be considered

Basic steps for prescription evaluation and documentation of DTPs for ambulatory cases.

The following are basic steps used for evaluating prescription at step 1 of dispensing for all ambulatory cases serviced through outpatient pharmacy, emergency pharmacy, ART pharmacy and other like chronic care pharmacies.

1. Legality of the Prescription (Standard Prescription, authorized signature, title & date)
2. Legibility (must be clear-never do guess work)
3. Completeness of Prescription (make sure all parts of Prescription are filled)
4. Take relevant medication history using open ended questions
5. Correctness of indication, dose and duration and safety issues such as ADE, contraindications etc.
6. Verification with the prescriber-If in doubt
7. Drug therapy problems (DTPs) and document same using "*Prescription Evaluation and Intervention Register*"
8. Announce price to the patient and confirm payment and if the patient cannot afford, try to help the patient in informing the prescriber to replace the expensive medicine with a cheaper alternative based on evidence.

1. Checking for legality of a prescription

It should be guiding rules that dispensers must always make it their inherent practice to always first prove that prescriptions are legal by avoiding the current unacceptable practice of rushing to the shelf for picking medicines.

A prescription is legal when: -

- It is written (can also be typed) and signed by an authorized prescriber
- NPS prescription (Narcotic and psychotropic prescription) for controlled drugs
- The medicines are written on the right prescription such as normal, Narcotic drugs and psychotropic substances (NPS) and antiretroviral therapy (ART)

- Date of issue not exceeding 15 days for narcotic drugs and psychotropic substances and 30 days for other medicines

2. Checking for legibility of prescriptions and their interpretation

2.1 Legibility

A brief examination of each prescription should be made immediately up on receiving it from the patient to as certain the legibility of various parts of the prescription.

- Pharmacy professional must examine the prescription only behind the dispensing counter, and must not allow themselves to be distracted while doing so. Any doubt regarding the reading of the prescription(i.e.name of the medicines or directions, or if it appears that manner or has been made by the prescriber), should be examined closely and, if necessary discussed/ consulted with other pharmacists or the prescriber himself/herself without arousing doubts or fears in the patient.

- Hand written names of patients and medicines are often difficult to read. In case of illegibility of name, age, etc. ask the patient for the correct spelling tactfully.

- Every prescription should be read and understood thoroughly before attempting to dispense it. Every word, abbreviation, has a meaning. To assume that an illegible or confusing word is unimportant inviting a costly mistake. In case of doubt, consult another pharmacy professional or the prescriber.

- Legibility is a problem requiring alertness and critical judgment on the part of the pharmacy professional. Careless handwriting and similarity in spelling of names of different medicines add to the difficulty. For example, consider a reading error for Medoprazole and Mebendazole. Due to illegible handwriting of prescribers, Medoprazole could be read as Mebendazole. Medoprazole is a brand containing omeprazole whereas Mebendazole is an anthelmintic two different medicines used for two different conditions.

- When handwriting is illegible, the best thing to do is to contact the prescriber over the phone and confirm. Remember, you are dealing with medicines and thus, the lives of patients. So be sure of what you are dispensing.

- The dosage form, the dosage and the quantity to be dispensed must be legible so that dispensing becomes easier for the pharmacy professional. The instructions written for administration should state clearly what the prescriber expects from the patient so that the

pharmacy professionals can counsel the patients efficiently. All terminology, including units of measures and Latin abbreviations should be properly interpreted and checked.

2.2 Interpretation of prescriptions

A. Double medication:

- Same medicine or different medicine with same pharmaco-therapeutic effect concurrently prescribed by the same or different prescribers to the same patient undergoing treatment.

Example –

If a patient has been prescribed diclofenac for fever, and if the dentist has prescribed other NSAIDs for the same patient, it could lead to over dosing of NSAIDs, and result in the risk of GI bleeding and may aggravate hypertension.

B. Interactions:

- Many medicines are known to interact with other prescribed or OTC medicines, food, diseases, herbal medicines, and laboratory results.

- Ideally, all multiple item prescriptions should be checked for medicine interactions. (Unfortunately, checking for medicine interactions is a major problem in Ethiopia because of the large number of medicines prescribed by prescribers).

- If a prescribed item is known to inter act with many medicines or to interact with OTC medicines then it is imperative that the pharmacy professionals check with the patient which other medicines or traditional/complementary medicines the patient is taking, in order to eliminate possible medicines interactions (see annex-10).

- Any medicine interactions likely to render the therapy ineffective or cause undesirable effects to the patient, or affect the treatment in any way, should be brought to the notice of the prescribing prescriber (without unduly alarming the patient)

  Example:

    - Acetylsalicylic acid taken can increase the effect of ananticoagulant (warfarin) that a patient is taking, and may thus lead to bleeding
    - Patientstakingciprofloxacinshouldavoidtakingantacidwithin2-3hours   because the antacid can drastically reduce the absorption of ciprofloxacin

- While interactions should be considered when dispensing all prescriptions, some groups of patients are particularly vulnerable, and extravigilance is required. (Pregnant women,

children, elderly, and those with kidney or liver malfunction).

- Known allergies should be checked, particularly for an antibiotic prescription, where prescribers may fail to consider cross sensitivities within groups of medicines e.g. penicillins.

- Also, check if there is any therapeutic or other type of incompatibility. For example, a pharmacy professionals may know that the client regularly takes oral contraceptives, but the prescriber may not have asked or not known about it.

- At times, a prescriber may have prescribed a medicine without considering certain aspects. For example, a prescriber may prescribe a medicine without confirming with a woman whether she is pregnant or not. A prescriber may miss asking this question. A pharmacy professional can question the patient politely about, whether she is pregnant, or the patient/client may pose the question herself while the prescription is being filled.

C. History of overuse, under use or misuse of medicines by the patient.

D. Check for overwriting:
- Over writing can be done by the patient, to buy extra medicines (especially habit forming medicines or medicines of abuse).

E. Fake/false prescription:
Pharmacy professional should be alert to detect misuse of prescription blanks by clients (obtained by stealing from private practitioners or from Government hospital OPDs, where blanks are often left lying around).

Pharmacy professionals should also be alert to fake prescriptions written/ printed by the patient or client coming to the pharmacy. If the hand writing is not the usual handwriting of the prescriber or you notice it to be unusual otherwise, confirm with a senior colleague or call the prescriber to confirm. Do not dispense such prescriptions, and be sure to alert the prescriber about the misuse.

F. For potent medicines and medicines with a narrow therapeutic index:
Special care must be taken with such medicines, as slight changes in systemic concentration lead to marked changes in pharmacodynamics responses. Examples of narrow therapeutic

index medicines

- Digoxin
- Lithium
- Phenytoin
- Warfarin

G. Special care must be taken in case of:

Medicines with similar names:

Certain medicines have names that may appear similar when carelessly written or when not read carefully. Others may lead to confusion for other reasons. Problems are particularly likely if the strengths and doses of the two preparations are similar. Doubts should always be resolved by checking with the prescriber. Sadly, in most cases where mistakes have occurred, it has been because the item was dispensed without a second thought.

Example of similar names that illustrate the pit falls are:

- Folic acid versus Folinic acid
- Dexamethasone versus Desoximetasone

Abbreviations

Although widely used in prescription writing, abbreviations can kill!! This is because in health care there are no recognized standards for abbreviations, and most of the time, prescribers invent their own. Secondly, different individuals/ pharmacy professionals may assume or interpret abbreviations differently.

Examples

- 'HCT' 25mg was intended to mean Hydrocortisone 25mg, but Hydrochlorothiazide was dispensed.
- 'CPZ' may refer to Chlorpromazine, an ant psychotropic Carbamazepine, which is an anticonvulsant.
- 'CPM'can mean Chlorpromazine or Chlorpheniramine

H. Changes to the prescription

Before a pharmacy professional attempts to dispense a prescription, he/she must read

and understand it thoroughly. If any portion of the prescription is not understood, or if he/she has detected an incompatibility, he/she should consult the prescriber who wrote the prescription.

Any changes made to the prescription over the telephone by the prescriber, should be recorded on the prescription, with the words "changes made over the telephone, in consultation with the prescriber at (time) on (date)" and should be signed and stamped by the pharmacy professional. This exercise facilitates at rust based professional relationship with the prescriber, besides documenting the changes made to the legal document-the prescription, by the pharmacy professional.

Many pharmacy professionals hesitate to call the prescriber about these matters, but, if the calls are executed tactfully, there is no reason why they should not create a better understanding between the persons of both professions.

I. **Therapeutic aspects**
- the safety of the medicine,
- possible contra-indications,
- drug/drug interactions,
- drug/food interaction,
- drug/disease interactions, and
- Treatment duplications.
- Appropriateness of the individual

Confirm that the dose and duration of prescribed medicine are in the normal range for the patient (noting sex and age or weight)

3. Check for completeness of prescriptions

A prescription is complete when all parts on it are filled. But in real time, prescriptions are observed to suffer from incompleteness. This makes it difficult for the dispensers to make decisions in correctly interpreting diagnosis with the type of drug or its dose and duration. When important parameters like age or weight are not written, obviously, dose determination would be challenging especially children. Regarding diagnosis, its mere presence is not enough. Diagnosis written specifically (say hookworm instead of IP or pneumonia instead of community acquired/ atypical pneumonia etc.)do radically affect the type of drug selected or its dose and duration. The

parts indicated in the standard prescription like the one shown below must therefore be filled correctly and consistently. As treatment outcome is the combined effort of all the actors in the care of the patients, all must do its part in writing prescription with full and correct information.

PRESCRIPTION PAPER   Code_____

Name of health institution............... Institution Name: _____Tel. No… ……

Name & address of patient......... Patient's full Name: _____

Sex: ___ Age:___ Weight: _____ Card No. _____

Region: _____Town _____ Woreda_____Kebele ____

House No. ____ Tel. No: _____ ☐ Inpatient ☐ Outpatient

Type of Diagnosis.................... Diagnosis, if not ICD _____

Drug Name, Strength, Dosage Form, Dose, Frequency, Duration, Quantity, How to use & other information	Price (dispensers use only)
Superscription......................... ℞	
Inscription .... Amoxicillin 500mg capsule	
TID, PO for seven days,	
Subscription......................... #21 capsules	
Total Price	

	Prescriber's	Dispenser's
Full name	_____	_____
Qualification	_____	_____
Registration #	_____	_____
Signature	_____	_____
Date:	_____	_____

Prescriber/dispenser information....

See overleaf

The latest version of the standard prescription modified for APTS implementing health facilities contains details that make prescribing and dispensing practices safer. A sample of prescription updated for APTS is that shown below.

PRESCRIPTION PAPER   Ser No_____

Name of Hospital: _____

  Tel: _____

Patient's full Name: _____

Sex: _ Age: _____ Weight: _____ Card No. _____

Region: ___ Town _____ Woreda ____ _ Kebele ___

House No. _____ Tel. No: _____ ☐ Inpatient ☐ Outpatient

Specific Diagnosis, if not ICD _____

Drug Name, Strength, Dosage Form, Dose, Frequency, Duration, Quantity, Route of Administration & other information	Price (dispensers use only)
Rx	
Total Price	

Reconciliation: (Cash sales Ticket's SR No and Sig of cashier) _____

Or (Register SR No for credit/free) _____

	Prescriber's	Evaluator's	Counselor's
Full name	_____	_____	_____
Qualification	_____	_____	_____
Registration #	_____	_____	_____
Signature	_____	_____	_____
Date:	_____	_____	_____

See overleaf

Please Note the Following Information

1. **Prescriptions:**
   1.1. Are valid only if it has the seal of the health institution
   1.2. Filled and blank are legal documents, treat them as fixed assets
   1.3. Written and verbal information to the client complement one another
2. **The prescriber:**
   2.1. Never allow others to use Rx issued under your custody
   2.2. Drug treatment is only one of the treatment options
   2.3. Write the prescription correctly and legibly
   2.4. Diagnosis and other parts of the prescription should be completed
   2.5. Abbreviations are NOT recommended
   2.6. Please accept prescription verification call from the dispenser
   2.7. If dosage must be repeated by the same Rx, describe so and sign
3. **The Rx Evaluator -Pharmacy Professional should check for:**
   3.1. Legality of the Rx; (Standard Rx, authorized signature, title & date)
   3.2. Legibility (must be clear-never do guess work)
   3.3. Completeness of Rx (make sure all parts of RX are filled)
   3.4. Medication history using open ended questions
   3.5. Correctness of indication, dose, duration, contraindications, safety, interactions and others using recent STG, formulary and resources in DIS etc.
   3.6. Verification with the prescriber-If in doubt
   3.7. Drug therapy problems (DTPs) and document using relevant format
   3.8. Price of medicines Rx, announce to the patient and confirm payment
4. **The Counselor-Pharmacy Professional:**
   4.1. Dispenses the medicines to patients
   4.2. Check for whom the medicine is being dispensed: Patient or care taker
   4.3. Arrange appropriate container and packaging for the product
   4.4. Labels of medicines should be clear, legible and indelible
   4.5. Dispense with appropriate information and counseling
   4.6. Record Rx in special recording if refilling is prescribed
   4.7. keep filled prescriptions at least for 2 years
5. **Minimum drug label information:**
   5.1. Patient name
   5.2. Generic name, strength and dosage-form of the medicine, dose, frequency and duration of use of the medicines
   5.3. Route of administration and storage condition and quantity

Sample of "prescription paper" used by APTS implementing health facilities

4. Taking patient past medication history

Taking past medication history can have a central role in the decisions needed for the selection of current medications. As it is known that patients may visit several health facilities, asking them for any history of getting drug from others health providers such as private clinic on Prescription basis or on OTC basis from private pharmacies can help much.

Cultural issues such as fasting may affect drugs chosen for some patients since patients fasting during the day may not become willing to take orally given medicines with qid or tid frequency of administration. Other type of patients refuse to take some types of medicines saying its previous use has caused them troubles (e.g allergy) after recognizing it by its colour in the hand of dispensers.

Regarding drugs given for chronic cases, asking adherence history has a paramount importance for such histories may give insights for decisions needed for regimen change or dose adjustment

or acquisition of vital information in tailoring the current counselling for a better treatment outcome. Through past medication taking, some contraindicated medications prescribed are intervened commonly in the dispensaries by the dispensers.

5. Checking for correctness of prescriptions

One must note that a complete prescription may not necessarily become correct in terms of indication, dose, duration, frequency and safety. For example, drug written on a neatly written complete prescription may become contraindicated or that drug may become infective drug in relation with diagnosis of the patient. In case 1 mentioned earlier for example, Ampcillin is not effective for osteomyelitis nor is the dose of clotrimazole for vaginal candidacies for a mother who is 2 months pregnant.

So, it is vital that dispensers need to be vigilant in making sure that drugs are correct in terms of indication, dose, duration and safety while of course adherence must also be given the attention it deserves. To help you as a quick reference during busy hours for safe dispensing, please see (Annex)

Correctness of a prescription refers to appropriateness of the medicine for individual patient in terms of indication, dose, duration, effectiveness and safety of the medicines in reference to the current national treatment guideline or any available, reliable and acceptable source or evidence.

6. Communicating problems with prescriptions to prescribers

It is mandatory and a professional obligation that dispensers need to communicate with prescribers about the possible problems of legality, legibility, completeness and correctness of prescription with suggestions of evidence based interventions. Updated and latest national guidelines like Standard Treatment Guideline (STG), ART guideline, malaria guideline, TB guideline, Ethiopian medicine formulary, medicine list of the hospitals, resources available in the health facilities' DIS and the like should be sited as evidence for the need for the communication.

When communicating with physicians, strict adherence to the requirements of professional ethics should a culture; dispensers should not alarm the patient about his relation with his physicians. It is highly recommended that when prescribers want to change prescription by accepting

recommendations of dispensers, they must use the same Prescription with DTP than writing it new on a new Prescription. They can cross once on the part of the Prescription where they want to make change, paraph it if necessary and send back to the dispenser.

7. Documentation of the DTPs

The national SOP on the provision of clinical pharmacy, October 2014 edition, recommends the detection, documentation and reporting of DTPs. Based on this, dispensers need to document any problems of legality, legibility, completeness and correctness on the "*Prescription Evaluation and Intervention Register*" shown below. Once they are documented; the data must be presented for the DTC and medical community to discuss on the root causes of the DTPs and the urgency needed to prevent them through concerted team effort. The "*Prescription Evaluation and Intervention Register*" must be prepared in the form of a register to ensure its durability.

Prescription evaluation, intervention and documentation register   Ser # _____

| Date | Card # | Age | sex | weight | Prescription | | | Specific diagnosis | Code of DTP identified and its justification with reference | Intervention proposed | Acceptance of Intervention (√) | | | Cost of drug with DTP | Cost of Drug after intervention | Initial & sign |
					Legal? (√ if not)	Legible? (√ if not)	Complete? (√ if not)				Fully	Partially	Rejected			
Total count/sum																

Page Summary
1. # unnecessary drug therapy (DTP 1) = _____   2. # needs additional drug therapy (DTP 2) = _____
3. # ineffective drugs (DTP 3) = _____   4. # dosage too low (DTP 4) = _____   5. # adverse drug event (DTP 5) =_____
6. # dosage too high (DTP 6) = _____   7. # noncompliance (DTP 7) =_____

DTPs involving antibiotics = _____, # DTPs involving antimalarial = _____, # of females (≥ 15yr) = _____, # of child (< 5yr) = _____

Code for: Rx with legality problems = RxL1,   Rx with legibility problems = RxL2,   Rx with completeness problems = RxC

NB: Code of DTPs described in bracket, all are completed and summarized by prescription evaluators, use new page for a new month (use EC)

8. Announcement of prices to the patients.

Prices should not be announced to patients before prescriptions are evaluated for legality, legibility, completeness and correctness through the steps shown from 1 to 7 above. Announce price to the patient and confirm payment and if the patient cannot afford, try to help the patient in

informing the prescriber to replace the expensive medicines with a cheaper alternatives based on evidence.

Using the prescription evaluation checklist

To effectively and easily use /apply the 1st step of dispensing for all patients visiting the health facility pharmacy, the use of the checklist shown below, hereafter called *prescription evaluation checklist*, can minimize burden of memorization. Usage of the checklist can help dispensers to play key role in executing their professional duty.

 The better way to use the prescription evaluation checklist is print it on A4 size paper, laminate back and front and use it on the counter in front of the patient. Posting it on the wall does not as such help.

Summary

- **The six steps of dispensing are: -**
- Step 1. The interpretation and evaluation of a prescription
- Step 2. The selection and manipulation of the medicine
- Step 3. Labelling and packaging of the medicine in an appropriate container
- Step 4. The provision of information and instructions to a patient
- Step 5. Recording the transaction
- Step 6. Prescription the transaction

The first step in the process of dispensing is reception and interpretation of a prescription which is then evaluated for legality, legibility, completeness and correctness for the individual patient.

- To evaluate prescriptions for these parameters, , eight steps are followed using a prescription evaluation checklist.
- Possible therapy problems found through the course of prescription evaluation are documented on a DTP registration format and communicated to the prescriber for correction.

STEP Make a final check

This is the final check before you give the medicine to the patient. Ideally, a different person than the one preparing the prescription should perform this check, but self-evaluation can be used when there is only one dispenser at work. The final check includes:

1,Reading and interpreting the prescription, including appropriateness of dose prescribed and medicine interactions

2, checking the dispensed medicine against the pre-scription and the stock containers used

3, checking that label is correct and all information is filled in checking routines, prevent mistakes

Session 5.2: Selection, Labelling and packaging of the medicine in an appropriate container

Session Description: This session provides a review of the basics of selection of medicines, packaging materials, labelling of dispensed medicines and the importance of these in safe use of dispensed medicines.

Session Objective: To enable participants to describe the basic of packaging materials and gain knowledge and   skill required for language labelling.

Enabling Objectives: By the end of this chapter, participants will be able to:

- Describe how to safely select, manipulate, and package medicines for dispensing
- Identify requirements for labelling medicines

Chapter Outline:

This chapter has the following outlines:

- Selection and manipulation of the medicines
- Labeling and packaging of the medicines in appropriate container
- summary

Allocated Time: 60 minutes

5.2.1. Selection, Manipulation, and Packaging of medicine

Selection and Manipulation

This includes: -

1. Select stock container of pre-pack reading the label and cross matching the medicine name and strength against the prescription.
2. Read the container label at least twice during the dispensing process.
3. Do not select the prescribed medicine according to the color or location of container.
4. Do not open many stock containers at the same time. This trend will lead to errors and/or expose the medicines to air and eventually leads to deterioration in quality.
5. Open and close containers once at a time.
6. While counting, pouring or measuring, the following points should be noted:
   - short and/or over counting should be avoided
   - Clean counting tray and/or spoon used
   - Graduated measuring cylinder and/or flask must be used for measuring liquid reduction. If small volume is to be measured, small measuring cylinder/flask has to be used (if compounding is performed in the pharmacy).
7. Appropriate balance should be used (if compounding is performed in the pharmacy)
8. In dispensing liquids (if compounding is performed in the pharmacy):
   - Must be measured in a clean vessel and should be poured from the stock bottle with the label kept up ward. This avoids damage to the label by any spilled or dripping liquid.
   - Pour the measured liquid preparation into the container/bottle and label it Provide appropriate bottles with caps for repackaging liquid preparations
   - Dispense liquid preparations in suitable containers
   - Do not use patient's own bottle
   - Dispense each medicine in a different bottle
9. In dispensing tablets and capsules:
   - Do not use fingers to count tablets as this can lead to contamination of medicines
   - Use a spoon to put tablets and capsules onto a counting tray

- Count and put them in a labeled medicine container or pack

- Close stock containers tightly after dispensing

- Keep the spoon clean always

- Do not keep the spoon inside the container

10. Labelling of dispensed medicines should be clear and legible.

Use separate plastic boxes for different patient's requirements of medicines. To avoid mix-ups of medicines of different patients, it is a good practice to assemble medicines of different patients in separate/different boxes, till they are billed and packed.

Packaging of medicines

Medicines must be suitably contained, protected and labelled from the time of manufacture until they are used by the patient. The container must maintain the quality, safety and stability of the medicine throughout this period.

The selection of packaging for medicines depends on:

- Nature of the medicine

- Type of patient

- Dosage form

- Method of administering the medicine

- Required shelf-life

- Use, such as for dispensing.

Original containers used by manufacturers are expected to protect medicines for their specified shelf-life. Because original containers may contain large amount of medicines, repackaging of medicines in to another container may be necessary to dispense medicines for patients. Such repackaging procedure can be done at-the –spot or in advance.

Pre packaging is the process by which the pharmacy professional transfers a medication manually from a manufacturer's original commercial container to another type of container in advance (before clients come to medicine retail out lets).

The following guidelines are recommended in pre packaging of medicines:

- o Pre packaging procedures must comply with laws and regulations.
  - o The pre packaging operation and area must be clean and separate from
- Other pharmacy activities.
  - o Only one medicine product at a time should be pre packaged in a specific work area.
  - o Before beginning a pre packaging run, a physical evaluation (color, odor, appearance, and markings) of the medicine product being pre packaged should be made to assure product integrity. The bulk container should also be examined for evidence of damage, contamination, and other deleterious effects.
  - o All pre packaging equipment and systems should be operated and used
- In accordance with the manufacturer's or other established instructions. There should be valid justification and authorization by the supervisor for any deviation from those instructions on the part of the operator.
  - o The pharmacy professional must use available data on the characteristics of all packaging material used to protect the integrity of the medicine product. This information should included at the chemical composition, light transmission, moisture permeability, size, thickness (alone or in laminate), recommended sealing temperature, and storage requirements.

Upon completion of pre packaging, all unused medicine stock, unused labels and finished packages should be removed from the pre packaging area. The packaging equipment should then be completely emptied, cleaned, and inspected before commencing the next pre packaging operation. All pre packaged medicines should be stored in a temperature and humidity-controlled environment. Pre packaging materials should be stored and used in accordance with the manufacturer's instructions.

The main advantages of pre packaging medicines are that it allows enough time for patient counselling and minimizes dispensing errors resulting from hectic operation due to heavy patient load. Unfortunately, the materials commonly used for repackaging in much medicine retail outlets of Ethiopia are ordinary papers and the labelling since complete. In such cases, repackaging of medicines is likely to have many disadvantages than advantages.

Packaging aids and materials

The materials used for repackaging include: glass bottles, plastic bottles, collapsible tubes, paper envelops, plastic envelops, etc. The requirements of containers for packaging different dosage forms are indicated in table 2.1. Paper has the least value as the primary packaging material in terms of maintaining the quality, safety and stability of packaged medicine.

Table 2.1. Requirements for packing materials.

Requirements for packing material	Package characteristics	Examples
Tablets/capsules		
Desirable	Clean, dry, plastic or glass container with tightly sealing cap or seal	Blister packages, plastic sachets, tightly sealing plastic or glass containers with screw or snap cap
Acceptable	Clean, dry container that provides protection from dirt and moisture	zip-lock plastic bags, glycine paper, hinged-lid unsealed boxes, sifter-top boxes, tight-top tins
Undesirable	Unclean absorbent paper, cotton, cardboard containers with no provision for closure	Unsealed plastic bags, paper bags, newspaper or other printed paper
Liquids (oral and topical)		
Desirable	Clean, dry, light-resistant glass container with tightly sealing cap	Amber or opaque bottle with screw cap
Acceptable	Clean, dry plastic or glass container with tight-fitting cap	Glass or plastic bottle with tight-fitting cap
Undesirable	Unclean paper, cardboard, metallic	Previously used liquid-containing cartons, plastic-lined paper bags, plastic bags
Liquids (otic and ophthalmic)		
Desirable	Clean (preferably sterile), light-resistant glass or plastic container with a dropper incorporated into a tightly sealing cap or a top fitted with dropper with a protective sleeve	Amber dropper bottle, opaque plastic dropper bottle
Acceptable	Clean, dry plastic or glass container with tight-fitting cap and a clean plastic/glass dropper (separate)	Glass or plastic bottle with tight-fitting cap, glass or plastic dropper with protective container(cardboard, zip lock, plastic, or paper)
Undesirable	Anything other than above	Anything else
Cream/ointment		
Desirable	Clean glass or porcelain wide-mouth jar with tightly fitting lid or collapsible plastic or metal tube	Wide-mouth jar with well-closed lid, cream or ointment tube with cap.
Acceptable	Clean glass or porcelain jar with lid	Glass or porcelain jar
Undesirable	Anything other than above	Anything else

***Desirable:** Package should meet listed requirements for period greater than 30 days.
Acceptable: Packaging should meet listed requirements for up to 30 days.
Undesirable: Packaging provides no protection from dirt, moisture, or other contaminants, thus permitting rapid deterioration or contamination.

5.2.2. Labelling of Medicines

Discussion on Labeling medicines.	
	• What is the importance of labeling medicines in the dispensing process? • How do you rate labeling of medicines at your practical settings?
Time allowed 10 minutes	

The main functions of a label on a dispensed medicine are to uniquely identify the contents of the container and to ensure that patients have clear and concise information about the use of the medicine. In order to gain maximum benefit from the use of drugs while minimizing their adverse effects, prescribers and pharmacists must maintain effective communications not only among themselves, but with their patients as well. The direction for drug use and other information which the prescribers indicate on the prescription orders and which pharmacists transfer to prescription labels are critical to safe and effective drug therapy.

The purposes of a label for prescribed medicine are to describe its identity, contribute to optimal therapeutic outcome and avoid medication errors, achieve appropriate handling and storage, and allow the product to be traced if there are problems with the manufacturing, prescribing or dispensing process. In order to assure that this information is conveyed clearly and effectively to the patients, dispensers should exercise required professional competence.

Each dispensed medicine must be appropriately labelled to comply with legal and professional requirements. All medicines to be dispensed should be labelled and the labels should be unambiguous, clear, legible and indelible. If possible printing should be printed.
Minimum drug label information should include the following:

- Patient name
- Generic name, strength and dosage form of the medicine
- Dose, Frequency and duration of use of the medicines
- Quantity of the medicine dispensed
- How to take or administer the medicine?
- Storage condition

If the medicine has been prepared extemporaneously, a batch number may be included. All

labels must be unambiguous, legible, accurate and comprehensible.

- Label of the kind demonstrated below have to be prepared and given out to patients with the language they understand. The labels have to be attached to the container/strip of each medicines using elastic band.

```
                                                    DATE_____
INSTITUTION NAME_____
PATIENT NAME_____
GENERIC NAME, STRENGTH & DFs OF
MEDICINE_____
FREQUENCY & DURATION OF
MEDICINE_____
 QUANTITY OF THE MEDICINE
DISPENSED_____
HOW TO TAKE THE
MEDICINE_____
EXPIRY DATE_____
STORAGE CONDITION _____
```

The labelling of medicines in drug retail outlets of Ethiopia is very disappointing. It is common to see the dispensed medicines without label, incomplete label, or illegible label. The size of the commonly used paper envelops may not even allow to write the required information on it.

Example of label in English:

XYXT Hospital pharmacy   *Tell: 047362……*
 Medicine use Instruction
 Cloxacillin 250 mg ; # 168 caps
        take 2 caps at 7am in the morning
        take 2 caps at 1pm at noon
        take 2 caps at 7mp in the evening
        take 2 caps at 1am in the night
        For 21 days
 Precautions
 1. Do not take more/less than recommended
 2. Take at the recommended time of the day always at regular intervals.
 3. Do not share with any other person
 4. Do not take medicines without prescription and tell the professional if you have done so.
 5. Report any unusual symptoms after taking this medicine.
 6. Do not use medicines which have shown symptoms of damage or those that have expired
 7. Medicines must be always stored closed in their original container at dry and cool places away from reach of light
 8. Do not take alcohol
 9. Take this medicine 2 hours before or after meal in an empty stomach
 10. Unless otherwise directed, complete the prescribed course even if your symptoms go
 	
 *Name of client: **BizuneshTesema***
 Date: Feb 27, 2005 EC   *Expiry date: Jan 2014*

A label must be prepared in a local language like those depicted below

XYXT ሆስፒታል መ/ቤት: ሴ.ቁ 047362...

የመድኃኒት አጠቃቀም መረጃ

Cloxacillin 250mg, # 168 caps

2 ፍሬ ጠዋት   በ 1 ሰዓት ይዋጡ
2 ፍሬ ቀን   በ 7 ሰዓት ይዋጡ
2 ፍሬ ማታ   በ 1 ሰዓት ይዋጡ
2 ፍሬ ሌሊት   በ 7 ሰዓት ይዋጡ
                                    ለ 21 ቀናት

ልደረጉ የሚገባቸው አስፈላጊ ጥንቃቄዎች:-
1. ከታዘዘው አስበልጠው ወይንም አሳንሰው አይውሰዱ!!
2. ሰዓቱን ጠብቀው ይውሰዱ!!
3. ከለላ ሰው ጋር አይጋሩ!!
4. ካለ ዓለም-ያ ትእዛዝ ለሊ መድኃኒት አይውሰዱ; እየወሰዱ ከሆነም ያሳውቁ!!
5. መድኃኒቱን ወስደዉ ያልተለመዱ ምልክቶች ካጋጠሞት ለባለሙያዉ ቶሉ- ያሳነሩ!!
6. ጊዜ ያለፈበትን ወይንም የብልሽት ምልክት ያሳየጋ መድኃኒት አይጠቀሙ!!
7. መድሃኒት ሁልጊዜ በራሱ መያዣ በደረጠ ተከድኖ ብርሃን በማይደርስበት በደረቅና ቀዝቃዛ ቦታ ይስቀመጡ!!
8. የአልኮል መጠጥ አይውሰዱ!!
9. ከምግብ በፊት ወይም ቦጎ 2 ሰዓት አራርቀዉ ይወሰዱ!!
10. የሆሙም ምልክት ስለጠፋ ብቻ ተሻለኝ ብሎ ማቋረጥ የለብዎትም!!

የታዘዘለት ስዉ ስም: ወ/ሮ ቡዜነሽ ተስሬጋ
ቀን : የካቲት 27፡2005   Expiry date: Jan 2014

ሕጻናት በማይደርሱብት ቦታ ይቀመጥ!!

XYXT ሆስፒታል መ/ቤት፡ ሰቁ 047362...

የመድኃኒት አጠቃቀም መረጃ

Clotrimazole 100mg, # 7 tabs

1 ፍሬ ማታ በ 3 ስዓት ማስገቢያዉን በመጠቀም ለ 7 ቀናት በማህጸንዎት ያስገቡ!!

ሊደረጉ የሚገባቸው አስፈላጊ ጥንቃቄዎች:-
1. ከታዘዘው አስበልጠው ወይንም አሳንሰው አይዉሰዱ!!
2. ስዓቱን ጠብቀው ይዉሰዱ!!
3. ክሊሳ ሰው ጋር አይጋሩ!!
4. ስለ ዓለሙያ ተኣዛዥ ላይ መድኃኒት አይዉሰዱና እጠባሩ ከሆነም ያዉጡ!!
5. መድኃኒቱን ወሰደዉ ያልተሰማዉ ግላከቶች ካጋጠሞት ሰዓሙያዉ ቶሎ ያሳዉቁ!!
6. ጊዜ ያለፈበትን ወይንም የብልጥ ምልከት ያሳየ_ መድኃኒት አይዉሰዱ!!
7. መድሃኒት ሁል2ዜ በራሱ መያዣ በጸጋ ተከድኖ ብርሃን በማይደርስበት በደረቅና ተዝቃዛ ቦታ ይስተዶ!!
8. በነፍ የሚወሰድ አይደለም!!
9. የሀመም ምልከት ስሰጡ በጀ ተጀለና ባሉ ረጥ የለብ ተ!!

የአጠቃቀም ቅድምተከተል
1. መጀመሪያ እጀዎትን ይታጠቡ !!
2. ከማሽጊያዉ አንዱን ፍሬ ከሊ በጆ ያዉጡ !!
3. ያጡትን አንድ ፍሬ ከሊ በማስገቢያዉ ጫፍ ላይ ያስገቡ!!
4. ጉልበትዎትን በማጠፍ እግርዎትን በመከፈት በጀርባዉ ይጋደሙ !!
5. ቀስ በማለት ማስገቢያዉን በመጠቀም ከንኑን በማህጸንዎት ያስገቡ!!
6. ማስገቢያዉ በደንብ መግባቱን ካረጋገጡ በኋላ ያሰ ሜፉን ይጎፉ!!
7. የመድሃኒት ማስገቢያዉን ከማህጸንዎት ያዉጡ!!
8. የመድሃኒት ማስገቢያዉን በሳሙና ለበ ባሰ ዉሃ በመጠቀም በደንብ ይጠቡት !!
9. እጀዎትን በሳሙና ይታጠቡ !!

ማሳሰቢያ:
መድኃኒቱን ከማስገባትዎ በፊት ሽንት ቤት መጠቀም አስፈላሰት አስተድሞ ሽንት ቤቱን ከተጠቀሙ በጋ ኮሳ የተዘዘዛዉን ቅድምተከተል በመከተል መድሃኒቱን ማስገባት አለብን!! በላ መጋጋድ መድሃኒቱን እስገቡ በጋ በአንድ ሰዓት ጊዜ ዉስጥ የሽንት ስሜት ከተሰማዎት መድሃኒቱ ገበቶ እንደ ሰዓት እስኪደፍ ሽንት ቤት አይጠቀሙ!!

የታዘዘላት ስዉ ስም፡ ወ/ሮ ብዙነሽ ተሰጋ
ቀን ፡ የኅትት 27 ፤ 2005 Expiry date: Jan 2014

ሕጻናት በማይደርስብት ቦታ ይቀመጥ!!

Summary

- Dispensers must select medicines from the shelves based on the prescription.

- While selecting medicines, reading their labels on their containers at least two times must be a routine practice.

- The required quantity of medicines is prepared and then packed in a container that can protect their safety and stability.

- Medicines must be labelled with legible and indelible local language. The content of the label must meet national requirements for labelling. in local languages should be encouraged.

- Standard labelling materials should be printed made available to patients

Session 5.3: Counselling, recording the transactions and prescription filing

Session Description: This session focuses on principles and basics of counselling, recording of transactions and filing the filled prescriptions

Chapter Objective: To enable participants to describe the basics of counselling, transcription recoding and documentation of prescriptions

Enabling Objectives: By the end of this chapter, participants will be able to:

- Discuss the medicine counselling checklist
- Describe cautionary/advisory words used for counselling and labelling
- Identify counselling points for selected dosage forms
- Discuss how to record the transactions
- Discuss the importance of prescription filing

Chapter Outline:

This chapter has the following outlines:

- Introduction
- Counselling checklist
- Cautionary/advisory wordings used when counselling and labelling
- Counselling points for selected dosage forms
- Recording the transaction
- Prescription filing
- Session Summary

Allocated Time: 90 minutes

5.3.1. Introduction

Inappropriate use of medicines has serious health and economic consequences for both individuals and the community. Medication use counselling by dispensers should be available to enhance patients' knowledge, understanding, and adherence to prescribed medication therapy regimens. Counselling by dispensers not only creates awareness but also decreases health care costs. Verbal counselling should be provided at the 4th step of dispensing after making sure that the prescription is legal. legible, valid, correct, and complete.

It is essential that dispensers follow standardized checklist for counselling patients on the use of medications to make sure that the patient or their caretaker understands the regimens correctly and gets maximum benefit from the treatment.

5.3 .2. Medicine   Counselling Checklist

Discussion on Counseling
• What are the components of counseling in the good dispensing process?   **Time allowed 5 minutes**

The nationally approved checklist for counselling has the following 21 counselling points. The 21 counselling points have been logically arranged to make counselling flow easy and understandable. Dispensers must follow the checklist and address the counselling points during the counselling session.

This means counselling starts at counselling point number 1 (checking allergies) and ends at 21 (providing contact information of the dispensary). The convenient and user friendly form of the counselling checklist is the A3 printed version of it laminated back and front. From practice point of view, posting it on walls has not proved to be very user-friendly and practical.

The 21 counselling points and counselling checklist is indicated below:

1. **Check for any Allergies in general and this medicine in particular**
    • Ask for any allergies
    • Obtain past medicines use history
 2. **Tell name and indication of the medicine:**

- Name is important in case of emergency and visit to more than one provider
- Indication reinforces diagnosis and creates confidence

3. **Tell route and frequency of administration:**
   - Prevents taking by the wrong route
   - Inform if first time or reinforce what they know; Note: 'take one tablet after meals" may not work since not everyone eats three meals a day

4. **Discuss on what to if the clients miss dose- taking time or if the taken dose is vomited**

5. **Tell the client how long to take the medicine:**
   - Helps to eliminate unrealistic expectations
   - Ensures reaching treatment goals
   - Prevents emergence of microbial resistance

6. **Tailor medicine regimen to daily routine:**
   - Ask the daily routine before suggestion a plan
   - Link taking a dose with regular daily task and effect of the medicine
   - Should not assume a common routine (e. g. eating three meals a day, sleeping night times, etc.)

7. **Ask if the client has problem taking this medicine:**
   - Complexity to the dosage regimen affects adherence:
   - Is there special preference for a dosage form when for example there is swallowing difficulty due to esophageal ulcers
   - Consider total cost of care not just the cost of the drug alone

8. **Tell how long it will take for the medicine to show an effect:**
   - If not told the client may believe the medicine is not working and may stop taking or increase dose with subsequent toxicity

9. **Tell how many times and when to refill:**
   - Number of refills: Check if there is incontinence

10. **Emphasize benefits of the medicine:**
    - Discuss benefits before potential side – effects

11. **Discuss major side effects of the medicine:**
    - Side effects that are common and how long they will stay; those that disappear with time using reassurance can help to cope with them.
    - Measures to recognize, prevent, or manage side effects and adverse effects:
    - Tell what to do it side effects don't go away or become intolerable
    - Encourage the patient to report side/ adverse effects of the drugs

12. **Discuss drug – drug –food, drug- disease, drug – herb interactions and manage it using appendix IV**
    - Ask if client is taking other medicines, discuss interference of other drugs, food or medical conditions with current medicine and /or condition being treated

13. **Inform clients of devices that can assist them in taking their medications regularly and thereby improve adherence**
    - Alarm devices (wrist watch or cell phone alarms), pill boxes, associating doses with daily activities, leaving medications out where they can see them, etc.

14. **Discuss precaution and measures to improve treatment outcome:**
    - Decreased salt intake, dietary requirement, self-monitoring recommended, exercise, activities to be avoided-

- Don't assume the client may have prior information. It is good to repeat and discuss precautions

15. **Discuss storage recommendation supplementary instructions:**
    - Shake well, refrigerate, avoid heat and humidity, etc.
    - Duration of use after opining container

16. **Discuss religious and cultural issue that may affect medicines use**
    - Fasting and holy water, dosage forms preferences, the ill consequences of hoarding medicines at home and sharing of such medicines with other people; etc.

17. **Demonstrate and provide adequate information about special dosage forms:**
    - Metered dose inhalers, suppositories, eye drops, ear drops, topical, transdermal patches, injections, sublingual tables, nasal sprays, sustained - release tablets /capsules,etc.

18. **Educate techniques for self – monitoring**
    - Diabetes signs and symptoms of hypo- and hyper – glycol use of blood glucose monitoring devices
    - Wayfaring therapy to watch for excessive bleeding
    - Hypertension: use of blood pressure motors

19. **Ask if there are any additional concerns or question: listen respectfully and carefully and carefully**

20. **Ask client to repeat key information to check how instructions are understood:**
    - Could you tell me how you are going to take your medicine?
    - Praising has been shown to reinforce adherence

21. **Provide your telephone number and encourage to contact you, if the need arises**

5.3.3. Cautionary/Advisory Wordings used when counselling and labelling

When advising the patients using the counselling checklist mentioned above, care need to be exercised regarding the content of wordings used with patients. For example, to advice patients about the need to take on an empty stomach for a better absorption, the better term to use is "take 2 hours after or before meal" than say "take in an empty stomach" because patients may assume, for example, "30 minutes before meal" as an empty stomach which is not the case physiologically. Therefore, it is advisable to use standardized wordings for advisory/cautionary labels when counselling patients or give them written instructions. The cautionary/advisory labels can be of 2 types depending if they are drug specific or common most medicines/dosage forms. See the examples below for details.

Examples of advisory/cautionary wordings common to most medicines/dosage forms:

- 'Shake the bottle', (for pharmaceutical products such as suspensions and emulsions)
- 'Use freshly boiled and cooled water', (for water used for constituting powders)
- 'For external use only', (for topical preparations)
- 'Discard ____ days after opening' (applied to eye preparations dispensed in multiple dose containers)
- 'Do not use after ____days' (apply particularly to antibiotic mixtures, diluted liquid and topical preparations, and to eye-drops)
- 'Keep out of the reach and sight of children'
- 'Stains cloths or the skin'
- 'Take the tablets with water or other liquid'
- 'Do not share with any other person'
- 'Do not take more/less than recommended'
- 'Do not use medicines not given you by an authorized health professional'
- 'Do not transfer into another container'
- 'Store tightly closed in a cool and dark place' 'Store in a cool place',
- 'Do not use medications which have become damaged or shown signs of damage or expiration'
- 'Inform the provider medications you bought from pharmacy by yourself or another doctor has prescribed you or you completed before sometimes'

Examples of advisory/cautionary labels specific to a drug or its family /dosage form

- Take this medicine with _____ hrs. gap separated from other medicines
- Take this medicine with ____ hrs. Gap separated from milk (or other food types).
- Take with or after food
- Take half to one hour before food.
- Take 2 hours before or after food or on an empty stomach
- To be sucked
- To be chewed
- To be swallowed whole, not chewed
- To be dissolved under the tongue
- Take with plenty of water
- Do not take more than 2 at any one time. Do not take more than 8 in 24 hours
- Do not take more than . . . in 24 hours
- Do not take more than . . . in 24 hours or . . . in any one week
- This medicine may color the urine
- Dissolve or mix with water before taking
- Avoid exposure of skin to direct sunlight or sun lamps
- Take at regular intervals. Complete the prescribed course unless otherwise directed.
- Warning. Avoid alcoholic drinks

- Warning. May cause drowsiness. If affected do not drive or operate machinery. Avoid alcoholic drink

5.3.4. Counselling Points for Selected Dosage Forms

Discussion dosage forms that need special counseling	
	• What are the dosage forms that need special counseling in your practice?
Time allowed 10 minutes	

There are multitudes of factors affecting counselling. Age, background of the patient, literacy level and the like are to be mentioned. Another important factor that can influence the medicine use counselling use we provide is the type of dosage form. Just because of the type of dosage form, not necessarily because of the active ingredient, some dosage forms require specialized counselling. Some of the commonest of these type of dosage forms requiring specialized counselling with their respective counselling point are listed below: -

A. *Tips for Proper Dispensing of Paediatric Powder for Suspension for Oral Use*

* Use freshly boiled and cooled water (FBC)
* Add the FBC gently bit by bit shaking each time after each bit and finally exactly to the mark on the bottle
* FBC is added only once to each bottle
* Do not add water (FBC) to all bottles at the same time, meaning this has to be only after the first reconstituted bottle is completed
* Shake each time before use
* Use only volume measuring device recommended by the dispenser to pour the accurate dose
* "Do not use after _____ days!"
* Provide the general warnings and find recommended warning label wordings that apply to a specific drug
* Praise your child for becoming willing to take the dose and the fact syrups are not candies but harmful medications if taken inappropriately

B. *Counselling Points for Administration of Eye Drops*

* Wash your hands.
    * Advice the need for thorough hand washing before application and importance of eye hygiene in prevention of contamination of the remaining doses and avoidance of re-infection and relapse of the problem
* Open the closure. Do not touch the dropper opening.
* Look upward.
* Pull the lower eyelid down to make a 'gutter'.
* Bring the dropper as close to the `gutter' as possible without touching it or the eye.

- Apply the prescribed number of drops in the 'gutter'.
    - Be vigil ant on the issue of systemic side effects after application into the eye

      Educating the patient on the needs to close the tubes immediately after each use
- Close the eye for about two minutes. Do not shut the eye too tight; excess fluid can be removed with a tissue.
- Eye-drops may cause a burning feeling but this should not last for more than a few minutes. If it does last longer consult a doctor or dispenser.
- If more than one kind of eye-drop issued wait at least five minutes before applying the next drops.
- When giving eye-drops to children:
    - Let the child lie back with head straight.
    - The child's eyes should be closed.
    - Drip the number of drops prescribed into the corner of the eye.
    - Keep the head straight.

Important!!!!

- Identify the type of eye preparation (lotion, solution, ointment, etc.)
- Eye drops are generally in stilled into the pocket formed by gently pulling down the lower eyelid and keeping the eye closed for as long as possible after application;
- One drop is all that is needed. A small amount of eye ointment is applied similarly; the ointment melts rapidly and blinking helps to spread it.
- When two different eye-drop preparations are used at the same time of day, dilution and over flow may occur when one immediately follows the other. The patient should therefore leave an interval of at least 5 minutes between the two.

C. Counselling Points for Administration of Eye ointment

- Wash your hands.
- Tilt the head backwards a little.
- Take the tube in one hand, and pull down the lower eyelid with the other hand, to make a 'gutter'. Do not touch anything with the tip of the tube.
- Bring the tip of the tube as close to the 'gutter' as possible.
- Apply the amount of ointment prescribed.
- Close the eye for two minutes.
- Remove excess ointment with a tissue.
- Clean the tip of the tube and close it.

D. Counselling Points for Administration of Eardrops

- Warm the ear-drops by keeping them in the hand or the arm pit for several minutes. Do not use hot water tap, no temperature control!
- Tilt head sideways or lie on one side with the ear upward.
- Gently pull the lobe to expose the ear canal.
- Apply the number of drops prescribed.
- Wait five minutes before turning to the other ear.
- Use cotton wool to close the ear canal after applying the drops ONLY if the manufacturer explicitly recommends this.
- Ear-drops should not burn or sting longer than a few minutes. If it does last longer consult a doctor or dispenser.

E. Counselling Points for Administration of Nasal drops

- Blow the nose.
- Sit down and tilt head backward strongly or lie down with a pillow under the shoulders; keep head straight.
- Insert the dropper one centimetre into the nostril.
- Apply the number of drops prescribed.
- Immediately afterward tilt head forward strongly (head between knees).
- Sit up after a few seconds; the drops will then drip into the pharynx.
- Repeat the procedure for the other nostril, if necessary.
- Rinse the dropper with boiled water.

F. Counselling Points for Administration of Nasal spray

- Blow the nose.
- Sit with the head slightly tilted forward.
- Shake the spray.
- Insert the tip in one nostril.
- Close the other nostril and mouth.
- Spray by squeezing the vial (flask, container) and sniff slowly.
- Remove the tip from the nose and bend the head forward strongly (head between the knees).
- Sit up after a few seconds; the spray will drip down the pharynx.
- Breathe through the mouth.
- Repeat the procedure for the other nostril, if necessary.
- Rinse the tip with boiled water.

G. Counselling Points for Administration of Aerosol

- Cough up as much sputum as possible.
- Shake the aerosol before use.
- Hold the aerosol as indicated in the manufacturer's instructions (this is usually upside down).

- Place the lips tightly around the mouthpiece.
- Tilt the head backward slightly.
- Breathe out slowly, emptying the lungs of as much air as possible.
- Breathe in deeply and activate the aerosol, keeping the tongue down.
- Hold the breath for ten to fifteen seconds.
- Breathe out through the nose.
- Rinse the mouth with warm water.

H. Counselling Points for Administration of Suppositories
- Defecate and wash your hands.
- Remove the covering (unless too soft).
- If the suppository is too soft letitharden first by cooling it (fridge or hold under cold running water, still packed!) then remove covering.
- Remove possible sharp rims by warming in the hand.
- Moisten the suppository with cold water.
- Lie on your side and pull up your knees.
- Gently insert the suppository, rounded end first, into the back passage.
- Remain lying down for several minutes.
- Wash your hands.
- Try not to have a bowel movement during the first hour.

I. Counselling Points for Administration of Vaginal tablet with Applicator
- Wash your hands.
- Remove the wrapper from the tablet.
- Place the tablet into the open end of the applicator.
- Lie on your back, draw your knees up a little and spread them apart.
- Gentlyinserttheapplicatorwiththetabletinfrontintothevaginaasfaras possible, do NOTuse force!
- Depress the plunger so that the tablet is released.
- Withdraw the applicator.
- Discard the applicator (if disposable).
- Clean both parts of the applicator thoroughly with soap and boiled, lukewarm water (if not disposable).
- Wash your hands.

J. For vaginal tablets without applicator

- Wash your hands.
- Remove the wrapper from the tablet.
- Dip the tablet in lukewarm water just to moisten it.
- Lie on your back, draw your knees up and spread them apart.
- Gently insert the tablet into the vagina as high as possible, do NOT use force!
- Wash your hands.

K. Counselling Points for Applying vaginal creams ointments and gels

(Most of these drugs come with an applicator)

- Wash your hands.
- Remove the cap from the tube containing the drug.
- Screw the applicator to the tube.
- Squeeze the tube until the required amount is in the applicator.
- Remove the applicator from the tube (hold the cylinder).
- Apply a small amount of cream to the outside of the applicator.
- Lie on your back, draw your knees up and spread them apart.
- Gently insert the applicator into the vagina as far as possible, do NOT use force.
- Hold the cylinder and with the other hand push the plunger down thus inserting the drug into the vagina.
- Withdraw the applicator from the vagina.
- Discard the applicator if disposable orcle an thoroughly (boiled water) if not.
- Wash your hands.

5.3.5. Recording the Transaction

Prescriptions should be recorded and documented as proof of transaction between the patient and the dispenser. Prescriptions can therefore be traced back if any need arises. All dispensing units should have a standardized Prescription Registration Book (PRB) for recording every pharmaceutical issued to a patient. A computerized dispensing and registration system may also be used, but should always be supported by paper backup. The registration book should be completed at the time of dispensing or at the close of the working day.

The prescription registration book should be used both when prescriptions are retained in the pharmacy and when they are returned to the patient.

For a prescription, which is returned to a patient because all the items in the original prescription could not be filled, the medicines that have been dispensed from the pharmacy should be copied on a blank prescription and the prescription should be filed appropriately. On the original prescription, which is retained by the patient, the word "dispensed" should be stamped a adjacent to those items which have been dispensed. For prescriptions, which are to be refilled on a later date, the dispensing information should been tered the registration book before returning the prescription to the patient. The official seals of the pharmacy/Health institution, name and signature of the dispenser, the date of dispensing and then extra fill date should be written on the back of the prescription.

Documentation and reporting

- The receipts for requisition, receiving as well as the prescription registration book should be kept properly.

- Blank prescription should be kept carefully, only prescribers have access to them.

Example: -.

Table 2.2. Prescription Registration Book (PRB)

Name of Health Facility _____, Region, _____, Town _____

Page _____

S.N.	Prescription No.	Date	Name of Patient	Sex	Age	Weight	Medical Record No.	Diagnosis	Medicine Name	Strength	Dosage Form	Qty in BU*	Total Qty (Page/Day) in BU*	Prescriber name	Qualification	Dispenser name	Qualification	Credit	Free	prisoner
1	001	1/1/03	XXX	F	42	65	2222	Minor UTI Infection	Amoxicillin	500mg	Capsule	**30**	**81**							
									Paracetamol	500mg	Tablet	10	10							
2	543	1/1/03	YYY	M	40	55	111	Upper RTI	Amoxicillin	500mg	Capsule	**30**	–							
									Ibuprofen	200mg	Capsule	20	65							
3	875	1/1/03	AAA	F	23	56	342	Arthritis	Ibuprofen	200mg	Capsule	45	–							
4	678	1/1/03	TTT	F	45	87	765	Celulitis	Cloxacillin	250mg	Capsule	56	56							
									Diclophenac	50mg	Tablet	10	40							
5	789	1/1/03	YXT	M	60	88	654	UTI	Amoxicillin	500mg	Capsule	**21**								
									Diclophenac	50mg	Tablet	20								

BU* = basic unit (e.g. tablet, capsule, tube, sachet, vial etc)

Please note in this example that the total in BU per page on 06/06/12 for Amoxicillin is 30cap + 30cap + 21cap = 81 capsules (shown in bold). Similar total per day (per page) for paracetamol, ibuprofen, cloxacillin and diclophenac is 10, 65, 56 and 40 respectively.

- Filled prescription should be kept as a receipt. Prescriptions for narcotic and psychotropic Substances should be kept for 5 years and other prescriptions for 2 years. Thereafter, they should be disposed carefully in the presence of appropriate body.

- Regular reports on medicine consumption and prescribing pattern from patient prescription registration book should be prepared and report to the appropriate body timely.

- Information obtained from prescription registration book could be used for further planning and efficient utilization of resource.

- The report on physical inventory shall be documented

5.3.6. Prescription filing

Each prescription should be signed and accountability accepted by the dispenser or other authorized person for the correctness of the dispensing of the medicine and confirming that the medicine was supplied.

- At the close of each day all dispensed prescriptions should be organized

- Prescriptions should be filed sequentially by day in a single container/ carton for each month. The container should be labelled with the month and year.

- Containers should be arranged monthly.

- Normal prescriptions should be filed securely for two years and special prescriptions for 5 years.

- Prescriptions, patient and medication related records and information should be documented and kept in a secure place that is easily accessible only to the authorized personnel.

Summary

- Counselling is the 4th step of dispensing. It involves provision of information to patients that is vital for ensuring proper use of medicines for the better treatment outcome.

- Counselling is given using counselling checklist that has 21 counselling points. The usage of the checklist during counselling session helps professionals in the provision of standardized information.

- To avoid confusion of clients, the wordings used during the counselling sessions should adhere to standard list of advisory/cautionary labels mentioned under this session

- Following the counselling session, transactions related to the prescriptions must be recorded to monitor performances of the department. The transaction is documented on the prescription registration format.

- The end of each day, prescriptions collected during the day need to be filed chronologically in a way that makes them traceable whenever required.

Session 5.4: Dispensing For Inpatients

Session Description: This session provides a review of basic techniques for hospital medicine distribution to in- patients, Types of incompatibilities in parenteral admixtures and Steps to Prevent or minimize incompatibilities.

Chapter Objective: To enable participants identify basic techniques for medicine distribution to inpatients and major incompatibilities in parenteral admixtures.

Enabling Objectives: By the end of this chapter participants will be able to:

- Discuss techniques for medicine distribution to inpatients.
- Describe major incompatibilities in parenteral admixtures and how to prevent incompatibilities.

Chapter Outline:

This chapter has the following outlines:

- Techniques for medicine distribution to inpatients
- Incompatibilities in parenteral admixtures
- Session summary

Allocated Time: 55 minutes

5.4.1. Techniques for medicine distribution to inpatients

There are three basic techniques for medicine distribution to inpatients

Bulk wards stock order system

In award stock system, the pharmacy functions as a warehouse and dispense bulk containers on requisition without reviewing individual medicine orders for appropriateness. The main advantage is shorter turnaround time between prescribing and administering the medicine. The use of stock medications should be minimized, although hit is appropriate and desirable for certain situations:

- In life threatening emergency situations, medicine should be kept in patient care areas as a time saving measure.

- High volume, low-cost medicine scan be dispensed if there is low risk of medication error.

Individual medicine order system

The individual medicine order system closely resembles dispensing to our patients: a course of therapy is dispensed according to a written prescription for an individual patient. Compared to ward stock distribution the advantages are:

- The pharmacy professional can review the appropriateness of therapy.

- A patient-specific medication profile can be maintained.

- Pharmacy charges to patients are facilitated.

- Closer control of inventory is possible

Unit dose system

The preferred system from a patient care perspective is the unit dose system, in which there is the lowest possibility for error. Commonly a twenty four hour supply is provided. It minimizes unnecessary expense if treatment is changed. But it requires that the pharmacy be opened for 24 hours.

Daily Medicine Requisition Form from In-patient Pharmacy

Institution name ---------------------------------   Date -------------------------

Departement --

S.No	Bed No	Card No.	Discription of priscribed medicine	Date	Quantity of priscribed medicine per unit dose & administration hour					Total dispensed basic unit	Unit price	Total price	Remark

The undersighned has recived the above mentioned items in a good condition from the facility In-patient Pharmacy

Head nurse-------------------------------------   Pharmacy professional -------------------------------

Signiture -------------------------------------   Signature---

5.4.2. Incompatibilities in parenteral admixtures

Intravenous admixture incompatibilities are the undesirable reactions that can occur when two or more drugs are administered through single IV line or given in a single solution. A safe admixture is one that is free from micro-organisms, free from particulate matter, undecomposed and clinically compatible.

Types of Incompatibilities in parenteral admixtures

- Physical Incompatibilities
- Chemical Incompatibilities
- Therapeutic Incompatibilities
- Drug -IV Container Incompatibilities

Physical Incompatibility: results from Incompatibility that is mainly on solubility changes and container interactions. Various types of physical incompatibilities may occur as:

- Visible color change or darkening
- Formation of precipitate

Examples: Insolubility, sorption, gas formation, change of pH of solution.

Prevention: Do not administer a precipitate forming drug. Avoid mixing drugs prepared in special diluents with other drugs. In administration of multiple intravenous medications, prepare each drug in a separate syringe.

Chemical Incompatibility: results from the molecular changes or rearrangement and leads to chemical decomposition. Various types of chemical incompatibility occur as complexion, oxidation, reduction and photolysis.

Therapeutic Incompatibility: is a result of antagonistic pharmacological effects of several drugs in one patient. For example:

- Heparin with antibiotics Intervention: It is best to avoid mixing heparin with antibacterial preparations because Heparin can affect the stability of certain antibiotics.
- The use of an IV or oral bacteriostatic as tetracycline with an IV or oral bactericidal as penicillin G, which results in decreased activity of the penicillin G.

Drug-IV Container Incompatibility: arise from the chemical reaction of the drug and the Intravenous container.

- *ADSORPTION*: - The property of a solid/liquid to attract and hold to its surface.
- *ABSORPTION*: - The act of taking up liquids or other substances through a surface of the body into body fluids and tissues.

Factors causing IV incompatibility

Difference in PH: when the components of an IV solution differ significantly in pH, incompatibility may occur. Example is the combination of an acid and a base in an IV solution, which represents a chemical reaction resulting in a salt and water formation; the salt may be an insoluble precipitate.

High Temperature: usually speeds drug degradation. Therefore, drugs should be stored in a refrigerator or freezer, as appropriate as per manufacturer recommendation.

High Concentration: Generally, the more concentrated the drugs are in a solution, the more chance there is for an ion interaction leading to incompatibility.

Length of time in solution: The longer the time drugs are in contact with each other in a solution, the more chance for a reaction resulting in incompatibility.

Order of mixing: Drugs that are incompatible in combination should not be added consecutively when an IV admixture is being prepared, such as calcium and phosphate.

Preventing IV Drug Incompatibilities

Be on alert for medications with a known history of frequent incompatibilities when they come into contact with other drugs. Among the drugs most often incriminated in incompatibilities are furosemide (Lasix), phenytoin (Dilantin), heparin, midazolam (Versed), and diazepam (Valium) when used in IV admixtures.

Steps to Prevent or minimize incompatibilities
1. Mix thoroughly when a drug is added to the preparation.
2. Solutions should be administered promptly after they are mixed to minimize the time available for a potential reaction to occur.
3. Minimize the number of drugs mixed together in an IV solution

4. Always refer to compatibility references.

Note that: In places where clinical pharmacy is not practiced, the pharmacy personnel should actively communicate with nursing staffs to prevent incompatibility problems.

Summary.

- Unlike ambulatory patients, special techniques required for medicine distribution to inpatients. These include unit dose dispensing, bulk ward stock order system and individual medicine order system.

- Intravenous admixture incompatibilities are the undesirable reactions can occur when two or more drugs are administered through single IV line or given in a single solution.

- Health professionals should be alert for medications with a known history of frequent incompatibilities, factors contributing to incompatibilities and follow the appropriate steps to avoid or minimize incompatibilities in parenteral admixtures.

Chapter six: Monitoring and Reporting Adverse Drug Events (ADEs)

Chapter Description: This chapter provides a review of classification, causes and prevention of Adverse Drug Events, and ADE national reporting system

Chapter Objective: To enable participants to report ADEs based on National recording and reporting system.

Enabling Objectives: By the end of this chapter, participants will be able to:

- Describe Adverse Drug Events (ADEs).
- Classify Adverse Drug Events ADEs.
- Identify the major causes of adverse drug reactions
- Discuss how to prevent ADEs
- Report ADEs based on national reporting system
- Identify prevention mechanisms for Adverse Drug Events

Chapter Outline:

This chapter has the following outlines:

- Key definitions and introduction
- Classification of ADEs
- Major Causes of adverse drug reactions
- Prevention of Adverse Drug Events
- Adverse drug event (ADEs) reporting
- Summary

Allocated Time: 85 minutes

6.1. Key Definitions and Introduction

Key Definitions:

Adverse drug reaction (ADR): Any response to a drug which is noxious and unintended, and which occurs at doses normally used in human for prophylaxis, diagnosis, or therapy of disease, or for the modification of physiological function." **In other words, an ADR is harm directly caused by the medicine at normal doses, during normal use.**

Side Effect: Any unintended effect of a pharmaceutical product occurring at doses normally used in humans which is **related to the pharmacological properties of the medicine**. Such effect may be either **positive or negative**. Such effects may be well-known and even expected and may require little or no change in patient management.

Adverse Drug Events (ADE): Any untoward medical occurrence that may be present during treatment with a medicine but does not necessarily have a causal relationship with this treatment, that is, **an adverse outcome that occurs while the patient is taking the medicine but is not**, or not necessarily, attributable to it.

Introduction:

Medicine safety problems are commonly caused by medication errors, poor quality, and certain medicines that are inherently unsafe (cytotoxic drugs, for example). Such safety problems are manifested through adverse drug Events (ADEs), which may result in serious patient harm, extended hospital stay and large consumption of resources.

It was not until the disaster caused by thalidomide in 1961 that the first systematic international efforts were initiated to address drug safety issues. At that time many thousands of congenitally deformed infants were born as the result of exposure in utero to an unsafe medicine promoted for use by pregnant mothers.

Unfortunately, there are often shortcomings in prescribing and taking medicines. One important concern is that of safety. Medicines are produced synthetically or from natural substances, and most will exhibit some form of side effect or adverse reaction. These side effects or adverse reactions may range from relatively mild to, in rare cases, serious and life threatening.

6.2. Classification of ADRs

Alphabetical classification of ADRs

Alphabetically ADRs can be classified into six types

Type A reaction (dose-related) these reactions are an exaggerated, but otherwise normal pharmacological responses to the effects of the medicines given in therapeutic dose, cause significant morbidity but are rarely severe. The reaction is treated by reducing the dose or withholding the medicine and considering alternative therapy.

Examples of such reactions include

Pharmacodynamics (e.g., bronchospasm from beta-blocker administration)

Toxic (e.g., deafness from overdosing of amino glycosides)

Type B reactions (non-dose related) these reactions are bizarre and unpredictable with no relation to dose or pharmacological action of the medicine and are often allergic in nature. They are uncommon but are often severe and cause high mortality. The reaction is treated by stopping the medicine and avoiding it in the future. Examples of such reactions include

- Medicine-induced diseases (e.g., antibiotic-associated colitis)
- Allergic reactions (e.g., anaphylactic reaction to penicillin administration)
- Idiosyncratic reactions (e.g., irreversible aplastic anemia caused by chloramphenicol)

Type C reactions (dose-related and time-related) these reactions are chronic (long Term) and related to cumulative dose. The reaction is treated by reducing the dose or with holding the medicine; this may have to be withheld for a long time. Examples of such a reaction include—
- Osteoporosis with oral steroids
- Hypothalamic-pituitary-adrenal axis suppression by corticosteroids

Type D reactions (time related) these reactions are delayed (i.e., have a lag time) after the use of a drug. They are uncommon but their treatment is often intractable. Examples of such reactions include:
- Teratogenic effects with anticonvulsants or lisinopril
- Carcinogenesis
- Tardive dyskinesia

Type E reaction (withdrawal) these reactions occur soon after the end of use (i.e. withdrawal) and are uncommon. The reaction is treated by reintroducing the medicine and then withdrawing it slowly. Examples of this reaction include:

- Withdrawal syndrome with benzodiazepines
- Opiate withdrawal syndrome
- Myocardial ischemia after beta-blocker withdrawal

Type F reactions (unexpected failure of efficacy)these reactions occur when there is a failure of efficacy. Such reactions are common, may be dose-related and are often caused by drug interactions. The reaction is treated by increasing the dose and considering the effects of concomitant therapy. Examples include:

- Resistance to antimicrobials
- Inadequate dosage or oral contraceptives, particularly when used with specific enzyme inducers

Adverse reactions as a result of medicine interactions may be manifested in all degrees of severity and type including-

• Reduced absorption of Tetracycline's if administered with calcium

• Phenytoin toxicity when administered in conjunction with Fluconazole

• Digoxin toxicity when administered with Furosemide

6.3. Major Causes of adverse drug reactions

There are various causes of known and unknown ADRs, some of these are mentioned below.

- Drug allergy/hypersensitivity
- Genetically – determined ADRs
- ADR following Drug withdrawal
- ADRs due to Disturbance of the Gut Flora by Broad – Spectrum Antibiotics
- Drug interactions
- Extrinsic Factors (Nutritional Deficiency State, Alcohol consumption, Cigarette smoking, Environmental pollutants)

6.4. Prevention of Adverse Drug Events

Prevention of many serious ADEs is possible and should be a necessary function in a health facility. Without a prevention program, many ADEs will occur needlessly, producing an increase in morbidity and associated health care cost. Many authorities agree that over 50 percent of ADEs may be preventable. There is a general lack of knowledge concerning ADRs, including the incidence, severity, and impact on health care. Many ADEs are related to the prescribing of an incorrect dose and to administration of a medicine to a patient with a known allergy.

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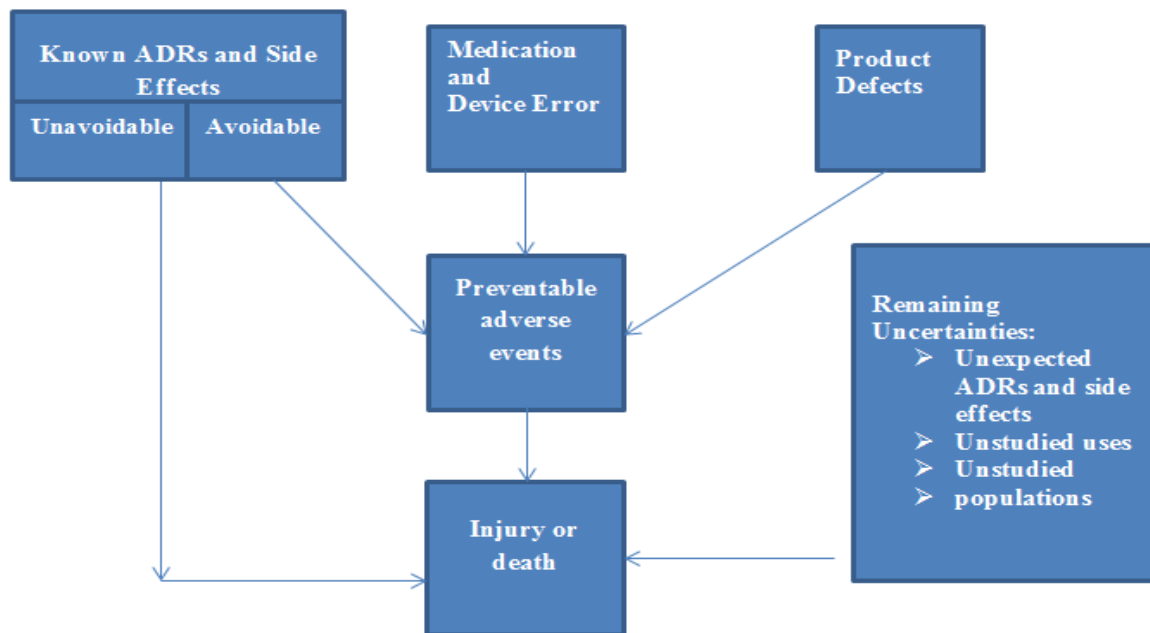
Figure 6.1: Schematic representation of preventable and unavoidable adverse events.

Preventing an ADE can be enhanced by the practitioner by evaluating the following before prescribing, dispensing and administering of medicine:-

- Is this medicine the correct one for the patient's clinical condition?
- Are the dose, route, and interval correct?
- Does the patient have any medical or physical conditions that would affect the pharmacokinetic aspects of the medicine?
- Does the patient have an allergy to this medication or a chemically similar medicine?
- Is the patient on another medicine (or herbal product) that would cause a significant medicine interaction?

- What is the patient's compliance with the medication?
- Is the medicine being prescribed a medicine that is at high risk for producing ADRs (e.g., amino glycosides, digoxin, warfarin, heparin, and antineoplastic)? Special precautions are necessary when using these high-risk medicines.
- Is the medicine being prescribed of high quality (i.e., reputable manufacturer, not expired, no deterioration)?
- Is the medicine being administered correctly (e.g., sterile needle or syringe for injectable medicines or with food for gastrointestinal irritants)?

6.5. Adverse drug event (ADEs) reporting

Discussion on ADR reporting	
	• Have you ever reported ADR? If you have, what was it? **Time allowed 5 min**

Different countries have designed interventions to stimulate reporting of ADRs by health care practitioners. It has been discovered in United States that practitioners report only small proportion of ADRs encountered in their practices. This underreporting largely is the result of a combination of several factors, including lack of awareness of ADR monitoring system, confusion about the definition on ADR, the kind of information to report and how to report ADRs encountered in practice.

In general, ADR-Reporting is an instrument that provides information on safety of products, detection of counterfeit or substandard drugs, resulting in improved quality of patient care and decreasing the financial impact on health care resources.

What to report?
Suspected adverse reaction to any therapeutic agent including prescription and over the counter drugs, vaccines, dental and surgical supplies, etc. should be reported

Some of the ADRs categories, as per the aims of pharmacovigilance, that can be recognized and need to be reported are:

- All suspected reactions to new drugs

- unknown or unexpected ADRS

- serious adverse drug reactions

- unexpected therapeutic effects

- all suspected drug interactions

- product quality defects

The above lists of categories are not exhaustive. Health professionals are generally requested to report cases ranging from minor reaction to disability or death.

When to report?

Any suspected ADR should be reported to the ADR monitoring division (FMHACA) as soon as possible (as soon as it is detected). Delay in reporting will make reporting inaccurate and unreliable. Reporting while the patient is still in the health institution will give chance to the reporter to clear any ambiguity by re-questioning or examining the patient.

How to report?

When there is an adverse reaction to drugs the reporting form should be completed by the concerned health professional and sent to the ADR monitoring division at FMHACA.

Steps for completing Adverse Drug Event formats

Steps	Activity	Note
1	**Patient background information**- write the patient background information starting from Patient name; Card no, Age Sex, Weight, Height, Ethnic group and Substance abuse.	It's not necessary to write the full name of patient's, write initials only. Substance abuse: refers to the harmful or hazardous use of psychoactive substances, including alcohol, chat, cigarettes and illicit drugs.
2	**Drug name:** Write all information including brand name and manufacturer(Drugs include conventional drugs, herbal drugs, traditional medicines, biological, medical supplies, medicated cosmetics)	Avoid Non – Standard Abbreviations
3	**S/C:** Fill all Suspected and concomitantly used drugs	Write 'S' for suspected drugs and 'C' for concomitantly used drugs

4	**Product Dosage and Frequency:** write dose/dosage form, route and frequency of the drug	
5	**Date:** write the date of drug taking started, reaction started and taking stopped	In European calendar (dd/mm/yy) If the medicine hasn't been discontinued at the time of reporting, write 'continuing'
6	**Indication:** write reason for drug use	
7	**Adverse Drug Event Description**	Clear description about the nature of adverse event, the date of onset, duration, time course and laboratory test results including '-ve' and normal results of any relevant test performed should be reported. The severity of the reaction i.e whether it has necessitated prolonged hospitalization or not, discontinuation of the medicine or not, etc has to be reported.
8	**Reaction necessitated:** **Discontinuation of drugs:** tick yes or no **Hospitalization:** tick yes or no	
9	**Reaction subsides after discontinuation of suspected drug:** tick yes or no **Reaction reappear after restart of suspected drug:** tick yes or no	
10	**Treatment Reaction:** write any treatment given at the facility for the identified ADE (Reaction).	
11	**Outcome:** tick the outcome of the ADE	**Example:** died, not recovered with or with out

12	**Sequelae:** write any sequelae condition that result due to the ADEs	**Sequelae:** is a pathological condition resulting from a prior disease, injury or attack.
13	**Relevant medical conditions:** write any relevant medical conditions if occurred	**Examples:** Allergies, renal disease etc
14	**Reported by:** write the name, the profession, email address, telephone, name of the individual reporting the ADE and their institution and date of reporting	
15	**Product Quality problem** write drug trade name, batch no, dosage form, strength, the size/type of package of the suspected drug	**Example:** color change, separating of components, powdering, molding etc
16	**For office use:** leave empty	This section of the form is to be used by the regulatory body to which the ADE is reported
17	**From:** write your postal address at the end of postage	Put the postal address (B. O. Box) of the health facility
18	**Provide the completed format to the ADE focal person**	

Note: the ADE reporting format is annexed

The ADEs report is completed when:

- ADE focal person send the completed ADE reporting format to FMHACA and summary report to the facility DTC

- When the focal person routinely follows and communicates to the responsible body.

- When the focal person receive confirmation from the nearest FMHACA or regulatory authority.

Summary

- Reporting of ADR is essential to obtain the necessary information on safety of products. . It helps to detect adverse reactions, which were not observed on the development phase of a particular drug on population subgroup such as children, pregnant women, , the old and patients with complicated disease, which are not normally exposed during the clinical trial.

- ADRs can be classified into:-

- Type A reaction (dose-related)

- Type B reactions (non-dose related)

- Type C reactions(dose-related and time-related)

- Type D reactions (time related)

- Type E reaction (withdrawal)

- Type F reactions (unexpected failure of efficacy).

- There are a number of causes for ADRs including allergy and genetics

- Most ADEs can be prevented by applying safe procedures of medicine use.

- ADEs should be documented and reported to strengthen the national pharmacovigilance efforts.

Chapter Seven: Antimicrobial Resistance Prevention & Containment

Chapter Description: This chapter provides a review of global and national status of AMR, factors contributing to the emergence of AMR, consequences, prevention, and containment of Antimicrobial Resistance.

Chapter Objective: To enable participants discuss the prevention and containment of Antimicrobial Resistance.

Enabling Objectives: By the end of this chapter, participants will be able to:

- Define antimicrobial resistance
- Discuss the global and national status of Antimicrobial resistance
- Identify the factors contributing to emergence and spread of AMR
- Describe the consequences of antimicrobial resistance
- Describe the priority actions to prevent and contain AMR in Ethiopian national strategies

Chapter Outline:

This chapter has the following outlines:

- Introduction
- Global and national status of AMR
- Factors contributing to AMR
- Consequences of AMR
- AMR prevention and containment
- Summary

Allocated Time: 40 minutes

7.1. Introduction

The use of antimicrobial medicines has greatly contributed to the decline in morbidity and mortality by infectious diseases over the past half-century. This achievement, however, is being undermined by the rapidly growing problem of antimicrobial resistance (AMR). Since the first use of antibiotics in the 1930s and 1940s, microbes have quickly adapted and developed mechanisms to escape their effects. This natural process of adaptation, antimicrobial resistance, means that the effective lifespan of antibiotics is limited.

Antimicrobial resistance (AMR) is the ability of microbes to grow in the presence of a class of drugs known as antimicrobials that would normally kill microbes or limit microbial growth. It occurs when microorganisms such as bacteria, viruses, fungi and parasites change in ways that render the medications used to cure the infections they cause ineffective. Some microbes are resistant to almost all types of antimicrobials. When the microorganisms become resistant to most antimicrobials they are often referred to as "superbugs."

Unnecessary use and inappropriate use of antibiotics have greatly favored the emergence and spread of resistant bacteria. Therefore, it is important to identify the underlying causes of AMR and tackle its spread. With the declining trend of new antimicrobial options developmental activities today, worldwide stronger action needs to be taken to avert a situation that entails an ever increasing health and economic burden.

Over several decades, to varying degrees, bacteria causing common infections have developed resistance to each new antibiotic, usually immediately following their use at clinical settings (See Figure below), and AMR has evolved to become a worldwide health threat. With a dearth of new antibiotics coming to market, the need for action to avert a developing global crisis in health care is increasingly urgent.
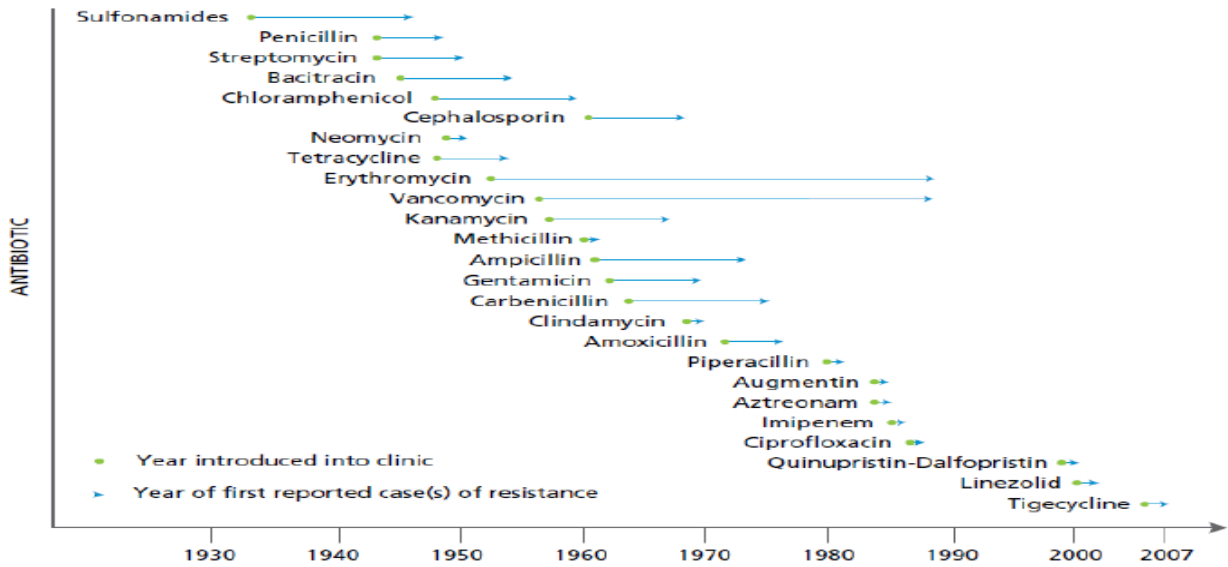
Figure 6.1: Resistance usually follows immediately after clinical applications

7.2. **Global** and National Status of AMR

Probing Question
• What makes AMR become a global phenomenon? **Time allowed 10 minutes**

The crisis of AMR has been building up over decades throughout the world, so that today many common and life-threatening infections are becoming difficult or even impossible to treat, sometimes turning a common infection into a life-threatening one. Infectious diseases, such as tuberculosis (TB), sexually transmitted infections, acute respiratory infections, malaria, dysentery, HIV/AIDS, streptococcal, staphylococcal spp. and many others are becoming increasingly difficult and expensive to treat, and the burden is greatest in developing countries where resources are limited and infection rates are high.

The status of AMR is also at an alarming level in Ethiopia. According to 2009 antimicrobial use, resistance and containment baseline survey, high levels of AMR to fist line antimicrobials were identified. Staphylococcus, Streptococcus pneumoniae, salmonella species, and Staphylococcus aurous were particularly the most common bacteria that have shown increased resistance.

Timeline	Deaths/Year	Deaths/Min
Present	700,000	1
2050	10,000,000	19

Europe 390,000
North America 317,000
Asia 4,730,900
Africa 4,150,000
Latin America 392,000
Oceania 22,000
Mortality per 10,000 population
number of deaths
Economic burden 1 trillion USD
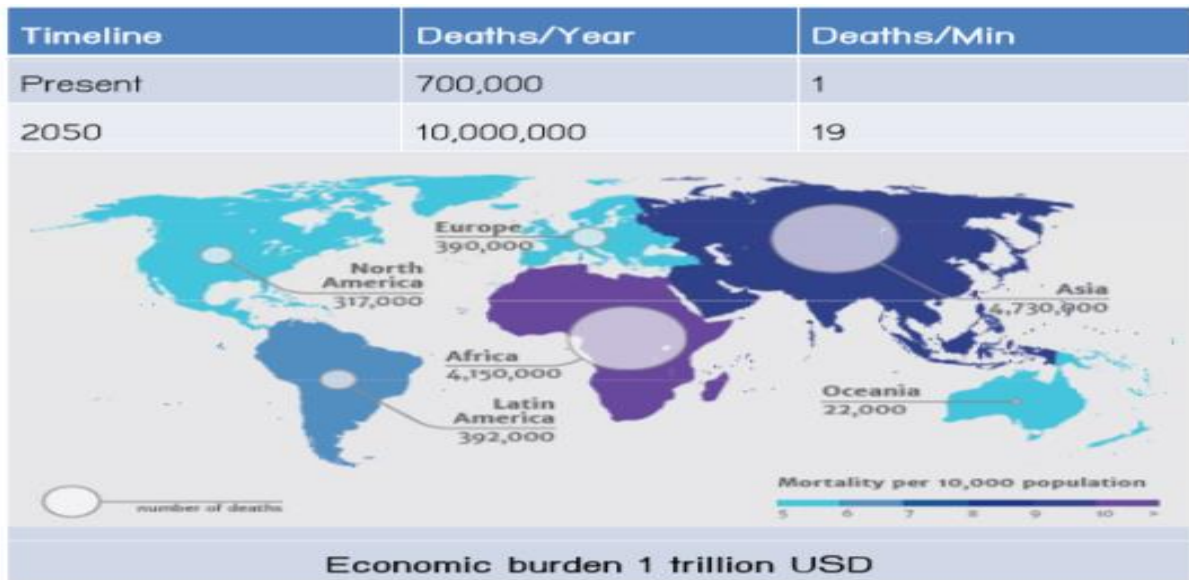
Figure 7.2: Global economic burden of AMR (WHO*)

7.3. Factors Contributing to AMR

Antimicrobial resistance is the result of many factors with biological, behavioral, technical, economic, regulatory, and educational roots. But among all these factors, irrational use of antimicrobials is the greatest driver of resistance.

The irrational use of antimicrobials practices which contribute to the development of AMR include, but not limited to the following:

- Unnecessary prescription of antibiotics, such as for viral infections (colds) or for prolonged prophylaxis
- Using broad-spectrum antibiotics (such as third generation cephalosporin's, carbapenems) when narrow-spectrum antibiotics are effective
- Prescribing too low doses
- Not prescribing according to microbiology results/absence of diagnostic facilities
- Prescribing intravenous therapy when oral therapy is known to be effective and clinically safe
- Omitting or delaying administration of doses and not taking antibiotics as prescribed by patients.
- Limited access to health care

- Standard treatment guidelines not provided to physicians or provided but not adhered to
- Antimicrobials available without prescription and irrational self-administration
- Accessible but poor quality, sub-standard or counterfeit antimicrobials
- Weak monitoring and regulatory systems
- Poor infection control systems in health facilities,
- Economic incentives for prescribers and dispensers (un ethical promotions)
- Poverty and economic hardships that lead to early termination of treatments or sharing of medicines within the family
- Insufficient level of training among health professionals, etc.

7.4. Consequences of AMR

Antimicrobial resistance is responsible for countless human deaths and billions of dollars in healthcare expenses. Many patients around the world suffer harm due to AMR because infections (caused by viruses, bacteria, fungi, protozoa, or helminths) are no longer susceptible to the common medicines used to treat them. The following points summarize the consequences of AMR.

- Increased morbidity & mortality
- Longer duration of illness:
- Longer treatment
  - Excess length of stay 6.4 – 12.7 days/patient
- Treatment with expensive drugs
- Increased burden on health system
- Negates technological advances in medical sector
  - Complex surgeries
  - Transplantations and other interventions
- Patient acts as reservoir of resistant organisms which are passed to community and health-care workers
- Huge economic impact (both direct & indirect)

7.5. AMR prevention & Containment

Recognizing the public health crisis due to AMR, several nations, international agencies, and many other organizations worldwide have taken action to counteract it through strategies applied in the relevant sectors. Ethiopia has its own national strategy to combat AMR. This national strategy addresses the following five key strategic issues:

Figure 7.2 AMR Strategy

1. *Raise awareness and understanding and improve education on antimicrobial use, resistance prevention, and containment through effective communication and training.*

<u>*Priority Actions*</u>

- Improve Awareness and Understanding, Education, and Empowerment of Clients and the Community
- Support Education and Training of Human and Animal Health Care Professionals

2. *Strengthen the knowledge and evidence on antimicrobial use and resistance through one-health surveillance and research.*

<u>*Priority Actions*</u>

- Support Surveillance of AMR Microorganisms

- Support Surveillance of Antimicrobial Use
- Establish or Strengthen Capacity of National, Regional, and Health Facility Laboratories
- Support Basic and Operational/Intervention Research

3. *Improve infection prevention and contain the spread of resistant microorganisms across human and animal communities and health care settings through individual and environmental sanitation, hygiene, and infection prevention measures.*

Priority Actions

- Strengthen Infection Prevention and Control Programs
- Strengthen Infection Prevention and Control Practices in Health Facilities
- Promote Infection Prevention and Control Practices in Communities

4. *Optimize the use of antimicrobials in human and animal health through effective stewardship practices.*

Priority Actions

- Promote Optimal Prescribing and Dispensing of Antimicrobials
- Promote Adherence to Treatment and Proper Use by Clients and the Public
- Rational Antimicrobial Use in Animal Health and Food Production

5. *Strengthen and establish national alliances and partnerships, management and governance arrangements, and resource mobilizations for the prevention and containment of AMR at all levels.*

Priority Actions

- Strengthen or Establish a National Alliance for the Prevention and Containment of AMR
- Strengthen National and International Networks and Collaborations
- Governance and Partnerships

General principles to combat AMR.

- Use antimicrobials only when necessary
- Rationalize the use of available antimicrobial agents
  - Maintain optimal concentration of drug in patient for sufficient time. This will Kill all sensitive cells and inhibits others so immune system can destroy

- Use antimicrobial agents in combination if rational. Combine the use of antimicrobials considering their interactions (Synergism, Antagonism, Addition, etc. principles)

- Discovery and development of new antimicrobials
  - Discover new drugs faster than emergence of resistance (Search for new antibiotics, semi synthetics, and synthetics)
  - Develop new generations of existing drugs (Second-generation drugs, Third-generation drugs)
  - Promote discovery, development and dissemination of new antimicrobial agents

Summary

- AMR forms nowadays one of the world`s most public health threats. It is increasing across the world while approaches in the area of new drug delivery system are declining.
- AMR has serious public health consequences. It increases mortality and morbidity from infectious diseases. It also increases treatment costs, illness duration and has many negative economic consequences.
- DTC have many roles in monitoring and improving medicines use in institutional settings to contain AMR.

Chapter Eight: Measuring medicine use problems

Chapter Description: This chapter provides an overview of the methods used in measuring problems in the use of medicines. It describes in detail about quantitative methods, i.e., indicators

Primary Objective: To enable participants apply quantitative methods of measuring medicine use problem (prescribing and patient care problems).

Enabling Objectives: By the end of this chapter, participants will be able to:

- Identify types of medicine use problem investigation methods.
- Measure medicine use problems using indicator methods.

Chapter Outline:

This chapter has the following outlines:

- Overview on medicine use problem investigation methods
- Drug use indicator study methods
- Summary

Allocated Time: **230 minutes**

8.1. Overview on medicine use problem investigation methods

Inappropriate medicine use results in poor patient outcomes and wastes significant amounts of money and other resources. This problem is worldwide, especially in developing countries like Ethiopia. Data from health facilities may be used to evaluate specific aspects of health provision and drug use and to generate indicators that provide information on prescribing habits, dispensing practice and aspects of patient care. These indicators can be used to determine where drug use problems exist, provide a mechanism for monitoring and supervision and motivate health care providers to adhere to established health care standards. DTC should engage in coordinating collection of data, describe patterns of medicine use, to address medicine use problems and monitor medicine use over time.

Medicine use problem identification methods can be categorized as:

Qualitative methods

- in-depth interview
- Focus group discussions
- Structured Questionnaires

Quantitative methods

- Aggregated methods
- Indicator Study methods
- Medicine use Evaluation

These methods are used to better understand the magnitude and causes of problems before intervening to correct them. Depending on the findings of the studies appropriate interventions will be designed and implemented. This manual focuses mainly on indicator study method from quantitative medicine use problem identification methods.

8.2. Drug Use Indicators Study Methods

Drug use indicators have been developed by WHO and International Network for Rational Use of Drugs (INRUD) for assessing healthcare and drug use for primary health care in hospitals, health centre and pharmaceutical retail out lets (pharmacy, drug store, and rural drug vendor).

These indicators are classified as:

- Core medicine use indictors
- Complementary indicators

Though complementary indicators are not well standardized and tested as that of core drug use indicators, they can provide complimentary information on drug use.

The drug use indicators can be collected at one time in a cross-sectional survey, or they can be measured at different points in time to assess change in performance. One feature to note is that the indicators can be done based on either retrospective and/or prospective data. Retrospective data describe drug use during patient visits that took place in the past, preferably over a one-year period to control for seasonal variations. These data are extracted from medical records/prescriptions kept at the health facilities. Prospective data, on the other hand, describe drug use during patient visits that take place on the day of the survey. This manual focuses on core medicine use indicators.

Core Medicine Use Indicators

Core medicine use indicators; include prescribing indicators, patient care indicators and health facility indicators. Results of these indicators should point to particular medicine use problems that need further examination in more detail and ultimately a plan to resolve the problem by the DTC. The specific indicators under each of these classes of indicators are listed below.

Prescribing indicators

- Average number of medicines per encounter
- Percentage of medicines prescribed by generic name
- Percentage of encounters with an antibiotic prescribed
- Percentage of encounters with an injection prescribed
- Percentage of drugs prescribed from the facility's medicines list
- Completeness of Prescription information

Patient care indicators

- Average consultation time
- Average dispensing time
- Average dispensing counselling time

- Percentage of drugs actually dispensed

- Percentage of drugs adequately labelled

- Percentage of patients who know how to take their medicines

Health facility indicators

- Availability of facility-specific drug list

- Availability of key medicines

- Availability of standard treatment guidelines

- Availability of national formulary

Prescribing indicators

The indicators of prescribing practices measure the performance of health care providers in several key dimensions related to the appropriate use of drugs. The indicators are based on the practices observed in a sample of clinical encounters taking place at outpatient health facilities for the treatment of acute or chronic illness. These encounters can be observed retrospectively, from data recorded in historical medical records, or they can be observed prospectively, from a group of patients attending the clinic on the day the data are collected.

The core prescribing indicators measure general prescribing tendencies within a given setting, independent of specific diagnoses. The data to measure the prescribing indicators can be recorded on forms that are annexed (Annex no.--). The prescribing indicator form requires that each indicator be entered directly by data collectors in the field. Its main advantage is that it allows immediate summaries of the indicators to be produced and discussed with staff from the health facility.

All prescribing indicators are based on behaviour observed in samples of patient encounters, which are collected retrospectively or prospectively. Therefore, specific types of data necessary to measure the indicators will be recorded for each encounter. In order to record these data in a consistent and reproducible way, certain other activities have to take place before the data collection can start. Before performing prescribing indicators DTC of the health facility is expected to agree on the following points.

Define medicines to be regarded as antibiotics: Antimicrobial agents are not always classified in an identical way. Sometimes drugs such as antiprotozoal, anthelminthic or ant tuberculosis agents are placed in a separate category from antibiotics, while other systems may classify all these products in a single category of anti-infective or antimicrobials.

Define Medicines to be classified as generic: To calculate the percentage of drugs prescribed by generic name, DTC/investigators need to have a list of drug names that are to be counted as generics. Without such a list it may be difficult to reliably classify some product names as generic or brand.

Define Medicines to be regarded as an injection: To calculate the percentage of drugs prescribed as injection, DTC need to have a list of injections that are not to be counted as injection. E.g. in most cases immunization medicines and injectable contraceptives are excluded from injection list.

Agree on Combination medicine; Known combination medicines should be counted as a single medicine.

Descriptions of Each of the prescribing indicators are presented below:

1. Average number of medicines per encounter

Target:< 2 per encounter

Purpose: To measure the degree of poly pharmacy.

Prerequisites: Known combination drugs are counted as one. Guidelines are needed on how to count certain ambiguous prescribing practices (e.g. some standardized sequential therapies).

Process: Request all available records for the past 12 months before beginning sampling. Consider only encounters for a single disease, complaint, or symptom. List the number of medicines given per encounter. Combination products are counted as one medicine. The same product prescribed consecutively in different forms (i.e. injection and tablet) should be counted as one medicine, however if the same product is prescribed simultaneously in different forms, each form should be counted separately.

Calculation: Average, calculated by dividing the total number of different medicines prescribed, by the number of encounters surveyed. It is not relevant whether the patient actually received the medicines.

> Average number of medicines = Total number of medicines prescribed/number of prescriptions

2. Percentage of medicine prescribed by generic name

Target: 100%

Purpose: To measure the tendency to prescribe by generic name.

Prerequisites: Investigators must be able to observe the actual names used in the prescription rather than only having access to the names of the products dispensed, since these may be different; a list must be available of specific product names to be counted as generic medicines.

Process: Request all available records for the past 12 months before beginning sampling. Determine the encounters where a generic medicine has been prescribed.

Calculation: Percentage, calculated by dividing the number of medicines prescribed by generic name by the total number of medicines prescribed, multiplied by 100.

> Percentage, number of medicines prescribed by generic name/total number of medicines prescribed *100

3. Percentage of encounters with an antibiotic prescribed

Target: 20-30 %

Purpose: To measure the overall level of use antibiotics.

Prerequisites: Investigators should identify medicines such as antiprotozoal, antihelmintics, or antituberculosis, agents are placed in separate category or as antibiotics.

Process: Request all available records for the past 12 months before beginning sampling.

Determine encounters where at least one antibiotic has been prescribed.

Calculation:

Total number of encounters with one or more antibiotics/total number of encounters x100

4. Percentage of encounters with an injection prescribed

Target:< 25%

Purpose: To measure the overall level of use of injections.

Prerequisites: A list of all the medicines which are to be counted as injections must be available; investigators must be instructed on medicines which are not considered as an injection like, immunizations, injectable family planning.

Process: Request all available records for the past 12 months before beginning sampling. Determine encounters where an injection has been prescribed. Do not count immunizations and injectable contraceptives.

Calculation:

Total number of prescriptions with one or more injection/total number of prescriptions x100

5. Percentage of Medicines Prescribed from health facility medicine list

Target: 100%

Purpose: To measure the degree to which, practices conform to a national drug policy, as indicated by prescribing from the health facility's medicine' list.

Prerequisites: Copies of a published health facility's medicine list to which data on prescribed drugs can be compared; procedures are needed for determining whether or not brand name products are equivalent to ones appearing in generic form on the drug list.

Process: Request all available records for the past 12 months before beginning sampling. Determine how many of the prescribed medicines are included on the health facility's

medicine list, even if they are not prescribed under an internationally recognized name.

*Calculation***:** Percentage, calculated by dividing the number ofmedicines prescribed which are listed on the essential medicines list by the total number of medicines prescribed, multiplied by 100.

Percentage = total number of medicines prescribed from the drug list/total number of medicine prescribed *100

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6. Completeness of prescriptions

Target: 100 %

Purpose: To measure the degree to which practices conform to a national drug policy, as indicated on the completeness of prescription information for the type of facility surveyed.

Prerequisites: Standard prescription is needed. All prescriptions to be evaluated should be collected

Process: On the sample prescriptions, check completeness of patient information (Name, sex, age, weight, card no. and diagnosis), medication information (Name dose, frequency, route and duration), and prescriber (name, qualification, signature and date) and dispenser (name, qualification, signature and date) information on each of the prescriptions.

Calculation: Percentage, calculated by dividing the number of prescriptions with complete information (as per indicated in the process) by the total number of prescriptions, multiplied by 100.

Patient care indicators

In order to understand the way medicines are used it is important to consider what takes place at health facilities from both the provider's and the patient's perspectives. Patients who enter in the facilities with a set of symptoms and complaints, and with expectations about the care they will receive; they typically leave with a package of medicines or with a prescription to obtain them in the private market. The patient care indicators address key aspects of what patients experience at

health facilities, and how well they have been prepared to deal with the medicines that have been prescribed and dispensed.

The time that prescribers and dispensers spend with each patient sets important limits on the potential quality of diagnosis and treatment. Patients for whom medicines are prescribed should, at a minimum, receive well-labeled medications, and should understand how to take each drug.

In a drug use indicator study, the adequacy of patient care is measured by observing a sample of patient encounters as they normally occur, and by interviewing patients as they leave the facilities. All the data needed to measure the patient care indicators for each facility can be recorded and summarized on the patient care form (Annex VI)

The following tasks are required to measure the patient care indicators.

Design a procedure for collecting prospective data: Because patient care encounters are always conducted prospectively, it is necessary to arrange for patient observations and interviews. Attention should be given to the methods of data collection before the study begins as patient flow can be organized in different ways, the methods should be reasonably consistent in all facilities and should not overly influence the routine process of patient care. To reduce the variations in time that occur with different patients it is recommended that the patient care process be timed for at least 30 individual encounters.

Specify how consultation and dispensing times will be measured: It is necessary to develop a consistent method for observing the beginning and end of consultation and dispensing encounters.

Identify the sources of data to compare prescribed and dispensed medicines: Not all prescribed medicines are actually dispensed at the health facility. This may happen because medicines which are usually available are out of stock, or when medicines are intentionally prescribed to be purchased in the private sector due to business motive. Measuring the degree to which medicines must be obtained in the facility provides some indication about the reliability of medicines supply as well as how prescribing choices match the range of pharmaceuticals available in the system.

Adequacy of labelling: It is very important that dispensed medicines be labelled with the necessary information. At a minimum, dispensed medicines should be labelled with patient name, name of the medicine, dose, frequency and duration of use/quantity dispensed, and expiry date. This information is obtained by observing packages of the medicines dispensed to the sampled number of encounters during the exit interview.

Define criteria for adequate patients' knowledge about medications: At some point during the examination or dispensing process, details about the medication prescribed should be explained to the patient. Ideally, this explanation includes the reasons why the medication is being given, how each drug should be used, as well as information about precautions and possible side effects. Because most of these factors are difficult to measure patients should only be evaluated on their knowledge of when and in what quantity each drug should be taken. This should be evaluated for each medication actually dispensed to the patient. Patients' knowledge can be evaluated when the prescribed dosage has been recorded on the drug package. If the necessary data (dose, dose, frequency and duration) are available in the label, the knowledge of the patient can be evaluated against this record.

Detailed descriptions of each of the patient care indicators are presented below.

1. **Average dispensing counselling time**

Purpose: To measure the average time that pharmacy personnel dispensing medicines spend while counselling patients

Prerequisites: Procedures for accurately recording the average time patients spent with pharmacy personnel to get information on how to use the medicines dispensed to them should be in place.

Process: For a series of encounters, observe and record the time the dispenser takes to counsel the patient

Calculation: Average, calculated by dividing the total time for counseling series of encounters, by the number of encounters observed.

Average dispensing counseling time = total time for a series of counseling/number of counseling

2. Percentage of medicines actually dispensed

Target: 100 %

Purpose: To measure the degree to which health facilities are able to provide the medicines which were prescribed to patients.

Prerequisites: Information on which drugs were prescribed, and whether these drugs were actually dispensed at the health facility.

Process: Interview patients leaving the dispensing area or leaving the facility after they have been treated and received medicines. Patients can be interviewed consecutively or as convenient. Count how many chemical entities were prescribed and dispensed.

Calculation: Percentage, calculated by dividing the number of drugs actually dispensed at the health facility by the total number of drugs prescribed, multiplied by 100.

Percentage of medicines actually dispensed = No. of medicines dispensed/total number of medicines prescribed *100

3. Percentage of medicines adequately labelled

Target: 100 %

Purpose: To measure the degree to which dispenser record essential information on the medicines packages they dispense.

Prerequisites: Investigators must be able to examine the medicines packages as they are actually dispensed at the health facility.

Process: Interview patients leaving the dispensing area or leaving the facility after they have been treated and received medicines. Patients can be interviewed consecutively or as convenient. Check if each medicine label conforms to all requirements for adequate labelling. Count a medicine as adequately labelled only if all requirements are met.

Calculation: Percentage calculated by dividing the number of drug packages containing at least name of the medicine, dose, frequency and duration/total quantity of the medicine dispensed.

Percentage of medicines adequately labeled = number of medicines with adequate label/total number of medicines dispensed*100

4. **Percentage of patients knowing how to take medicines**

Target: 100 %

Purpose: To measure the effectiveness of the information given to patients on the dosage schedule of the medicines dispensed to them.

Prerequisites: Access to a written prescription or to a patient card against which patients' knowledge on the dosage schedule can be checked, or access to standards for how each common drug is supposed to be used is the most reliable source of information for this indicator. If it is difficult to access such sources, the patients' knowledge can also be compared against the label on the medicine packages dispensed to them.

Process: Interview patients leaving the dispensing area or leaving the facility after they have been treated and received medicines. Patients can be interviewed consecutively or as convenient.

Check if the patient knows both the appropriate dosage and duration of each medicine (i.e., how much, how often and for how long he or she should take each medicine). Count the patient as having adequate knowledge only if both criteria are met for all medicines dispensed to the patient.

Calculation: Percentage, calculated by dividing the number of patients who can adequately report the dosage schedule (dose, frequency and duration/total quantity dispensed) for all medicines, by the total number of patients interviewed, multiplied by 100.

% of patients knowing how to take medicines = number of patients who can adequately report dosage of all medicines dispensed to them/total number of patients *100

Health facility indicators

The ability to prescribe medicines rationally is influenced by many features of the working environment. Two particularly important components are an adequate supply of essential medicines and access to unbiased information about these medicines. Without these it is difficult for health personnel to function effectively.

1. Availability of copy of the health facility's medicines list

Purpose: To indicate the extent to which copies of the facilities list, n is available at health facilities.

Prerequisites: The health facility should have its own up-to-date medicines list prepared by DTC; if not, the indicator would always be scored "no".

Process: Ask to see a copy of the current applicable medicine list of the facility. Only count a facility as having medicine list if the facility is able to produce the current version. If the current version of the document is not physically available or if it has been more than three years since the list was last updated, mark "no".

Calculation: Yes or no, per facility.

2. Percentage availability of key essential medicines

Purpose: To measure the availability at health facilities of key medicines recommended for the treatment of some common health problems.

Prerequisites: A short list of key essential medicines (15 - 20) must be compiled that should always be available in the facility.

Process: Go through the shelves and identify which of the listed essential medicines are available at the facility at the time of the survey. Only count in stock medicines in the facility at the time of the visit regardless of whether or not they are available at an offsite storage facility.

Calculation: Percentage, calculated by dividing the number of specified key medicines actually in stock by the total number of medicines on the checklist, multiplied by 100.

Percentage availability of key medicines = number of key medicines available in stock/total number of key medicines identified as key *100

3. Availability of Standard Treatment Guidelines

Purpose: To indicate the extent to which copies of STG nationally developed for the level of health facility is available in the health facility

Prerequisites: There should be STG national developed for the level of health facility

Process: Ask to see a copy of the relevant STGs national developed for the level of the health facility. Only count a facility as having each STG if the facility is able to produce the current version. If the current version of the document is not physically available, mark "no".

Calculation: Yes or no, per facility.

Recommended sample size for conducting indicator study:

In order to conduct prescribing indicators the size of samples drawn within each facility must be at least 100 encounters. The sample should be taken from outpatient dispensary from a year record. For patient care indicators at least 30 encounters are recommended. These samples can be chosen based on random Sampling or systematic random sampling methods.

Steps to conduct indicator method of medicine use study

Step	Activity	Description
1	Determine objectives	Objective of the study should be clearly stated E.g. Identify prescribing practice of facility X based on indicator methods
2	Determine indicators	Specify which indicators will be addressed E.g. % prescriptions completed, % of proper labeling
3	Determine study design	Prospective Vs retrospective
4	Set sample size and sampling	E.g. Number of prescriptions, chart to be reviewed Random sampling Vs systematic random sampling

5	Develop data collection tools	Use standard tools
6	Data analysis	E.g. Excel spreadsheet
7	Result dissemination	To DTC, to management, health care providers
8	Plan interventions	Strategies or activities appropriate to address identified gaps(considering available resources, priorities, problem severity…)
9	Follow up	Continuously follow implementation and outcome of interventions

NB. Each step and activities should be properly recorded and documented.

Summary

- Data from health facilities may be used to evaluate specific aspects of health provision and medicine use and to generate indicators that provide information on prescribing habits, dispensing practice and aspects of patient care

- Medicine use problem investigation methods can be classified in to quantitative and qualitative methods.

- The quantitative study methods presented in this session provide a mechanism for the pharmacy team or the DTC to quickly assess the causes of a medicine use problem

- The study methods can be used individually or to supplement qualitative survey methods to enable design appropriate intervention. These indicators can be done all at a time or selected indicators based on priorities of the facility and available resource

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Annexes for Part I

Annex 1: Communication exercise
Scenario 1

Dispenser: Hi Doctor, the amoxicillin you prescribed for Ms. Kidist's kid is not working. We need to get her something else.

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Physician: Who is this?

(□□□□□)

Dispenser: Zewdu at the Hospital Pharmacy – the dispenser

(□□□□□□□□□□□□□□□□□□□□□□□□□□□□)

Physician: What do you mean it's not working? Did she give it to the child correctly? He's only been taking it for 5 or 6 days. She has a 10 days' supply. Is the child still running fever?

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Dispenser: I guess she's giving it to him right. She says he is not feeling good and she wants to give him something else. I didn't ask about a fever.

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Physician: Tell her to call me. I will take care of it.

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Dispenser: You got it, Doctor!

□□□□□

senario 2

Dispenser: Hi Doctor Kamil. This is ZewduKassa at the hospital pharmacy. I have here KidistBikila, the mother of TewodrosGutema. He is one of your pediatric patients. She is here because she was concerned about Tewodros. His fever is 38ºC and he has been taking the amoxicillin for 6 days now, three times a day as you prescribed. She said he is still in a miserable condition. I assumed Tewodros has otitis because she talked about his ear infection and I saw from his medication records that he was treated for otitis once before, about 3 months ago. I think it might be time to go to trimethoprim-sulfamethoxazole twice a day.

(□□□□□□□□/□□□ 38ºC □□□□□□□□□□□□□□□□□□□□□□□□□ 6 □□□□□□□□□□□ Amoxicillin □□ otitis □□□□□□□□□□□□□□□□□□□□□□□ infection □□ otitis □□□□□□□□□□□□□□□□□ trimethoprim-sulfamethoxazole□□□□□□□□□□□□□□□□□□□□□□□□□□□□□/□?

Physician: So he is still running a fever. From what you said it sounds like he is not responding to the amoxicillin. Ok, give him the trimethoprim-sulfamethoxazole twice a day. Do you have his weight?

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Dispenser: Sure Doctor.

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Physician: Good. Let's keep him on it for 10 days.

□□□ □ 10 □□□□□□□□□□□□

Dispenser: Ok, I'll let Mss. Kidist know.

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Physician: Thanks for calling.

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Dispenser: You're welcome. Thanks for getting back to me so quickly.

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Annex 2: Cues for Non-verbal Communication

Non-verbal communication involves the use of body languages. Body language can be broken down into several component parts which include gestures, facial expression, eye contact, physical contact, body posture, body space, and proximity.

Gestures: hand gestures in particular are used in communication. They are useful when emphasizing a point or to help to describe something. Used appropriately, they can greatly enhance communication and improve the listener's understanding. However, it is important not to overuse them, as this can detract from the spoken word and become a distraction to the listener. Pharmacists should use gestures, where appropriate, to emphasize a point or describe a particular procedure. Observing other people's gestures can give useful information on how concerned, agitated or confused they may be. Do a spot of 'people watching'! It is amazing how much information about a person you can pick up just by quietly observing his gestures.

Facial expressions: this is of vital importance in any communication. In fact, it has been suggested that, after spoken word, facial expression is the most important part of communication. Many of the communications in which pharmacists are involved deal with listening and offering advice. In these types of situations the success of the event will be very dependent on how relaxed and comfortable the patient or customer feels. The facial expression of the pharmacist at the start of the conversation may very well determine how receptive the patient will be to any advice or information offered. Facial expression says a lot about mood and emotion, with the eyes and the mouth giving the dominant signs. As well as ensuring that facial expression is encouraging and welcoming, it is important for pharmacists to be able to read the meaning of facial expressions. In this way important points regarding a patient's level o comprehension or receptiveness can be judged.

Eye Contact: avoiding eye contact is a very successful way of avoiding communication. This can be very well illustrated by observing a class of students who have just been asked a question by a lecturer!

The maintenance of eye contact during a conversation is vital to ensure the continuation of the process. Eye contact can indicate interest in the subject and is also useful as a means of determining whose turn it is to speak. However, care must be taken. Whilst eye contact is important, an uninterrupted stare can be rather off-putting and may detract from the success of the communication.

Physical contact: this is an important aspect of any communication process. It can be used to greatly enhance verbal communication. A sympathetic touch on an arm can often say far more than any number of words. However, physical contact is governed by board of social rules and inappropriate use may cause problems. The levels of physical contact vary greatly between cultures, with British being identified as one of the least 'touching' nations in the world. An awareness of this is important because what is considered acceptable behavior in one culture could be unacceptable in another.

Body posture: we can usually control the words we say, but we are not so good at controlling our body language. Although we may be giving a positive verbal message, our body posture may be giving a negative message. This may be easily picked up by the listener and the verbal message lost.

Body posture can have a major influence on how well a communication progresses or even if it gets started at all. There are several classic body postures which have been identified as having significant meaning.

The closed position: this would be illustrated by a person standing with his arms folded. This is seen as a rather negative posture and not one likely to encourage initiation of communication.

Feet position: it is often found that a person's feet will be pointing in the direction in which the wants to go. This can be used to check whether the listener is giving you his full attention or would rather be elsewhere.

Positive body posture: Leaning towards the person who is talking, or sitting in a relaxed fashion, are both examples of non-verbal language which can encourage communication.

Annex 3: Case for ADE reporting exercise

Ato NadewTasew is 48 years old known hypertensive patient (card number 23076) went for a follow up to **AB** hospital found in Addis Ababa, woreda 09 kebele 14 on 14/6/2008E.C. While the healthcare provider (S/r Zewde) was measuring his BP it is found 185/120 mmHg.

AtoNadew smokes half a pack of Nyala Cigarettes a day.

AtoNadew was admitted to emergency room for 12 hours and prescribed ABC brand of Hydralazine 20mg/ml injection to be given 5mg/ml; every 20 minutes (IV) until BP drops and XYZ brand of Furosemide 10mg/ml in 2ml injection; 20mg dose daily for three days (IV). The nurse gives the two medications as prescribed.

AtoNadew's condition improves and discharged after 12 hours of stay in emergency room.

On the next day, AtoNadew comes to the hospital with complains of red, swollen skin on his legs and becomes very sick and was admitted to medical ward in AB Hospital.

Next morning when the duty healthcare provider was about to give Furosemide she found out it was cloudy. The nurse decided to stop the Furosemide medication temporarily and the swelling subsides after five days and he became stable of discontinuation of medication.

Assume you were the healthcare provider, how would you report AtoNadew`s case?

<u>Note:</u>

Hydralazine 20 mg/ml injection was produced by Pharma lab firm **Q** with batch number of ABA612CXF and expiry date of 29/2/2018 (Registration# 123FHAC31A) and XYZ which produced by pharma firm **Z** with batch number of AA1012AXA and expiry date of 31/7/2018 (registration # 234RFS34Q).

Annex 4: Prescription evaluation, intervention and documentation register

Prescription evaluation, intervention and documentation register   Ser # _____

Date	Card #	Age	sex	weight	Prescription			Specific diagnosis	Code of DTP identified and its justification with reference	Intervention proposed	Acceptance of Intervention (√)			Cost of drug with DTP	Cost of Drug after intervention	Initial & sign
					Legal? (√ if not)	Legible? (√ if not)	Complete? (√ if not)				Fully	Partially	Rejected			
Total count/sum																

Page Summary	1. # unnecessary drug therapy (DTP 1) = _____ 2. # needs additional drug therapy (DTP 2) = _____
	3. # ineffective drugs (DTP 3) = _____ 4. # dosage too low (DTP 4) = _____ 5. # adverse drug event (DTP 5) = _____
	6. # dosage too high (DTP 6) = _____ 7. # noncompliance (DTP 7) =_____
	# DTPs involving antibiotics = _____, # DTPs involving antimalarial = _____, # of females (≥ 15yr) = _____, # of child (< 5yr) = _____
	Code for: Rx with legality problems = RxL1, Rx with legibility problems = RxL2, Rx with completeness problems = RxC

NB: Code of DTPs described in bracket, all are completed and summarized by prescription evaluators, use new page for a new month (use EC)

Annex 5: Counselling time registering form

Patient #	Counseling time	
	T1	T2
1.		
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Annex 6: Medicines actually dispensed registering form

Patient #	# Drugs Prescribed	# Drugs actually dispensed
1.		
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6.		
7.		
8.		
9.		
10.		
11.		
12.		
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Annex 7: Patient knowledge and labelling information registering form

Patient #	Patient Knowledge						Labelling Information								
	Name(¾SÊH'>~eU)	Dose (v"É Ñ>²; Eé"/Ä¨eÇK<	Frequency (uk" Ñ>²; Eé"/Ä¨eÇK<;	Route (□□□□□□□□□)	Duratio □(□□□□□□□□□□□□□)	Storage ((□□□□□□□□□□□□□□))	Patient Name	Drug Name	Strength	Dose	Frequency	Duration	Direction for use	Date of Dispensing	Dispensers Address
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2.															
3.															
4.															
5.															
6.															
7.															
8.															
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26.															

Annex 8: ADE reporting form

Patient initial		Card N o:	Age:	Sex:		Weight:
Ethnic Group			**Substance of Abuse**			

Prescription evaluation checklist

Information on Suspected Drug/ Vaccine S=suspected C= Concomitantly used drugs						
Prescription evaluation param	**Availability of required information on the prescription**					
Drug Name (use Brand Name. indicate manufacturer and batch no if applicable	• **Standard prescription of the Hospital?** • **Check for legality** • **Signed by an authorized prescriber?** • **Titer of an authorized prescriber present?**	**Dose/Route**	**Frequency**	**Date D/M/Y Drug**		**Indication (Reason for drug use)**
				Started	**Stopped**	

Adverse Drug Reaction Description (Including Laboratory test results):	**Date of onset of Reaction:**D/M/Y

Reaction necessitated: **Discontinuation of drug/s/** □ Yes □No **Prolonged Hospitalization**□ Yes □No	**Reaction subside after D/C of Suspected Drug** □Y □ N □NA **Reaction reappear after Restart of Suspected Drug** □ Y □ N □ NA

Treatment of reaction:

Outcome: □ **Died due to adverse reaction**   □ **Died, drug may be contributory**   □ **Not yet recovered**   □ **Recoveredwith outsequelae**□ **Recovered with sequelae**□ **Unknown**

Sequelae:

Relevant medical conditions such as allergies, renal disease, liver disease, other chronic disease, pregnancy, etc.

Reported by: Name		**Profession**	**e-mail:**	**Tele No:**	
Name of health Institution				**Date**	

Product Quality Problem (Color change, □Separating of components,□Powdering / crumbling,□Caking,□Moulding, Change of odour,□Incomplete pack,□Suspectedcontamination,□Poor packaging / poor labeling,□Receiving expired medicines,etc)

Trade Name	Batch No.	Registration No	DF and strength	Expiry date	Size/ Type of container

For office use only	
Received On:	Registration Nº:

Key: D|M|Y Date |Month |Year; D/C Discontinue Treatment; Y Yes; N No; NA Not available

What to report	NB. Drugs includes
• All suspected reactions to drugs • Unknown or unexpected ADRs • Serious adverse drug reactions • Unexpected therapeutic effects • All suspected drug interactions • Product Quality Problem • Treatment failure	• Conventional drugs • Herbal drugs • Traditional medicines • Biologicals • Medical supplies • Medicated cosmetics
From _____ _____ _____ _____	¾Ñ<ÇÃ SMeSeÝ ›ÑMÓKAƒðnÉlØ` HQ2 Business Reply Service Licence No.HQ2 **Postage Prepaid**

Food, Medicine and Health care Administration and Control Authority of Ethiopia (FMHACA)

		• Date of the Prescription?			
		• Right medicine on right prescription such as normal, NPS and ART?			
2. Check for legibility		• legibly written?			
		• No sound alike errors?			
		• Does the Prescription contain illegible terms that encourage guess work?			
		• Nonstandard abbreviation present on the PRESCRIPTION			
3. check for completeness		• All parts of the Prescription have been written completely?			
		• If not complete, at least these present?	• Card #		
			• Patient name		
			• Sex		
			• Age		
			• Weight		
			• Diagnosis		
			• If diagnosis present, is it specific?		
		• Are these drug parameters present?	• Drug Name		
			• Strength		
			• Dosage Form		
			• Dose		
			• Frequency		
			• Duration		
			• Quantity		
			• Route of Administration		
4. Past medication history on these taken?		• Allergy or any ADR/SE or medication errors or any possible quality problems of previous medications			
		• Liver disease and /or renal disease			
		• Pregnancy and or breast feeding			
		• Current medications including combined oral contraceptives, OTCs, drugs for chronic illness etc.			
		• Medications stopped within the last 2-3			
		• Use of alcohol, chat or other substances			
		• Adherence problems on these assesses?	• Hoarding of medicines?		
			• Sharing of medicines?		
			• Taking under or an over dose?		
			• Not completing the whole course of antibiotics		
			• Others specify		
		• Signs of therapeutic failure			
		• Economic factors affecting medication taking such as lack of nutrition etc.			
		• Others specify			
5. Check for correctness and safety of medication by referring STG, EMF, DIS or based on available and acceptable evidence such as expert opinion		• Is any drug-drug, drug -food etc. interaction?			
		• Indication correct?	• Is there Unnecessary drug therapy?		
			• Is there Need for Additional Drug Therapy?		
		• Effectiveness problem present?	• Ineffective Drug?		
			• Dosage too Low?		
		• Safetyproblem present?	• Adverse Drug Reaction?		
			• Dosage too High?		
			• Any Contraindication/s?		
		• Compliance/ adherence problem present?	• The patient does not understand the instructions		
			• The patient prefers not to take the medication		
			• The patient forgets to take the medication		
			• Drug product is too expensive		
			• The patient cannot swallow or self-administer the medication properly		
			• The drug product is not available for the patient		
6. Have you communicated possible drug therapy problems to the prescriber by suggesting an appropriate intervention based on evidence?					
7. Have you documented any DTPs and any completeness problems on the Prescription Evaluation and Intervention Register?					

Annex 10: Sample Dispensing procedure

የዓይን ጠብታ አጠቃቀም/አጫጫን

1. መጀመሪያ እጅዎትን በሳሙና ይታጠቡ !!
2. የመድሃኒት መያዣውን መክደኛ ይክፈቱ፣ (ስለ አከፋፈቱ ባለሙያን ይጠይቁ)፣ የጠብታ መጨመሪያውን ጫፍ በእጅ መንካት የለብዎትም!!
3. ጭንቅላትዎን ወደ ኋላ ዘምበል በማድረግ ወደ ላይ ይመልከቱ
4. ታችኛውን የዓይንክፍል (ቁት) አንደኛውን እጅዎትን በመጠቀም ይክፈቱ!!
5. የጠብታ መጨመሪያውን ወደ ተከፈተው የዓይንክፍል ያስጠጉ፡ አይንዎትን እንዳይነካ ይጠንቀቁ !!
6. የታዘዘውን የጠብታ መጠን ወደ ተከፈተው የዓይንክፍል(ቁት)ይጨምሩ !!
7. ጠብታዉ ከተጨመረ በኋላ አይንዎትን ቢያንስ ለ2 ደቂቃ በስሱ እየጨፈኑ ያነቃንቁ !!!
8. ከ 2 ዓይነት ጠብታ በላይ ከታዘዘል ዎትበ ቢያንስ በ 5 ደቂቃ አራርቀዉ ይጨምሩ !!

ማሳሰቢያ፡ ከ 5 ደቂቃ በላይ የሚቆይ የማቃጠል ስሜት ከተሰማዎት የጤና ባለሙያዉን ቶሎ ያማክሩ !

የጆሮ ጠብታ አጠቃቀም/አጫጫን ቅደም ተከተል

1. መጀመሪያ እጅዎትን በሳሙና ይታጠቡ !!
2. የጆሮ ጠብታዉን በእጅ ወይንም ብብት ስር በማድረግ ለተወሰነ ደቂቃ ያሙቁት !!
   ሙቀዉ ሃግን አይጠቀሙ !

3. ጭንቅላትዎንወደጎንበማዘንበልወይንም በአንድ ጎንዎትበመተኛት ጆሮዎትንያዘጋጁ!!

4. የመድሃኒትመያዣዉንመክደኛይክፈቱ፡ የጠብታ መጨመሪያዉንጫፍበእጅመንካት የለብዎትም!!

5. መድሃኒትየጆሮንዉ ስጥኛክፍልበደንብእንዲ ያገኝጆሮዎትንበስሱይሳቡት

6. የታዘዘዉን የጠብታ መጠን ይጨምሩ !!

7. ቢያንስለ5 ደቂቃ ይጠብቁ!!

8. ከላይየ ተዘዘረዉንት ደምተከተል ለሌ ለኛ ጆ ሮ ይተግብሩ !!

በማህጸንየሚገቡመድሃኒቶችየአጠቃቀምቅደምተከተል
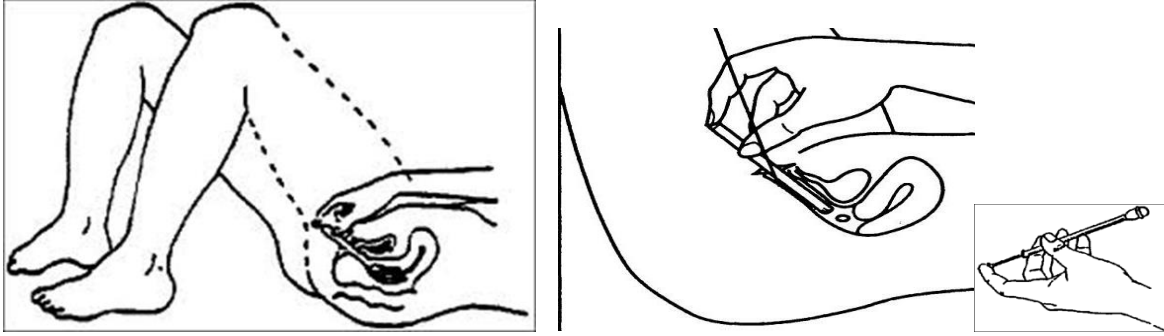
1. መጀመሪያእጀዋትንበሳሙናይታጠቡ !!

2. ከማሽጊያዉአንዱንፍሬክኒንብቻያዉጡ !!

3. ያዎጡትንእንድፍሬክኒንማስገቢያዉጫፍላይያስገቡ!!

4. ጉልበትዎንበማጠፍእግርዎትንበመክፈትበጃርዎይጋደሙ

5. ቀስበማለትማስገቢያዉንበመጠቀምክንኑንበማህጸንዎትያስገቡ!!

6. ማስገቢያዉበደንብመግባቱንካረጋገጡበኋላየኂላዉጫፉንይግፉ!!

7. የመድሃኒትማስገቢያዉንከማህጸንዎትያዉጡ!!

8. የመድሃኒትማስገቢያዉንበሳሙናለብባለዉ ሃበመጠቀምበደንብይጠቡት !!

9. እጀዋትንበሳሙናይታጠቡ !!

ማሳሰቢያ፦
መድሃኒቱንከማስገባትዎበፊትሽንትቤትመጠቀምእስፈለግነትአስቀድሞሽንትቤቱንከተጠቀሙበኂአስላ
ይየተዘበረዘረዉንቅደምተከተልበመከተልመድሃኑትንማስገባትአይዘዘንጉ!!
በሌላመንገድመድሃኑትንካስገቡበኂአስአንድሰዓትጊዜዉስጥየሽንትስሜትከተሰማዎትመድሃኑቱገብቶ
አንድሰዓትእስኪያልፍሽንትቤትአይጠቀሙ!!

በፍንጢጣየሚገቡመድሃኒቾችየአጠቃቀምቅደምተከተል

1. መድሃኒቱየመለስለስባህሪይካሳየየቧንቧዉሃንበመጠቀምወይንምፍሪጅዉስጥለተወሰነደቂቃበ

   ማቆየትእንዲፈጋያድርጉ!!

2. ከማሽጊያዉአንዱንፍሬክኒንብቻያዉጡ

3. የመድሃኒቱንጫፍየፒንቪዉሃንበመጠቀምረጠብያድረጉ (ባዚሊንንአይጠቀሙ)

4. በጎንዎትበመተተኛትአንዱንእግርዎትይዘርጉ፡ሌላኛዉንይጠፉ!!

5. በስዕሉእንደሚታየዉጭንዎትንሳብያድርጉ

6. በስዕሉእንደሚታየዉመድሃኒቱንያስገቡ!!

7. መድሁኒቱእንዳይወጣቢያንስለ 5 ደቂቃበተኙበትይቆዩ!!

8. እጆዎትንበሳሙናበደንብይታጠቡ !!

ማሳሰቢያ:
መድሃኒቱንከማስገባትዎበፊትሽንትቤትመጠቀምካስፈለገትአስቀድሞሽንትቤቱንከተጠቀሙበኂላላ
ይየተዘረዘረዉንቅደምተከተልበመከተልመድሃኑቱንማስገባትአይዘንጉ!!
በሌላመንገድመድሃኑቱንካስገቡበኂላበእንድሰዓትጊዜዉስጥሽንትመጠቀምካስፈለግዎትመድሃኑቱገብ
ቶአንድሰዓትእስኪያልፍሽንትቤትአይጠቀሙ!!

Part II. Pharmaceuticals Supply Chain Management

Chapter One: Introduction to Supply Chain Management

Chapter Description: This chapter provides a brief introduction to supply chain management, its purpose and concept. It also deals about the national pharmaceuticals supply chain system. Besides help participants to understand the basics of supply chain and the country supply chain system.

Primary Objective: To enable participants describe supply chain management system

Enabling Objectives: By the end of this chapter, participants will be able to:

- Define supply chain management Describe the purpose and benefit of supply chain management
- Describe the national supply chain management system

Chapter Outline:

This chapter has the following outlines:

- Introduction to SCM
- Goal of SCM
- Benefit of SCM
- Impact of poor SCM practice
- National supply chain system
- Chapter summary

Allocated Time: 45 minutes

1.1.   Introduction

Supply Chain Management (SCM) as defined by the Council of Supply Chain Management Professionals (CSCMP): "Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies. Pharmaceutical supply chain management follows the same principle with the addition of public health concept and the sensitivity of pharmaceuticals.

1.2.   Goal of SCM

Group Discussion

- Discuss on the goal of SCM and the six rights of SCM

time allowed 10 minutes

The goal of any health supply chain management system is to help ensure that every person is able to obtain and use quality essential health supplies whenever he or she needs them. SCM tries to achieve this goal by achieving the six rights of SCM.

The six rights of SCM

- The **RIGHT** goods
- in the **RIGHT** quantities
- in the **RIGHT** condition
- delivered…to the **RIGHT** place
- at the **RIGHT** time
- for the **RIGHT** cost

1.3.   Benefit of SCM

Well-functioning supply chains benefit public health programs in important ways by;

- **Increases program impact**

- o If the system provides a reliable supply of pharmaceuticals, more people are likely to use health services. Customers feel more confident about the health system and the facilities when they have a constant supply of pharmaceuticals. It motivates them to seek and use services.

- **Enhances quality of care**
  - o Well-supplied health facilities can provide superior service, while poorly supplied health facilities cannot.
  - o Likewise, well-supplied health workers can use their training and expertise fully, directly improving the quality of care for clients. It helps in increasing their professional satisfaction, motivation, and morale. Motivated staffs are more likely to deliver a higher quality of service.
  - o Customers will also benefit from the consistent availability of commodities.

- **Improves cost efficiency and effectiveness**
  - o Reduces losses due to overstock, waste, expiry, damage, pilferage, and inefficiency;
  - o Protects other major program investments
  - o Maximizes the potential for cost recovery

1.4. Impact of poor supply chain practice

Group discussion

- Discuss on the impacts of poor supply chain practice in your group

Time allowed 10 minutes

Despite the numerous benefits attained from a good supply chain management practice, the following are the results of poor supply chain practice;

- Frequent stock out
- Overstock of pharmaceuticals
- Increase inventory holding costs
- Inefficiency leading to high cost
- Patient dissatisfaction

- Health worker dissatisfaction and lack of motivation

- Irrational medicine use

1.5. National supply chain system

	Group Discussion
	Discuss on how IPLS works
	Time allowed 15 minutes

The Federal Ministry of Health (FMOH) through Pharmaceuticals Fund and Supply Agency (PFSA) started implementing Integrated Pharmaceuticals Logistics System (IPLS) since 2009. IPLS is the term applied to the single pharmaceuticals reporting and distribution system based on the overall mandate and scope of PFSA. Before the existence of IPLS, there were so many problems in the management of health commodities that lead to frequent stock out and wastage of health commodities. IPLS is developed in response to the problems that Ethiopia had been suffering from lack of supply management system.

The IPLS integrates the management of essential pharmaceuticals including the following pharmaceuticals that were used to be managed vertically: HIV/AIDS, Malaria, TB and Leprosy, EPI, MCH and purchased essential drugs. It is the primary mechanism through which all public health facilities obtain essential and vital pharmaceuticals. This system ensures that all Ethiopians receive the commodity they need when they are visiting service delivery points by ensuring the six rights of logistics system are fulfilled.

Summary

- Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities

- Pharmaceutical supply chain management follows the same principle with the addition of public health concept and the sensitivity of pharmaceuticals. IPLS is the term applied to

the single pharmaceuticals reporting and distribution system based on the overall mandate and scope of PFSA. It integrates the management of essential pharmaceuticals

Chapter Two: Logistics Cycle

Chapter Description: This chapter provides a review of logistics management, the logistics cycle and logistics activities. The chapter briefly deals with the logistics cycle: serving customers, selection, quantification, procurement, inventory management and LMIS. This chapter helps the participant to understand the interlinkage between the logistics activities

Primary Objective: To enable participants to describe the components of the logistics cycle

Enabling Objectives: By the end of this chapter, participants will be able to:

- Define logistics management and logistics cycle
- List the components of a logistics cycle
- Describe the interrelationships of components of logistics cycle
- Describe the logistics cycle relation with IPLS & APTS

Chapter Outline:

This chapter has the following outlines:

- Introduction to Logistics Management and Logistics Cycle
- Components of logistics cycle
- Logistics cycle in relation to IPLS and APTS
- Chapter summary

Allocated Time: 110 minutes

2.1. Introduction to Logistics Management

As defined by the Council of Supply Chain Management Professionals (CSCMP): "Logistics management is part of SCM that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements. Logistics activities typically include selection, quantification, procurement, inventory management and serving customers. Logistics management is an integrated function which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions, including marketing, sales, manufacturing, finance, and information technology." The goal of a health logistics system is much larger than simply making sure a product gets where it needs to go. Ultimately, the goal of every public health logistics system is to ensure that every customer has commodity security. Commodity security exists when every person is able to obtain and use quality essential health supplies whenever he or she needs them. A properly functioning supply chain is a critical part of ensuring commodity security though financing, policies, and commitment are also necessary.

2.2. Components of logistics cycle

Group Discussion

on logistics Cycle

Time allowed 10 minutes

Logistics management includes a number of activities that support the six rights. The activities are interlinked as a cycle called logistics cycle (figure__). Being circular, the cycle indicates the cyclical or repetitive nature of the various elements in the cycle. Each activity, serving customers, product selection, and quantification, procurement and inventory management depends on and is affected by other activities. The activities in the centre of the logistics cycle represent the management support functions that inform and impact the other elements around the logistics cycle.
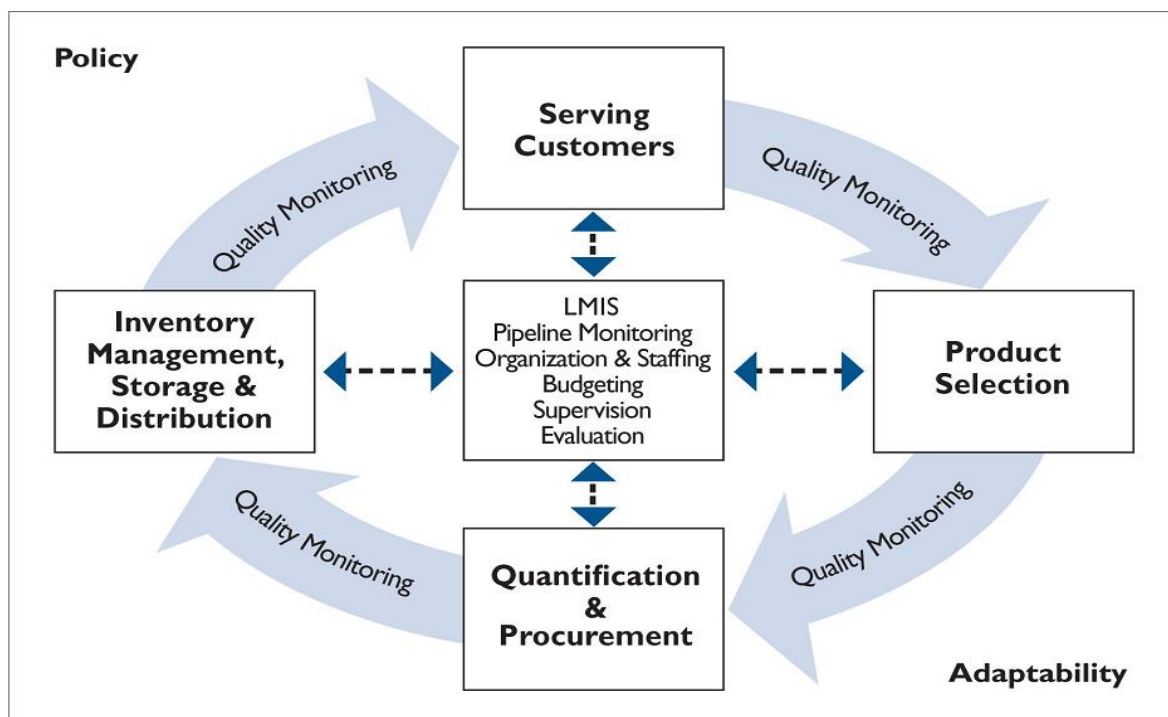
Figure 3.2 The logistics cycle

A. Serving customer

Everyone who works in logistics must remember that they select, procure, store, or distribute products to meet customer needs. Store managers do not store drugs just for the purpose of storing; rather they store products to ensure commodity security Therefore each activity in the logistics cycle, contributes to excellent customer service.

B. Pharmaceutical selection

Pharmaceuticals may constitute as much as 40% of the health care budget in developing countries, however large proportion of the population may lack access to essential medicines. The limited funds available are frequently spent on ineffective, unnecessary, or even dangerous medicines. The rationale for selecting a limited number of essential medicines is that it -leads to better supply, more rational use and lower cost.

Essential medicines are those that satisfy the primary health care needs of the majority of the population and that should be available in the appropriate dosage form and strength at all times. The selection of medicines has a considerable impact on the quality of care and the cost of treatment. It is one of the logistics management activities where intervention is most cost

effective. More commonly, the selection and use of essential medicines are limited to public sector health facilities.

In Ethiopia, health facilities are expected to develop their own essential medicine list in accordance with the recent national STG and essential medicine list. This is to make sure that basic health services are accessible to everyone before more expensive services are made available to a small, usually urban proportion of the population. The potential advantage of using a limited list of essential medicines is listed in the following table.

Table 2.1 Advantages of a limited list of essential medicines

Major objective	Addressed Challenge
Supply	Easier procurement, storage, and distribution
	Lower stocks
	Better quality assurance
	Easier dispensing
Cost	Lower prices
	More competition
Patient use	Focused education efforts
	Reduced confusion and increased adherence to treatment
	Improved drug availability
Health care provider	Focused and up-to-date information
	More experience with fewer medicines
	Reduction of AMR
	Better recognition of ADR

Criteria for medicine selection

An essential medicine list names medicine considered optimal treatment choices to satisfy the health care need of the population. Although there are many different settings in which an essential medicine list can be developed and used, the criteria for selection are basically similar in each. The following are the most common criteria for medicine selection: -

- Relevance to the pattern of prevalent diseases
- Level of health facility and its capacity (eg. diagnostic facilities, STG)
- Training and experience of available personnel

- Financial resources

- Genetic, demographic and environmental factors

- Favorable cost-benefit ratio in terms of the total treatment cost

- Preference for drugs that are well known

Steps in the process of pharmaceuticals selection

The following steps should be followed during the preparation of essential medicine list. This activity will be entertained by the participants in chapter____ section_____

1. Establish DTC or drug selection committee

2. Determine prevalent health problems based on the data (percent frequency)

3. Select drugs, laboratory reagents and medical supplies for each health problem following recent STG (level of care), NDL/ EDL; generic name, dosage form (s), strength(s)

4. Structure list of pharmaceuticals

5. Introduce the list for staffs

6. Update the list

C. Quantification

Quantification is the process of estimating the quantity and cost of the products required for a health facility, and to ensure an uninterrupted supply, determining when the products should be procured and distributed. Quantification is completed when both forecasting and supply planning has been done. In general terms, quantification is the process used to determine how much of a product is required for the purpose of procurement. The goal of quantification is to maintain the most cost-effective balance between service levels and inventory costs.

Figure 2.4: Steps in quantification of pharmaceuticals

Quantification methods

There are four general quantification methods.:

- Consumption method
- Morbidity method
- Proxy consumption method
- Service-level projection of budget requirements

The method used should be chosen according to actual & potential availability of data. In this training, we will give emphasis on the two quantification methods, consumption and morbidity method considering their applicability at the health facility level.

1. **Consumption based method**

- This method uses records of past consumption of individual drugs (adjusted for stock outs and projected changes in drug utilization) to project future needs

- Consumption based method is useful when:
  - Historical data on drug consumption exists.
  - Drug supply at facility has been consistent (stock out for not more than 3 months)
  - Stock management is reasonably good.
  - low level of wastages
- Source of data for consumption based method
  - Bin card
  - Health Commodity Management Information System (HCMIS)
  - Dispensing registration books
  - Transaction records (e.g. IFRR, Model 19, Model 22, RRF)
- Advantages of Consumption based Method
  - Does not require detailed morbidity data or standard treatment protocol
  - Requires less detailed calculations
  - Useful for facilities in which their health problems are numerous and drug treatments are complex
  - Identifies stock management problems
  - Reliable if consumption is well-recorded and stable
- Limitations of Consumption-based Method
  - Assumes that current and past usage patterns will continue
  - Not useful for new protocols or treatments
  - Relies on accurate and complete dispensing and inventory records
  - Accuracy depends on a relatively uninterrupted supply
  - Pattern of consumption can be influenced by change of prescribers, promotional influence etc.
  - Consumption data may or may not reflect rational use of medicine

2. **Morbidity based method**
   - This method estimates the need for specific drugs based on the expected number of attendances, the incidence of common diseases & standard treatment patterns for the diseases considered.
   - Morbidity method is useful when:
     - Available consumption data are incomplete /unreliable

- o Prescribing patterns are not cost effective

- o The health facility or services concerned are not expanding or contracting rapidly

- Advantages of morbidity Quantification

  - o Does not require drug consumption data

  - o Provides a systematic basis for reviewing drug use and prescribing

  - o Motivate reliable morbidity recording

  - o Provide more realistic and reliable estimated picture

- Limitations of Morbidity Based Method
  - o Requires accurate and reliable data on morbidity or patient attendance

  - o Assumes that incidence and/or case enrolment trends remain the same

  - o More complex and time consuming

  - o May need computer analysis for large datasets

  - o Accuracy depends on the degree to which STGs are followed and access to services

Consequences of poor quantification exercise

- Frequent shortage or stock out of pharmaceuticals

- Excess stock due to Over-Estimation

- Increased disposal cost due to stock expiry

- Wastage of valuable pharmaceuticals & funds to be used for other purpose.

- Death of patients due to in-availability of life-saving drugs

D. Procurement

The pharmaceuticals procurement system is a major determinant of pharmaceutical availability and total pharmaceuticals costs. Pharmaceuticals procurement means the purchasing or obtaining of pharmaceuticals by any contractual means. Public procurement is the process of the acquisition, usually by means of a contractual arrangement after public competition of goods, services, works and other supplies bythe public entity, in this case the health facilities.

The aim of procurement is to achieve the "five rights" namely, namely; getting the right quality, in the right quantity, at the right time, for the right price, from the right source.

E. Inventory Management

Inventory management is a process of assuring that the right volume and movement are secured in order to ensure that the obtained drugs have reached to the final consumer correctly. It is the process of maintaining of stock properly all the time in the health facility. It is considered as the heart of pharmaceuticals supply management system. There are two major components of inventory management called inventory control system and storage.

Inventory control system

Group Discussion

- What do we mean by maximum level, minimum level, review period and emergency order point?

Time allowed 5 minutes

An inventory control system is mechanism that informs the store manager when to order or issue, how much to order or issue, and how to maintain an appropriate stock level of all products to avoid shortages and oversupply. The following are key inventory control terms:

- Maximum stock level/Maximum quantity
  - The level of stock above which inventory levels should not rise, under normal condition. The max stock level is set as a number of months of stock. It indicates how long the pharmaceuticals will last.
- Minimum stock level/Minimum quantity
  - The level of stock at which actions to replenish inventory should occur under normal conditions. the min stock level is expressed in months of stock.
- Review period
  - The routine interval of time between assessments of stock levels to determine if additional stock is needed. This term is also called the order or resupply interval.
- Review period stock
  - The quantity of stock dispensed during the review period.
- Emergency Order Point (EOP)

o The level of stock that triggers an emergency order; it can be reached at any point during the review period.

Storage

Storage ensures the physical integrity and safety of products and their packaging, until they are dispensed to clients. An important goal in storage of health products is the correct staging of health products to ensure that requests from dispensary units can be filed and resupplied. To maximize the products' shelf life and make them readily available for length of time required, you must have procedures for safe storage for all products. Storage guideline will be discussed briefly in the next chapter.

Visual inspection

Visual inspection is the process of examining products and their packaging to look for obvious problems with product quality. Store keepers can easily verify quality by visually checking the condition of all products in their health facility on a regular schedule.

Physical inventory count

A physical inventory count is used to compare actual stock on hand for each commodity with the amount recorded on the stock card. A physical inventory count enables you to confirm how much stock you have and whether forms are being completed correctly. It can be a quick, routine exercise, especially if you follow good storage practices.

One factor that may discourage store managers from conducting a physical inventory count is the large number of products in store room that must be counted. Some facilities are able to shut down for a few days each year to do a complete physical inventory count, but many situations make this impossible. In such case, health facilities can use one of the following options for conducting an inventory count;

- Annual physical inventory/stock verification
    - The most common method of checking inventory both physically and what is in the book record in almost all government organization in Ethiopia.
    - Involves complete or 100% count of all pharmaceuticals in the store room.
    - Done at the end of a financial year for an organization, and all transactions of store remain completely closed during this period (July).
- Cycle/periodic counting

- Store managers conduct a physical inventory count for a fraction of items each month. By the end of the year, all items have been counted. When the next year starts, they begin the process again.
- Helps in keeping physical inventory up-to-date without disrupting store operations.
- Recommended for health facilities that manage large number of products

- VEN analysis
  - Involves counting the vital and most essential items more often.
  - Enables you to assess stocks of vital items more often than nonessential items.
- ABC analysis
  - Divide products into three categories, based on monetary value.
  - As a store manager, you might also use an ABC analysis that is not based on cost, but on how often a receipt or issue is made.

F. Logistics Management Information System

Information is the engine that drives the entire logistics cycle. We collect information to make decisions; the better information we have, the better decisions we can make. A logistics management information system (LMIS) is the system of records and reports that you use to collect, organize, and present logistics data gathered across all levels of the system. It collects data about pharmaceuticals, this information often used for routine activities such as filling routine request of health facilities. The purpose of LMIS is to collect, organize, and report information to other levels in the system in order to make decisions that govern the logistics system and ensure that all the six rights are fulfilled. The primary function of the LMIS is to support the management of essential pharmaceuticals

Essential logistics data

There are three essential data items required for logistics decisions;

1. Stock on Hand: Quantities of usable stock available at a particular point in time. Items that are unusable are not considered part of stock on hand; they are considered losses to the system.

2. Consumption Data: The quantity of pharmaceuticals used during the reporting period.

3. Losses/Adjustments:

- Losses are the quantities of products removed from your stock for anything other than in the provision of services to patients or issuing to another facility (e.g. expiry, lost, theft, or damage) and are recorded as negative (-) numbers.

- Adjustments are quantities of a product received or issued to another health facility. An adjustment may also be a correction due to an error in mathematics. An adjustment may be a negative (-) or positive (+) number.

Types of Logistics Records

There are only three activities that happen to pharmaceuticals within a logistics system: they are stored in the store room, moved between facilities, orused to provide health services to patients. A well-designed logistics management information system will include records and forms that collect and report the three essential data items as they relate to these three activities. There are three logistics records;

1. Stock keeping records – holds information about products in storage. E.g. bin card, stock card, HCMIS
2. Transaction records – holds information about products being moved. E.g. Model 19, Model 22 & IFRR
3. Consumption records – holds information about products being consumed or used. E.g. dispensing registration book

G. Quality monitoring

In the logistics cycle, quality monitoring appears between each activity of the logistics cycle. Quality monitoring refers not only to the quality of the product, but also to the quality of the work. It plays the following role in the logistics cycle;

- Ensures quantification and procurement of the right products, based on the appropriate product selection and use.

- To ensure product quality, procurement documents must include detailed product and packaging specifications, and the expectations for quality at the time of receipt. After procurement, the quality of the pharmaceuticals should be checked.

- While products are received, stored, and when customers receive them, it is important to monitor their quality. The quality of the storage conditions should also be monitored.

- Health facilities must determine if customers are satisfied with the quality of the products and whether the customers are satisfied with the service they received (customer satisfaction).

2.3. Logistics cycle relation to IPLS and APTS

IPLS and APTS are the two systems in Ethiopia that deals with the pharmaceuticals supply chain management. IPLS deals with the logistics cycle activities called quantification, procurement and inventory management. APTS deals with inventory management, serving customer and selection as its main objective is bringing accountability and transparency in the pharmaceuticals management system, and improving the pharmacy service practice. The interlink age of the two systems indicate that the logistics system is a continuous process and each activity in the cycle affect each other. To be effective each activity should be performed in a quality manner that's why quality monitoring is mentioned in between each cycle

Health facilities implementing APTS will find it easy in terms of managing logistics information which is the main input for IPLS. On the other hand, using this information IPLS will enable the health facilities to acquire the required pharmaceuticals to serve their customer based on the need that comes from the customers. In general, IPLS focuses on ensuring availability of quality, safe and effective pharmaceuticals to the ultimate customer which is the community while APTS focuses on ensuring the appropriate utilization of the available pharmaceuticals.

Summary

- Logistics activities typically include selection, quantification, procurement, inventory management and serving customers. The goal of a health logistics system is to help ensure that every person is able to obtain and use quality essential health supplies whenever he or she needs them.
- IPLS and APTS are the two systems that deal with the pharmaceuticals supply chain management with the objective of ensuring availability and rational use of pharmaceuticals.

Chapter Three: National Supply Chain System Main Concepts and Practices

Chapter Description: This chapter provides an overview of the main concepts and practices of the national supply chain system of Ethiopia. The chapter starts with facility medicine list development. Detailed description of how a facility list is developed and maintained. Then the chapter deals with practices of the national pharmaceutical logistic system with an emphasis on LMIS, inventory control system and storage practices. The chapter also provides an overview of pharmaceutical disposal issues.

Primary Objective: To enable participants describe the national supply chain system.

Enabling Objectives: By the end of this chapter, participants will be able to:

Accordingly, this chapter is sub-divided into four sessions:

- Session 3.1. Developing Facility Specific Pharmaceuticals List
- Session 3.2. National Supply Chain System
- Session 3.3. Data Quality
- Session 3.4. Pharmaceuticals Storage
- Session 3.5. Disposal for Pharmaceuticals Wastes

Chapter Outline:

This chapter has the following outlines:

- Introduction to Logistics Management and Logistics Cycle
- Components of logistics cycle
- Logistics cycle in relation to IPLS and APTS
- Chapter summary

Allocated Time: 45 minutes

Session 3.1: Developing Facility Specific Medicine

Session Description: This session provides brief concept on the processes that are involved during the development of facility specific medicine lists. The session specifically addresses the importance of developing facility specific medicine list, the criteria that are used for customizing the lists and the basic steps in classifying medicines according to their importance. For better understanding of this session, participants are advised to refer the DTC SOP manual.

Primary Objective: After completing this session, participants will acquire basic knowledge and able to demonstrate skills required on development of facility specific medicines list.

Enabling Objectives: By the end of this chapter, participants will be able to:

- Explain the importance of facility specific list
- List criteria for developing facility specific medicine list
- Describe definition of VEN as a system in setting priorities while selecting medicines
- Explain steps for developing the medicine list
- Demonstrate skills in developing facility specific pharmaceuticals lists

Chapter Outline:

This chapter has the following outlines:

- Introduction and importance of pharmaceuticals or medicines list
- Criteria for developing medicines list
- Categorizing medicines using VEN system
- Session summary

Allocated Time: 135   minutes

3.1.1 Importance of developing facility specific drug list

Medicines List: is a list of pharmaceutical products approved for use in a specific health care setting. The list contains all pharmaceutical products including medicines with strength and dosage forms, medical supplies, laboratory supplies/reagents and medical equipment. Essential medicines are those that satisfy the priority health care needs of the population.

There are vast numbers of medicine in the market; availing all these medicines in a health facility is impossible from many aspects. With so many different pharmaceutical products available, prescribers often find it impossible to keep their knowledge up-to-date and to compare alternatives. In addition, the variety of available products may contribute to inconsistent prescribing within the same health care system in the same health facility.

The rationale for the selection and customizing facility specific medicines list is that it leads to improved supply of medicines, ensure rational prescribing practice, provide framework for defining scope of quantification, and help to utilize the limited resources appropriately It also improves efficiency within the procurement and inventory management programs. Therefore, for ensuring the availability of the safe, effective and good quality medicines, health facilities need to develop medicine list for their own institution. Developing and maintaining facility specific medicines list is one of main function of DTC.

3.1.2 Criteria for developing facility specific list

Selecting medicines for the list is the most important function of the formulary system. The process, which is multi factorial, ultimately brings the best medicines to the health care system. The DTC can take the criteria mentioned in chapter two selection section as important considerations when selecting and developing the facility specific medicine list:

3.1.3 Categorizing medicines using VEN system

Pair Reading –

Read categorizing medicines using VEN system.

Time allowed 5 minutes

The other most important considerations while developing medicine list is to categorize each medicine as Vital (V), Essential (E) and Non-essential (N). The VEN system helps sort medicines according to their health impact into vital, essential, and non/less essential categories, and is a well-known method to help set priorities for purchasing medicines and keeping priority stocks appropriately.

The main objective of VEN system is to give priority to essential lifesaving medicines as opposed to expensive, nonessential items. The DTC should be involved in the application of this system to the facility's medicines list by identifying the VEN class for all medicines approved for the medicine list.

Vital (V)

- Potentially lifesaving: required saving patient's life in certain conditions; patient may die or may be harmed or disabled because of lack of this medicine
- Crucial to provide basic health services, without which it is impossible to deliver the basic services in the specific catchment area (in its absence, service may be discontinued).
- Must always be available

Essential (E)

- Effective against less severe but significant illness, not vital; it is between vital and less essential
- It is lifesaving; without which patient may be in difficulty/ problem /may be somehow substituted
- Essential to the service without which it is difficult to give the health service
- It is mandatory at least once a day, or at least once a week, or at least once in a month or once in a quarter of the year, but not as highly mandatory as vitals

Nonessentials (N)

- Effective for minor illnesses and low therapeutic advantage
- Important to patients; however, patients will not die because the absence of these medicines
- Necessary to give the health service; however, health service delivery will not be discontinued in the absence of these medicines

- Last priority medicines (when budgets are limited, these categories are the first to be adjusted in reconciling requirements with the budget/fund)

N.B. Assignment to the nonessential category does not mean that the medicine is no longer on the health facility's medicine list. It indicates that the medicine may be considered a lower priority than other medicines in the list.

The following table summarizes the various patient and medicine-related criteria used to classify medicines by VEN. The most recommended approaches to classify medicines into VEN system is the morbidity approach.

Characteristic of Drug or Target Condition	(V) Vital, Crucial	(E) Essential	(N) Non-Essential or Less Essential
Persons affected (% of population) in case of drugs used for disease of infrequent prevalence but may cause severe infections	Over 5%	1-5%	Less than 1%
Persons treated (number of patients per year at an average level of health facility) in case of drugs used for disease of infrequent prevalence but may cause severe infections	Over 5%	1-5%	Less than 1%
Severity of the disease condition			
Life-threatening condition and or disability may be occurred in the absence of the item	Yes	Occasionally	Rarely
Difficult to treat the disease condition in the absence of the item; however can be tackled by a substitute	Rarely	Yes	Rarely
Therapeutic significance			
Effective against less severe but significant illness	Rarely	Yes	Rarely

Treats minor, self-limited Symptoms and conditions	No	Possibly	Yes
Crucial to the service			
Health service will be discontinued in the absence of the item	Yes	Rarely	Not at all
Health service will be very difficult to give the health service and somehow can be exchanged by other item	Rarely	Yes	Not at all

Categorizing medicines into VEN using morbidity Approach.

Morbidity is the most frequently used approach for categorizing medicines into VEN system. In this case, facilities can use the following key steps to categorize medicines into VEN system:

1. Gather and rank morbidity data (HMIS data are collected as per the International Classifications of Diseases/ICD)

2. Sub-categorize the collected ICD in to specific cases

3. Compute the proportion of the cases from the total cases and sort them in descending order

4. Those cases that are constituting above 5% categorized as VITAL, 1-5% ESSENTIAL and the rest NON-ESSENTIAL

5. As per the latest STG, identify the require treatment, diagnostic facility and supplies for each of the cases

6. Those medicines, and supplies used for the treatment of above 5% are vital, 1-5% essential and the rest are non-essential.

7. Precautions are needed for some programmatic items (like TB. Family planning and ART), depending on their impact, they need to be classified as VITAL.

A step by step guide for developing facility specific medicine list

Task:	Develop facility specific drug list
Completed by:	The DTC or subcommittee assigned by DTC
Purpose:	1. To maintain facility specific medicine list by categorizing

	according to their importance	
When to perform: 1. At least yearly 2. When new medicines are required to be added in the list		
steps	Actions	Notes
1	Introduce the concept; create the demand and obtain support from the facility management and staff	Successful implementation of the list requires support from both the medical staff and administrators
2	Establish a subcommittee to coordinate the development process of facility specific medicines list	A subcommittee of the DTC having 3-5 members representing key departments/units
3	Prepare and introduce the role and responsibilities of the subcommittee coordinating the development process	
4	List identified prevalent diseases affecting the community	Information can be obtained from morbidity and mortality reports
5	Select medicine/s for the first top health problem adhering to the recent STG.	Considering the selection criteria
6	Specify the required strengths and dosage forms of the selected medicine	Use the "List of (Essential) Medicines for Ethiopia" to identify all available forms and strengths. Example. Frusemide Injection, 10mg/ml in 2ml ampoule Frusemide Tablet, 40mg,
7	Categorize each medicine .into V (vital), E (essential) and N (non-essential) by the level of their importance to treat each of the	Consider each of the strengths and dosage forms of a medicine while categorizing the medicine, as V, E or N according to their level of importance to treat the disease.

	disease	Example. Hydrochlorothiazide tablet, 25mg,- E Mannitol Injection, 20% in 500 -V
8	List down all diagnostic facilities (supplies, chemicals and reagents), Medical supplies and equipment those are required to diagnose and treat the disease.	While listing, consider specifying full details of each item selected Example. X ray Films 18x24 X ray Films, 30x40 Gloves, surgical Latex, disposable, sterile, pre-powdered, individually wrapped in pairs, size 7.5,
9	Categorize each diagnostics (supplies, chemicals and reagents), Medical supplies and equipment, .into V (vital), E (essential) and N (non-essential) by the level of their importance to diagnose and treat each of the diseases	Apply same principle used in step 7 above, while categorizing each diagnostics (supplies, chemicals and reagents), Medical supplies and equipment, as V, E or N according to the level of their importance to diagnose/manage the disease. Example Surgical Gloves, sterile, latex No. 6.5-N Surgical Gloves, sterile, latex No. 7 - V
10	Similarly follow steps 5-9 to select medicine/s, diagnostics (supplies, chemicals and reagents), Medical supplies and equipment; for the rest of disease problems.	
11	Sort the list alphabetically and delete redundant medicines	Treat Pharmaceuticals, Diagnostic chemicals and reagents, Medical supplies and equipment separately.
12	Circulate the draft list to different departments for comment	Practitioners have different experiences and will use their expertise to review the

		list and comment on draft list
13	Evaluate comments and edit the list accordingly (incorporate accepted ones and remove un-accepted ones)	You can use literature reviews or other appropriate information resources for unbiased decision making
14	Categorize and segregate the selected medicines according to their Pharmacotherapeutic Classification Scheme.	Use List of (essential) Medicines for Ethiopia for Pharmacotherapeutic Classification Example: • Cardiovascular, Gastrointestinal medicines Note also that a Medicine may have more than one Therapeutic Category

This tasks is completed when:

The document is:

- Prepared with preface, acknowledgement, List of Contributors and DTC members on separate pages prior to list of medicines, Table of contents acronyms and indexes
- Printed and distributed to all departments;

Summary

- Health facilities must have a list of pharmaceuticals that they need for provision of their services.
- The list is prepared with due consideration of the prevalent diseases, amount of population affected, the type of services provided and similar criteria.
- The selected medicines should be categorized depending on their health impacts as: vital (V), essential (E), and non-essential (N).
- The VEN classification system should guide subsequent supply management decisions
.

Session 3.2: National Supply Chain System

Session Description: The session provides an overview of the national supply chain system of Ethiopia. The session discusses essential data items that are critical for making informed decisions regarding pharmaceutical supply chain.

Primary Objective: After completing this session, participants will able to describe the essential data items that are used for making decisions in the supply chain

Enabling Objectives: By the end of this chapter, participants will be able to:

- Describe essential data items
- Perform recording, documentation, and reporting of essential data items

Chapter Outline:

This chapter has the following outlines:

- Essential data items and decision making
- Perform recording, documentation, and reporting of essential data items
- Session summary

Allocated Time: 240 minutes

3.2.1. Essential Data Items tracking and Decision making

There are three essential data items, these are: stock on hand, consumption and loss adjustment. This information is used to make supply decisions - to order and issue health commodities at the appropriate time and in adequate quantities.

They are initially recorded in the bin card and then aggregated and reported using report formats. The health post uses Health Post Monthly Report and Resupply Form (HPMRR), internal dispensing unit use Internal Facility Report and Resupply Form while health centre and hospital use Report and Requisition Form (RRF) for reporting information and ordering of their pharmaceuticals. Internal dispensing unit submits its report either weekly or biweekly depending on the agreed schedule.

Health posts reports every month to be resupplied for a maximum of two month whereas health centre and hospital every two month to reach their maximum of four months' stock. The system has a mechanism to address emergency orders. At health post level, the emergency order point is when the stock level reaches below 0.25 month, likewise at hospital and health centre, it is below 0.5 month of stock.

In case of internal dispensing units, reports are submitted as per agreed schedule. This agreement helps reports to be submitted timely. The pharmacy store manager and pharmacy head in

collaboration with staffs in dispensing units need to agree and develop workable Reporting/Resupply schedule and min/max system for dispensaries.

To ensure timely reporting of reports from DUs, the below listed interventions can help

- The schedule to be posted at DUs should be posted in a way that can be easily visible
- For DUs reporting on bi-weekly bases, stating weeks into even and odd can be an easy reminder for timely reporting, for instance you can put, say for TB unit, every Thursday of 1st and 3rd week
- When needed, the store manager will go to DUs or made a call to remind the responsible person
- Orientation of the system to all staffs working in DUs can help the timely acquisition of reports during the off-work of the head or coordinator

Several schedule types can be developed as per facility contextual needs The schedule need to clearly show the time when they supposed to report and receive their product within the context of the developed Dispensary Specific Minimum and Maximum levels.

Brainstorming
• on the effect of not adhering to schedule and what will happen if dispensaries failed to report as per the agreed schedule? **Time allowed 5 minutes**

 Annexed the sample report and resupply schedule for internal DU.

Table 3.2.1 sample report/resupply schedule for dispensaries.

Pharmacy Store & Dispensing Unit Report submission & Issuing / Receiving Schedule					
Dispensing Units	**Report submission / Report Receiving Date**	**Issuing / Receiving Date**	**Reporting or Re supply Interval in weeks**	**Min**	**Max**
OPD	Thursday Morning	Thursday Afternoon	1	1	2
MCH	Wednesday Morning	Wednesday Afternoon	1	1	2
ART	Thursday Morning	Thursday Afternoon	1	1	2

TB	Wednesday Morning	Wednesday Afternoon	1	1	2
Laboratory	Tuesday Morning	Tuesday Afternoon	1	1	2
Delivery	Tuesday Morning	Tuesday Afternoon	1	1	2
YFS	Friday Morning	Friday Afternoon	2	2	4
VCT	Friday Morning	Friday Afternoon	2	2	4
CRBHA	Tuesday Morning	Tuesday Afternoon	4	4	8

3.2.2. Recording and Reporting

A well-designed logistics management information system will include recording and reporting forms that gather the three essential data items. The most important recording and reporting forms used in IPLS include BCs, SRC, IFRR and RRF.

3.2.2.1 Recording for bin card

IPLS uses the Bin Card at all level of health facilities to record the information used to make resupply decisions. They are the primary source of data from which different pharmaceutical reports are generated for determining order quantities and monitoring of stock levels.

Bic cards should be up-to - dated every time:

- When pharmaceuticals are received, or issued
- When pharmaceuticals are transferred to another facility
- When pharmaceuticals are transferred in from another facility
- When pharmaceuticals are removed from the storage area for reasons other than for use in health services

If accurate and up-to-date data are not recorded in the bin card, the report generated will be lacking quality leading to incorrect order quantities. Thus, the accuracy of the bin card is one of the most important factors that determine the quality and timeliness of reports.

Recording formats and the job aid is annexed. It is also available in the IPLS Standard Operating Procedure and refer the SOP for further understanding.

3.2.2.2 Reporting and ordering pharmaceuticals

The main reporting and ordering forms in IPLS are HPMRR, IFRR and RRF. These are the primary report forms through which the quantities are determined for re-supply and ordering purpose.

If reports are completely missing or lacking, the likelihood of experiencing stock out will be completely higher. The reporting personals from the health facility store, dispensary units and health post should take a serious responsibility and accountability for ensuring sending of uninterrupted, best quality and timely ordering and resupply reports.

Note that for detail understanding on how to complete each of the resupply and ordering reports, a step by step guide (job aid) is available in the IPLS SOP and participants advised to refer it for further understanding.

Summary

- There are three essential data items: *stock on hand, consumption, and loss adjustment.*
- This information is used to make supply decisions - to order and issue health commodities at the appropriate time and in adequate quantities
- To facilitate the supply management of pharmaceuticals within the health system, the country has designed and implemented IPLS.
- The most important recording and reporting forms used in IPLS include BCs, SRC, IFRR and RRF.

Session 3.3: Data Quality

Session Description: This session introduces participants with the issues surrounding quality of logistics data in relation to the integrated pharmaceutical logistics system (IPLS). It describes the importance, definition, components of data quality. It further deals with outcomes of poor data quality and interventions to improve data quality.

Primary Objective: At the end of the session it will enable participants to apply basic concepts of data quality for improvement

Enabling Objectives: By the end of this chapter, participants will be able to:

- Describe importance of data they capture and report
- Define data quality
- List components of data quality in IPLS
- Identify main points where the required level of timeliness, completeness and accuracy for the data to be brought
- Explain outcomes of poor data quality
- List interventions used for improving data quality

Chapter Outline:

This chapter has the following outlines:

- Introduction to data quality
- Definition of data quality
- Outcomes of poor data quality
- Focus points for improving data quality
- Steps needed to ensure data quality
- Session summary

Allocated Time: 65 minutes

3.3.1. Introduction to data quality

As it has been already pointed logistics systems exist to fulfil the six rights for the customer, all decisions in logistics should be based on information. Information is collected to make decisions. Logisticians say "If information is not going to be used in a manner to make decisions, it should not be collected". This means it will compromise the decision made for serving the customers.

The information professional at main store and dispensing units in the health sector collect, organize and report through LMIS is used to improve healthcare services by improving the quality of management decisions and ensure availability of essential medicines. That is why quality of information is emphasized and called DNA for the SCM.

3.3.2. Definition of Data Quality

Data quality refers to the condition of a set of values of quantitative and qualitative variables. There are many definitions of data quality but data is generally considered high quality if it is "fit for its intended uses in operation, decision-making and planning. Alternatively, data is deemed of high quality if it correctly represents the real-world construct to which it refers. The state of completeness, validity, consistency, timeliness and accuracy that makes data appropriate for a specific use.

In relation to IPLS it refers to the timeliness, completeness and accuracy of IFRR and HPMRR submitted to main stores in a facility and RRF reported to PFSA hubs for making sound decision in resupplying products. Timeliness for DUs indicates reporting at the agreed day and within days in the schedule set for IFRR and HPMRR reporting; whereas within the specified period (1-10th days) for RRF reporting. Completeness refers to the degree of transferring the essential data items to all products eligible as per the list determined by the facility (i.e. pharmaceuticals list of the facility and list specific to each DU). Data accuracy is the degree in which the transferring of the real situation of the stock to the reports for the essential data items.

3.3.3. Outcomes of problems related to data quality

Among the number of outcomes related to data quality challenges, the following main ones can be cited

- The required products can't reach or be received timely, in right quantity to fill the stock to the maximum which result in stock outs
- Compromise the stocks kept at supplying source

- Excess stock will be taken simultaneously exposing shortage to others

3.3.4. Focus Points for Improving Data Quality

The following issues can contribute for challenge in acquisition of quality reports and needs to be sought as areas of intervention for improving data quality

- Sources of delay in reporting timely
  - Lack of awareness on the benefits of timely reporting
  - Forgetfulness
  - Low staffs' commitment and
  - Low enforcement by the management
- Sources of challenges related to completeness
  - Lack of due attention,
  - Knowledge gaps (program items)
  - Organizing products as per the sequences in the reporting format, etc.…processes are subjected to compromise the quality of reports
- Sources of Data Inaccuracy
  - Not maintaining bin card for all products
  - Lack of regular bin card updating
  - Error created while transferring data from bin card to reports
  - Data manipulation
  - Aggregating RRF reports coming from non-direct delivery sites at Woreda Health Offices

Steps needed to ensure timeliness

To ensure timely reporting of reports from DUs, the below listed interventions can help

- Agreement should be reached with DUs on the day that can be suitable for both parties when developing schedule for reporting
- The schedule of each DU should be posted in a way that can be easily visible
- For DUs reporting on bi-weekly basis, assigning DUs to odd and even weeks can be an easy reminder for timely reporting
- When needed, the store manager shall go to DUs or made a call to remind the responsible person

- Orientation of the system to all staffs working in DUs can help the timely acquisition of reports during the off-work of the head or coordinator
- Making it a regular agenda of DTC

Steps needed to ensure Completeness and data accuracy

Health facilities reporting RRF have the Job aid to complete the report (annexed). To improve challenges related to completeness and data accuracy, it needs provision of regular supportive supervision and thorough examination of reported data.

The below guides will help for ensuring completeness and data accuracy of RRF reports that can be also applicable to IFRR & HPMRR.

- Make sure for the proper writing of name of the health facility, region, zone and woreda at the top pages of all copies of the RRFs.
  - Abbreviations aren't the right way of completing these parts
- Write properly the reporting period
  - The reporting period should be put from the beginning to the end dates of the reporting period in the Ethiopian calendar (e.g. From: <u>Tikimet 1, 2009</u> To <u>Hidar 30, 2009</u> or it can be written as 1/2/2009 to 30/3/2009)
- Review for the reporting of all required items.
- Make sure the completion of the three essential data items expected in IFRR and HPMRR; the required data in the "Report Part" and "Requisition Part" in the RRF
- Check for listing of products with near expiry or shelf life ≤ 6 months with their S/No, Quantity and Expiry date in the "Remarks" part
- Make sure the person responsible for the reporting puts his/her name, signature and date on each copies of the report
- Go through the report for checking the proper use of units
- Select randomly some number of items to assess data accuracy
- Compare the current period copy of report with the previous ones and conduct analysis for the data accuracy. E.g. comparing the ending balance of the last RRF with the current RRF beginning balance.
- Compare quantities written in the "Quantity Received" column in the current report with the Quantity ordered/issued in the previous period for the selected items

- Assess for the presence of expiry and damage of products and also adjustments made during the reporting period and check for their completion in the loss/adjustment part.

Summary

- Logistics decisions should be based on accurate and timely information. Accordingly, the LMIS is at the heart of the logistics cycle..

- Data can be used for a specific purpose when it can be asserted that it is complete, valid, consistent, timely, and accurate. .

- Problems related to data quality result in poor availability of required pharmaceuticals to the end users.

- Health facilities and stakeholders involved in the supply management cycle should implement Interventions to improve data quality.

Session 3.4: Pharmaceuticals Storage

Session Description: This session provides a review on shelf life and expiry dates of pharmaceuticals, impact of storage conditions on the usability of products, requirement for good storage practice and its guidelines.

Primary Objective: To enable participants to explain purpose of good storage, infrastructures required and guidelines for advocating and implementing good storage practices.

Enabling Objectives: By the end of this chapter, participants will be able to:

- Explain the purpose in which health facilities are required to have good storage for their pharmaceuticals
- Identify criteria to be considered while building or selecting room for medical store
- List the guidelines for the proper storage of pharmaceuticals
- Identify materials and formats to be used to maintain standard temperature in a medical store room and refrigerator for cold chain items

Chapter Outline:

This chapter has the following outlines:

- Introduction
- Premises for good medicines storage
- Guidelines for proper storage
- Summary of the session

Allocated Time: 40 minutes

3.4.1. Introduction

Provision of quality health care demands the availability of safe, efficacious and quality pharmaceuticals. On the other hand, it is not only the availability but also the quality that matters a lot for proper diagnosis, management and success of treatment to patients.

To avail safe and quality medicines and medical supplies to the health system it needs maintenance of proper storage conditions till it reaches the end-users. The expiry date written by pharmaceuticals manufacturers puts in to consideration as the quality is protected up on keeping the ideal storage conditions. If the products storage conditions are not maintained as per the prescribed standard their shelf-life will be shorten and become out of use before the labelled date for expiry.

3.4.2. Storage Facilities

To implement proper storage of pharmaceuticals it requires fulfilment of premises (storage facilities). The remaining are routine activities to be done in the premises.

In general, every health facility needs to have store room to store medicines and medical supplies safely. The smallest facility like health posts may need only medicines cupboard, but most facilities need a room fitted with shelves and refrigerator. The room to be used for storage should be well-built, well-located and ensure security.

To implement the storage guidelines properly the following points, need to be considered when designing or selecting the storage room:

- Storage facilities must have sufficient space and capacity for storage and handling including stage for receiving and issuing products.
    - The space should allow arrangement of shelves in lines with a passageway not less than 90 cm wide and placement of shelves 90 cm from the walls of the storeroom to ensure they are accessible from both sides.
- Built in raised foundation to allow rain water drainage.
- Slanting roof to allow water run-off and extend the roof over the windows to give extra protection from rain and direct sunlight.
- A double ceiling to provide insulation and ensure that supplies are kept cool.
- Walls and floors should be permanent and smooth for easy cleaning.

- Doors wide enough to allow for the free and easy movement of supplies and handling equipment and strong fore security purpose.
- Windows that are high and wide to allow adequate ventilation, high enough to not be blocked by shelves, have wire mesh to keep out insects, and be burglar proofed.
  - The location and design should ensure maximum air circulation to avoid concentrations of fumes or gases and to prevent condensation of moisture on products or walls.
- The storeroom with as much natural light (sunlight) in the day as possible to avoid the use of either florescent or incandescent bulb lighting.
  - Florescent lighting emits ultraviolet ray which have a negative effect on certain products. Incandescent bulbs emit heat.
  - At the same time, take care to ensure that products are not in direct sunlight.
- It should be located to a place easily accessible to units to be served. Ideally to be in a separate lot of land to minimize human congestion and enhance security from theft and fire.
- Its construction or selection should be in place where shading of trees to be available to offset high temperature.

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3.4.3. Storage Guidelines

Medicines and medical supplies should be protected from sun, heat, and water. Manufacturers recommendations for storage conditions usually printed on the products carton and boxes.

The following are general storage guidelines for pharmaceuticals.

1. Clean the store room regularly:
    - Regular cleaning and disinfecting prevents attraction and intrusion of pests in to the store room.

2. Store pharmaceuticals in dry, well-ventilated and well-lit but out of direct sunlight:
    - Extreme heat and exposure to direct sunlight can degrade drugs and other pharmaceuticals and dramatically shorten shelf life.
    - Temperatures in the storeroom should not exceed $25^{O}C$ although there are recommendations that allow the maximum limit to $30\,^{O}C$.

- o Direct sunlight also raises the temperature of the product in addition to its direct damaging impact on some products.
- o There are many parts of the country especially in the low lands where the temperature exceeds the limit. For the products to be in the standard range, the room temperature must be monitored on daily bases using room thermometer and appropriate interventions must be taken when it is found out of the range. Among the interventions that need to be taken during overheating opening of windows and doors, switching on fan or other air conditioner can be mentioned.
- o It requires recording of the daily temperature twice a day using the log-sheet that includes interventions taken (annexed at the end of the manual).

3. Protect storeroom from water penetration:
   - o Water can destroy both supplies and their packaging. If the packaging is damaged, the product is still unacceptable to the patient even when the pharmaceutical is not damaged.
   - o Repair the storeroom so that water cannot enter. Stack supplies off thefloor on pallets at least 10 cm high and 30 cm away from walls as moisture can seep through walls and floors.
   - o ARV drugs and fluconazole are particularly sensitive to moisture

4. Keep fire safety equipment available, accessible, functional and with well-training on usage

5. Store latex products away from electric motors and fluorescent lights:
   - o Latex products can be damaged if they are directly exposed to fluorescent lights and electric motors. Electric motors and fluorescent lights create the chemical ozone which can rapidly deteriorate latex products. Keep latex products in paper boxes and cartons

6. Maintain cold storage, including a cold chain, as required:
   - o Cold storage (2 to 8 degrees Celsius; 36 to 46 degrees Fahrenheit) is essential for maintaining the shelf life of certain pharmaceuticals that require it.
   - o These items are irreversibly damaged if the cold chain is broken.
   - o Daily bases monitoring of storage temperature in the refrigerator needs to be carried out using the thermometer. Some refrigerators have the measuring

thermometer fixed on it. However, the majority use a separate thermometer to be placed in the internal part.

7. Limit storage area access to authorized personnel and lock up controlled substances.
   - To prevent theft and pilferage, lock the storeroom and/or limit access to personnel other than authorized staff,
   - track the movement of drugs and other pharmaceuticals
   - Physical counts should be conducted on a regular basis to verify inventory records.

8. Stack cartons at least 10 cm off the floor, 30 cm away from the wall and other stacks, and no more than 2.5m high.

9. Store medical supplies away from insecticides, chemicals, old files, office supplies and other materials.
   - Exposure to insecticides and other chemicals may affect the shelf life of pharmaceuticals.
   - Old files and office supplies may get in the way and reduce space for medical supplies or make them less accessible.

10. Store flammable products separately from other products.
    - Take appropriate safety precautions for some flammable products, such as alcohol, cylindered gas, or mineral spirits.
    - Such products should be stored away from other products and near a fire extinguisher.

11. Store pharmaceuticals to facilitate FEFO procedures and stock management.
    - FEFO (First Expired, First Out) is a method of arranging drugs in a storage facility where the drugs are managed by their expiry date.
    - Drugs that will expire first are issued first, regardless of when they were received at the health facility.

12. Arrange cartons with arrows pointing up, and with identification labels, expiry dates, and manufacturing dates clearly visible.
    - Identification labels make it easier to follow FEFO, and make it easier to select the right product. Items should be stored according to manufacturer's

instructions on the cartons; this includes paying attention to the direction of the arrows.

13. Separate unusable pharmaceuticals from usable pharmaceuticals and dispose of damaged or expired products,

   o Remove them from inventory immediately and dispose of them using established procedures.

Summary

- Shelf life of medicines and supplies can be shortened and supplies can be shortened if the ideal storage conditions compromised
- Proper consideration of criteria for storage should be done when designing storage rooms for pharmaceuticals

Session 3.5: Disposal for pharmaceutical wastes

Session Description: This session deals with the standards of pharmaceutical waste disposal as per the Ethiopian national directive. The chapter particularly discusses on the steps to be followed in the proper disposal of pharmaceutical wastes at health facility.

Primary Objective: To enable participants explain standards and procedures for management and disposal of pharmaceuticals wastes

Enabling Objectives: By the end of this chapter, participants will be able to:

- Explain the general points for management of pharmaceuticals wastesas per the national directive
- Describe main points that need to be followed for safe medicines waste disposal in
- Describe steps for disposal of medicines wastes by a health facility

Chapter Outline:

This chapter has the following outlines:

- Introduction
- Overview of national directive on disposal of pharmaceuticals wastes
- Major steps for disposing pharmaceuticals wastes
- Session conclusion

Allocated Time: 40 minutes

3.5.1. Introduction

Expiry of products can be minimized (less than or equal to 2% in HSTP) upon applying good SCM practices. But it can't be always zero. There are also cases the products subjected to damage that includes on its packaging and labelling that will make them unfit for use.

Expired, damaged and other unusable pharmaceuticals are wastes that should be removed regularly and disposed to make working environment clean and safe from incidents that cause harm to humans. Disposal of these wastes must be carried in a manner that protect the public health and the environment from health risks emerging from unsafe disposal.

3.5.2. Directive on Disposal of Pharmaceuticals Wastes

To standardize the disposal practice of the country, the Food, Medicine and Healthcare Administration and Control Authority (FMHACCA) issued disposal directive. The directive state the following main points that must be considered for management and disposal of pharmaceuticals wastes

- Medicines which are unfit for use shall not be stored for more than six months.
- Approval and authorizing of disposal of medicines shall be sought from the appropriate organ.
- Any medicines waste disposal practice, including diluting and flushing of liquid medicines into sewers and burning of packaging materials, shall be attended by an inspector of the appropriate organ.
- After disposal of medicines waste, disposal certificates shall be issued by the appropriate organ.
- Disposal sites shall be environment and society friendly and shall be approved by appropriate organ in accordance with Environment Impact Assessment (EIA).
- Re-use of any medicines waste including re-packing and re-labeling is prohibited.
- Scavenging of medicines is prohibited and security measures to prevent scavenging shall be in place at disposal sites and temporary storage areas.
- Any health institution which does not have a disposal facility approved by the appropriate organ shall not carry out medicines waste disposal.

- Any health institution which does not have an approved disposal facility shall use disposal referral system of licensed disposal firms, respective medicines suppliers or central disposal sites.

For the details on the techniques and procedures related to management and disposal, the guideline is available in soft copy at FMHACA website www.fmhacca.org

3.5.3. Major steps for disposing Pharmaceuticals Wastes

The prior activities that precede the initiation of disposal is immediate registration of expired and damaged products upon separating them from usable ones. While registering, it requires completing all the information in the standard registration sheet prepared by FMHACA.

The registration should be held by the heads of main store and all dispensing units under a facility in two copies. The pharmacy department should distribute the registration sheet to all places where the pharmaceuticals managed.

There are two approaches where these unusable items are returned from dispensing units to be stored in temporary room. The first one is DUs themselves return to the store manager while submitting their IFRR and HPMRR report. Another alternative is the pharmacy unit collect from DUs as per its plan.

The responsible person for the storing the registered wastes should place in organized manner to facilitate easy counting and checking by responsible bodies during the disposal. These activities will make the disposal process easy.

The following major procedures can serve as a guide for disposal of expired and damaged products by a facility.

- Aggregate the lists of all the wastes collected and stored in temporary storing room
- Prepare plan for the disposal that includes the required cost or proposal for the disposal
- Submit the plan together with the aggregated list to the DTC and concerned management of the facility for their review and approval
- The facility will communicate a head of time with a letter attached with the completed registration sheet to the responsible regulatory body, police, finance and economic development and other relevant bodies

- Communicate to the concerned parties where the letter issued and arrange the day that can be suitable for the disposal process to be started
- Arrange the necessary inputs like laborer, fuel, transportation, disposal site, etc required for conducting the disposal as per the directive
- Conduct the disposal and
- Finally collect certificate of the disposal from the regulatory body and document the certificate properly.

Summary

- The application of good supply chain management practices can minimize rate of expiry well below the 2% mark set by the nation
- However, the health system in general and the pharmacy service in particular should be well prepared to properly handle and dispose of expired and damaged pharmaceuticals in the event that happens
- The country has disposal directive that guides the disposal process
- There are steps that need be followed during disposal of pharmaceuticals. These steps include:
- Aggregate the lists of all the wastes collected and stored in temporary storing room
- Prepare plan for the disposal that includes the required cost or proposal for the disposal
- Submit the plan together with the aggregated list to the DTC and and concerned management of the facility for their review and approval.

Chapter Four: Monitoring and Evaluation of Supply Chains

Chapter Description: This chapter provides a review of the monitoring and evaluation of SCM, purpose and indicators. The chapter briefly deals with the indicators: definition, formula, purpose, data source, frequency, target, and responsible person.

Primary Objective: To enable participants utilize indicators to improve SCM

Enabling Objectives: By the end of this chapter, participants will be able to:

- Identify and define basic M&E concepts

- Describe the purpose of M & E

- Describe M&E's role in strengthening logistics systems

- Identify and practice the role and collaboration of M&E indicators in supply chain systems to improve performance

- Know how to calculate basic M and E indicators

Chapter Outline:

This chapter has the following outlines:

- Introduction to Monitoring and Evaluation

- Indicators for pharmacy service and SCM
- Chapter summary

Allocated Time: **140 minutes**

4.1. Introduction

Monitoring is routine, timely tracking of the performance of supply chain system through continuous record-keeping, reporting or surveillance systems. it refers to reviewing, on a continuous basis, the degree to which program activities are completed and targets are being met. Effective, frequent monitoring helps managers to make decisions in a timely manner. For example, the six early warning indicators presented in this document can help prevent stock-outs and overstocking if used in real time and not retrospectively.

Evaluation is episodic assessment of progress towards a program's targets. Evaluation refers to analyzing progress toward meeting established objectives and goals. It provides feedback on whether plans had been met and the reasons for success or failure. The purpose of indicators is to establish evidences whether a program's inputs are producing the desired outputs and outcomes. Evaluation helps managers to determine the added value of investments in the programs. Monitoring indicators often show the areas that require in-depth evaluation; evaluation is conducted at longer intervals and requires significant investment and is conducted in a rigorous method.

As a combined effort, monitoring and evaluation are used to evaluate programs and results regularly, to determine whether progress is being made towards the targets and defined objectives. When monitoring and evaluation show that the program is not meeting the targets, actions must be initiated to prevent or correct problems.

Purpose of Monitoring and Evaluation

Monitoring and evaluation helps to improve performance and achieve results. More precisely, the overall purpose of monitoring and evaluation is the measurement and assessment of performance in order to more effectively manage the outcomes and outputs known as development results. Performance is defined as progress towards achievement of results. Traditionally, monitoring and evaluation focused on assessing inputs and implementation processes. Many supply chain management specialists consider implementing supply chain performance indicators or metrics as one of the simplest, least expensive, and least time-consuming activities.

4.2. Indicators for pharmacy service and SCM

Definition and Types of Indicators

Indicators are either a qualitative or quantitative variables that measure the extent of progresses in the level of performance. We adapted four types of indicators: quality, time, financial, and productivity. All indicator types need to be considered, and they need to work together.

Quality: These indicators are often the simplest to implement and measure. Typically, they tell you how well you are performing a specific activity—a common logistics indicator in this classification is accuracy— including order accuracy, inventory accuracy, forecasting accuracy (Absolute deviation percentage)

Time: These indicators focus on the time it takes to complete specific activities. They show where saving time during specific activities can improve the overall supply chain performance.

Financial: These indicators help managers identify the supply chain cost drivers and help move toward a more efficiently managed supply chain.

Productivity: These indicators examine how well resources are used.

Focusing on only one type of indicator may actually have a negative impact on product availability. It is very important to view these indicators holistically—to make sure they are harmonized and not working against each other—and to identify the tradeoffs required to strategically improve overall supply chain performance.

Description of indicators

1, Essential drugs availability

Indicator	Essential drugs availability	
Definition	The number of months in which a tracer drug was available averaged over all tracer drugs during the months	
Formula	$\sum$ the number of months tracer drugs are available in the review period	*X 100*
	(Number of months in period x number of tracer drugs)	

Interpretation	Essential drugs should always be available. Essential drug availability is the proportion of months in the time period under consideration for which a given tracer drug was available throughout the month. The availability can be averaged over several tracer drugs to give a general picture of availability. The type of essential drug that needs to be available differs by type of health facility. This indicator measures product availability (or absence) over a period and serves as a proxy indicator of the ability of a program to meet clients' needs with a full range of products and services. If a product is not available (stocked out) for one day in the month, then it's considered as not available for the whole month. Evaluators may assess reasons for stock outs to help program managers address the underlying causes for this logistics system performance.						
Disaggregation	By each product, program products						
Sources	BIN card, HCMIS, and tracer drug availability sheet						
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD/ ScHO	RHB	FMOH
	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly

2, Wastage rate

Indicator	Wastage rate of health products	
Definition	The percentage of the stock of products, in value, that are unusable because of expiration or damage during a period to the total value of the products received during the same period plus the quantity of the products found during the beginning of the period.	
Formula	Unusable stock of products during a period in monetary value	X 100
	Beginning stock plus received stock during the same period in monetary value	

Interpretation	This indicator can be calculated for any facility that manages pharmaceutical of interest. It can be measured over any period but it is preferable to be calculated for unusable stock with in a quarter. It is usually calculated whenever a physical inventory is taken. Unusable stock that has been accumulated for long period and were not disposed previously (expired and damaged items that were transferred from previous quarter) should not be included during calculation of this indicator. In addition, Items that were unusable during the quarter reviewed but were disposed with in the quarter should be taken in to consideration during calculation. This indicator is one of the performance indicator to have efficiency gain and one of the HSTP indicators to measure reduction of wastage from 8% to 2%.						
Disaggregation	By program, RDF						
Sources	Bin cards, stock cards, Model 19, inventory sheet, disposal reports, HCMIS						
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD/ ScHO	RHB	FMOH
		Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

3, Supplier fill rate

Indicator	Supplier fill rate	
Definition	The percentage of all items ordered by health facility from a distribution source (PFSA, or other private supplier) over a period that are filled correctly up to 80% in terms of quantities requested of those items	
Formula	Number of line items delivered in full (up to 80%)	*X 100*
	Total no. of line items requested	

Interpretation	This indicator measures supplier's ability to fill orders completely in terms of items and quantity during a definite period of time. This indicator measures the percentage of items ordered that are received to determine whether an order is filled in the correct quantities with the correct products at least 80%. For suppliers, it may be necessary to identify which items are causing the most problems and find another mechanism for obtaining those items.
Disaggregation	By supplier (PFSA, others) and by Programs
Sources	RRF report, Receiving voucher of HF, approved procurement request by DTC or HF head
Method of data collection	DHIS2

Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD/ScHO	RHB	FMOH
		Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

4, Stock out duration

Indicator	Stock out duration for tracer drugs
Definition	The number of days in which the tracer drugs were not available, averaged over all specific tracer drugs in a certain period
Formula	Sum of stock out days of tracer drugs
	Number of tracer drugs
Interpretation	The availability of tracer drugs is a measure of service availability. Tracer drugs should always be available at the health facility. If there is any stock out of tracer drugs the facility should act to identify and address the cause.
	This indicator provides a proxy measure of the ability of a program to meet clients' needs with a full range of drugs.

Disaggregation	By tracer product, program products						
Sources	Bin card, HCMIS and summary stock out tally sheet						
Method of data collection	Review of documents and routine report						
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD/ ScHO	RHB	FMOH
		Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly

5, Percentage of facilities that maintain acceptable Storage Conditions

Indicator	Percentage of facilities that maintain acceptable Storage Conditions						
Definition	This indicator measures the percentage of facilities that meet acceptable storage conditions.						
Formula	Number of facilities that meet 80% acceptable storage condition / Total number of facilities						*X 100*
Interpretation	This indicator measures the conditions of pharmaceutical store against a list of storage conditions required to protect the integrity of products. Evaluators can apply the indicator at pharmaceutical stores identify facilities that need improvement. Storage facilities are expected to meet at least 80% of the requirements according to standard checklist.						
Disaggregation	by health facility level						
Sources	standard storage condition checklist						
Method of data collection	Survey, supportive supervision						
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD/ ScHO	RHB	FMOH
		Annually	Annually	Annually	Annually	Annually	Annually

6, Inventory Accuracy Rate

Indicator	Inventory accuracy rate
Definition	This indicator measures the accuracy of stock balances recorded in stock keeping records (bin card, HCMIS) versus physical count over a range of items as a percentage of stock balances reviewed for accuracy.
Formula	$$\frac{\text{Number of items where stock record count equals physical stock count}}{\text{total number of items counted}} \times 100$$
Interpretation	This indicator measures the accuracy of logistics data as the percentage of discrepancy between physical count and stock record. High accuracy rate indicates good inventory practice.
Disaggregation	By type of health facility
Sources	Bin Cards, HCMIS
Method of data collection	Survey, supportive supervision through standard checklist

Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD	RHB	FMOH
		Quarterly	Quarterly	Quarterly	Quarterly	Annually	Annually

7, Drug and Therapeutics Committee (DTC) Functionality

Indicator	Drug and therapeutic Committee (DTC) functionality
Definition	Percentage of health facilities that have functional DTC
Formula	$$\frac{\text{Number of health facilities that have functional DTC}}{\text{Total number of health facilities that have DTC}} \times 100$$

Interpretation	This indicator measures the facility has a functional DTC. Functional health facility DTC develops and implements interventions promoting the rational and cost-effective use of medicines. DTC functionality at health facilities serves as a proxy indicator of the ability of a health facility to engage mix of health care providers and departments to meet the health facility needs with a full range of products and services and their rational utilization.
	If the facility assigned DTC members by official letter, has approved TOR, has documented minute, meets regularly at least every two months, has annual action plan, has updated health facility specific medicine list, practice medicine use studies/ evaluation, and has DTC performance reports then the DTC is considered as functional.
	A health facility is considered as having functional DTC if 80% of the above requirements are met. All the health facilities must have functional DTCs.
Disaggregation	By health centre and hospital
Sources	Documents from DTC secretary (DTC minute, official assignment letters, approved TOR, action plan, facility specific medicine list, DTC performance reports, medicine use study/evaluation reports)
Method of data collection	Survey/Supportive supervision with structured checklist

Frequency of Reporting	HC	Hospital	WoHO	ZHD/ ScHO	RHB	FMOH
			Quarterly	Quarterly	Annually	Annually

8, Availability of Health Facility Specific Medicine List

Indicator	Availability of Health facility specific medicine list	
Definition	Percentage of health facilities that have specific health facility medicine list at least updated in the past 2 years	
Formula	*number of health facilities with facility specific medicine list*	*X100*
	total number of health facilities	

Interpretation	The purpose of this indicator is to indicate the extent to which comprehensive facility specific list of medicines, reagents and supplies is available at health facilities. The list should be prepared by the DTC and updated at least every two years. The list is said to be complete when it captures the approved compilation of all medicines, reagents, and supplies selected based on relevance to treat prevalent diseases of the catchment area and categorized by VEN						
Disaggregation	By health centre and hospital						
Sources	Facility specific medicine list						
Method of data collection	Survey, supportive supervision with structured checklist						
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD/ ScHO	RHB	FMOH
				Annually	Annually	Annually	Annually

8, Availability of Standard Treatment Guidelines

Indicator	Availability of Standard Treatment Guidelines (STG)	
Definition	The percentage of health facilities having recent edition of standard treatment guideline during the time of visit	
Formula	Number of health facilities with recent standard treatment guideline	*X100*
	Total number of health facilities surveyed/visited	
Interpretation	The purpose of this indicator is to measure the extent to which copies of nationally developed STG is available in health facility. The availability of STG in a health facility can be used as proxy indicator for rational prescribing practice. The STG assessed should be those that are developed for the level of health facility. There should be at least one hardcopy of the recent STG available at the visited health facility	
Disaggregation	By health center and hospital	
Sources	Observation with standard checklist	

Method of data collection	Survey, supportive supervision					
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD	RHB	FMOH
				Annually	Annually	Annually	Annually

9, Percentage of medicines prescribed from the facility's medicines list

Indicator	Percentage of medicines prescribed from the facility's medicines list						
Definition	Percentage of medicines prescribed from those listed on the medicines list of the health facility (developed by the DTC).						
Formula	Total number of medicines prescribed from HF medicine list	X100					
	Total number of medicine prescribed						
Interpretation	The purpose of this indicator is to measure the degree to which health facilities follow to a national drug policy, which is prescribing from the health facility's medicine' list. The DTC develops the list. High level of adherence to the medicine list indicates better rational prescribing practices. Take a sample of 100 prescriptions using systematic random sampling from the prescription register/prescription paper during the fiscal year and compare it with the health facility medicine list.						
Disaggregation	None						
Sources	Dispensing register, Prescription paper						
Method of data collection	Survey						
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD	RHB	FMOH
		Annually	Annually	Annually	Annually		

10, Patients knowledge on correct dosage

Indicator	Patients knowledge on correct dosage	
Definition	Percentage of patients who understood the correct dosage of their dispensed medicines.	
Formula	*Number of patients with adequate knowledge*	*X100*
	Total number of patients interviewed	

Interpretation	The purpose of this indicator is to measure the effectiveness of the information given to patients on the dosage of medicines dispensed to them. Correct dosage includes dose, frequency, route, and duration. To analyses knowledge, the label of medicine dispensed to patients can be checked. To measure this indicator, take sample of at least 100 patients.						
Disaggregation	By level of HF, regions						
Sources	Patient exit interview						
Method of data collection	Survey						
Frequency of Reporting	HP	HC	Hospital	WoHO	ZHD/	RHB	FMOH
		Annually	Annually	Annually	Annually	Annually	Annually

11, Percentage of clients with 100% prescribed drugs filled

Indicator	Percentage of clients with 100% prescribed drugs filled	
Definition	Percentage of clients who get all the prescribed medicines (100%) from dispensary among all the clients who received prescriptions in a given time period.	
Formula	Number of clients who received all prescribed drugs	*X 100*
	Total number of clients who received prescriptions	
Interpretation	Percentage of clients who get all of the prescribed drugs (100%) from dispensary is an indicator of access to quality and affordable medicines. Proportion of clients who get all the prescribed drugs is one of the indicators that tell about the continuous availability of drugs and quality pharmaceutical care in country. Getting prescribed drugs within the facility pharmacy improves patient satisfaction and overall trust and confidence in the health sector. Percentages of clients who get all the prescribed drugs (100%) from dispensary is expected to be 100 percent. The limitation of this indicator is that it doesn't consider those patients for whom prescription is ordered but did not come to the dispensary.	
Disaggregation	By level of health facility (health centre, hospital)	

Sources	Prescription registration book					
Method of data collection	Routine through DHIS2					
Frequency of Reporting	HC	Hospital	WoHO	ZHD/ Sc HO	RHB	FMOH
	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly

Summary

- The overall purpose of monitoring and evaluation in SCM is the measurement of performance of the system to ensure that its intended objectives are effectively met.
- There are several indicators that can be applied to measure performance of the logistics system The indicators can be. classified under: Quality, Time, Financial, Productivity
- Productivity

Annexes for Part II

Annex 1.Bin Card

Name of the Health Facility: _____

Product Name, Strength and Dosage Form: _____

Unit of Issue: _____   Maximum Stock Level: _____

Maximum Stock Level: _____   Emergency Order Point: _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj.	Balance			

Annex 2. HPMRR (Health Post Monthly Report and Re-supply Form)

Name of the Health Post: _____

Health Post ID Code: _____

Supplying Health Centre: _____

Health Center ID Code: _____

Reporting Period From: _____ **To:** _____

Maximum Level: ___2 months of stock___

Ser. No.	Product Code/Product Name/Unit	UNIT OF ISSUE	COMPLETED BY HEALTH POST				COMPLETED BY HEALTH CENTRE				
			Beginning Balance	Quantity Received	Loss / Adjustment	Ending Balance	Calculated Consumption this month E = A+B+/-C-D	Calculated Consumption last month	Maximum Quantity G = E + F	Quantity Needed to Reach Max. H = G – D	Quantity to be Supplied
			A	B	C	D	E	F	G	H	I
1	Product description (pre-printed)										
2	Product description (pre-printed)										
3	Product description (pre-printed)										
4	Product description (pre-printed)										
5	Product description (pre-printed)										
6	Product description (pre-printed)										
7	Product description (pre-printed)										
8	Product description (pre-printed)										
9	Product description (pre-printed)										
10	Product description (pre-printed)										
11	Product description (pre-printed)										

Remarks:

Completed by (Name, Date and Signature) :

Completed by (Name, Date and Signature) :

Approved by (Name, Date and Signature) :

Annex 3. IFRR (Internal Facility Report and Re Supply Form)

Name of Dispensing Unit: _____ Reporting Period From: _____ To: _____ Maximum Level: _____

Ser. No.	Item	UNIT OF ISSUE	COMPLETED BY UNIT				COMPLETED BY STORE			
			Beginning Balance	Quantity Received	Loss/ Adjustment	Ending Balance	Calculated Consumption E = A + B +/- C - D	Maximum Quantity F =E * 2	Quantity Needed to Reach Max. G = F – C	Quantity to be Supplied
			A	B	C	D	E	F	G	H
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

Remarks:

Completed by (Name, Date and Signature):   Completed by (Name, Date and Signature):

Approved by (Name, Date and Signature):

Annex 4. RRF (Report and Requisition Form)

Health Facility: _____   Region: _____   Zone: _____   Woreda: _____

Reporting Period **From**: ___month/day/year___ **To** ___month/day/year___   **Maximum Stock Level**: _4 months_   **Emergency Order Point**:   _0.5 months_

No.	Description of Medicines Wastes (generic & brand name, strength and dosage form)	Unit type and size	Quantity	Batch Number	Expiry Date	Reason for Disposal (expired, damaged, etc.)	Manufacturer/ Supplier	Country of Origin	Purchase value	ntity red
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Annex 5. Medicines Wastage registration and Reporting Form

Annex 6. Log-sheet for monitoring room temperature and cold chain storage in refrigerator

Month_____ Year _____

Days in Month	Temperature record during the day		Is within standard range? (Yes/No)	Remarks on Interventions taken
	Morning	Afternoon		
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				

Annex 7. Tally Sheet for Tracking Availability of Tracer Drugs at Health Centres

Facility Name_____ Month _____ Year _____ Name of Dispensing Unit/Ward_____

S. N.	Types of Tracer Drugs	Days in the Month																													Total days Available
		21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	Amoxicillin 500mg or 250 mg Caps																															
2	Amoxicillin 250mg/ml or 125mg/5ml suspension																															
3	Arthmeter + Lumfanthrine 20mg+120mg tab (Coartem 1X6) Dispersable tab																															
4	Arthmeter + Lumfanthrine 20mg+120mg tab (Coartem 2X6 or 3X6 or 4X6)																															
5	Ciprofloxacin 500mg tablet																															
6	Co-trimoxazole 480mg or 960mg tablet																															
7	Co-trimoxazole 240mg/5m suspension																															
8	Mebendazole 100mg or Albendazole 240 mg tab																															
9	Mebendazole or Albendazole susp.																															
10	Metronidazole 250mg or 500mg capsule																															
11	Metronidazole 125mg/5ml suspension																															
12	RHZE- 150mg+75mg+400mg+275mg-tab																															
13	TDF/ZDV+3TC+EFV/NVP adult																															
14	Ferrous sulphate + folic acid cap/tab																															
15	Tetracycline eye ointment																															
16	Tetanus toxoid vaccine (TT)																															
17	Pentavalent vaccine (DTP+HepB+Hib)																															
18	Magnesium Sulphate injection																															
19	Oxytocin 10 units/ml injection																															
20	ORS ± Zinc sulphate tablet/syrup																															
21	Hydralazine injection																															
22	Adrenaline (Epinephrine) injection																															
23	Aminophylline injection																															
24	Glucose 40%																															
25	Dextrose in normal saline/Ringer lactate																															
26	Lidocaine (1% or 2% injection)																															
27	Paracetamol 125mg/5ml syrup																															
28	Paracetamol 500mg tablet																															

Total number of tracer drugs available for the whole month ____

Annex 8. JOB AID: Recording Transactions in the Bin Card

Task:	Recording Transactions in the *Bin Card*
Completed by:	Health staff in charge of pharmaceuticals (Health Extension Worker, Pharmacy Store manager and Dispensing Units)
Purpose:	To record pharmaceuticals received To record pharmaceuticals issued To record changes in stock balances To track supplies moved through non-routine methods (e.g., local purchase, transfers) To track losses/adjustments To record expiry dates
When To Perform:	When pharmaceuticals are received or issued When pharmaceuticals are transferred to another facility When pharmaceuticals are transferred in from another facility When pharmaceuticals are removed from the storage area for reasons other than for use in health services (e.g., for demonstrations, expiration, damage) At the end of the month when physical counts are conducted at the Health Post; every other month at the Health Centres and Hospitals
Materials Needed:	*Bin Cards*, pen, pencil (for AMC only)
Note:	See the job aid on conducting a physical count for specific instructions for completing the *Bin Card* during the physical count.

Step	Action	Notes
1.	Complete one *Bin Card* for each pharmaceutical you manage.	For example, each of the following should have a separate *Bin Card*: • Glove, latex disposable, large, 100 pieces • Glove, latex disposable, medium, 100 pieces • Glove, latex disposable, small, 100 pieces
2.	Enter only one transaction on each line.	
IF ⇒		THEN
Opening a new *Bin Card*		Continue with Step 3.
Entering a transaction		Skip to Step 10.
Steps 3 – 10: Opening a NEW Bin Card		

Step	Action	Notes
3.	**Name of Health Facility:** Write the name of the health facility where the product is being managed.	
4.	**Product Name, Strength and Dosage Form:** Enter the name, pack size, form or presentation of the pharmaceutical.	Examples: • Condom • Amoxicillin, 250 mg tabs
5.	**Unit of Issue:** Write the individual unit for the particular pharmaceuticals.	Example: bottle, tablet, tube, piece The unit recorded at the top of the *Bin Card* is the same unit that is used to record transactions on the card.
6.	**Maximum Stock Level:** Write "4 months". • For Health Post: Leave it empty • For Dispensing Unit: 2 x reporting interval	For health centres and hospitals, the maximum has been set at 4 months of stock.
7.	**Emergency Order Point:** Write "0.5 months". • For Health Post: Leave it empty	For health centres and hospitals, the Emergency Order Point has been set at 0.5 months (= 2 weeks of stock).
8.	**Average Monthly Consumption (AMC):** Take 3 months average of monthly Internal Issues from the Bin Card (BC).	
9.	Write the product group (Program Vs Purchased)	
10.	**Record the opening balance at the time the Bin Card is opened.** • If this is the first line of a new Bin Card for an existing product, write the date, write "Balance Brought Forward" under the received column, and record the ending balance from the old Bin Card under the balance column. • If this is the first line of a new Bin Card for a new product, conduct and record a physical count and record the results of the physical inventory on the first line of the Bin Card.	Example: "Balance Brought Forward". For recording a physical count, refer to the Job Aid *Conducting a Physical Count* in Chapter VIII.
	If you do not have a transaction to record, you are finished with this part of the task. If you have a transaction to record, continue with Step 11 below.	
STEPS 11 – 22: Recording Stock Transactions		

Step	Action	Notes
11.	**Date:** Enter the date of the transaction.	Example: 27/11/07
12.	**Document No. (Receiving or Issuing):** Write the pre-printed number from the issue or receipt voucher that was used to document the receipt or issue of the pharmaceuticals.	Example: 736529
13.	**Received from or Issued To:** • If receiving products, enter the name of the facility from which the item was received. • If issuing at a health post, write "dispensed to patients". • If issuing within a health centre or hospital, or if issuing from a health centre to a health post, write the name of the dispensing unit or health post to which the pharmaceuticals are being issued. • If a physical count was conducted, write "Physical Count". • If a positive adjustment (such as a transfer in) is being recorded, note from what facility products are being received.	Example: PFSA
14.	**Quantity/Received:** Enter the exact amount of the product received on this date.	The quantity should be written in terms of units of issue, the units noted at the top of the card, for example, bottles. Stock transferred from one facility to another should be recorded as an adjustment (see Step 16 for information on entering adjustments). Therefore, the only quantities entered in the Quantity/Received column should be those quantities received from the health centre (at the health post) or from PFSA (at the health centre or hospital).

Step	Action	Notes
15.	**Quantity/Issued:** Record the number of units issued as indicated: At the health post, write the total quantity of the product that was given to clients during the day. At the health centre and hospital, write the quantity of the product each time the product is issued to dispensing unit and health post. **At the dispensing units** • Write the quantity of the product in the pack each time the package is opened or brought to the dispensing area from the shelf, or • Write the quantity of the product after counting and calculating for each product at the end of each reporting period. That is, Quantity Issued = Balance at the beginning of the reporting interval + Quantity Received +/- Loss/Adjustment – Ending Balance (Mostly applied for bottles and tubes), or • Write the quantity of the product after adding total quantities from tick or tally sheet at the end of the day	
16.	**Quantity/Loss/Adj.:** Enter the exact amount of losses or adjustments to the inventory on this date. Explain any losses or adjustments in the "Remarks" column (see Step 20).	**Losses** are quantities removed from your stock for anything other than issuing to patients or another unit in the facility (e.g. expired, lost, stolen, or damaged). Losses are recorded as (-) negative numbers. **Adjustments** are quantities of a pharmaceuticals received from any source other than the regular source, that is, health centre (for health posts) or PFSA (for health centres and hospitals), or issued to anyone other than within your facility. Always use a (+) sign to indicate positive adjustments, and a (-) sign to indicate negative adjustments. Adjustments may also be made to correct mathematical mistakes previously made in recording. Be sure to indicate if the adjustment was negative or positive and note the reason for the adjustment in the "Remarks" column.

Step	Action	Notes
17.	**Quantity/Balance:** *If receiving products:* Add the "Quantity Received" to the Balance from the previous row and then enter the new balance. *If issuing products:* Subtract the "Quantity Issued" from the Balance from the previous row and then enter the new balance. *If recording a loss or adjustment:* Add (if +ve adjustment) or subtract (if -ve adjustment) the loss or adjustment quantity to the Balance from the previous row and then enter the new Balance.	The Balance should show only the quantities of usable stock. Any unusable stock should have been removed from inventory and an adjustment made on the Bin Card.
18.	**Batch Number:** At the health post: Leave this column blank. At the health centre or hospital: Write the batch number of the pharmaceuticals received or issued.	If the pharmaceuticals received or issued have more than one batch number, use a separate row for each batch number and indicate the quantity received or issued for each batch number.
19.	**Expiry Date:** At the health post: Leave this column blank. At the health centre or hospital: Write the expiry date of the pharmaceuticals received or issued.	If the pharmaceuticals received or issued have more than one expiry date, use a separate row for each expiry date and indicate the quantity received or issued for each expiry date. Each expiry date should match with the corresponding batch number.
20.	**Remarks:** Provide a brief explanation for any loss/adjustment or add any other comments as needed.	Examples: • Damaged product. • Purchase from local pharmacy. • Correction of math error.
21.	If you have filled the last line of the front of the Bin Card…. If you have filled the last line of the back of the Bin Card…	Turn to the back of the card and write "Balance Brought Forward" in the "Received From" column and carry the balance from the front of the card and write it in the "Balance" column of the back of the card. You will need to start a new Bin Card. Go to Step 3.
22.	Keep the *Bin Card* close to where pharmaceuticals are being stored and issued.	

The task is complete when:
❑   A separate *Bin Card* has been completed for each pharmaceutical managed in the store.
❑   The Name of Health Facility, Product Name, Strength and Dosage Form, and Unit of Issue have been written at the top of the *Bin Card*.
❑   Each transaction is recorded on the *Bin Card* as it occurs.
❑   The *Bin Card* is kept close to where the pharmaceuticals are stored and issued.

Annex 9. JOB AID: Completing the Health Post Section of the Health Post Monthly Report and Re-supply Form

Task:	Completing the Health Post Section of the Health Post Monthly Report and Re-supply Form
Completed by:	Health Extension Worker
Purpose:	To report the logistics data that the health centre needs to calculate the issue quantities for each pharmaceutical
When to perform:	By the **5th day of the month**.
Materials needed:	Bin Card for each pharmaceutical, blank Health Post Monthly Report and Re-supply Form and copy of the previous month's Health Post Monthly Report and Re-supply Form.
Note:	There are three copies of each report; two copies to be given to the Health Centre and one copy to remain in the booklet for the Health Post. The Health Centre will send one copy to the Woreda.

Step	Action	Notes
1.	**Name of the Health Post:** Write the name of the Health Post for which the report is being completed.	
2.	**Health Post ID Code:** Write the code that designates the Health Post.	The Health Post ID Code is assigned by PFSA/MOH (Woreda Health Office). If you do not know the Health Post ID Code, leave this item blank and request the Health Centre to complete it.
3.	**Supplying Health Centre**: Write the name of the Health Centre from which you will receive your products.	The Supplying Health Centre is assigned by MOH (Woreda Health Offices).
4.	**Health Centre ID Code**: Write the code that designates the Health Centre from which you will receive your products.	The Health Centre ID Code is assigned by PFSA/MOH (Woreda Health Office). If you do not know the Health Centre ID Code, leave this item blank and request the Health Centre to complete it.
5.	**Reporting Period, From: … To:** Write the starting month, day and year and the ending month, day and year that covers the reporting period.	The Reporting Period should be from the 1st day of the month through to the last day of the month. Example: Meskerem 1, 2002 – Meskerem 30, 2002

Step	Action	Notes
6.	**Maximum Level (pre-printed):** The Maximum Stock Level for the Health Post.	The maximum stock level for the Health Post is 2 months of stock.
7.	**Serial Number (Ser. No.) (Pre-printed):** The serial number of the product on the form.	Example: 1, 2, 3, …
8.	**Product Code (pre-printed):** The code number that designates the product.	The Product Code is assigned by PFSA.
9.	**Product Name (pre-printed):** The name and description of each pharmaceutical.	If reporting on products that are not listed, write the Product Name and description on a blank row.
10.	**Unit (pre-printed):** The unit for each pharmaceutical.	If reporting on items that are not listed, write the unit for the item next to the Product Name and description on a blank row.
11.	**Beginning Balance (A):** Write in the quantity of stock you had available at the beginning of this reporting period.	This information is on the Bin Card, it is the quantity of product you started with. The Beginning Balance for the current month should be the same as the Ending Balance from the previous month.
12.	**Quantity Received (Column B):** Write the quantity of the item received during this reporting period.	This information is the sum of the quantities found in the "Received" column of the *Bin Card* for the dates during the current reporting period.
13.	**Losses/Adjustments (C):** Write the total quantity of the item lost or adjusted during this reporting period.	This information is the sum of the quantities found in the "Losses/Adjustments" column of the *Bin Card* for the dates during the current reporting period. Write any remarks related to the loss/adjustment in the Remarks section;
14.	**Ending Balance (D):** Write the quantity of the product on hand at the end.	Conduct a physical count to determine the Stock on Hand. Stock on Hand can also be found on the *Bin Card*, if the *Bin Card* is up-to-date.
15.	**Remarks:** Write any remarks related to the product or any explanation related to losses and adjustments that you have reported.	Remarks on losses and adjustments should be found on the *Bin Card*.
16.	**Completed by Health Centre section:** Leave all columns in this section blank.	The store manager at the supplying Health Centre will complete these columns for you.
17.	**Completed by/Signature/Date:** Write your name, sign the report and write the date on which the report was completed.	The report should be completed and signed until the **3rd day of the month**.

Step	Action	Notes
18.	**Take all copies of the report with the completed report to the Health Centre.**	The report should be taken to the Health Centre for re-supply until the **5th day of the month.**

The task is complete when:
❑ The Health Extension Worker has completed the information identifying the facility and the reporting period, completed the information required for each product, and signed and dated the report.
❑ The Health Extension Worker has taken the report to the Health Centre for re-supply.

Annex 10. JOB AID: Completing the Health Centre Section of the Health Post Report and Re-supply Form (HPMRR) (when issuing from Health Centre to Health Post)

Task:	Issuing Pharmaceuticals to Health Posts
Completed by:	Health Post and The Health Centre (Pharmacist, Pharmacy Technician or other);
Purpose:	To re-supply the Health Post with pharmaceuticals up to the Maximum Stock Level.
When to perform:	At the end of each month when the Health Extension Worker comes to the Health Centre for its regular monthly re-supply When the HEW comes to the Health Centre with an emergency order
Materials needed:	Current *Health Post Monthly Report and Re-supply Form (HPMRR)*, *Health Post Monthly Reportand Re-supply Form (HPMRR)* from the previous month, calculator, pen

Note: The Health Extension Worker should have already completed the "Completed by Health Post" section and signed the report before arriving at the Health Centre. See the Job Aid *Completing the Health Post Section of the Health Post Monthly Report and Re-supply Form (HPMRR)*.

Step	Action	Notes
1.	**Health Post ID Code**: Verify if the Health Post ID Code is written. If it is not written, write in the Health Post ID Code.	The Health Post ID Code is assigned by PFSA/MOH (Woreda Health Office).
2.	**Health Centre ID Code**: Verify if the Health Centre ID Code is written. If it is not written, write in the Health Centre ID Code.	The Supplying Health Centre is assigned by MOH (Woreda Health Offices).

Step	Action	Notes
3.	**Calculated Consumption this month (E):** Calculate the estimated quantity consumed by taking the Beginning Balance plus the Quantity received, plus or minus Loss/Adjustment and subtracting the Ending Balance. E = A +B+/- C – D	Example #1: • Beginning Balance (A): 500 • Quantity Received (B) : 300 • Transfer in (C): 100 • Ending Balance (D): 120 E = A + B +/– C - D 500 + 300 + 100 -120 = 780 Calculated Consumption = 780 Example #2: • Beginning Balance (A): 700 • Quantity Received (B) : 400 • Quantity Stolen (C): -50 • Ending Balance (D): 250 D = A + B +/– C - D 700 +400 – 50 - 250 = 800 Calculated Consumption = 800
4.	**Calculated Consumption last month (F):** Write the calculated consumption (column E) from the previous month.	Refer to column E in the previous month's HPMRR to obtain the Calculated Consumption for the previous month.
5.	**Maximum Quantity (G):** Write the total of the current Calculated Consumption (E) plus the Calculated Consumption last month (F). G = E.+ F	The Maximum Level for the Health Post is two months of stock. Adding two months' consumption gives two months of stock. Example: • Current Calculated Consumption 800 • Previous Calculated Consumption 850 • 800 + 850 = 1650 • Maximum Quantity = 1650
6.	**Quantity Needed to Reach Max. (H):** Subtract the Ending Balance from the Maximum Quantity and write the number. H = G – D	Example: Maximum Quantity = 1650 Ending Balance = 250 Quantity Needed to Reach Max. = 1650 – 250 = 1400 If the Quantity Needed to Reach Max. is a negative number, write "0"; no re-supply is needed.

Step	Action	Notes
7.	**Quantity Supplied (I):** Write in the quantity of products supplied to the unit.	The Quantity Supplied should be the same as the Quantity Needed to Reach Max. If the Quantity Supplied is negative, write "0" (zero); no re-supply is needed.
8.	**Update the *Bin Card* and the *Stock Record Card* for the product you have issued.**	See the Job Aids *Recording Transactions in the Bin Card* and *Recording Transactions in the Stock Record Card*.
9.	**Completed by/Signature/Date:** The person issuing (completing the "Completed by Health Centre" section) writes his or her name and signs and dates the form.	The person issuing the product should also fill and sign Model 22.
10.	**Approved by/Signature/Date:** The person approving the issue writes his or her name and signs and dates the form.	

The task is complete when:
❑ The re-supply quantity has been calculated and written for each product, and the products have been given to the Health Post worker.
❑ The *HPMRR* has been signed by the person issuing the products, the person approving the issue, and the person reporting the products.
❑ Other legal documents such as Model 22 has been filled and signed by the person issuing the product.
❑ The *Bin Cards* and *Stock Record Cards* for the products issued have been updated.

Annex 11. JOB AID: Completing the Internal Facility Report and Resupply Form (IFRR) for Issuing Pharmaceuticals within Health Centre and Hospitals

Task:	Issuing Pharmaceuticals within a health facility
Completed by:	The person from the Dispensing Unit reporting/receiving the pharmaceuticals (Completed by Unit section) The Health Centre or Hospital pharmacy manager (Pharmacist, Pharmacy Technician or other) (Completed by Store Section)
Purpose:	To report on and issue pharmaceuticals within a health facility.
When to perform:	According to the schedule established at the Health Centre/Hospital Pharmacy Store for re-supply to the dispensing units Any time pharmaceuticals are needed by dispensing units within a health facility (emergency).
Materials needed:	Blank *Internal Facility Report and Resupply Form (IFRR),* IFRR from the previous period, *Bin Card(s)* for pharmaceuticals being issued, calculator, pen
Note:	It is recommended that products be issued to the dispensing units on a weekly, bi-weekly or monthly basis.

Step	Action	Notes
Steps 1 – 10 should be completed by the Dispensing Unit before going to the Pharmacy Store according to the agreed schedule.	
1.	**Name of Dispensing Unit:** Write the name of the Dispensing Unit	Example: MCH/Family Planning
2.	**Reporting Period From: __ To: ___** Write the first and last date of the reporting period covered by this IFR.	From: Tikimt 1, 2002 to Tikimt 7, 2002 The reporting period should be the same as your scheduled re-supply interval (weekly, bi-weekly).
3.	**Maximum Level (ML):** Write in the maximum level for the dispensing unit (2 X Reporting Interval) in weeks	The Maximum Level is based on how often your receive products from the pharmacy store. Examples: If you receive products from the pharmacy store every two weeks, write ("2 weeks") X 2. If you receive products from the pharmacy store every week, write ("1 week") X 2.
4.	**Serial Number (pre-printed):**The serial number of the product on the form.	Example: 1, 2, 3, …

Step	Action	Notes
5.	**Item:** Write the name and description of each pharmaceuticals you are reporting on.	Amoxicillin 250 mg tablets
6.	**Beginning Balance (A):** Write in the quantity of stock you had available at the beginning of this reporting period.	This information is on the Bin Card; it is the quantity of product you started with.
7.	**Quantity Received (B):** Write the quantity of the item received during this reporting period.	This information is the sum of the quantities found in the "Received" column of the *Bin Card* for the dates during the current reporting period. Convert quantity in basic unit to the default unit using the following formula: Quantity in Basic Unit (BU) Number of Units in default pack
8.	**Losses/Adjustments (C):** Write the total quantity of the item lost or adjusted during this reporting period.	This information is the sum of the quantities found in the "Losses/Adjustments" column of the *Bin Card* for the dates during the current reporting period. Convert quantity in basic unit to the default unit using the following formula: Quantity in Basic Unit (BU) Number of Units in default pack Write any remarks related to the loss/adjustment in the Remarks section;
9.	**Ending Balance (D):** Write in the quantity of stock that you have on hand at the end of the reporting period.	Conduct a physical count to determine the Stock on Hand. Stock on Hand can also be found on the *Bin Card*, if the *Bin Card* is up-to-date. Convert quantity in basic unit to the default unit using the following formula: Quantity in Basic Unit (BU) Number of Units in default pack
10.	**Reported by/Signature/Date:** Write your name, sign and date the form.	
Steps 11 – 17 are completed by Pharmacy Store.		

Step	Action	Notes
11.	**Calculated Consumption (E):** Calculate the estimated quantity consumed: Beginning Balance plus Quantity Received plus/minus Loss/Adjustment minus Ending Balance. A + B +/– C - D= E If DU was stocked out in the reporting interval, the pharmacy store manager should use Calculated Consumption in the last reporting intervals to calculate the resupply quantity.	Example #1: • Beginning Balance(A): 50 • Quantity Received (B): 35 • Borrowed from another Dispensing unit (C): 10 • Ending Balance(D): 12 A +B+/– C – D = E = 50 +35 +10 - 12 = 83 Calculated Consumption = 83 Example #2: • Beginning Balance (A): 70 • Quantity Received (B): 30 • Expired Product (C): -5 • Ending Balance(D): 25 A + B +/- C -D = E 70 +30 – 5 - 25 = 70 Calculated Consumption = 70
12.	**Maximum Quantity (F):** Multiply calculated consumption by 2. F = E X 2	To calculate the maximum quantity, multiply the calculated consumption by 2. Example: Calculated Consumption 800 800 X 2 = 1600 Maximum Quantity = 1600
13.	**Quantity Needed to Reach Max. (G)**: Write in the quantity of the product that is needed to reach the maximum stock level. From the Maximum Quantity subtract the Stock on Hand (Ending Balance), . G=F- D	Example: Maximum Quantity = 140 Ending Balance = 12 140 – 12 = 128 Quantity Needed to Reach Max. = 88 If the Quantity Needed to Reach Max. is negative, write "0" (zero); no re-supply is needed.
14.	**Quantity Supplied (H):** Write in the quantity of products supplied to the unit.	If no products were needed, write "0" (zero) and do not re-supply that product.

Step	Action	Notes
15.	**Update the *Bin Card* and the *Stock Record Card* for the product you have issued.**	See the Job Aid *Recording Transactions in the Bin Card* and *Recording Transactions in the Stock Record Card*.
16.	**Completed/Signature/Date:** The person issuing (completing the "Completed by Store" section) writes name and sign and date the form.	The person issuing the product should also fill and sign Model 22.
17.	**Approved by/Signature/Date:** The person approving the issue writes his or her name and signs and dates the form	

The task is complete when:
❑ The name of the Unit receiving the products, the date, and the commodity information has been completed on the IFRR.
❑ The re-supply quantity has been calculated and written.
❑ The IFRR has been signed by the person reporting, issuing and approving the products.
❑ Other legal documents such as Model 22 has been filled and signed by the person issuing the product.
❑ The *Bin Cards* and *Stock Record Cards* for the products issued have been updated.

Annex 12. JOB AID: Completing the Report and Requisition Form

Task:	**Completing the Report and Requisition Form**
Completed by:	Health Centre or Hospital Store Manager (verified by the Pharmacy Manager and Approved by Head of the Health Centre or Hospital.
Purpose:	To report on pharmaceuticals used and stocks available To order pharmaceuticals
When to perform:	Until the **10th day of the month** following the end of the reporting period
Materials needed:	Blank *Report and Requisition Form,* the *Report and Requisition Form* from the previous reporting period, *Stock Record Cards/Bin Cards* for all pharmaceuticals, pen, calculator
Note:	Each page of the form has **three (3) copies.** Press hard with your pen so that everything you write appears on the bottom copy. Much of the information needed to complete the *RRF* is obtained from the Bin Card/*Stock Record Card*;be sure that the Bin Card/*Stock Record Cards* are up-to-date and that they include the most recent physical count.

Step	Action	Notes
To Report and Order Pharmaceuticals		
1.	**Health Facility/Woreda/Region:** Write the location of the health facility (Health Centre or Hospital).	Example: [region : Oromia], [Woreda : Lume], [health facility : ModjoHealthCenter]
	Reporting Period: From: … To: Write the first and last day of the reporting period (In Ethiopian Calendar).	Example: Meskerem 1, 2002 – Tikimt 30, 2002.
3.	**Serial Number (S/No.) (Pre-printed):** The serial number of the product on the form.	Example: 1, 2, 3,
4.	**Product (pre-printed):** The name and description (Strength, Dosage Form and Minimum Unit of Issue) of each pharmaceutical is pre-printed on the form. If note pre printed write those descriptions on the blank form	If reporting on and ordering items that are not listed, use a blank line at the end of the form. Write the product name and description.
5.	**Unit of Issue (pre-printed):** The unit of issue for each pharmaceutical is pre-printed on the form.	If reporting on and ordering items that are not listed, write the unit of issue, if it is known, next to the item description written in Step 5.

Step	Action	Notes
6.	**Beginning Balance (Column A):** Write the balance of the item at the beginning of the reporting period. The Beginning Balance for the current report is equal to the Ending Balance of the previous report.	This information can be found on the *Report and Requisition Form* from the previous reporting period. If this is the first *RRF*, • This information can be found on the Bin Card/*Stock Record Card*. • Convert other units to the default unit using the following formula: Number of Units in the pack X Quantity on the Bin Card Number of Units in standard pack
7.	**Quantity Received (Column B):** Write the quantity of the item received during this reporting period.	This information is the sum of the quantities found in the "Received" column of the Bin Card/*Stock Record Card* for the dates during the current reporting period. Convert other units to the default unit using the following formula: Number of Units in the pack X Quantity on the Bin Card Number of Units in standard pack
8.	**Losses/Adjustments (Column C):** Write the total quantity of the item lost or adjusted during this reporting period.	This information is the sum of the quantities found in the "Losses/Adjustments" column of the Bin Card/*Stock Record Card* for the dates during the current reporting period. Convert other units to the default unit using the following formula: Number of Units in the pack X Quantity on the Bin Card Number of Units in standard pack Write any remarks related to the loss/adjustment in the Remarks section; see Step 17.

Step	Action	Notes
9.	**Ending Balance in DUs (Column D):** Write the ending balance or Stock On Hand quantity of the item at the end of the reporting period in the dispensing units.	The Ending Balance (D) is the ending balance from the latest IFRR reports from DUs The Ending Balance should also equal the results of the physical count of the item at the dispensing units or the bin card at the end of DU reporting period. Convert other units to the default unit using the following formula (except for products coming in individual patient kit form like TB kit); Number of Units in the pack X Quantity on the Bin Card Number of Units in standard pack
10.	**Ending Balance (Column E):** Write the ending balance or Stock On Hand quantity of the item at the end of the reporting period in the store room.	The Ending Balance (E) Is the balance on the Bin Card on the last date of the reporting period for most products. But, the SOH at the Dispensing Units (DUs) should be added to the balance on the Bin card if the smallest unit of issue is greater than the maximum level needed at the Dispensing Units (DUs). The Ending Balance should also equal the results of the physical count of the item. Convert other units to the default unit using the following formula: Number of Units in the pack X Quantity on the Bin Card Number of Units in standard pack
11.	**Calculated Consumption (Column F):** Calculate the total amount of pharmaceuticals Issued out of the Pharmacy Store using the beginning balance in the store, Quantity Received, Loss/Adjustment and Ending balance in the store**.**	Calculated Consumption (Column F) = Beginning Balance (A) + Qty Received (B) + Loss/Adjustment (C) - Ending Balance at DUs (D)- Ending Balance at Store (E) This is also the same as the sum of issues in the bin card for the reporting period
12.	**Days Out of Stock (Column G):** The total number of day a product was out of stock at facility	Count the number of days of Stock Out from the Bin Card.

Step	Action	Notes
13.	**Maximum Stock Quantity (Column H):** Calculate and write the maximum stockquantity ·For program RRF using the formula G =120 F/ (60 – G). ·For RDF RRF using the formula G = F*RP*30/ ((RP*30)-DOS) .	For program pharmaceuticals, the maximum quantity is calculated after multiplying CC adjusted for DOS by 2 (4 MOS). For RDF pharmaceuticals, the maximum quantity is calculated based on adjusted CC for DOS for consumption within the review period (Maximum for RDF is adjusted CC in the review period). The letters in the formula refer to the columns in the RRF.
14.	**Quantity Ordered (Column I):** Calculate and write the quantity needed to reach max by subtracting the ending balance in the store from the maximum stock quantity using the formula I= H- D-E	I (Quantity Ordered) = H (Maximum Stock Quantity) – D (Ending Balance in DU) – E (Ending Balance in store) The formula is also found on the RRF. The letters in the formula refer to the columns in the RRF. If the calculated quantity is a zero or a negative number, then no additional stock is required. Write 0 in the "Quantity Ordered" column.
15.	**Products with shelf life ≤ 6 months:** Write the serial number in the list, quantity and expiry dates of pharmaceuticals with shelf life less than or equal to 6 months.	
16.	**Remarks:** Write any remarks related to the product or any explanation related to losses and adjustments that you have reported.	Remarks on losses and adjustments should be found on the *Bin Card*.
17.	**Completed by/ Name/Signature/Date:** The person (Store Manager) completing the Report and Requisition parts should write and sign his or her name, and write the date on which he or she has completed these sections of the form.	

Step	Action	Notes
18.	**Verified by/ Name/Signature/Date:** The Head of the Pharmacy Section should write and sign his or her name, and write the date on which he or she has reviewed the form.	
19.	**Approved by/Name/Signature/Date:** The Head of the facilityshould write and sign his or her name, and write the date on which he or she has reviewed the form.	

Task is complete when:
❑ The Health Centre or Hospital has completed the information identifying the facility and the reporting period, has completed columns A through I, and signed the form.
❑ The Health Centre or Hospital has sent 1 copy to PFSA and 1 copy to the appropriate administrative body (RHB/ZHD or WHO), and keeping one copy.

Annex. 13 – Pharmaceuticals Supply Chain Management Exercises

1. Exercise on pharmaceutical list development using morbidity approach

Facility X is a health center located in East Hararge Zone. The facility has a strong and functional DTC and they have quality and sufficient morbidity data from the HMIS for the EFY 2009. The DTC in this facility has a plan to prepare facility specific pharmaceuticals list.

Assume that your group is the DTC member in facility X and you wanted to develop the pharmaceutical list for your facility as per the standard procedure.

While listing the morbidity data you noted that the data in HMIS didn't track as per disease standard classification for all but it rather categorizes in to crude groups. For example, AURTI, musculo-skeletal diseases, Infections of the skin, etc.

So, you are given the definition of ICD for 2006 G.C. (WHO) and also looked at the OPD visit tally sheet (FMOH) to list each diseases according to the standard classification. This classification is given in table 3

Morbidity data from the HMIS is given in table 1; and table 2 is a blank format for transferring the top ten morbidities and to list the required pharmaceuticals (medicines, reagents for diagnostic tests, and supplies)

Tasks:

- Calculate the proportions (percentages)
- Sort/rank the diseases in a descending order as per the proportion.
- Categorize the diseases into:
    - greater than to 5%,
    - 1-5%, and
    - less than 1%.
- Transfer those diseases with above 5% category into the table provided for the exercise purpose.
- Cases reported under HMIS is crude and need to be classified according to ICD using WHO guide.
- Select the first 2 cases (ICD) and fill out the required pharmaceuticals (medicines, reagents for diagnostic tests, and supplies) according to the given table.
- Tell them to write the generic name, dosage and strength for all pharmaceuticals.
- Complete for the other cases at their homes.

Table 2. OPD visits Morbidity data of X health center for 2009 EFY

code	Disease_Facility	Male <=4	Male5To14	Male>=15	Female<=4	Female5To14	Female>=15	Total	Proportion of the cases	Rank	Treatment failing according to VEN
1001	Urinary tract infection	1	12	247	1	20	542	823			
111	Tuberculosis all forms	0	2	40	0	5	14	61			
104	Trauma (injury, fracture etc.)	7	73	239	2	21	144	486			
1401	Severe acute malnutrition	26	0	0	18	0	0	44			
1300	Pneumonia	66	40	131	48	25	120	430			
1201	Otitis	8	12	28	13	11	37	109			
1801	Infections of the skin and subcutaneous tissue	34	80	215	27	50	183	589			
1102	Hypertension and related diseases	0	12	117	0	0	139	268			
125	Helminthiasis	9	45	38	5	17	50	164			
901	Dyspepsia	0	10	182	0	6	275	473			
106	Diseases of the musculoskeletal system and connective tissue	1	38	238	2	13	345	637			
137	Diarrhea with dehydration	6	11	16	2	11	16	62			
801	Diarrhea with blood (dysentery)	5	33	61	8	29	43	179			
1101	Diarrhea (non-bloody)	193	108	186	117	62	188	854			
105	Diabetes mellitus	0	2	20	0	0	26	48			
1003	Dental and gum diseases	0	22	25	1	2	30	80			
123	Asthma	0	4	33	0	1	24	62			

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401	Acute upper respiratory infections	186	219	408	140	143	450	1546			
404	Acute Febrile Illness (AFI)	49	103	399	27	92	333	1003			
	Total							7918			

Table 2. HC Top 10 morbidities Vs Reagents and Medicines for their management and Treatment as per STG 2014

Rank	Disease Type	Sub-classes of the Disease	Tests Required	Reagents	Supplies	Treatment		Remark
						First Line	Alternative	
1								

Table 3, International Classification of Disease

Disease Type	Sub-classes of the Disease
Acute Upper Respiratory Infections	Acute Rhinitis
	Acute Rhinosinusitis
	Allergic Rhinitis
	Acute tonsillitis
	Common cold (Acute nasopharyngitis)
	CROP (Acute laryngotrachebronchitis) in pediatrics
	Nasal Furuncle
Acute Febrile Illnesses (AFI)	Fever Origin: 1. Different types of infections mainly viral but also bacterial, malarial & others 2. Non-infection like Renal failure & Jaundice
Diarrhea (non-bloody)	
Urinary tract infection	Acute, uncomplicated UTI in women
	Acute uncomplicated Pyelonephritis in non-pregnant women: -Mild & moderate AUP -Severe
	Asymptomatic bacteriuria
	Symptomatic UTIs (Lower UT/cystitis and urethritis)
	Symptomatic UTIs (Upper UTI/Pyelonephritis)
Diseases of the musculoskeletal system and connective tissue	Osteoarthritis
	Pyogenic Osteomyelitis
	Rheumatic Fever (Acute)
	Rheumatoid arthritis
	Gout (Acute)
	Chronic Gout
Infections of the skin and subcutaneous tissue	Acne vulgaris
	Bacterial folliculitis
	Candidiasis (Balanoposthitis)
	Candidal Intertrigo
	Esophageal Candidiasis
	Oral candidiasis
	Cellulitis
	Dermatophytes
	Atopic Dermatitis
	Allergic contact dermatitis (ACD) or Irritant contact dermatitis
	Dermatophytes for systemic tt (Tinea corporis & cruris resistant to topical therapy, Tinea capitis, Tinea unguium & Tinea pedis)
	Eczema (Acute dermatitis) -Eczematous lesion
	Eczema (Allergic & Irritant contact dermatitis
	Erysipelas
	Furunclosis
	Herpes simplex
	Herpes zoster

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	Molluscum contagiosum
	Pitriasis versicolor
	Scabies
	Urticaria
	Common wart
Trauma (injury, fracture etc.)	Wounds (mechanical injury, animal bite)
	Fracture
Dyspepsia	
Pneumonia	In Children (Mild to moderate)
	Children (severe pneumonia)
	Community acquired ambulatory patients (Mild Pneumonia)
Hypertension & related diseases	No emergency conditions
	Hypertensive Emergencies
	Hypertensive urgency

2. Bin Card exercise

Instructions:

Fill in the Bin Card with the following information:

This Bin Card is being used at Azezo Health Center.

Bin Card for **Amoxicillin 250 mg/5 ml Suspension**.

The new Bin Card is being started on 2 Meskerem 2009.

The last balance from the previous Bin Card is 1000 bottles, which have a batch number of 0712309 and an expiry date of July 2019.

8 Meskerem 2009	Issued 50 bottles to the dispensary with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828301
15 Meskerem 2009	Issued 50 bottles to the dispensary with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No.828302.
22 Meskerem 2009	Issued 50 bottles to the dispensary with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No.828303.
23 Meskerem 2009	Received 1000 bottles from PFSA on Model 19 No.123456 with a batch number of 1012409 and an expiration date of 10/2019.
28 Meskerem 2009	Issued 100 bottles to the Azezo Health Post with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828304
28 Meskerem 2009	Issued 100 bottles to the Geche Health Post with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828305
28 Meskerem 2009	Issued 100 bottles to the Ude Health Post with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828306
29 Meskerem 2009	Issued 50 bottles to the dispensary with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828307
5 Tikimt 2009	Issued 50 bottles to the dispensary with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828308
12 Tikimt 2009	Issued 100 bottles to the dispensary with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828309
19 Tikimt 2009	Issued 100 bottles to the dispensary with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828310
25 Tikimt 2009	Issued 100 bottles to the Azezo Health Post with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828311
25 Tikimt 2009	Issued 100 bottles to the Geche Health Post with a batch number of 0712309 and an expiration date of 8/2019 using Model 22 No. 828312
25 Tikimt 2009	Issued 100 bottles to the Ude Health Post, 50 bottles with a batch number of 0712309 and an expiration date of 8/2019 and 50 bottles with a batch number of 1012409 and an expiration date of 10/2019 using Model 22 No. 828313
29 Tikimt 2009	Stocktaking indicated 930 bottles in stock. No known reason for discrepancy.

Bin Card

Name of the Health Facility: _____

Product Name, Strength and Dosage Form: _____

Unit of Issue: _____   Maximum Stock Level: _____

Maximum Stock Level: _____   Emergency Order Point: _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj.	Balance			

3. HPMRR - Health Post Reporting and Resupply Exercise

Instruction: Complete the report part of the following Health Post Monthly Report and Re supply Form for the month of Yekatit 2009 EC , using the given bin cards of Azezo Health Post. Then continoue completing the health center section using the information below

Issuing to Health Post Exercise

Instructions:

Using the information filled in health post reporting exercise (given on page 6-10); complete the "Completed by Health Centre" section of the Health Post Report and Re-supply Form for issuing Pharmaceuticals to Azezo Health Post.

The date is 3 Megabit 2009. The Azezo Heath Center Pharmacy Store Manager, Eyob Berhanu is issuing pharmaceuticals to Derartu Dufera from the Azezo Health Post. He is able to provide all the pharmaceuticals requested.

Dagne Habtamu is the person in charge of the facility.

The HPMRR for the previous month (Tir 2009) is given on page 11.

HPMRR (Health Post Monthly Report and Re-supply Form)

Name of the Health Post: _____ **Health Post ID Code:** _____

Supplying Health Centre: _____ **Health Center ID Code:** _____

Reporting Period _____ **To:** _____ **Maximum Level:** _2 months of stock_

Ser. No.	Item Description	Unit	COMPLETED BY HEALTH POST				COMPLETED BY HEALTH CENTRE				
			Beginning Balance	Quantity Received	Loss /Adjustment	Ending Balance	Calculated Consumption this month E = A+B+/-C-D	Calculated Consumption last month	Maximum Quantity G = E + F	Quantity Needed to Reach Max. H = G –D	Quantity Supplied
			A	B	C	D	E	F	G	H	H
1	10012 Albendazole 100mg/5ml suspension	Bottle									
2	11033 Condom (male) latex	Piece									
3	l10147 Microgynon	Cycle									
4	48103 Depo-Provera 150 mg	Vial									
5	41052 Paracetamol 500mg	Tablet									

Remarks:	
Completed by (Name, Date and Signature):	Completed by (Name, Date and Signature):
Approved by (Name, Date and Signature)	

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1. Bin Card (Completed for HP Reporting Exercise)

Bin Card – 1

Name of the Health Facility: **Azezo Health post**   .

Product Name, Strength and Dosage Form: **Albendazole 100 mg/5ml suspension**   .

Unit of Issue: **Bottle**

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
30/5/2009	BBF					50			
1/06/2009		B. Dar HC	100			150			
2/06/2009		Dispensing Table		20		130			
7/06/2009					-2	128			Damaged
14 /06/2009		Dispensing Table		28		100			
21 /06/2009		Dispensing Table		20		80			
28 /06/2009		Dispensing Table		20		(60)			
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30/06/2009		Physical Inventory				60			
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2. Bin Card (Completed for HP Reporting Exercise)

Bin Card – 2

Name of the Health Facility: _____ **Azezo Health post** _____ .

Product Name, Strength and Dosage Form: **Condom (male) Latex** _____ .

Unit of Issue: _____ **Pieces** _____

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
30/5/2009	BBF					288			
1/06/2009		B. Dar HC	576			864			
2/06/2009		Dispensing Table		144		720			
14 /06/2009		Dispensing Table		60		660			
20 /06/2009					- 84	576			Expired
28 /06/2009		Dispensing Table		176		(400)			
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30/06/2009		Physical Inventory				400			
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3. Bin Card (Completed for HP Reporting Exercise)

Bin Card – 3

Name of the Health Facility: _____ **Azezo Health post** _____ .

Product Name, Strength and Dosage Form: **Microgynon** **(Levonorgestrel 0.15mg + 0.03mg Ethinyl estradiol)**

Unit of Issue: **Cycle**

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/ Adj	Balance			
30/5/2009	BBF					300			
1/06/2009		B. Dar HC	210			510			
2/06/2009		Dispensing Table		90		420			
14 /06/2009		Dispensing Table		60		360			
21 /06/2009		Dispensing Table		30		330			
28 /06/2009		Dispensing Table		90		240			
------------	-----------	-------------	----------	-------	--------	--------	-----------	--------------	-------------
30/06/2009		Physical Inventory				240			
------------	-----------	-------------	----------	-------	--------	--------	-----------	--------------	-------------

4. Bin Card (Completed for HP Reporting Exercise)

Bin Card – 4

Name of the Health Facility: _____ **Azezo Health post** _____ .

Product Name, Strength and D/Form: **Medroxy Progestrone Acetate 150mg injection (Depo-provera).**

Unit of Issue: _____ **Vial**

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
30/5/2009	BBF					20			
1/06/2009		B. Dar HC	30			50			
2/06/2009		Dispensing Table		10		40			
14 /06/2009		Dispensing Table		5		35			
21 /06/2009		Dispensing Table		5		30			
28 /06/2009		Dispensing Table		10		(20)			
--------------	-------------	---------------	------------	---------	-----------	-----------	-------------	-----------	------------
30/06/2009		Physical Inventory				20			
--------------	-------------	---------------	------------	---------	-----------	-----------	-------------	-----------	------------

5. Bin Card (Completed for HP Reporting Exercise)

Bin Card – 5

Name of the Health Facility: **Azezo Health post**   .

Product Name, Strength and D/Form: **Paracetamol 500 mg Tablet**   .

Unit of Issue: **Tablet**

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
30/5/2009	BBF					2000			
1/06/2009		B. Dar HC	3000			5000			
2/06/2009		Dispensing Table		1000		4000			
14 /06/2009		Dispensing Table		1000		3000			
20 /06/2009		Dispensing Table		1000		2000			
28 /06/2009		Dispensing Table		1000		(1000)			
---------------	----------	-----------------	-----------	--------	----------	----------	---------------	-----------	-----------------
30/06/2009		Physical Inventory				1000			
---------------	----------	-----------------	-----------	--------	----------	----------	---------------	-----------	-----------------

6. Last Month HPMRR(Completed for HP Reporting Exercise)

4. Dispensary unit reporting and resupply exercise

Health Post Monthly Report and Re-supply Form

Name of the Health Post: _Denkaka Health Post_   Health Post ID Code: _HP – 39495_

Supplying Health Centre: _Denkaka Health Center_   Health Center ID Code: _HC - 3810_

Reporting Period: _Tir 1,2007_   To: _Tir 30,2007_   Maximum Level: _2 months of_

Ser. No.	Product Code/Product Name	Completed by Health Post					Completed by Health Centre				
		Unit	Beginning Balance	Quantity Received	Loss Adj.	Ending Balance	Calculated Consumption this month $E = A+B+/-C-D$	Calculated Consumption last month	Maximum Quantity $G = E + F$	Quantity Needed to Reach Max. $H = G - D$	Quantity Supplied
			A	B	C	D	E	F	G	H	I
1	10012 Albendazole 200mg	Tablet	60	90	0	60	90	100	190	130	100
2	11033 Condom (Male) Latex	Piece	400	500	10	380	510	450	960	580	576
3	I10147 Microgynon	Cycle	240	210	0	240	210	250	460	220	210
4	48103 Medroxy progesterone Acetate -150mg/ml in 1ml Vial - Injection (Depo Provera)	Vial	20	30	0	25	25	35	60	35	30
5	41052 Paracetamol 500mg	Tablet	2000	3600	0	2000	5400	2000	7400	5400	3000

Remarks:

Completed by (Name, Date and Signature): Derartu Dufera   30/5/2007

Approved by (Name, Date and Signature): **Dagne Habtamu** __3/6/2007__

Completed by (Name, Date and Signature): Eyob Berhanu 3/6/2007

IFRR (Internal Facility Report and Re Supply Form)

Instruction:
Complete the the part of IFRR to be completed by the dispensing unit using the bin card provided below (page no. 13-18). Then you will complete the part of IFRR to be completed by the store.

Name of Dispensing Unit: _____ Reporting Period From: _____ To: _____ Maximum Level (ML): _____

Ser. No.	Item	Unit	COMPLETED BY UNIT				COMPLETED BY STORE			
			Beginning Balance	Quantity Received	Loss/ Adjustment	Ending Balance	Calculated Consumption E = A+B+/-C-D	Maximum Quantity F =E * 2	Quantity Needed to Reach Max. G = F – D	Quantity to be Supplied
			A	B	C	D	E	F	G	H
1	Condom (Male) Latex	Piece								
2	Medroxy progesterone Acetate -150mg/ml in 1ml Vial - Injection (Depo Provera)	Vial								
3	Oral Contraceptive Pills (Microgynon)	Cycle								
4	IUCD	Piece								
5	Levonorgestrel - 75 mg - Implant Capsule (Jadelle)	Set								
6	Levonorgestrel (D-Norgestrel) - 0.03mg - (Mini Pills) -Tablet	Cycle								

	Remarks:
	Completed by (Name, Date and Signature):
	Approved by (Name, Date and Signature):

Completed by (Name, Date and Signature):

1. Bin Card for IFRR Exercise

Bin Card – 1

Name of the Health Facility: <u>Arsi Health Center, Family Planning Unit</u> .

Product Name, Strength and Dosage Form: <u>Condom (male) Latex</u> .

Unit of Issue: <u>Pieces</u>

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj.	Balance			
Tikimt 1,2009						420			
Tikimt 1,2009			300			720			
Tikimt 1, 2009				120		600			
Tikimt 2, 2009				140		460			
Tikimt 2,2009					-20	440			Expired
Tikimt 3,2009				100		340			
Tikimt 4, 2009				100		240			
Tikimt 5, 2009				140		(120)			
------	------	------	------	------	------	------	------	------	------
Tikimt 5, 2009	Physical Count					120			

Bin Card – 2

Name of the Health Facility: <u>Arsi Health Center, Family Planning Unit</u> .

Product Name, Strength and D/Form: <u>Medroxy Progesterone Acetate 150mg injection (Depo-Provera).</u>

Unit of Issue: <u>Vial</u>

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
Tikimt 1 2009						65			
Tikimt 1 2009			40			105			
Tikimt 1 2009				15		90			
Tikimt 2, 2009				19		71			
Tikimt 3, 2009				20		51			
Tikimt 4, 2009				19		32			
Tikimt 4, 2009				12		(20)			
Tikimt 5, 2009	Physical count					20			

Bin Card – 3

Name of the Health Facility: <u>Arsi Health Center, Family Planning Unit</u>   .

Product Name, Strength and D/Form: <u>   **Microgynon** (Oral Contraceptive Pills)   </u>.

Unit of Issue: <u>   Cycle</u>

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
Tikimt 1 2009						44			
Tikimt 1 2009			20			64			
Tikimt 1 2009				8		56			
Tikimt 2, 2009				10		46			
Tikimt 3, 2009				9		37			
Tikimt 4, 2009				12		25			
Tikimt 5, 2009				7		**18**			

Tikimt 5, 2009	Physical Count					**18**			
---									

4. Bin Card for IFRR Exercise

Bin Card – 4

Name of the Health Facility: <u>Arsi Health Center, Family Planning Unit</u>   .

Product Name, Strength and D/Form: <u>   IUCD</u>   .

Unit of Issue: <u>   Pieces</u>

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
Tikimt 1 2009						16			
Tikimt 1 2009			10			26			
Tikimt 2, 2009				6		20			
Tikimt 3, 2009				7		13			
Tikimt 4, 2009				5		8			
Tikimt 5, 2009				4		(4)			
--- ------------------------------									
Tikimt 5, 2009	Physical Count					4			
--- ------------------------------									

Bin Card – 5

Name of the Health Facility: <u>Arsi Health Center, Family Planning Unit</u> .

Product Name, Strength and D/Form: <u>Jadelle</u> .

Unit of Issue: <u>Set</u>

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	**Issued**	**Loss/Adj**	**Balance**			
Tikimt 1 2009						4			
Tikimt 1 2009			2			6			
Tikimt 2, 2009				2		4			
Tikimt 3, 2003				2		2			
Tikimt 3, 2009					2	4			Found in the cabinet
Tikimt 4, 2009				1		3			
Tikimt 5, 2009				1		(2)			
--									
Tikimt 5, 2009	Physical Count					2			
--									

Bin Card – 6

Name of the Health Facility: <u>Arsi Health Center, Family Planning Unit   .</u>

Product Name, Strength and D/Form: <u>Levonorgestrel (D-Norgestrel) - 0.03mg - (Mini Pills) -Tab</u>

Unit of Issue: <u>   Cycle</u>

Maximum Stock Level: _____   **Emergency Order Point:** _____

Date	Doc. No. (Receiving or Issuing)	Received from or Issued to	Quantity				Batch No.	Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance			
Tikimt 1 2009						68			
Tikimt 1 2009			55			123			
Tikimt 2, 2009				32		91			
Tikimt 3, 2009				29		62			
Tikimt 3, 2009					-4	58			Damaged
Tikimt 4, 2009				27		31			
Tikimt 4, 2009				21		10			

Tikimt 7, 2009	Physical Count					10			

IFRR Exercise 2:

The table below shows stock figures for Amoxicillin 500 mg in basic units for OPD dispensary. Calculate the resupply quantity after converting it to default unit for resupply, which is 10X10.

Product Description	Beginning Balance	Quantity Received	Loss/Adjustment	Ending Balance
Amoxicillin 500 mg	50	200	-10	80

5. RRF (Report and Requsition Form)

Instruction : complete the RRF using the information from the stock record cards provided below (page on. 21-24) and the ending balance at dispensing unit (page no. 25)

Health Facility: _____   Region: _____   Zone: _____   Woreda: _____

Reporting Period **From**: ___month/day/year___ **To** ___month/day/year___   **Maximum Stock Level**: _4 months_   **Emergency Order Point**: ___0.5 months___

SI. No.	Product Description	Unit of Issue	Report Part							Requisition Part		
			Beginning Balance	Quantity Received	Losses/ Adjustments	Ending Balance		Calculated Consumption	Days Out of Stock	Maximum Stock Quantity	Quantity needed to reach Max	Quantity Ordered
						In DU	In store					
			A	B	C	D	E	$F = A + B +/- C - D - E$	G	$H = \frac{120 \times F}{(60 - G)}$	$I = H - E - D$	
1	Acetylsalicylic Acid 300mg X10 tabs	Pack										
2	Albendazole 200 mg tab X 6 tabs	Pack										
3	Aluminum Hydroxide + Magnesium Tri-silicate Tab 250mg+500 mg/ (10 Tab Blister Pack)	Pack										
4	Paracetamol 500 mgx10 tabs	Pack										

Products with shelf life ≤ 6 months (S/No, Quantity and Expiry date):   Remarks:

Completed   _____   Signature: _____   Date: _____
Verified by: _____   Signature: _____   Date: _____
Approved   _____   Signature: _____   Date: _____

1. Stock Record Card for RRF Exercise

Stock Record Card – 1

Name of the Health Facility: Azezo Health Center

Product Name, Strength and D/Form: Acetylsalicylic Acid 300 mg

Unit of Issue: Pack of 10 tab **Location:** Shelf 8

Maximum Stock level: 4 Months **Emergency Order Point: 0.5 Month** **AMC:** ___

Date	Doc. No. (Receiving or Issuing	Received from or Issued to	Quantity				Unit Price		Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance	Birr	Cent		
2/1/07	Balance Brought Forward					1250				
8/1/07	828315	Dispensary		20		1230			3/2016	
15/1/07	828316	Dispensary		30		1200			3/2016	
22/1/07	828317	Dispensary		20		1180			3/2016	
23/1/07	123459	PFSA	4000			5180	5	30	10/2016	
24/1/07	828318	Dispensary		30		5150			3/2016	
28/1/07	828319	Kamash HP		450		4700			3/2016	
28/1/07	828320	Geche HP		350		4350			3/2016	
28/1/07	828321	Ude HP		450		3900			3/2016	
29/1/07	828322	Dispensary		25		3875			3/2016	
5/2/07	828323	Dispensary		20		3855			3/2016	
12/2/07	828324	Dispensary		20		3835			3/2016	
19/2/07	828325	Dispensary		35		3800			3/2016	
25/2/07	828326	Kamash HP		600		3200			3/2016	
25/2/07	828327	Kamash HP		550		2650			10/2016	
25/2/07	828328	Geche HP		500		2150			10/2016	
25/2/07	828329	Ude HP		400		(1750)			10/2016	
29/2/07	Physical Count				+100	1850				Found at Phys. Count

2. Stock Record Card for RRF Exercise

Stock Record Card – 2

Name of the Health Facility: <u>**Azezo Health Center**</u>

Product Name, Strength and D/Form: <u>**Albendazole 200 mg tablet**</u>

Unit of Issue: <u>**Pack of 6 tab**</u> **Location:** <u>**Shelf 6**</u>

Maximum Stock level: <u>**4 Months**</u> **Emergency Order Point:** <u>**0.5 Month**</u> **AMC:** ____

Date	Doc. No. (Receiving or Issuing	Received from or Issued to	Quantity				Unit Price		Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance	Birr	Cent		
2/1/07	Balance Brought Forward					50				
8/1/07	828315	Dispensary		25		25			3/2018	
15/1/07	828316	Dispensary		25		0			3/2018	
25/1/07	123459	PFSA	800			800	2	10	10/2018	
26/1/07	828318	Dispensary		25		775			10/2018	
28/1/07	828319	Kamash HP		100		675			10/2018	
28/1/07	828320	Geche HP		40		635			10/2018	
28/1/07	828321	Ude HP		135		500			10/2018	
29/1/07	828322	Dispensary		25		475			10/2018	
5/2/07	828323	Dispensary		25		450			10/2018	
12/2/07	828324	Dispensary		20		430			10/2018	
19/2/07	828325	Dispensary		35		395			10/2018	
25/2/07	828326	Kamash HP		100		295			10/2018	
25/2/07	828327	Kamash HP		100		195			10/2018	
25/2/07	828328	Geche HP		60		135			10/2018	
25/2/07	828329	Ude HP		100		(35)			10/2018	

29/2/07	Physical Count					35				
----------										

3. Stock Record Card for RRF Exercise

Stock Record Card – 3

Name of the Health Facility: <u>**Azezo Health Center**</u>

Product Name, Strength and D/Form: <u>Aluminum Hydroxide + Magnesium Tri-silicate Tab 250mg +500 mg/ (10 Tab Blister Pack)</u>

Unit of Issue: <u>Pack</u>   **Location:** <u>Shelf 10</u>

Maximum Stock level: <u>4 Months</u>   **Emergency Order Point:** <u>0.5 Month</u>   **AMC:** ____

Date	Doc. No. (Receiving or Issuing	Received from or Issued to	Quantity				Unit Price		Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance	Birr	Cent		
2/1/07	Balance Brought Forward					85				
8/1/07	828315	Dispensary		5		80			3/2017	
15/1/07	828316	Dispensary		5		75			3/2017	
22/1/07	828317	Dispensary		5		70			3/2017	
23/1/07	123459	PFSA	300			370	0	70	10/2017	
24/1/07	828318	Dispensary		5		365			3/2017	
28/1/07	828319	Kamash HP		5		360			3/2017	
28/1/07	828320	Geche HP		25		335			3/2017	
28/1/07	828321	Ude HP		5		330			3/2017	
29/1/07	828322	Dispensary		20		310			3/2017	
5/2/07	828323	Dispensary		25		285			3/2017	
12/2/07	828324	Dispensary		20		265			3/2017	
19/2/07	828325	Dispensary		25		240			3/2017	
25/2/07	828326	Kamash HP		30		210			3/2017	
25/2/07	828327	Kamash HP		30		180			10/2017	
25/2/07	828328	Geche HP		25		155			10/2017	
25/2/07	828329	Ude HP		25		(130)			10/2017	
29/2/07	Physical Count				-10	120				Torn blister packs

4. Stock Record Card for RRF Exercise

Stock Record Card – 4

Name of the Health Facility: Azezo Health Center _

Product Name, Strength and D/Form: Paracetamol 500mg tablets _

Unit of Issue: **Pack of 10 tablet** **Location:** **Shelf 1**

Maximum Stock level: 4 Months **Emergency Order Point: 0.5 Month** **AMC: ____**

Date	Doc. No. (Receiving or Issuing	Received from or Issued to	Quantity				Unit Price		Expiry Date	Remarks
			Received	Issued	Loss/Adj	Balance	Birr	Cent		
2/1/07	Balance Brought Forward					120				
8/1/07	828315	Dispensary		8		112			3/2016	
15/1/07	828316	Dispensary		6		106			3/2016	
22/1/07	828317	Dispensary		6		100			3/2016	
23/1/07	123459	PFSA	250			350		70	10/2016	
24/1/07	828318	Dispensary		7		343			3/2016	Transfer
28/1/07	828319	Kamash HP		35		308			3/2016	
28/1/07	828320	Geche HP		35		273			3/2016	
28/1/07	828321	Ude HP		25		248			3/2016	
29/1/07	828322	Dispensary		5		243			3/2016	
5/2/07	828323	Dispensary		7		236			3/2016	
12/2/07	828324	Dispensary		6		230			3/2016	
19/2/07	828325	Dispensary		5		225			3/2016	
25/2/07	828326	Kamash HP		45		180			3/2016	
25/2/07	828327	Kamash HP		40		140			10/2016	
25/2/07	828328	Geche HP		45		95			10/2016	
25/2/07	828329	Ude HP		25		(70)			10/2016	

29/2/07	Physical Count					70				
---										

5. Ending balance at dispensing unit

s.n.	Item	quantity
1	Acetylsalicylic Acid 300mg X10 tabs	200
2	Albendazole 200 mg tab X 6 tabs	50
3	Aluminium Hydroxide+Magnesium Trisilicate Tab 250mg+500 mg/ (10 Tab Blister Pack)	40
4	Paracetamol 500 mgx10 tabs	60

Annex 6.2: Prescriptions consolidation form (validity of prescriptions)

Rx code	Pres cript ion	Responses on review of validity of Prescriptions																		
		Patient related information									Medicine related information					Prescriber's related information			Dispenser's related information	
	Std	Date of Rx	Card no	Name of pt	Age	Sex	Add	Wt	Dx	Name of medicine	Dose	Freq uenc y	Route of admin	Duratio n/qty	Name	Profe ssion	sign	Name	Profe ssion	sign
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
30																				
Total																				
Avera ge																				
%																				

Annex 6.3 Patient Care Indicators Forms

A. Adequate labelling and patient Knowledge

Patient identifier (code/#) _____; N<u>o</u> of drugs prescribed _____; N<u>o</u>. of drugs dispensed _____
Age _____; Sex _____; Educational status_____
Name of Health Facility: _____

Adequate labelling Indicate response as ✓(yes) or x(No)						Patient knowledge Indicate response as✓(yes) or x(No)			
S/N	Name of dispensed drug	Strength	Dose	Freq.	Amount of drug/Duration	Overall result	Dose	Freq.	Duration/Reason for prescription	Overall result
1										
2										
3										

●●●

Patient identifier (code/#) _____; N<u>o</u> of drugs prescribed _____; N<u>o</u>. of drugs dispensed _____
Age _____; Sex _____; Educational status_____
Name of Health Facility: _____

Adequate labelling Indicate response as ✓(yes) or x(No)						Patient knowledge Indicate response as✓(yes) or x(No)			
S/N	Name of dispensed drug	Strength	Dose	Freq.	Amount of drug/Duration	Overall result	Dose	Freq.	Duration/Reason for prescription	Overall result
1										
2										
3										

B. Dispensing time and dispensing counselling time

Name of Health Facility: _____

S/N	Dispensing time* (Minutes)	Dispensing counselling time ** (Seconds)
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		
Total		
Average		

*Dispensing time is the time between presenting of prescriptions to the pharmacy personnel and collecting of drugs
** Dispensing counselling time is the time the pharmacy personnel spends in counselling the patient about the dispensed medicines

Annex 6.4: MUE Criteria Form For:_____

Patient number			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Data collector's initials																								
Patient chart number																								
Diagnosis																								
Age																								
Sex																								
Weight																								
Date treated																								

Criteria (indicators)

Indications 1. 2. 3. 4. 5. 6.	Threshold	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Average
Doses 1. 2. 3. 4. 5. 6	Threshold	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Average

	Threshold	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Average
Duration 1.																						
2.																						
3.																						
4.																						
5.																						
6.																						
Drug Interactions 1.	Threshold	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Average
2.																						
3.																						
4.																						
5.																						
6.																						
Contraindications 1.	Threshold	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Average
2.																						
3.																						
4.																						
5.																						
6.																						

Y/N = yes/no

Annex 6.5: Standard Prescription Paper

_____ Hospital: Tel +251 -----------------------

PRESCRIPTION PAPER

 Patient's full Name: _____

Sex: _____ Age: ____ Weight: _____ Card No. _____

Region: _____Town _____ Woreda _____Kebele _____

House No. _____ Tel. N<u>o</u>: _____□Inpatient □ Outpatient

Diagnosis, if not ICD _____

℞

Drug Name, Strength, Dosage Form, Dose, Frequency, Duration, Quantity, How to use & other information	Price (dispensers use only)
Total Price	

Prescriber's	Dispenser's

Full name   _____   _____

Qualification   _____   _____

 Signature   _____   _____

Date: _____   _____

See overleaf

Please Note the Following Information

1. **Prescriptions:**
   - Are valid only if it has the seal of the health institution
   - Filled and blank are legal documents, treat them as fixed assets
   - Written and verbal information to the client complement one another

2. **The prescriber:**
   - Medicine treatment is only one of the treatment options
   - Write the prescription correctly and legibly
   - Diagnosis and other parts of the prescription have to be complete
   - Abbreviations are NOT recommended
   - Please accept prescription verification call from the dispenser

3. **The Dispenser:**
   - Check legality of the prescription
   - Check completeness and accuracies before dispensing
   - Check for whom the medicine is being dispensed: actual client or care taker
   - If in doubt about the contents of the prescription; verify with the prescriber
   - Containers used for packaging must be appropriate for the product
   - Labels of drugs should be clear, legible and indelible
   - Medicines should be dispensed with appropriate information and counselling
   - Keep filled prescriptions at least for 2 years

4. **Minimum medicine label information should include the following:**
   - Patient name
   - Generic name, strength and dosage form of the medicine
   - Dose, Frequency and Duration of use of the medicines
   - Quantity of the medicine dispensed
   - How to take or administer the medicine?
   - Storage condition

Annex 6.6. Follow up questions on specific indicators

1. Average number of medicines per encounter

High number of medicines per encounter*:*	***Low number of medicines per encounter****:*
Are there shortages of therapeutically correct drugs? Do prescribers lack therapeutic training or appropriate diagnostic equipment? How secure are prescribers in their ability to diagnose and treat the common illnesses? How strongly do prescribers feel that patient demand influences their practice, and do observations of clinical encounters support this? Are there financial incentives to encourage polypharmacy?	Are there absolute constraints in the drug supply system such that very few drugs tend to be available? Are there administrative regulations that limit the number of drugs that can be prescribed? Do prescribers have appropriate training in therapeutics? Is there significant drug "leakage" from the system?

2. Percentage of medicines prescribed by generic name

Supply factors:	Prescriber factors:	Health problem factors:
Are predominantly generic or branded forms of drugs available in health facilities? How closely have brand names of products been chosen to model their generic name? Are drugs supplied in bulk containers and labelled at the facility, and how are the names written on the labels? Are branded products being prescribed which are not available in health facilities?	Do prescribers know the correct generic names for most drugs? How often are prescribers visited by pharmaceutical representatives, and what kind of promotional material is left for them to use? Does the training of the prescribers affect their willingness to prescribe generically?	Which classes of drugs seem to be particularly problematic? Are there certain common health problems for which a generic form of treatment is not supplied in the system?

3. Percentage of encounters with an antibiotic prescribed

Specifics of antibiotic prescribing:	*Possible influences on antibiotic prescribing;*	*Impact of antibiotic use:*
What types of antibiotics and which modes of delivery (injections, tablets, syrups) are most commonly prescribed? What is the relative use of narrow vs. broad spectrum antibiotics? What proportion of antibiotic	What are the cultural beliefs in the community about antibiotics, and are patient expectations of receiving certain types of antibiotic very high? How strongly are particular antibiotics marketed? Are some antibiotics distributed in the system more than would be indicated by local morbidity patterns? How effective is the drug quality assurance system, and do prescribers have	What are the local resistance patterns to commonly-used antibiotics? How often are particular organisms treated with drugs to which they are

prescribing is represented by dermatological products, by ophthalmologic products? How much do antibiotics cost, as a percentage of all prescribing or for particularly expensive forms of antibiotic?	faith that the drugs they are prescribing contain the appropriate therapeutic amounts? Are laboratory facilities necessary for differential diagnosis available and used by prescribers?	likely to be resistant, for example, in specific sexually-transmitted diseases?

4. Percentage injections

Specifics of injection use: What are the specific health problems for which injections are given? Are injections given more often to adults or children treated for these conditions? What is the availability of syrups and mixtures as alternative modes of therapy for small children?	*Possible influences on injection use:* What are the beliefs and attitudes of patients and health providers about the relative efficacy of injections versus oral medications? Do prescribers report patient demand as an important factor in determining injection use, and do observations of clinical encounters support this? What is the availability of injections outside the public health facility, and is competition with the private injectionists for patient loyalty an important factor? Do patients bring their own needles or syringes? Is there a financial incentive for a health worker to give an injected rather than an oral form of medication?	*Impact of overuse of injections:* Are appropriate sterilizing units available in health facilities, and are they being used appropriately? What is the local prevalence of HIV and hepatitis-B infections, and is there evidence that lack of sterile technique is a possible source of these blood-borne infections? What are the cost implications of injection use, comparing oral and injected alternatives for the same health problem?

5. Percentage of medicines prescribed from health facility specific drugs list

Specifics of prescribing: What are the most common drugs being prescribed that are not on the list or formulary? Which health problems are these drugs intended to treat? Are the drugs being prescribed from outside the list generic products or branded products? What is the value of non-EDL drugs compared to EDL drugs?	*Supply factors:* Is there an adequate supply of the drugs on the essential drugs list or formulary? Who makes decisions about which drugs are ordered for the health facility? Are the forms used for drug orders based on the essential drugs list or formulary, or are they developed from lists of previously-consumed drugs?	*Characteristics of the list:* How does the essential drugs list or formulary compare to other standard lists of this type, in terms of organization and number of products listed? Do prescribers know about the existence of the list, and which drugs are contained on the list? What efforts have been made to disseminate appropriate unbiased drug information linked to the list or formulary? What is the attitude of prescribers towards the essential drugs list or formulary and its role in the health system?

6. *Average consultation time*

Health facility aspects: What is the physical organization of the clinic, and is there appropriate allowance for privacy and confidentiality? What is the average workload of health staff, and does the volume of clinic visits allow time for appropriate interactions with patients? What is the volume of patient attendances at different times, during the course of the work day and by week? Could chronic disease patients be scheduled at times when the workload is less?	*Prescriber factors:* Do the training programmes for various categories of health workers include training in effective communication? Do health workers see communication as an important aspect of their work role? Are there important socioeconomic, ethnic, or status differences between health workers and their patients?	*Characteristics of patient-provider interactions:* What actually takes place during the clinical encounter between a patient and a health worker? What is the quality of this interaction in terms of effective communication about illness, explanation about illnesses and drugs, and nonverbal expressions of empathy? Are patients and health workers satisfied with what takes place during clinical encounters? Do their expectations about what should take place differ, for example, do patients expect to be more thoroughly examined than providers feel is necessary?

7. *Average dispensing time*

Health facility aspects: What is the layout of the dispensary, and does it allow for private pharmacist-patient interactions? What is the workload of dispensers, and do they have sufficient time to explain medications to patients? Are dispensing supplies available? What impact does drug supply have on the dispensing process, in terms of the availability of products, how efficiently they are stored, and whether appropriate hygienic techniques are followed? How is decision-making organized within the dispensary, in regard to product substitution, the number of days' supply dispensed, and so forth? What is the impact of patient fees for drugs on the type and quantity of drugs that are dispensed?	*Dispenser's background:* What is the average level of training of personnel working in the dispensary? Have they been appropriately trained in educating patients about drugs? What is the understanding of dispensary personnel about their responsibilities, and do they feel it includes patient education? Do dispensers ask patients to repeat how they will take the drugs?	*Characteristics of patient-dispenser interactions:* What is the quality of the interaction between dispensers and patients? Is there communication about the purpose for individual drugs, how they should be taken, and possible side effects? Are dispensers and patients satisfied with their interaction? What is the patient's understanding of the dispenser's role? Do patients expect to learn more from dispensers about drugs?

8. *Percentage of medicines actually dispensed*

Differences between prescribed and dispensed medicines:	*Patient attitudes:*
Are there certain types of medicines that are routinely prescribed, yet not dispensed? Is the problem more common for specific therapeutic classes or medicines to treat particular illnesses? Are medicines not being dispensed even when they are available in health facility stores? Are medicines which are not dispensed available in the local community? What are the reasons why pharmacists did not dispense the medicines as they were prescribed? Are there rules laid down for what they will dispense?	Do patients plan to purchase the medicines that were not dispensed at the health facility? If they do not plan to purchase them, is it because they cannot afford to pay for them, or because they do not think the medicines are important? If they plan to purchase only a proportion of the drugs prescribed, how do they prioritize? What do patients understand are the reasons for products not being given in the amounts they were prescribed, or are they even aware that this was the case?

9. *Percentage of drugs adequately labelled*

Specify inadequate labeling:	*Reasons for inadequate labeling:*
What element of appropriate labeling is missing: the name of the patient, the correct generic name of the drug, or the drug strength? Is the information written legibly? Is information on how the drug is to be taken also written on the label, using terminology that patients are likely to understand? Is the information on dosage correct according to the standard for this drug?	Are dispensers adequately trained in how drugs are to be packaged and labeled? Are there adequate packaging materials available at health facilities? Do dispensers have time, given their typical workload, to package and label drugs appropriately? Are procedures adequately supervised by pharmacy and medical personnel?

10. *Patients' knowledge of correct dosage*

Patient-provider communication: Is the physical layout of the clinic (examination and dispensing areas) conducive to communication about health problems and drugs? How do different health workers (physicians, nurses, pharmacy attendants) describe their role in communicating about drugs, and how often do they perform the functions they describe? What is the typical content of communication about pharmaceuticals: what drugs do, how they should be taken, possible side effects and precautions, relative importance of different products, and so forth? Is information about drugs offered voluntarily by health workers, or do they depend on patients to ask specific questions? Do patients ask questions?	*Patient understanding and compliance:* What do patients actually understand about the drugs they have received: what drugs do, how they should be taken, side effects, and so forth? How does patient understanding compare with the information communicated during clinical and dispensing encounters? What are the sources of misunderstanding about drugs: lack of correct information, cultural or language differences between patients and providers, lack of patient interest, or other factors? Do patients leaving health facilities intend to comply with recommendations about drugs? What are the reasons for expected or actual noncompliance with recommended drug therapies?

11. Availability of copy of essential drugs list or formulary

Characteristics of the list or formulary: Which products are included on the drugs list or formulary? How does the list compare with WHO recommendations? Does the same list apply to different levels of care, or are only subsets of drugs recommended at lower levels? Does the list or formulary contain descriptive information about drugs or therapeutic guidelines? What efforts have been made to disseminate the essential drugs list or formulary to individual prescribers? Is the formulary or EDL clean with unbroken binding, or dirty indicating that it has been used?	*Prescriber attitudes:* How do prescribers describe the purpose of the essential drugs list? Are they generally aware of which drugs are on the list? Do health personnel responsible for drug procurement at individual facilities consult the list when making purchase decisions? Do prescribers recommend similar types of therapy in both their public sector and private sector practices? Do prescribers think they could affect the next list?

12. Availability of key medicines

Supply system: Are there particular classes of medicines or particular dose forms (for example, pediatric syrups) which are more likely to be out of stock? Does the incidence of the stock-outs tend to vary seasonally with the drug procurement cycle? Once products go out of stock, how long do they tend to remain out of stock? What is the system for informing prescribers about pharmacy stock-outs, and are there procedures for therapeutic substitution by pharmacists or dispensers?	*Focus on key drugs:* Are there particular health problems for which drugs tend to go out of stock on a regular basis, for example, malaria or tuberculosis? Are there therapeutic alternatives in stock for the drugs which are found to be out of stock? Do prescribers respond to the absence of a drug by continuing to prescribe it and expecting patients to purchase the product in the private sector, or by switching to a therapeutic alternative?

Annex 8.1: Monitoring Medicine Safety and Quality: Case for ADE reporting

Ato Nadew Tasew is 48 years old known hypertensive patient (card number 23076) went for a follow up to **AB** hospital found in Addis Ababa, woreda 09 kebele 14 on 14/6/2008E.C. While the healthcare provider (S/r Zewde) was measuring his BP it is found 185/120 mmHg. Ato Nadew smokes half a pack of Nyala Cigarettes a day. Ato Nadew was admitted to emergency room for 12 hours and prescribed ABC brand of Hydralazine 20mg/ml injection to be given 5mg every 20 minutes until BP drops and XYZ brand of Furosemide 10mg/ml in 2ml injection; 20mg dose daily for three days. The nurse gives the two medications as prescribed. Ato Nadew gets improvement and discharged after 12 hours of stay in emergency room. On the next day, Ato Nadew comes to the hospital with complains of red, swollen skin on his legs and becomes very sick and was admitted to medical ward in AB Hospital. Hydralazine 20 mg/ml injection was produced by Parma lab firm **Q** with batch number of ABA612CXF and expiry date of 29/2/2018 and XYZ which produced by pharma firm **Z** with batch number of AA1012AXA and expiry date of 31/7/2018. Next morning when the duty healthcare provider was about to give Furosemide she found out it was cloudy. The nurse decided to stop the Furosemide medication temporarily and the swelling subsides after five days and he become stable of discontinuation of medication. Assume you were the healthcare provider, how would you report Ato Nadew`s case?

Annex 8.2: Food, Medicine and Health Care Administration and Control Authority of Ethiopia (FMHACA) Adverse Drug Event reporting form

Patient Name (abbreviation	Card No	Age, Date of birth	Sex	Weight	Height

Ethnic group--------------------	Substance of abuse--

Information on suspected drug/vaccine   S=suspected drug   C=concomitantly used drugs

Drug name(write all information including brand name batch no and manufacturer	S/C	Dose/dosage form, route, frequency	Date drug taking was started (D/M/Y)	Date drug reaction started (D/M/Y)	Date drug taking was stopped (D/M/Y)	Indication (Reason for drug use)

Adverse drug event description(include all available laboratory test results)

_____
_____
_____
_____
_____
_____
_____
_____
_____.

Reaction necessitated	Reaction subside after D/C of suspected drug
Discontinuation of drug/s □ YES □ No	□ YES □ No □ Information not available
Hospitalization prolonged □ YES □ No	Reaction reappear after restart of suspected drug
	□ YES □ No □ Information not available

Treatment of reaction

_____
_____
_____

Outcome: □ Died due to the adverse event □ Died, drug may be contributory □ Not yet recovered

□ Recovered without sequelae □ Recovered with sequelae □ Unknown Sequelae

Relevant medical conditions such as allergies, renal disease, liver disease, other chronic diseases, pregnancy etc_____

Reported by: Name	Profession:	Email address:	Telephone
---	--------------------------	--------------------------------------	--------------------

Name of health institution	Date

Product quality problem: Color change, separating of components, powdering, crumbling, caking, molding, change of odor, incomplete pack, suspected contamination, poor packaging/poor labeling, etc (Write if anything different than given above)

Drug trade name	Batch No	Registration no	Dosage form and strength	Size /type of package

For office use only

Received on: Registration no:

Key: D/M/Y ; Date /Month/Year D/C; Discontinue treatment Y;YES N;NO

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what to report

All suspected reactions to drugs

Unknown or unexpected reactions

Serious adverse drug reactions

Unexpected therapeutic effects

All suspected drug interactions

Product quality problems

Treatment failures

Medication errors

NB. Drugs includes

Conventional drugs

Herbal drugs

Traditional medicines

Biologicals

Medical supplies

Medicated cosmetics

ቀጥሎ እዚህ ላይ እጠፍ

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From --

Business Reply Service License No HQ2

Postage prepaid

-

Food, Medicine and Health care Administration
and Control Authority of Ethiopia

Food, Medicine and Health Care Administration and Control Authority

Regulatory Information Development and Dissemination Team
P.O.Box 5681-Tel.0115-523142
Addis Ababa, Ethiopia

Annex 12: DTC Checklist

SCOPE and FUNCTIONS		Yes	No	Comment
General	Has the DTC established chairman, secretary and members with official letter?			
	Is the membership of the DTC multidisciplinary? Does it include representatives across a range of disciplines, which have expertise and skills to reflect the functions of the DTC? e.g. medical, nursing and pharmacy…etc			
	Does the DTC have approved TOR			
	Is the authority and accountability for decision-making clearly defined in the TOR?			
	Are the terms of reference and membership regularly reviewed to reflect organizational or functional changes?			
	Is there mechanism to hand over DTC activities when chairman, secretary or members leave membership?			
	Does the DTC develop plan of action for the current year			
	Is there regular DTC meeting with a minimum frequency of every two months			
	Is there minutes recorded and documented for each meetings undertaken			
Developing policies and procedures to manage medicines	Has the DTC developed procurement policy			
	If yes, has the procurement policy approved by the management?			
	Does the facility procure as per the developed procurement policy			
	Has the DTC developed AMR prevention and containment Policy			

	Has the DTC developed policy to monitor medicines promotion within the health facility?				
Developing and maintaining the health facility's medicine and medical device list	Has the DTC developed facility specific drug list?				
	If yes, is the list	Classified by VEN?			
		Coded with APTS code?			
		Update within one year's period?			
		Include medical supplies			
	Does the list distributed to relevant departments (all prescribing units, pharmacy, laboratory etc.)				
	Does the list in use during quantification and procurement?				
	If yes, are all the drugs purchased within one year's period from the list only?				
Identifying medicine supply and use problems	Does the DTC undertake assessments with respect to medicines use?	Aggregate methods of study (ABC/VEN)			
		Indicator studies			
		MUE			
	Does the DTC assess availability of tracer medicines in the facility				
	Others_____				
Designing intervention strategies to improve medicine related issues	When problems are identified, are -----	strategies identified			
		If yes, mention:			
		Recommendations made to mitigate that problem?			
		Implantations followed or applied?			
	Does the facility use standard prescription paper?				
	Does the DTC support DIS provision?				
Promoting the monitoring and	Does the DTC have strategy to promote monitoring and management of ADEs?				
	Does the DTC monitor reporting of ADEs to FMHACA?				

management of ADEs	Number of ADE report to FMHACA_____ Reported to DTC_____			
Promoting prevention and containment of AMR	Has the DTC established antimicrobial stewardship program (ASP) in the facility?			
	If yes, does DTC take report from ASP?			
	Does DTC discuss on strategies to mitigate the problem			
Monitoring medicine procurement and inventory management	Does the DTC involve in annual budget allocation for medicines?			
	Does the DTC reviewed quantification done for medicines and supplies?			
	Does the DTC endorsed procurement lists prepared and get feedback?			
	Does the DTC monitor inventory management?			
	If yes,	Is there stock transfer procedures agreed by DTC?			
		Does the DTC discuss on stock status?			
		percentage of wastage for the recent three years year1 _____year2_____year3_____		
	Is there a mechanism to manage specific tasks and projects, as required? I.e. have any task forces been established and managed specific tasks?			
	Does the DTC report its activities to the management quarterly?			
	Does the DTC conduct forum with the health facility management and/or staff to discuss on medicine use related issues at least annually?			
Monitoring and evaluation	Has the DTC follow the implementation of STGs in the facility?			
	Has the health facility management evaluated the performance of the DTC during the last one year?			
	Does the DTC evaluate their current practice			

	and progresses using the check list?			

Annex 13: Planning and Reporting Template for Establishing/Revitalizing DTCs

Name of Hospital:--- Region:--------------------------------Zone:----------------------

Telephone:---------------------------- Fax:------------------------------------ Email address:---------------------------------------

EFY:-------------------

S.N	Process Indicator or Milestones	Objective	Implementation Time												Responsible person	Collaborators	Resource Needed	Implementation status • Fully achieved • Partially achieved • on progress • not started • cancelled	Brief description of Results achieved	Brief description of challenges faced	Way forward/recommendations
			J	F	M	A	M	J	J	A	S	N	O	D							
Activity 1:	**Establishing DTC**																				
Activity 2:	**Develop specific drug list**																				
	Revitalize DTC																				