

Uganda Accredited Drug Shop Seller's Manual

**Module 1: General Introduction to Drug
Sales and Use**

Module 2: Medicines Management



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ACRONYMS

ACT	artemisinin-based combination therapy
ADDO	accredited drug dispensing outlet
ADR	adverse drug reaction
ADS	Accredited Drug Shop
AIDS	acquired immunodeficiency syndrome
AL	artemether-lumefantrine
ANC	antenatal care
BNF	British National Formulary
Bp	blood pressure
DADI	District Assistant Drug Inspector
DHO	District Health Officer
DSA	Drug Sellers' Association
FEFO	first expiry, first out
FIFO	first in, first out
FP	family planning
GIT	gastrointestinal track
Hb	haemoglobin
HC	health centre
HIV	human immunodeficiency virus
iCCM	integrated community case management
IMCI	Integrated Management of Childhood Illness
IM	intramuscular
IV	intravenous
JIK	chlorine bleach (brand name)
Kg	kilogram
L	litre
LAM	lactation amenorrhoea method
LC	Local Council
Mg	milligram
MOH	Ministry of Health
MSH	Management Sciences for Health

NDA	National Drug Authority
NGO	nongovernmental organization
ORS	oral rehydration solution
OTC	over-the-counter
PNFP	private not for profit
PPT	PowerPoint
PSU	Pharmaceutical Society of Uganda
RDT	rapid diagnostic test
RTI	respiratory tract infection
SDSI	Sustainable Drug Seller Initiative
SOP	standard operating procedure
SR	slow release
STI	sexually transmitted infection
UCG	Uganda clinical guidelines
UTI	urinary tract infection
WHO	World Health Organization

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- Joint Medical Stores
- Kabale School of Nursing
- Kampala International University
- Management Sciences for Health (MSH)
- National Drug Authority (NDA)
- Pharmacy Division, Ministry of Health (MOH)

The training course has been adapted from the Tanzania accredited drug dispensing outlets (ADDO) dispensers' training manual, the integrated community case management (iCCM) manual, and the curriculum for training drug shop sellers developed by the STRIDES for Family Health project in Uganda. This manual has also drawn information from Ugandan laws, regulations, and policies and guidelines about the diagnosis and management of common diseases.

The illustrations used in the unit about maternal and child care were adopted from the iCCM for Accredited Drug Shops (ADS).

PREFACE

The idea of establishing Accredited Drug Shops (ADS) builds on MSH's Strategies for Enhancing Access to Medicines Program, which, in collaboration with the government of Tanzania, launched the country's successful accredited drug dispensing outlet (ADDO) program. Similar to the situation in Tanzania, drug sellers in Uganda's Class C drug shops lack adequate dispensing skills and have limited knowledge about managing common illnesses in the community. Although the Class C shops operate in an unregulated fashion, they are a necessary service for the majority of the population in rural areas where there are no pharmacies.

Through its Sustainable Drug Seller Initiative (SDSI) in Uganda, MSH supported the National Drug Authority (NDA) to develop and implement a package aimed at improving access to medicines through Class C drug shops. The Uganda ADS program involves upgrading these Class C shops through an accreditation process of both the premises and service providers. This will allow them to legally stock and sell a limited number of essential prescription medicines to serve the population. The accreditation process entails a comprehensive training for all owners and drug sellers so that they can run a profitable business, handle prescription medicines on the ADS medicines list, and be able to make sound judgments on when to offer first aid treatment and refer clients.

This training program was developed with the NDA, and in consultation with key stakeholders. It provides a comprehensive approach to the training of drug shop sellers and owners to build their skills in medicines management, and the assessment and treatment of selected disease conditions common at the community level.

INTRODUCTION

This manual is intended to be used by health workers undergoing training to operate accredited drug shops.

The content in this manual is intended to boost the knowledge base of the participants, particularly on rational dispensing and management of minor illnesses in a drug shop setting.



This manual is organized into three modules:

- Module 1 provides an overview of the health care delivery system and legal aspects in the operation of accredited drug shops.
- Module 2 focuses on medicines management and rational dispensing.
- Module 3 provides a foundation on the management of common minor illnesses in the community, with a particular focus on the symptomatic approach.

As a complement to this manual, a handbook for drug shop operators and sellers that contains detailed information on medicine dosage, indications, side effects, drug interactions, contraindications, and client education has been developed. The user is also encouraged to consult current publications of standard guidelines available in Uganda, such as Uganda clinical guidelines (UCG), sexually transmitted infection (STI) treatment guidelines, and iCCM and Integrated Management of Childhood Illness (IMCI) guidelines, among others, in order to get the latest programmatic updates on the management of specific diseases.

It is our wish that this manual achieves its primary objective of equipping the ADS operators with practical knowledge to improve the quality of life of people living in hard to reach areas.

By the end of the training, participants will be able to:

-  Evaluate, manage, and refer clients
-  Read, interpret, and label prescriptions

- ✚ Dispense medicines
- ✚ Counsel clients on optimal medicines use
- ✚ Provide first aid
- ✚ Keep required legal records
- ✚ Manage medicines inventory
- ✚ Store medicines
- ✚ Demonstrate professional conduct and health-related ethics

The course lasts five weeks, i.e., three weeks of technical training, one week of business training and one week of practical attachment.

To enhance learning, the training has been designed with graphical presentations, role plays, group work, and individual exercises.

Participants

Participants attending this course are drug sellers who have attained a minimum of a six-month duration nursing assistant course and an Ordinary-level Certificate from the Uganda National Examinations Board. Drug shop owners who are not sellers and would like to attain business skills can attend only the business skills training module.

Trainers

Trainers for this course are tutors in health training institutions whose capacity has been further built through a training of trainers provided by the Makerere University Department of Pharmacy.

**MODULE 1: GENERAL AND LEGAL ASPECTS OF MEDICINE SALE
AND USE**

SESSION ONE: BACKGROUND TO ADS

Uganda's health system

Health care delivery services in Uganda are provided by both the public and private sectors.

The government provides 44% of all health services offered in Uganda and the remaining 56% is met by private sector service providers.

It is within this context that the Government of Uganda has recognized the need to involve the private service providers in the overall provision of health services to the people of Uganda.

The health care delivery system in Uganda is composed of:



Government health facilities (44%)

Private institutions (56%)

Private for profit

-  Private hospitals
-  Medical centres
-  Clinics
-  Pharmacies
-  Drug shops

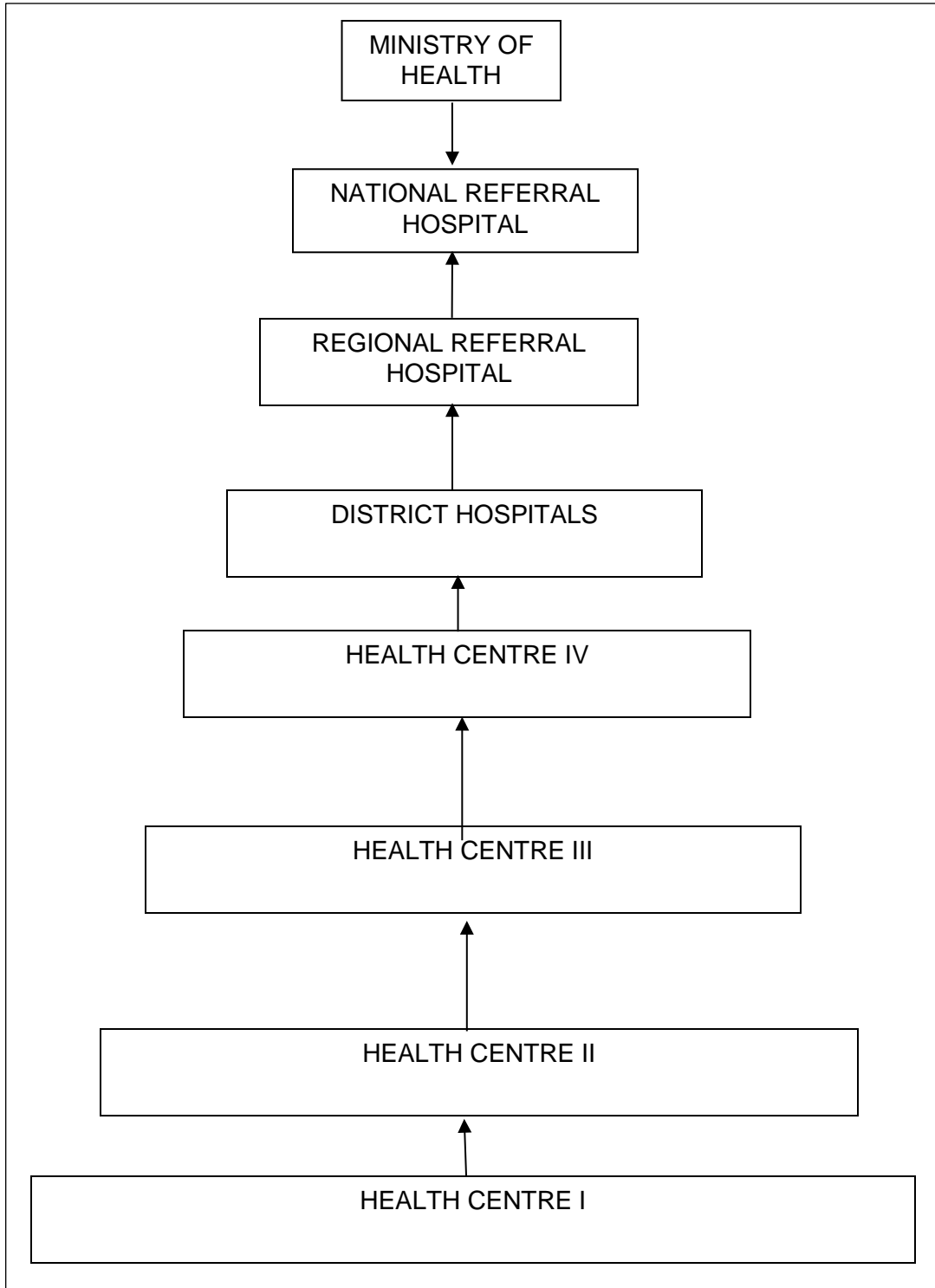
Private not for profit

-  Hospitals
-  Medical centres founded on religious backgrounds (e.g., mission-founded health facilities)

One of the objectives of setting up accredited drug shops (ADS) in Uganda is to improve the health care delivery, especially in hard to reach areas. One of the components of the services offered by ADS is to ensure proper and prompt referral of clients to the next level of health care service delivery.

To achieve this, the ADS operator should be familiar with the referral system and the services offered at each level to avoid any delay in the proper management of clients.

Uganda's Health Care Referral System



Administrative structure	Facility level	Cadre available	Services offered
National	National Referral Hospitals	Specialists in different areas	<ul style="list-style-type: none"> ✓ Comprehensive specialized services, e.g.: ○ Internal medicine ○ Gynaecology & obstetrics ○ Surgery ○ Paediatrics ○ Dermatology ○ Ear, nose & throat ○ Ophthalmology ○ Psychiatry
Region	Regional Referral Hospitals	Consultants, e.g.: <ul style="list-style-type: none"> ✓ Physician ✓ Gynaecologist ✓ Surgeon ✓ Paediatrics ✓ General doctors 	<ul style="list-style-type: none"> ✓ Admission ✓ Blood transfusion ✓ High-level surgical services ✓ Obstetrics & gynaecology ✓ High-level medical services ✓ Laboratory services ✓ X-ray & scan ✓ Psychiatry ✓ Ear, nose & throat & ophthalmology
District	District Hospital	Headed by a specialist General doctors Clinical officers Registered & enrolled nurses and midwives	<ul style="list-style-type: none"> ✓ Admissions ✓ Blood transfusion ✓ Maternity ✓ General surgery ✓ General medicine ✓ Laboratory services ✓ Radiography (x-ray)
County or sub-district	Health Centre IV	Headed by general doctor Clinical officers Registered nurses & midwives	<ul style="list-style-type: none"> ✓ Admissions ✓ General surgery ✓ General medicine

Administrative structure	Facility level	Cadre available	Services offered
		Enrolled nurses & midwives	✓ Maternity
Sub-county	Health Centre III	Headed by a clinical officer Registered and enrolled nurses & midwives Laboratory technician	✓ Maternity care ✓ Laboratory services ✓ General health care services
Parish	Health Centre II	Headed by enrolled comprehensive nurse	✓ Outpatient care ✓ Patient referrals ✓ Community outreach
Village	Health Centre I	Village health teams	✓ ACT dispensing ✓ Counselling ✓ Family planning pills

The pharmaceutical sector in Uganda

Headed by the Pharmacy Division of the Ministry of Health (MOH).

The National Drug Authority (NDA) under the MOH is responsible for controlling the importation, manufacturing, and use of medicines in Uganda.

Most of the medicines used in Uganda are imported; a small percentage are manufactured locally.

The local manufacturers in Uganda include: Kampala Pharmaceutical Industries, Rene Industries, Medipharm, Abacus, and Mavid.

Imported pharmaceuticals

The biggest percentage of medicines imported into the country come from India and China. A small percentage come from Europe and the rest of Africa (mainly from Kenya and Egypt).

The European medicines available in Uganda come from the United Kingdom, Cyprus, Switzerland, and Germany, among others.

Distribution of pharmaceuticals

The distribution of pharmaceuticals in Uganda is through either public or private sources.

Public distribution is controlled by the National Medical Stores, which distributes all medicines to all government health centres and hospitals.

Distribution in the private sector

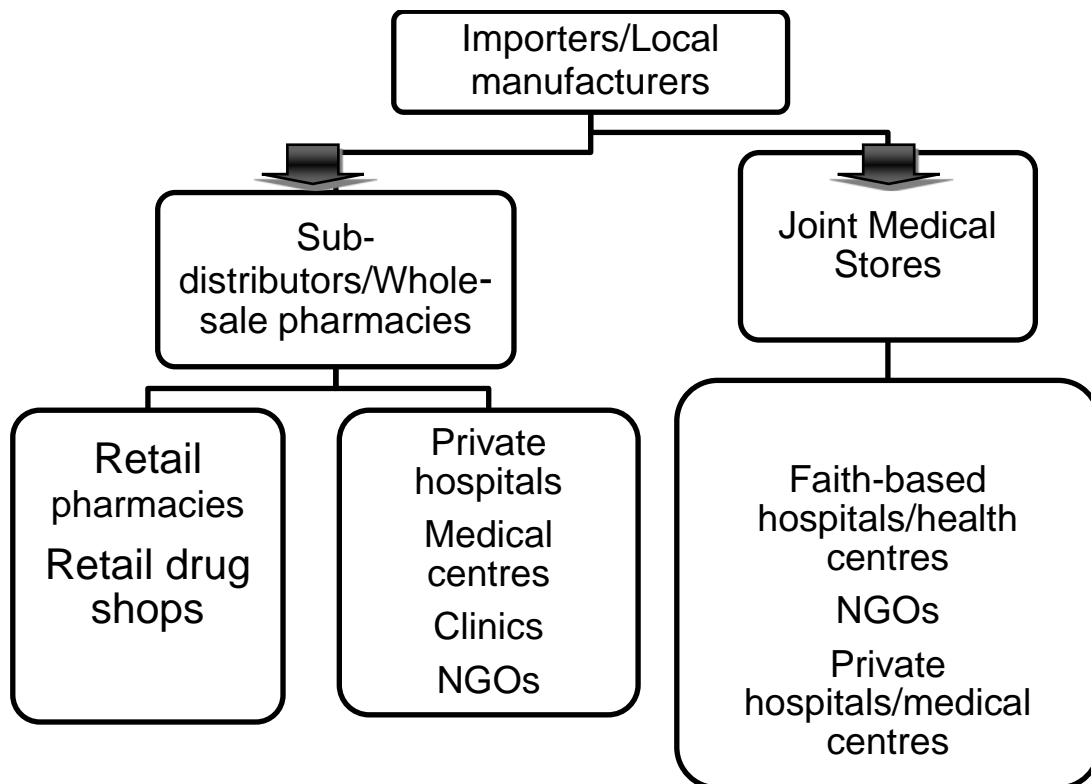
The distributors of pharmaceuticals in the private sector include direct importers and wholesalers.

The direct importers supply the wholesalers, who are located countrywide, especially in major towns such as municipalities and town councils.

The wholesalers then sell the medicines to retail pharmacies, drug shops, clinics, private hospitals, nongovernmental organizations (NGO), and faith-based hospitals.

Joint Medical Stores mainly supplies faith-based hospitals, NGOs, and medium size medical centres and private hospitals.

Distribution Channels of Pharmaceuticals in the Private Sector



Pharmaceutical services

Pharmaceutical services are mainly concentrated in big cities, such as Kampala, Mbarara, Jinja, Masaka, Gulu, etc.

Retail pharmacies, which are allowed to stock a wide range of both prescription and over-the-counter (OTC) medicines, mainly serve the urban community.

Class C drug shops are allowed to legally stock only OTC medicines.

These shops are left to serve the rural community, which has an equal demand for prescription medicines like the urban community.

This imbalanced distribution of pharmaceutical services has led to the development of ADS.

ADS are allowed to stock a wider range of medicines, including some prescription medicines that are highly needed in the community.

The ADS are mainly intended to serve rural communities.

The accredited drug shop (ADS) model

An ADS is a drug shop that is allowed to sell a wider range of medicines, including some prescription medicines.

The ADS are medicine outlets that were created by the NDA in response to poor access to medicines.




The current ADS are created from existing Class C drug shops.

The idea of setting up of ADS originated in Tanzania where the results were excellent in terms of improved medicine access.

It was then introduced to Uganda and started in Kibaale district with the help of Management Sciences for Health (MSH).

The operation of the ADS is regulated by the NDA in conjunction with the office of the District Health Officer (DHO) and the district association of accredited drug shops.

Besides the NDA, professional bodies with keen interest in the operation of the ADS include:

-  Uganda Nurses and Midwives Council
-  Allied Health Professionals Council
-  Pharmaceutical Society of Uganda (PSU)

professional bodies, such as the PSU, are responsible for the regulation of pharmaceutical services in Uganda.

The Nurses Council and Allied Health Professionals Council are involved because of the individuals who are involved in the operation of the ADS.

Why ADS?

The ADS have been created for the following reasons:

- ✚ To improve medicine availability
- ✚ To improve care provided in the community
- ✚ To reduce inappropriate practices

Requirements for accreditation

Class C drug shops (licensed) that meet specific criteria are eligible for accreditation.

Accreditation: Means the shops meet standards for the physical facility, employ trained and licensed operators, and are approved by the NDA to dispense an enhanced list of medicines and manage selected diseases.

This happens when the Class C shop has done the following:

- ✚ Passed inspection
- ✚ Completed the training component and passed the examination
- ✚ Adopted the approved ethical code

Note: Once accredited, the Class C shop is called an Accredited Drug Shop (ADS).

- ✚ An Accreditation Certificate is issued to the successful applicants.
- ✚ The ADS is supplied with materials, such as a dispensing coat, record books, ADS sign post, etc.
- ✚ Local monitors are trained to supervise the ADS, and they report drug shop regulatory abuse to the NDA.
- ✚ Regular inspection is conducted by the NDA.

Expectations of the ADS

- ✚ Purchase stock from licensed wholesale pharmacies.
- ✚ Proper storage of medicines.
- ✚ Proper dispensing of medicines.
- ✚ Management of selected illnesses in both children older than 2 months and adults.
- ✚ Early reporting of outbreaks.
- ✚ Client education and referral of clients with chronic conditions.
- ✚ Referring in cases of danger signs.
- ✚ Counselling and initiating women on family planning (FP) methods.
- ✚ Counselling mothers on newborn care, nutrition, and immunisation of children under 5 years.

What health conditions can be managed at the ADS shop?

The following conditions can be managed at the ADS shop:

- ✚ Uncomplicated malaria in both adults and children
- ✚ Upper respiratory tract infections
- ✚ Common colds, allergic rhinitis (adults and children)
- ✚ Non-severe pneumonia **only in children aged 2 months to 5 years** (with no danger signs or chest in-drawing, or stridor in calm child)
- ✚ Diarrhoea and dysentery in children and adults, **except** in cases of severe diarrhoea or severe dehydration, or persistent diarrhoea
- ✚ Ear infections, except in cases of tender swelling behind the ear (mastoiditis)

- ✚ Anaemia and malnutrition in children aged 2 months to 5 years only, except for severe cases as defined in this manual
- ✚ Minor skin conditions, like boils, ringworm, athlete's foot, scabies, chicken pox, nappy rash and minor cuts, skin allergies
- ✚ Eye conditions only, including foreign bodies and sty
- ✚ Treatment of lice
- ✚ Selected STIs

Benefits of ADS

- ✚ ADS will be allowed to stock medicines and other health-related commodities beyond what is generally allowed by ordinary Class C drug shops.
- ✚ Drug sellers and owners will be trained in business management, medicines management, and client care.
- ✚ There will be a public awareness campaign so that clients will know that ADS provide good care and are a good place to seek help.
- ✚ There will be supportive supervision and regular monitoring.

National Drug Authority

The NDA is a semi-autonomous body under the MOH.

It was established in 1993 by an act of Parliament.

Its major activity is to control the importation, manufacture, and use of medicines in Uganda.

With its headquarters in Kampala, the NDA operates through its regional offices based in the eastern, western, northern, and central regions.

The NDA is represented at the district level by the District Assistant Drug Inspector (DADI).

The NDA is the regulatory body that implements the national drug policy through the following functions:

- ✚ Regulates the operation of pharmacies and drug shops in the country.
- ✚ Controls the quality of medicines and other medical items distributed in Uganda.
- ✚ Promotes local production of medicines.
- ✚ Promotes the proper use of medicines in the country.
- ✚ Encourages research and development of herbal medicines.
- ✚ Controls the importation, exportation, and sale of pharmaceuticals in the country.
- ✚ Approves the national list of essential drugs and supervises the revision of the list in an approved manner.
- ✚ Establishes and revises professional guidelines and disseminates information to health professionals and the public.

Health-related professional bodies in Uganda

There are four health-related professional bodies in Uganda, each with a particular cadre (s) involved in the provision of health services to the community.

Professional body	Health cadres regulated
Uganda Nurses and Midwives Council	✓ Nurses ✓ Midwives
Uganda Medical and Dental Practitioners Council	✓ Doctors ✓ Dentists

Professional body	Health cadres regulated
Allied Health Professionals Council	<ul style="list-style-type: none"> ✓ Pharmacy technicians ✓ Clinical officers ✓ Laboratory technicians ✓ Orthopaedic officers ✓ Physiotherapists ✓ Occupational therapist ✓ Radiographers ✓ Dental assistants ✓ Public health officers
Pharmaceutical Council/ Pharmaceutical Society of Uganda	<ul style="list-style-type: none"> ✓ Pharmacists

Uganda Nurses and Midwives Council

The Uganda Nurses and Midwives Council is responsible for supervising the training, practice, and registration of all categories of nurses and midwives in the country.

The functions of the Uganda Nurses and Midwives Council include:

- ✚ Regulate the standards for nursing and midwifery in the country.
- ✚ Regulate the conduct of nurses and midwives and exercise disciplinary control over them.
- ✚ Approve courses of study for nurses and midwives.
- ✚ Supervise and regulate the training of nurses and midwives.
- ✚ Grant diplomas or certificates to persons who have completed the respective courses of study in nursing or midwifery.
- ✚ Supervise the registration and enrolment of nurses and midwives.
- ✚ Publish the names of registered and enrolled nurses and midwives in the Gazette.
- ✚ Advise and make recommendations to the government on matters relating to the nursing and midwifery professions.
- ✚ Exercise general supervision and control over the two professions.

Allied Health Professionals Council

The Allied Health Professionals Council regulates, supervises, controls and enforces standards in the training and practice of allied health professionals in the country.

The role of the Council includes:

- ✚ Registration of all members of the professions.
- ✚ License all professionals of the allied health professions.
- ✚ Supervise the practice of all allied health professions in Uganda.
- ✚ Monitor and evaluate all services offered by allied health professionals in Uganda.
- ✚ Generate standards suitable for the practice of its professional members in order to benefit the people of Uganda.

Uganda Medical and Dental Practitioners Council

The Uganda Medical and Dental Practitioners Council regulates the practice of doctors and dental surgeons in the country.

The main functions of the Council include:

- ✚ Register and license qualified practitioners and all private health units that meet the requirements of the Council.
- ✚ Conduct regular inspection of private clinics in the country.
- ✚ Investigate all reported cases of alleged professional misconduct and take appropriate action.

The Pharmaceutical Society of Uganda

The PSU regulates the training, registration, and practice of pharmacists in Uganda.

The functions of the PSU include:

- ✚ Control the practice of pharmacy in Uganda.
- ✚ Set standards for the pharmacy profession in Uganda.

- ✚ Ensure the proper registration of all pharmacies in Uganda and set minimum standards for their operation.
- ✚ Regulate the training of pharmacy students in Uganda.
- ✚ Conduct research the effects of medicines in human and veterinary health.
- ✚ Conduct continuing medical and pharmacy education for members and pharmacy auxiliary staff.
- ✚ Handle all issues of indiscipline related to the pharmacy profession and impose punishment, when necessary.

SESSION TWO: ETHICS, LAWS, & REGULATIONS IN ADS

Legal Requirements for Setting up and Operating an ADS

Licensing and operations

The licensing of ADS follows the usual procedure for licensing Class C drug shops.

The operation of ADS is regulated by the NDA, assisted by the DHO's office.

The requirements include:

- ✚ Suitable premises
- ✚ Availability of qualified medical personnel
- ✚ Minimum distance of 1.5km away from an existing drug shop.

Application, inspection, and accreditation process

Steps	Responsible body/reason
1. Pre-inspection of the premises	✓ NDA/DADI
2. Training of ADS seller	✓ Authorized nursing schools ✓ Seller should have a minimum qualification of s.4 level schooling & nursing assistant training for 6 months
3. Re-inspection of the premises	✓ NDA/DADI ✓ It is intended to confirm /determine whether the ADS has met the minimum requirements.

Standards for operating an ADS

Standards are minimum requirements. The following are the standards for proper running of an ADS. They apply to:

- ✚ Personnel
- ✚ Premises
- ✚ Dispensing
- ✚ Record keeping and documentation

Standards for personnel

- ✚ Trained ADS seller
- ✚ Dress in a professional manner
- ✚ Not to work under the influence of alcohol.
- ✚ Observe high standards of personal hygiene.
- ✚ Be of sound mind.
- ✚ Behave professionally.
- ✚ Observe the guidelines set by the NDA.
- ✚ Drug seller must have written a commitment letter to operate with a particular ADS.
- ✚ Undergo regular continuing medical education.

Standards for dispensing

- ✚ Availability of dispensing materials.
- ✚ All medicines stocked must be registered with the NDA.
- ✚ All the medicines in the ADS should be stored according to the manufacturer's guidelines.
- ✚ Should not dispense expired medicines.
- ✚ Should be able to identify and refer complicated cases.

- ✚ All prescription medicines to be dispensed on a written valid prescription.
- ✚ Maintain proper records of dispensed medicines.
- ✚ Medicines should be dispensed in a proper container that is clearly labelled.
- ✚ All medicines should be given with proper instructions.

Standards for premises

- ✚ Be of permanent nature.
- ✚ The roof should not be leaking and should have a ceiling.
- ✚ Space should be big enough (at least 16m²) to carry out proper dispensing.
- ✚ The walls and floors should have smooth surfaces.
- ✚ The walls should be painted white or any other bright colour.
- ✚ Availability of water, latrine.
- ✚ Availability of sign post for ADS.

Standards for record keeping

- ✚ All invoices and receipts should be recorded in the purchase medicines book and the original receipts should be kept.
- ✚ All prescriptions should be recorded in the ADS dispensing log book and the records kept for at least 2 years.
- ✚ A record of expired drugs should be kept.
- ✚ Availability of the files of communications from the NDA and other regulatory authorities.

Reference materials

- ✚ ADS training manual
- ✚ ADS medicines handbook

- ✚ Uganda clinical guidelines
- ✚ National medicines formulary
- ✚ Essential medicines list for Uganda
- ✚ NDA act
- ✚ ADS standards and code of ethics
- ✚ ADS Expanded Medicines List

ADS personnel code of ethics

- ✚ Should be honest and have integrity
- ✚ Ensure client's wellbeing at all times
- ✚ Respect for the client
- ✚ Should not discriminate against clients
- ✚ Ensure confidentiality and privacy
- ✚ Provide quality medical services
- ✚ Collaborate with other health workers
- ✚ Should not engage in the sale of illegal/ government medicines
- ✚ Should participate in health promotion activities

THE ADS EXPANDED MEDICINES LIST

The ADS can dispense medicines from Class C as well as from the expanded medicines list below. The expanded list takes into consideration the prescribing levels in line with the Uganda clinical guidelines , malaria treatment guidelines, and STI guidelines.

A consideration has also been made to ensure that the public has reasonable access to the most essential (key) medicines needed to treat the common diseases found in the community. The medicines on this list are identical to those available at Health Centres II, except for injectable medicines.

Note: ADS are not allowed to stock, dispense, or administer injectable medicines.

Drug and form	Intended ailments
<i>Anti-asthmatics & cough preparations</i>	
Aminophylline tablet 100 mg	Wheezing & difficulty breathing
Salbutamol tablet 4 mg	Wheezing & difficulty breathing
Cough preparations (e.g., cough linctus, expectorants, and herbal) but NOT those containing codeine	Symptomatic relief of dry and productive cough
<i>Antibiotics</i>	
Amoxicillin capsules/ tablets 250 mg & 500 mg	Respiratory tract infections (RTI) & urinary tract infections (UTI)
Amoxicillin oral suspension 125 mg/5 ml & 250 mg/5 ml	RTIs, UTIs
Co-trimoxazole suspension 240 mg/5 ml	RTIs, UTIs
Co-trimoxazole tablets 480 mg and 960 mg	RTIs, UTIs
Doxycycline capsules/tablets 100 mg	Gonorrhoea, pelvic inflammatory disease

Drug and form	Intended ailments
Erythromycin oral suspension 125 mg/5 ml	RTIs, bacterial skin infections
Erythromycin tablets 250 mg	RTIs, gonorrhoea, bacterial skin infections
Metronidazole tablets 200 mg	Protozoa diarrhoea, trichomoniasis, dental infections
Metronidazole suspension 200 mg/5 ml & 125 mg/5 ml	Protozoa diarrhoea, dental infections
Nitrofurantoin tablets 100 mg	UTIs
Phenoxymethyl Penicillin suspension 125 mg/5 ml	Tonsillitis
Phenoxymethyl Penicillin tablets 250 mg	Tonsillitis
Ciprofloxacin 250 mg & 500 mg tablet	UTIs
<i>Dermatological products</i>	
Silver sulfadiazine cream 1% w/w	Wounds and burns
Iodine tincture 2%	Wounds
Calamine lotion 15%	Chicken pox, herpes zoster
Benzyl benzoate lotion 25%	Scabies
Malathion lotion aqueous 0.5%	Pediculosis
Hydrocortisone cream 1%	Eczema, nappy rash, insect bites
<i>Anti-helminthics</i>	
Mebendazole tablet 100 mg	Intestinal worms
Mebendazole suspension 100 mg/5 ml	Intestinal worms
Albendazole tablet 200 mg & 400 mg	Intestinal worms
Albendazole suspension 100 mg/5 ml and 200 mg/5 ml	Intestinal worms

Drug and form	Intended ailments
<i>Anti-Inflammatory/Analgesics</i>	
Diclofenac sod. tablets 50 mg & 100 mg	Pain
Ibuprofen tablet 200 mg & 400 mg	Pain and fever
Ibuprofen syrup 100 mg/5 ml	Pain and fever
Acetylsalicylic acid tablet 300 mg	Pain and fever
Paracetamol tablet 500 mg	Pain and fever
Paracetamol suspension 120 mg/5 ml	Pain and fever
<i>Anti-allergic</i>	
Chlorpheniramine tablet 4 mg	Skin itching and allergy
Chlorpheniramine syrup 2 mg/5 ml	Skin itching, common cold & allergy
Promethazine tablet 25 mg	Skin itching, common cold, allergy, & vomiting
Promethazine syrup 5 mg/5 ml	Skin itching, common cold, allergy & vomiting
Cetirizine tablet 10 mg	Skin itching, common cold & allergy
Cetirizine syrup 5 mg/5 ml	Skin itching, common cold & allergy
<i>Anti-fungal</i>	
Nystatin oral suspension 100,000 IU/5 ml & 100,000IU/ ml	Oral candidiasis
Nystatin tablets 100,000 IU & 500,000 IU	Oral candidiasis
Nystatin lozenges 100,000 IU	Oral candidiasis
Nystatin pessaries 100,000 IU	Vaginal candidiasis
Clotrimazole pessaries 100 mg	Vaginal candidiasis

Drug and form	Intended ailments
Clotrimazole cream 1%	Fungal skin infections, e.g., ringworms
Sulphur ointment 10%	Fungal skin infections, e.g., ringworms
Benzoic acid + salicylic acid ointment 6% + 3%	Fungal skin infections, e.g., ringworms
<i>Antimalarial medicines</i>	
Artemether /lumefantrine tablet 20/120 mg and 40/240 mg	Uncomplicated malaria
Artesunate/amodiaquine tablet 50/200 mg and other artemisinin-cased combination therapies (ACT)	Uncomplicated malaria
Quinine tablet 300 mg	Uncomplicated malaria
Quinine suspension 100 mg/5 ml	Uncomplicated malaria
Rectal artesunate	Pre-referral for severe malaria
<i>Disinfectants and antiseptics</i>	
Cetrimide + chlorhexidine solution 0.5% + 0.05%	Skin wounds and antiseptic
Chlorhexidine gluconate solution 20%	Skin wounds
Hydrogen peroxide solution 6%	Skin wounds and mouth gargle
Calcium or sodium hypochlorite solution 5%	Disinfectant
<i>Oral Contraceptives</i>	
Ethinylestradiol + Norethisterone	Family planning
Ethinylestradiol + Levonorgestrel	Family planning
<i>Anti-diarrhoea</i>	

Drug and form	Intended ailments
Zinc sulphate tablets	Diarrhoea in children
Oral rehydration solution (ORS)	Diarrhoea
<i>Anti-convulsant</i>	
Diazepam rectal tube 2 mg/MI	Convulsions in children
<i>Antidotes</i>	
Charcoal activated tablet 250 mg	Poisoning
<i>Eye/Ear/ Nasal preparations</i>	
Chloramphenicol eye ointment 1%	Bacterial eye infections
Chloramphenicol eye/ear drops 0.5%	Bacterial eye & ear infections
Tetracycline eye ointment 1%	Bacterial eye infections
Combined antibiotic plus steroid eye/ear drops	Allergic eye & ear diseases with bacterial infections
<i>Anti-anaemia medicines, Vitamins & Minerals</i>	
Ferrous salt tablet 60 mg	Anaemia
Folic acid tablet 5 mg	Anaemia
Ferrous/folic acid 200 mg/0.5 mg & 100 mg/0.5 mg	Anaemia
Multivitamin tablets and suspensions	Food supplements
Vitamin A capsules	Food supplement
Vitamin C tablets 100 mg	Food supplement (common cold)
<i>Diagnostics</i>	
Rapid diagnostic tests	Testing for malaria

MODULE 2: MEDICINES MANAGEMENT

SESSION ONE: BASIC PRINCIPLES OF MEDICINES MANAGEMENT

Medicines management is a series of procedures and techniques used to maintain the required quantity of medicines and range of stock.

Good medicines management aims to make sure that:

- ✚ Medicines are available in the drug shop in the right quantities.
- ✚ Medicines are available at all times without stock-outs.
- ✚ Medicines are available at the right cost.
- ✚ Only quality medicines are stocked.
- ✚ Dispensing is properly done to make sure that the medicines are correctly taken by the client.

The medicines management cycle

The medicines management cycle involves five stages:

1. Selection
2. Procurement
3. Distribution
4. Use
5. Management support

Selection of medicines

The selection of the types and quantities of medicines that will be bought and stocked in an ADS usually depends on:

- ✚ Demand created by prescriptions from the prescribers.
- ✚ Demand created by the clients through the purchase of OTC medicines.

- ✚ Demand created by the ADS operator by treating conditions that are allowed to be managed at the ADS.
- ✚ Environmental factors, e.g., outbreaks like cholera need more JIK (chlorine bleach) to be stocked.
- ✚ Availability of funding to purchase the medicines.
- ✚ ADS expanded list of medicines.

Note:

- ✚ The proper selection of medicines to be purchased ensures the continuous availability of stock and minimizes expiries.
- ✚ Selection should be limited to prescription-only medicines that are on the ADS expanded list and OTC items.
- ✚ No stocking of injectable medicines is allowed in the ADS.

Procurement of medicines

Procurement is the process of obtaining medicines or OTC items from a supplier.

Before procurement of a medicine is done, the ADS operator should ensure that the following are available:

- ✚ List of medicines to be purchased and their quantities.
- ✚ Total amount of money required to purchase the medicines.

There are several steps in the procurement of medicines:

Estimating the quantity of medicine for procurement

The quantity of medicine to be purchased for the drug shop usually depends on following:

- ✚ The population the drug shop serves
- ✚ Rate of consumption of the medicine

- ✚ Pattern of diseases in the area
- ✚ Frequency of procurement
- ✚ Availability of storage facilities
- ✚ Amount of money available to purchase medicines
- ✚ The distance from the drug shop to the wholesale pharmacy

Note: Consideration of these factors helps to avoid over-stocking or under-stocking.

Quantifying the medicines to be purchased

Quantification is the process of estimating the amount of medicines required for a particular period of time (e.g., weekly).

- ✚ This can be based on consumption during the previous week(s).
- ✚ Information on previous consumption can be obtained from the receipt book or sales books.

Exercise 1 - Quantifying the amount of medicines needed for one week

Situation:

- KN drug shop sells an average of 6 packets of Coartem adult daily.
- The owner buys medicines for the drug shop every Monday.

Question:

- How much Coartem adult should the owner stock for 1 week?

Process:

- Multiply the average number of packets sold daily by the number of days in a typical work week.

Answer:

- ? Packets for 1 week

Selecting the sources of medicines

Medicines and OTC items may be obtained from any of the following:

- ✚ Licensed wholesale pharmacies
- ✚ Licensed importers
- ✚ Licensed cosmetic distributors/wholesalers in the case of cosmetics
- ✚ Licensed general merchandise wholesalers in case of items like glucose powder, JIK.

Advantages of purchasing from licensed suppliers:

- ✚ The products can be obtained at competitive prices.
- ✚ Minimizes the chances of buying counterfeit medicines or items.
- ✚ In case of any fault in the product, it can be replaced with a new one.
- ✚ Licensed suppliers provide receipts for record keeping and for any legal requirement.

Note: Never buy medicines from hawkers because the chances of buying stolen medicines or counterfeits are very high.

Sample of a purchase order list

Name of medicine	Form/strength	Unit pack	Unit price	Quantity needed	Total cost
Amoxicillin	Caps 250 mg	100's	3500	2x100	7000
Amoxicillin	Syrup 125 mg/5 ml	100 ml	900	5 bottles	4500
Paracetamol	Tabs 500 mg	100's	2000	2x100	4000
Coartem	Tabs 20/120	24's	1000	8 packets	8000

Name of medicine	Form/strength	Unit pack	Unit price	Quantity needed	Total cost
	mg				
ORS	Sachet	1's	400	20 sachets	8000
Total amount of money needed					31,500

Receipt of medicines

Many times the receipt of medicines will be done by the pharmacy where medicines are purchased.

On rare occasions, the medicines may be delivered by your supplier to the drug shop premises.

In either case, use the following checklist to ensure that your order is correct in terms of quantity, quality, and completeness.

Receipt of medicine checklist

Checklist	Remarks
Check the quantity supplied	<ul style="list-style-type: none"> ✓ Cross check the quantity ordered against what is being supplied on the invoice. ✓ Some suppliers may try to give you more than what you have ordered. This is more common for slow moving items or items with short expiry. ✓ Take only what you have ordered and budgeted for. ✓ Do not accept to be over-stocked because of a reduction in the price/abnormal discounts.
Check the expiry date	<ul style="list-style-type: none"> ✓ Cross check the expiry dates of every product being supplied. ✓ Check both the internal (primary) & the external (secondary) packages for uniformity of expiry dates.

Checklist	Remarks
	<ul style="list-style-type: none"> ✓ Do not accept medicines with short expiry even if the price is low. ✓ Do not accept medicines without expiry dates as this might indicate counterfeit medicine.
Check packaging materials	<ul style="list-style-type: none"> ✓ Helps to identify broken bottles, leakage, stained packaging material. ✓ Do not accept medicines whose labels are stained or damaged.
Check the brands	<ul style="list-style-type: none"> ✓ Cross check the brand name quoted on the purchase list against that given to you. ✓ Some customers prefer a particular brand, therefore stick to what your clients want unless it is out of stock. ✓ Some suppliers may not inform you about the changes in the brand of medicines being supplied, therefore pay keen attention.
Check the medicine strength	<ul style="list-style-type: none"> ✓ Cross check the strength of the medicine ordered against what is being supplied. ✓ This prevents receiving the wrong strength of a medicine, e.g., children's packs may be supplied instead of the requested adult one. ✓ Some strengths of medicines are not liked by some clients, e.g., amoxicillin 500 mg

Transport of medicines

- ✚ Exposure of medicines to unfavourable conditions, like direct sunlight, high temperatures, water, and dust spoils them.
- ✚ Medicines should therefore be properly packed before transport to avoid exposure to the above conditions.

Pricing of medicines

Proper pricing of medicines ensures profitability and sustainability of the business. On average, the retail prices of medicine in drug shops provides for a range of between 30% and 40% profit margin.

Take into consideration the following factors when setting prices:

- ✚ Cost of the medicine
- ✚ Transportation cost
- ✚ Rent of premises
- ✚ Electricity/water
- ✚ Salaries/allowances for workers
- ✚ Taxes

Note: Indicate the retail price on the medicine container and in the purchase order book.

Avoid keeping the prices in your head only and making the customer ask what it is. This may lead to variation in price and loss of trust by customers.

Distribution

Storage of medicine

Medicines should be stored in a secure place to prevent theft and in suitable conditions to prevent deterioration (loss of effectiveness).

Medicines should always be stored:

- ✚ In a locked cupboard or room that can only be accessed by qualified staff.
- ✚ On shelves that can be regularly cleaned to prevent the accumulation of dust.
- ✚ In a dry cool place, away from light.

Arrangement of medicines

For details about this topic, see the following section: Arrangement of medicines on the shelves.

Arrangement of medicines on the shelves

Introduction

Medicines should be arranged in such a way that they can be easily located during dispensing.

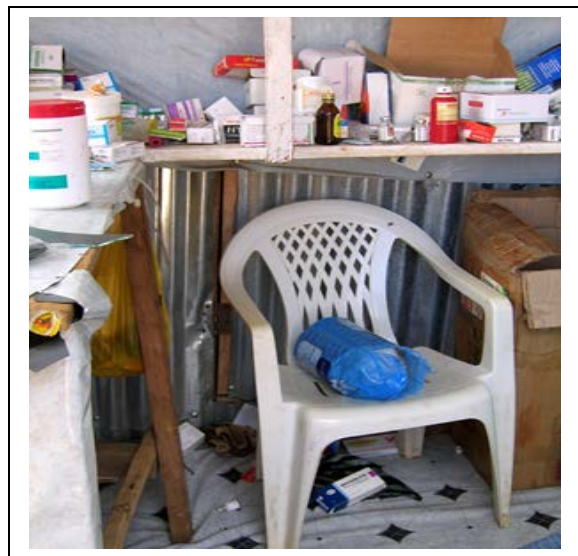
They can be arranged on the shelves in various ways based on:

- ✚ Alphabetical order (use generic names)
- ✚ According to dosage forms (e.g., all medicines for oral use can be placed in the same section)
- ✚ According to their clinical uses (i.e., antibiotics, antimalarials, pain killers, etc.) This is the most practical way and the easiest to apply.

Note: For easy identification, all medicines on the shelves should have properly displayed labels on the containers.

Do you see the differences between how medicines are stored in these two shops? As a customer, which shop would you choose to purchase from?

How will you store medicines in your shop?



Section of shelves	Category of medicines	Remarks
Top shelves	Tablets, capsules, bulky light items like syringes, cotton wool	Medicines that are not commonly dispensed The medicine should not be sensitive to heat.
Middle shelves	Syrups, oral suspensions, e.g., amoxicillin, magnesium trisilicate mixture	Do not put solid medicines, like tablets, below them. This prevents spoilage in case of a leak.
Bottom shelves	Bulky and heavy items, like disinfectants, e.g., JIK and other liquid preparations, topical creams and ointments	Do not keep the medicines directly on the floor.

Importance of proper arrangement

- ✚ Ensures easy dispensing.
- ✚ Helps to know the medicines in stock.
- ✚ Helps to add new stock without changing everything.
- ✚ Helps qualified staff to get familiar with the medicines in stock and their uses.

Factors that influence the storage of medicines

Medicines must be stored according to the manufacturer's recommendation.

The following factors may influence how medicines are stored in a drug shop:

- ✚ Temperature
- ✚ Moisture
- ✚ Direct sunlight
- ✚ Cleanliness

Temperature

Most medicines are sensitive to high temperatures. For example, ointments, creams and suppositories tend to melt when the temperature is very high (i.e., above 30°C).

Most manufacturers recommend keeping medicines at room temperature (18-25°C).

Some medicines, such as insulin and vaccines, have to be kept at very low temperatures (i.e., in a fridge).

Use of fans or proper ventilation of the drug shop maintains a good temperature suitable for medicine storage.

Moisture

Moisture tends to make tablets crumble or stick together.

Keep the medicines in a cool dry place to maintain their effectiveness up to the expiry date.

Keep all medicines off the floor to prevent them from getting wet.

Get all roof leaks repaired as soon as possible to reduce moisture and water damage.

Keep the containers closed before and after use.

Direct sunlight

Light can easily damage medicines because it may speed up chemical reactions.

Most medicines are supplied in containers that protect them from light. Keep the medicines in the original manufacturer's containers to protect the medicines from light.

Prevent direct entry of light into the drug shop through the use of curtains, especially during the brightest time of the day.

Paint windows and walls of the drug shop with any light colours (e.g., white) in order to reflect light.

Keep the containers closed before and after use.

Cleanliness

Dirt tends to make medicine degrade faster and lose its effectiveness.

Keep the drug shop and medicines clean all the time to prevent degradation.

A clean drug shop creates confidence and shows professionalism.

Keep the containers closed before and after use.

Summary of storage guidelines

- ✚ Store medicines on clean, safe, and well maintained shelves.
- ✚ Protect medicines from light and heat.
- ✚ Store medicines in a cool dry place away from pests and rodents.
- ✚ Store medicines with short expiry at the front of the shelves and those with long expiries behind (first expiry, first out [FEFO]).
- ✚ Keep light medicines on the upper shelves and heavy ones at the bottom.
- ✚ Arrange the medicines on the shelves according to what they are used for.
- ✚ Label all the shelves for easy retrieval of medicines.

Exercise 2 – Preparing and arranging medicines and other stock in a drug shop

Set up:

- **Ahead of time** set up a sample layout of a drug shop (or use a large box to serve as a medicine cupboard with shelves where different items can be arranged).
- Gather sample commodities (medicines and other stock) ahead of time. Be sure you have medicines of the same type with different expiry dates and some expired ones. Also include some liquids.

Facilitator explains:




→ “We are going to practice preparing and arranging medicines in a drug shop.”

Process:

1. Facilitator distributes the SOP: “Good Storage Practices for ADS Commodities” to all participants.
2. Facilitator leads a review of the SOP (inviting participants to take turns reading the various sections of the SOP out loud).
3. Facilitator invites a participant to demonstrate where to place one medicine and to explain why it should be placed there.
4. Participant places the medicine and explains why it should go there.
5. Facilitator asks other participants to comment: Do they agree? If not, where should it go and why?
6. Facilitator and participants repeat this several times until all of the sample medicines and other commodities have been properly stored.

Record keeping

To support successful arrangement and management of medicines, the ADS operator needs to do the following:

-  Keep a proper record of medicines dispensed, whether on a prescription or not.
-  Keep a record of all the medicines purchased
-  Monitor stock levels.

- ✚ Reconcile current stock with what is expected to be in stock according to the records on a regular basis (at least monthly). To do so:
 - Count current stock.
 - Compare amounts with the records of what should be in stock.
 - Identify any differences and determine why there is a difference.

Tools for stock management


To ensure effective stock management, the ADS operator should have the following tools to monitor stock:

- ✚ Out of stock book
- ✚ Purchase order book
- ✚ Receipt book
- ✚ Debtor's book
- ✚ Expired drug book
- ✚ Dispensing log

Stock management tools

Tool	Purpose
Out of stock book	<ul style="list-style-type: none"> ✓ To record medicines that are out of stock. ✓ Helps as a guide for restocking.
Purchase order book	<ul style="list-style-type: none"> ✓ Used to record medicines purchased from a wholesale supplier. ✓ Helps to account for the money used to buy medicine.
Receipt book	<ul style="list-style-type: none"> ✓ Used to record daily cash sales. ✓ Helps to monitor cash inflow (daily sales).
Debtor's book	<ul style="list-style-type: none"> ✓ Records clients who take medicines on credit. ✓ Helps to identify bad debtors.
Expired drug book	<ul style="list-style-type: none"> ✓ Record the names and quantities of expired medicines. ✓ Helps to know the value of the expired medicines.
Dispensing log	<ul style="list-style-type: none"> ✓ To record medicines that have been dispensed (including name of the medicine, dose, dosage, quantity, and the name and age of the client)

Sample Inspector's Record Book

DRUG				
NATIONAL			AUTHORITY	
<u>INSPECTORS RECORD BOOK</u>				
DATE OF INSPECTION	NAME OF INSPECTORS	PURPOSE OF INSPECTION	OBSERVATIONS AS PER INSPECTION	RECOMMENDATIONS
<small>NB: THIS BOOK SHOULD BE FILLED BY THE SELF REGULATION, SUPPORT SUPERVISION AND INSPECTION TEAMS WHENEVER THEY VISIT THE ACCREDITED DRUG SHOP.</small>				

SESSION TWO: DISPENSING

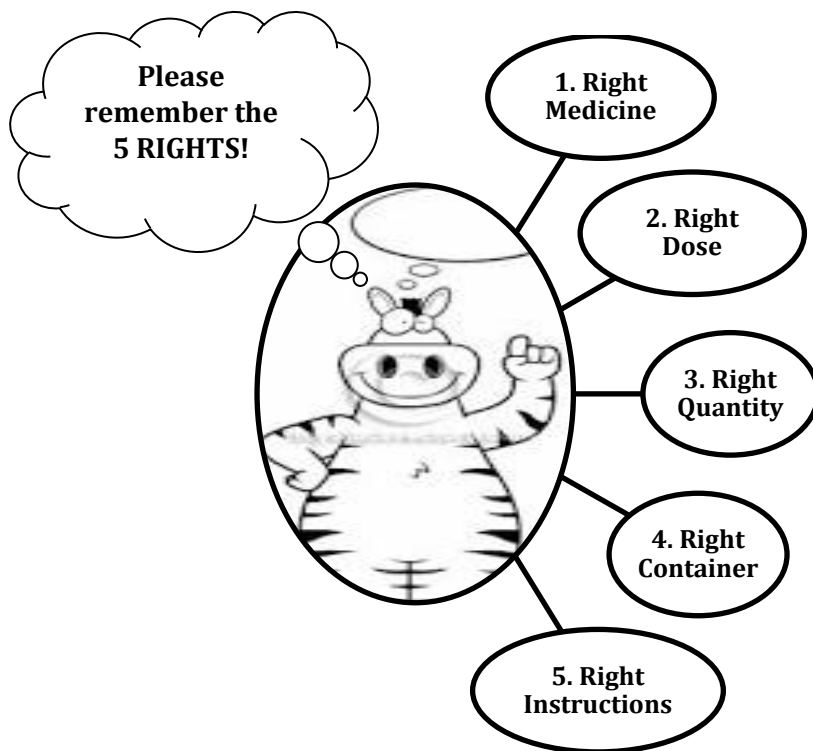
- ✚ Good dispensing practice is different from merely giving out medicines to clients.
- ✚ Dispensing is often the final stage in the health care delivery encounter.
- ✚ It usually determines the client's outcome, i.e., whether or not the client will get better.

Definition of terms related to DISPENSING

Term	Definition
Dispensing	This is the process of issuing medicines to the client. The process covers all activities involved, from receiving the prescription to issuing the prescribed medicine to the client.
Seller	This is a qualified person who is authorized to give out medicines or medical sundries to the client or caregiver.
Prescription	This is a written instruction from a prescriber to the seller ordering the giving out of medicines.
Prescriber	This is a qualified medical person who is authorized to prescribe by law.
Medicine	This is any substance administered to a client in order to diagnose, prevent, or treat diseases.
Medical sundries	These are items, such as gloves and syringes, which can be used during diagnosis and treatment.
Prescription medicines	These are medicines that can only be dispensed after presenting a valid prescription.
OTC medicines	These are medicines that can be given to the client without presenting a prescription (e.g., Hedex)

Good dispensing practice requirements

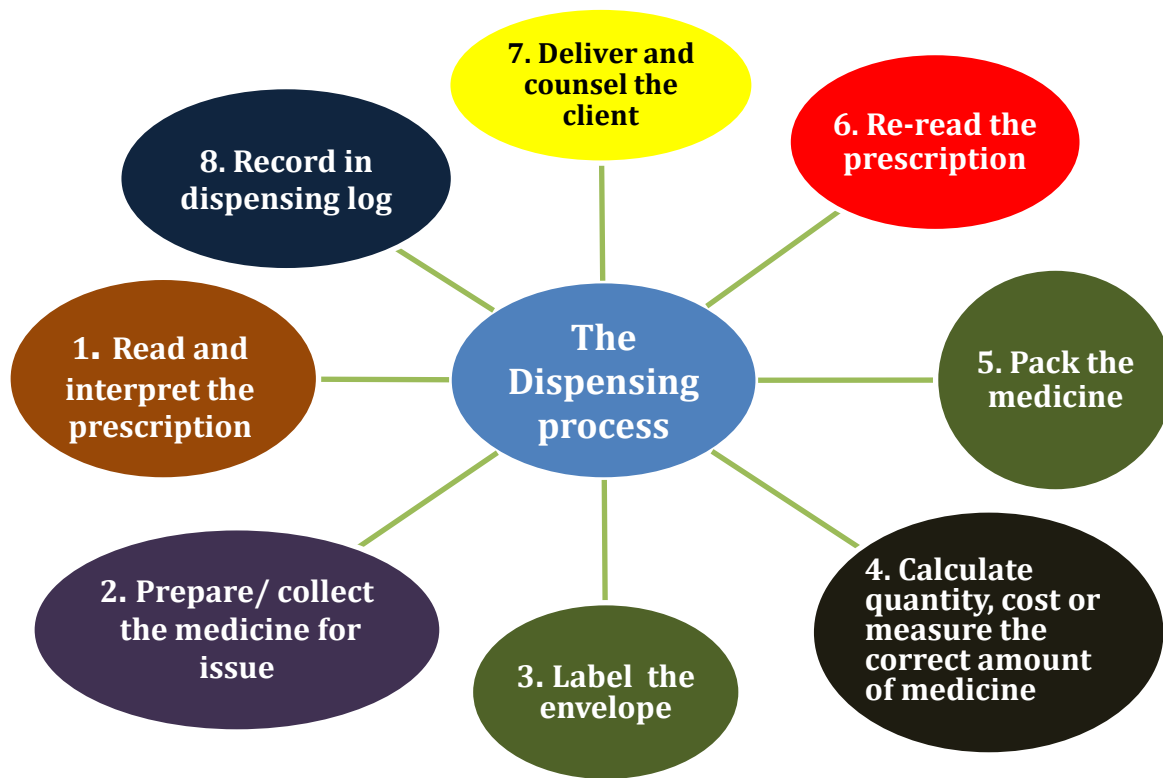
- ✚ The client or caregiver receives the right medicine in the right dose.
- ✚ The right quantities of medicine are dispensed in the right container.
- ✚ The client or caregiver receives the right instructions on how to use the medicine.



Qualities of a good seller

- ✚ Knowledgeable about medicines and common diseases.
- ✚ Able to communicate well.
- ✚ Able to offer good customer care.
- ✚ Good writing skills.
- ✚ Well organized.
- ✚ High level of professionalism and integrity.
- ✚ Good attitude about work.

The Dispensing Process



Details of the process step-by-step

1. Read and interpret the prescription








- ✚ Confirm whether it is official (valid).
- ✚ Interpret the prescription correctly. (NOTE: See the list of abbreviations used in prescriptions in the Annex to this session on dispensing.)
- ✚ If you cannot read the writing, check with someone else.
- ✚ Cross check the dose, dosage, and duration and check whether the dosage is correct.
- ✚ Again, if you are uncertain, ASK! to ensure that you understand what you are dispensing.


Use the following checklist to help you read and interpret a prescription.

Prescription checklist

Checklist	Reason for checking
Check date of prescription	✓ Helps to determine if the prescription is current or old and is still valid.
Confirm ownership of the prescription	✓ Helps to dispense medicines to the right client and avoids mistakes that could occur from a mix up of prescriptions.
Confirm name of medicine and dosage	<ul style="list-style-type: none"> ✓ Helps to give the right medicine to the client. ✓ Prevents giving over dose or under dose. ✓ Helps pick the right strength of medicine.
Cross check the age and weight of the client	<ul style="list-style-type: none"> ✓ Helps ascertain the correct dose. ✓ Helps identify a missed contraindication.
Diagnosis of the disease	<ul style="list-style-type: none"> ✓ Helps interpret the medicine prescribed. ✓ Helps verify the dosage & duration of treatment.
Cross check drug interactions and contraindications	<ul style="list-style-type: none"> ✓ Helps to prevent dispensing medicines to the wrong client. ✓ Improves client's outcome if no drug interaction is detected. ✓ Prevents harming the client/drug complications.

The prescription must contain the following information:

-  Name of the unit from where the prescription is coming
-  Name of the client and age (especially if a child)
-  Date
-  Prescriber's name and signature
-  Generic name of the medicine
-  Dosage form of the medicine
-  Dose

 Frequency of administration

 Duration of treatment

Definition of terms related to PRESCRIPTIONS

Term	Definition
Brand/Trade name	It is the name of a pharmaceutical product given by the manufacturer. Medicine with same active ingredient may have different brand/trade names; for example, Panadol, [®] Kamadol, [®] and Cetamol [®] are brand/trade names of medicines that contain paracetamol as an active substance.
Generic name/Non-proprietary Names	Name given to a medicine based on its chemical composition by an official standards-setting body, which will be recognized all over the world. It remains the same regardless of which company manufactures the medicine and what brand name the manufacturer gives it. Paracetamol is a generic name.
Manufacturing date	This is the date on which the medicine was manufactured. This date may be expressed in month and year of manufacturing
Expiry date	The date found on all medicines after which they are believed to have lost potency (effectiveness). Some medicines may become toxic due to deterioration and presence of toxic substances. Never use medicines beyond their expiry date. You can avoid having expired medicines at your facility by maintaining an effective stock control system and practicing FEFO to avoid stock expiring on your shelf.
Dose	The amount of medicine administered (swallowed, injected, applied on the skin, etc.) to the client at a time.
Dosage	How often a medicine has to be taken, e.g., every 8 hours, every day, every week, or every month.
Course of treatment	How long a medicine has to be taken for complete treatment or management of the health problem.
Dosage form	Medicines can be given to clients in several ways, depending on a client's needs, and therefore are available in different forms—tablets, capsules, injections, powders, syrups, solutions, ointments, creams, etc. These are called dosage forms. Always read the label of a medicine container carefully to understand the proper use of the dosage form being dispensed.



Term	Definition
Toxic dose	This is an amount of a given medicine that causes serious unwanted effects.
Formulation	Refers to how the medicine is presented by the manufacturer for use, e.g., tablet, capsule, ointment, syrup, etc.
Side effects	These are the effects of a medicine other than those the medicine is intended for a client. No medicine is entirely free of undesirable side effects. That is why it is important to make sure that the client is taking the right dose and to request the client to report immediately whenever he/she experiences undesirable side effects. Undesirable side effects may influence how a client take his/her medicine and therefore affects the treatment outcome.
Water for preparation	This is water that is freshly boiled and cooled.

Generic names and brand names for medicines

Prescriptions should be written in generic names and not brand names to prevent confusion among sellers.

Generic names are names given by international bodies. The vast majority of most medicines are known by the same name worldwide.

Examples of generic names

<ul style="list-style-type: none">  Paracetamol  Diclofenac  Metronidazole  Ciprofloxacin 	<ul style="list-style-type: none">  Quinine  Mebendazole  Artemether/ lumefantrine  Gentamycin
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Brand names are names given to medicines by the manufacturing company.

Brand names are always short and easy to remember and write, and this prompts prescribers to use them more frequently than the generic name.

Examples of brand names

Generic name	Brand name	Manufacturing company
Paracetamol	Panadol®	GSK,-Kenya
	Cetamol®	Regal Pharmaceuticals, Kenya
	Kamadol®	KPI, Uganda
Artemether/lumefantrine	Coartem®	Novartis, Switzerland
	Lumartem®	Quality Chemicals, Uganda
	Artefan®	Ajanta, India
Quinine	Qunimix®	Medipharm, Uganda
Amoxicillin	Kamoxyl®	KPI, Uganda
	Unixil®	Regal Pharmaceuticals, Kenya

Generic/brand name



Brand name

Generic name

Sample Prescription

Name of the unit from where the prescription is coming
Kakumiro Health Centre IV

OPD NO. 340/09

Name of the client
Name: M/S Kibuuka John

Age of the client
Age: 34

Date
Date: 04.05.2009

Address of the client
Address: Kakumiro

Weight of the client
Weight: 70 kg

Rx

Generic name of the medicine
Co-trimoxazole tablets (480 mg)

Dose
x 5/7

Frequency of administration
ii tds

Duration of administration
x 3/7

Paracetamol tablets (500 mg)

Prescriber's name and signature
Name of prescriber/qualifications Dr. Mwesigwa Emmanuel MBChB (MUK)
Signature _____

2. Prepare/collect the medicine for issue

- ✚ Double check the prescription and the name of the medicine being retrieved.
- ✚ Cross check the strength.
- ✚ Cross check the quantities prescribed and duration.
- ✚ Clean the medicine container and cross-check the expiry date.
- ✚ Do not identify medicine by colour, size, and shape since many medicines look alike.

Collecting the medicine checklist

Step	Reason for checking
Double check the medicine name	✓ Helps to avoid dispensing the wrong medicine with almost similar names/colour.
Cross check the strength	✓ Prevents dispensing an adult strength to children or vice versa.
Cross check the quantities prescribed and duration	✓ Helps to prevent dispensing less or more Note: Always make proper calculations of the quantities before dispensing
Check expiry date	✓ Prevents dispensing expired medicines ✓ Prevents legal action against the pharmacy Note: This should be a routine procedure
Do not identify medicine by colour, size or shape only	✓ Helps to prevent dispensing the wrong medicine ✓ Many medicines share same shape/colour

3. Label the envelope

- ✚ Write the name of the medicine & strength and the client's name on the label.
- ✚ Write the label before inserting the medicine.
- ✚ Use the language the client understands.
- ✚ Avoid abbreviations if possible.

Labelling checklist

Label information	Importance
Name of the client	<ul style="list-style-type: none"> ✓ Helps client to identify his/her medicine in case they are many clients at home.
Name of the medicine	<ul style="list-style-type: none"> ✓ Helps the client to know the medicine that he/she is taking. ✓ Helps to give proper antidote in case of poisoning. ✓ Helps to identify the cause of adverse effects.
Strength of the medicine	<ul style="list-style-type: none"> ✓ Helps to know the frequency of administration by any seller in case the client forgets.
Quantity of the medicine supplied	<ul style="list-style-type: none"> ✓ Helps the client to know how much medicine has been dispensed.
Frequency and duration of treatment	<ul style="list-style-type: none"> ✓ Proper frequency helps the client to comply with treatment. ✓ Helps the client to know when treatment is to be stopped.
Special instructions about how to take the medicine	<ul style="list-style-type: none"> ✓ Helps the client know whether to take the medicine with or without meals or with plenty of fluids.
Date supplied	<ul style="list-style-type: none"> ✓ Helps the client know when the medicine was dispensed.
Telephone contact, address, and name of the drug shop	<ul style="list-style-type: none"> ✓ Helps the client to call in case of any problem. ✓ Helps the client to send a caregiver to buy the medicine in case of a refill prescription.

Sample of medicine envelope label

God Cares Drug Shop	
Name of patient: <u>Omach, Lawrence</u>	40 tabs
Name of medicine: <u>penicillin V 250 mg</u>	
Dose: <u>2 tabs every 6 hours for 5 days</u>	
Instruction: <u>Take the medicine 1 hour before food</u>	
<u>Keep the medicine away from children.</u>	
<u>22/4/2015</u>	

4. Calculate quantity, cost, or measure the correct amount of medicine

Communicate the cost to the client.

5. Pack the medicine

Use the right container that maintains the effectiveness of the medicine.

Packaging medicines

Form	Notes
Solid dosage forms	<ul style="list-style-type: none"> ✓ Plastic dispensing bags ✓ Paper envelopes
Liquids or semi-solid dosage forms	<ul style="list-style-type: none"> ✓ In their original packaging
Dry powder (that needs to be reconstituted)	<ol style="list-style-type: none"> 1. Disperse the dry powder by first shaking the bottle. 2. If the volume to be added is given on the label, measure that amount. 3. Add water in small volumes, shaking the bottle each time you add a portion of water. Do so until the particles are evenly dispersed in the water. 4. Add the remaining water to make up to the marked point or to

Form	Notes
	finish the volume of liquid you had measured.
Need for dilution	<ul style="list-style-type: none"> • To arrest bleeding and disinfect wounds: <ul style="list-style-type: none"> ○ Dilute 1 part of hydrogen peroxide with 3 parts of purified water. ○ Apply using a piece of cotton wool on the affected area. • To remove dirty dressing: <ul style="list-style-type: none"> ○ Dilute 1 part of hydrogen peroxide with 3 parts of purified water ○ Soak the dressing in the diluted solution ○ Leave it for some minutes before removing the dressing • Mouthwash and deodorant: <ul style="list-style-type: none"> ○ Dilute one tablespoonful in one glass of water and gargle

6. Re-read the prescription

7. Deliver the medicine and counsel the client

Client's instructions
<ul style="list-style-type: none"> ✚ Name of the medicine being dispensed ✚ Uses of the medicine ✚ How to use the medicine ✚ When to expect an improvement and when to stop treatment, if applicable ✚ Possible side effects and how to minimize them ✚ Advise client/caregiver not to share the medicine ✚ Encourage the client to complete the treatment ✚ Tell the client when to go back for review if there is need

Client instruction checklist

Instruction	Rationale
Name of the medicine	<ul style="list-style-type: none"> ✓ Clients with chronic conditions need to know their medicines. ✓ This helps in case a prescription is lost or if there is an over dose.
Use of medicine	<ul style="list-style-type: none"> ✓ This motivates the client to take the medicine. ✓ Knowledge about the medicine creates informed clients and this minimizes drug error.
How to use the medicine	<ul style="list-style-type: none"> ✓ Improves compliance and disease clearance. ✓ Prevents development of drug resistance. ✓ Minimizes adverse drug reactions.
Duration and expected time of improvement	<ul style="list-style-type: none"> ✓ Motivates the client to take the medicine. ✓ Improves client compliance. ✓ Helps the client to know when to stop the treatment.
Advise client to complete the treatment	<ul style="list-style-type: none"> ✓ Helps the client to follow instructions and to avoid making mistakes. ✓ Helps to improve client outcome, e.g., getting better. ✓ Prevent disease recurrence.
Tell the client when to go back for review	<ul style="list-style-type: none"> ✓ Helps with follow up of the client. ✓ Helps the prescriber to know which medicine works. ✓ Energizes the prescriber/seller in case of good outcome

8. Record prescription

Once the prescription is dispensed, it is necessary to document the medicines that have been dispensed.

All medicines dispensed by a drug shop should be recorded in the ADS dispensing logbook, as illustrated in the sample ADS Dispensing Log below.

Abbreviations used in prescriptions related to DOSAGE FORM

Abbreviation	Meaning
Tab.	Tablet
Cap.	Capsule
Gutt.	Eye drop
Oint.	Ointment
Syr.	Syrup
Supp.	Suppository
Pess.	Pessary
Inj.	Injection
IM	Intramuscular injection
IV	Intravenous injection

Abbreviations used in prescriptions related to DOSAGE (frequency of medicine administration)

Abbreviation	Meaning	Time interval
o.d.	Once daily	Take medicine every 24hrs
b.d or b.i.d	Twice daily	Take medicine every 12hrs
Tds or t.i.d	Thrice/three times daily	Take medicine every 8hrs
Qid	Four times daily	Take medicine every 6hrs
Stat.	Single dose	Take only one dose of medicine
Prn	Take the medicine whenever necessary	Take medicine whenever symptoms

	(i.e., when symptoms occur)	occur
Noct	Take medicine at night	Take medicine only at night

Abbreviations used in prescriptions related to DURATION of treatment

Prescriptions usually include an abbreviation that indicates the length of time the medicine is to be used/taken.

The duration of treatment is usually written in the form of a fraction.

The *lower number* of the fraction indicates days, weeks, or months.

Remember we have **7** days in a week, **52** weeks in a year, and **12** months in a year.

Examples related to DAYS

Abbreviations	Meaning
5/7	Medicine is to be used for 5 days.
7/7	Medicine is to be used for 7 days.
3/7	Medicine is to be used for 3 days.
14/7	Medicines is to be used for 14 days.
10/7	Medicines is to be used for 10 days.

Examples related to WEEKS

Abbreviation	Meaning
1/52	Medicine is to be used for 1 week.

Abbreviation	Meaning
2/52	Medicine is to be used for 2 weeks.
3/52	Medicine is to be used for 3 weeks.
4/52	Medicine is to be used for 4 weeks.
6/52	Medicine is to be used for 6 weeks.

Examples related to MONTHS

Abbreviation	Meaning
1/12	Medicine is to be used for 1 month.
2/12	Medicine is to be used for 2 months.
3/12	Medicine is to be used for 3 months.
4/12	Medicine is to be used for 4 months.
6/12	Medicine is to be used for 6 months.

Dilution

This is the process whereby a concentrated solution is made weaker. This is usually done before use. Diluting medicines is mostly done with purified water, but other liquids are sometimes also used. Disinfectants and antiseptic solutions, such as hydrogen peroxide, very often require dilution.

How to make a dilution

There are some concentrated liquid preparations that you may have to dilute before dispensing (common for antiseptics and disinfectants). Example: Hydrogen peroxide is often diluted with purified water before use for disinfection or antiseptic purposes. The following are the dilution instructions for **hydrogen peroxide**.

1. First aid

To arrest bleeding and disinfect wounds; dilute 1 part of hydrogen peroxide with 3 parts of purified water, then apply using a piece of cotton wool on the affected area.

2. To remove dirty dressing

Dilute 1 part of hydrogen peroxide with 3 parts of purified water, then soak the dressing in with the diluted solution and leave it for some minutes before removing the dressing.

3. Mouth wash

Dilute one tablespoonful to one glass of water and gargle

Reconstitution

This is a process where a specified amount of water is added to a powder form of a medicine. This method is used when medicines are not stable in water/solution and break down, losing their effectiveness. For this reason, the powder form must be mixed with water (reconstituted) just before use. Examples of powder form of medicine include amoxicillin (syrup) and Pen-V syrup. Once mixed with water, the resulting liquid must be used by a certain date, often only several days (or less) after it is reconstituted. Since different reconstituted medicines will have different periods of effectiveness, always check the product's label to see how long it will be good and how you should store it.

How to re-constitute dry powders

Most of antibiotics/antibacterial preparations, like amoxicillin syrup, are supplied in bottles as dry powders because they are not stable in liquid form. You need to add a specified amount of purified water immediately before you dispense it to the client. The amount to be added is usually indicated on the bottle or label.

Some manufacturers have their bottles marked showing the final level of the reconstituted volume. The following is the procedure for correct reconstitution of powders:

- Disperse the dry powder by first shaking the powders. This disperses any powder lumps in the bottle that would be difficult to disperse if water was added without this step.

- ✚ If the volume to be added is given on the label, measure that amount; if only a mark is given on the bottle, you need not measure any volume of liquid.
- ✚ Now add the water in small volumes, shaking the bottle each time you add a portion of water. Do so until the resulting liquid is completely mixed with the added water.
- ✚ Finally add the remaining water to make up to the marked point or to finish the given volume of liquid you had measured.

How to prepare oral rehydration solution (ORS)

ORS is frequently used in the treatment of diarrhoea. ORS is usually supplied in pre-packed sachets that contain a mixture of salts and sugar, sufficient to make either one-half litre or one litre of ORS.

When you are dispensing ORS to a client, give the client the following instructions about how to prepare it:

To create ½ litre of ORS	To create 1 litre of ORS
<ol style="list-style-type: none"> 1. Measure one half litre of clean, boiled, and cooled potable water in a clean container or pot. <ol style="list-style-type: none"> a. One tumpeco mug or one Nile special beer bottle equals half a litre or 500ml. 2. Add the contents of one-half of a sachet (unless the sachet is for ½ litre) into the water and stir until the liquid is clear and without visible powder particles. The powder is now dissolved. 3. Please note that ORS should be used within 24 hours. If any of it remains after 24 hours, throw it away (because it is no longer good). Prepare a new solution of ORS, following the instructions above. 	<ol style="list-style-type: none"> 1. Measure one litre of clean, boiled, and cooled potable water in a clean container or pot. <ol style="list-style-type: none"> a. One tumpeco mug or one Nile special beer bottle equals half a litre or 500ml. You will have to fill two of them to make one litre of water. 2. Add the contents of one sachet into the water and stir until the liquid is clear and without visible powder particles. The powder is now dissolved. 3. Please note that ORS should be used within 24 hours. If any of it remains after 24 hours, throw it away (because it is no longer good). Prepare a new solution of ORS, following the instructions above.

SESSION THREE: MEDICINE ADMINISTRATION

A route of administration is the path by which a medicine is introduced onto or into the body.

The route of medicine administration is broadly divided into three major routes:

- ✚ Enteral route
- ✚ Parenteral route
- ✚ Topical route

Enteral route

The enteral route involves administering the medicine into the gastrointestinal tract (GIT)

It is classified as follows:

- ✚ Oral route
- ✚ Buccal route
- ✚ Sublingual route
- ✚ Rectal route

Oral route

- ✚ Medicines are given orally through the mouth and swallowed.
- ✚ Most commonly used route of administration because it is cheaper and convenient.
- ✚ Medicines administered by this route are in the form of tablets, capsules, syrups, oral suspensions, and powders.

Advantages of oral route

- ✚ It is a relatively safe route of medicine administration since reversal is possible in the case of a mistake.
- ✚ It is a convenient route since self-medication is possible.
- ✚ It is economical since no expenses are incurred during administration.
- ✚ Some medicines can only be administered by the oral route.

Disadvantages of oral route

- ✚ It has a slow onset of action, therefore it is not good for emergencies.
- ✚ Oral route is not recommended in clients with nausea and vomiting.
- ✚ Some medicines, such as insulin, are destroyed by gastric enzymes and therefore cannot be given by this route.
- ✚ It cannot be used with unconscious clients.
- ✚ It requires co-operative clients to ensure that the medicine is swallowed properly.
- ✚ Drug absorption is not predictable.
- ✚ Some medicines may irritate or damage the stomach lining.

Buccal/sublingual route

- ✚ Medicines are given between the gum and cheek (buccal) or under the tongue (sublingual).
- ✚ Medicines administered by these routes are usually tablets, films, or sprays.

Advantages of buccal/sublingual route

- ✚ Medication is absorbed rapidly.
- ✚ Medicine's effects are not affected by the digestion process.
- ✚ Easier for clients who have trouble swallowing a tablet or capsule.
- ✚ Can be used with unconscious clients.

Disadvantages of buccal/sublingual route

- ✚ Eating, drinking, or smoking can have an effect on how the medication is absorbed and how effective it is.
- ✚ The medication can irritate or cause mouth sores.

Rectal route

Medicines are placed into the rectum in the form of suppositories or enema.

Medicines are intended to give either a local or systemic effect.

Local effect, e.g., use of Anusol in the treatment of haemorrhoids.

Systemic effect, e.g., Diazepam rectal in the treatment of convulsion in children.

Advantages of rectal route

- ✚ Rectal route can be used in children.
- ✚ It can be used by a client who is vomiting.
- ✚ Can be used by unconscious clients.
- ✚ It gives a faster onset of drug action compared to the oral route.

Disadvantages of rectal route

- ✚ It is inconveniencing to the client.
- ✚ It may be embarrassing for the client.
- ✚ It may cause irritation of the rectal mucosa (anus).
- ✚ Variation in drug absorption.

Parenteral route

In this type of route of medicine administration, the medications are given with the help of a needle and syringe.

The parenteral route is preferred for severe infections and emergencies.

Examples of the parenteral route:

- ✚ Intravenous route
- ✚ Intramuscular route

NOTE: It is illegal for an ADS to stock injectable medicines.

Topical route

- ✚ Medicines given by this route are intended to treat localized diseases.
- ✚ Medicines are applied directly to the surface of the skin or mucus membrane.
- ✚ Medicines applied to the skin are in form of creams, gels, lotion, ointments, and powders.
- ✚ Medicines applied to the eye are in form of eye drops and eye ointment.
- ✚ Medicines applied to the vagina are in form of pessaries, creams, and ointments.

- ✚ Medicines applied to the nose and lungs are in form of nasal spray, nasal drops, and inhalers.

Medicine Dosage Forms

Introduction

- ✚ Dosage form is defined as a way the medicine is presented for use by the client.
- ✚ The type of dosage form determines the route of medicine administration.
- ✚ The ADS operator should know the different dosage forms and how they are used.
- ✚ This helps to dispense the medicine properly.

Common dosage forms

- ✚ Tablets
- ✚ Capsules
- ✚ Syrups
- ✚ Oral suspensions
- ✚ Eye drops
- ✚ Ear drops
- ✚ Suppositories
- ✚ Pessaries
- ✚ Creams and ointments

Tablets

Tablets are oral solid dosage forms intended to be given by mouth.

Tablets may be oval, circular, triangular, or square.

After swallowing, tablets have to dissolve before they are absorbed into the blood.

Tablets are used when the client is able to swallow.

Types of tablets include the following:

- ✚ Chewable tablets
- ✚ Effervescent tablets
- ✚ Slow release
- ✚ Enteric coated tablets
- ✚ Sugar coated tablets

Chewable tablets

Chewable tablets are meant to be chewed before swallowing.

The client should drink water after chewing the tablets.

This helps the medicine to move down the stomach.

Examples

- ✚ Magnesium trisilicate tablets for heartburn and peptic ulcers
- ✚ Charcoal for treating excessive gas in the stomach



Magnesium trisilicate



Charcoal

Effervescent tablets

These tablets are dissolved in a small amount of water in a glass forming a solution.

The solution is then taken by the client.

Effervescent tablets work faster than ordinary tabs.



Examples

- ✚ Paracetamol (Parafiz)
- ✚ Multivitamins, e.g., Lavit

Slow release (SR) tablets

These tablets are made in such a way that their action is prolonged.

The labels usually have the term “retard” or an abbreviation such as SR (slow release).

Slow release tablets should be swallowed wholly without chewing or breaking them.



Examples include: diclofenac retard or SR.

Enteric coated tablets

Enteric coated tablets are covered with a substance to prevent them from being destroyed by the gastric acid.

They should be swallowed wholly without crushing or chewing.

Examples



-  Omeprazole used for peptic ulcer
-  Bisacodyl used for constipation

Sugar-coated tablets

These tablets are covered with a layer of sugar to mask the bitter taste.

They should be swallowed wholly without chewing to avoid the bitter taste.

Examples

-  Quinine tablets used to treat malaria
-  Metronidazole used to treat amoebas and trichomoniasis

Film-coated tablets

These are tablets that are coated with a thin layer of film.

The coating may be used to mask the bitter taste or smell.

Examples

-  Metronidazole
-  Quinine

Capsules

Capsules are solid dosage forms in which medicines are enclosed in a small gelatin shell.

Capsules are intended to be swallowed whole although sometimes, if needed and if it does not harm the medicine's action, the capsules may be opened to facilitate taking the medicine.

Capsules are of two types, namely hard gelatin and soft gelatin capsules.


Hard gelatin capsules

These are capsules in which powdered medicine is enclosed in a shell.

Capsules usually have different colours that are sometimes used to help with identification, although since many products have the same colour you must always read the label to verify identification.

Hard gelatin capsules also have the advantage of masking the bad taste of its contents.

Examples

Examples of hard gelatin capsules	Illustration
Ampicillin	
Amoxicillin	
Doxycycline	

Soft gelatin capsules


These are capsules in which liquid medicine is enclosed in a shell.

Soft gelatin capsules are stable and easy to swallow.

The soft gelatin capsules release their content very quickly.

They are best swallowed whole, but some may be opened, (e.g., vitamin A), to facilitate taking the medicine.

Examples

Examples of soft gelatin capsules	Illustration
Vitamin A capsules	
Cod liver oil capsules	
Vitamin E capsules	

Granules

These are preparations consisting of solid, dry grains.

Granules are commonly supplied in single dose sachets.




They are usually intended to be dissolved in water before taking.

Examples of granules	Illustration
Andrews® liver salts	
Eno®	

Mouthwash

Mouthwashes are aqueous solutions that are used to cleanse the mouth or treat diseases of the oral cavity.

Mouthwashes can be used to treat dental diseases or bad breath.

Examples of mouthwash	Illustration
Colgate®	
Listerine®	
Sonatec®	





Lozenges

A lozenge is a solid preparation consisting of sugar and gum.

They are used to treat diseases of the mouth and the throat, e.g., cough or sore throat, etc.

Lozenges are put into the mouth and allowed to dissolve slowly.

Lozenges should never be swallowed whole.


Examples of lozenges	Illustration
Zecuf® lozenges	
Travasil® lozenge	
Strepsils®	
Menthodex®	

Suppositories

Suppositories are solid bullet-shaped preparations designed to be inserted into the rectum (anus).

Suppositories may have a local or systemic effect.

- ✚ Anusol suppositories are used to treat haemorrhoids.
- ✚ Paracetamol suppositories are used to treat pain and reduce fever.

Example	Shape of a suppository
Paracetamol suppositories	
Anusol suppositories	
Diclofenac suppositories	
Diazepam suppositories	
Artesunate suppositories	

Procedure for inserting suppositories


- ✚ Wash the anal area (anus) and gently dry it by patting with toilet paper or clean towel.
- ✚ Wash your hands thoroughly.
- ✚ Gently remove the suppository from its wrapper (packet).
- ✚ Dip the suppository in lukewarm water (not hot) to moisten it and help it enter easily.
- ✚ Lie on your left side with knees bent towards your chest.
- ✚ Relax the buttock just before inserting the suppository.
- ✚ Gently push the suppository inside as far as possible.
- ✚ Continue to lie down for a few minutes and hold the buttocks together.
- ✚ Wash your hands.
- ✚ Remember not to visit the toilet/latrine for at least one hour after inserting a suppository.

Pessaries

These are solid preparations designed to be inserted into the vagina.

They are sometimes inserted with the help of an applicator.

Pessaries are used to treat vaginal candidiasis.

Example	Illustration of a pessary with an applicator
Nystatin pessaries	
Clotrimazole pessaries	

Procedure for inserting a vaginal pessary

- ✚ Wash your hands with soap and water.
- ✚ Remove the pessary from the packet and place it firmly into the applicator.
- ✚ Lie on your back with knees bent towards your chest.
- ✚ Insert the applicator with the pessary as deep as is comfortable into the vagina.
- ✚ Slowly press the plunger on the applicator until it stops.
- ✚ This releases the pessary into the vagina.



- ✚ Gently remove the applicator.
- ✚ Remain in the position for some time to prevent leakage.

Oral suspension

These are liquid preparations for oral use containing one or more active ingredients.

Oral suspensions may be in dry powder for reconstitution or already in liquid form.

Shake the oral suspension before measuring off the uniform dose.




Dry powder for oral suspension	Liquid oral suspensions
<p>Amoxicillin Erythromycin</p> <p>Note</p> <ul style="list-style-type: none"> ✓ Dry powders should be mixed with clean drinking water before use. ✓ Dry powders can typically be kept for 1 week after mixing, but products may vary, so be sure you follow the manufacturer's directions. 	<p>Co-trimoxazole Magnesium trisilicate mixture</p> <p>Note</p> <ul style="list-style-type: none"> ✓ Liquid suspensions do not need the addition of water. ✓ They are ready to be used after shaking.
Dry powder for oral suspension	Liquid oral suspension
	

Topical preparations

Topical preparations are semi-solid preparations intended to be applied to the surface of the skin.

Topical preparations may be in the form of creams, ointments, lotions, and gels.

Topical preparations are intended for external use only.

Examples of topical preparation	Illustration	Use
Hydrocortisone cream 1%		✓ Used to treat eczema and insect bites
Betamethasone ointment		✓ Used to treat eczema
Calamine lotion		✓ To treat chicken pox and herpes zoster

Eye preparations

These are sterile preparations intended to be applied to the eye.

They are in the form of eye drops or eye ointment.

These preparations may contain antibiotics, steroids, or antivirals.

Eye drops are applied to the eye during the day time and ointments at night.

Eye preparation	Illustration	Use
Pro-Beta eye/ear drop Betamethasone (steroid)		✓ Used to treat allergies of the eye (or ear)
Ocucycline eye ointment Tetracycline eye ointment (antibiotic)		✓ Used in neonatal conjunctivitis
Ocumycin eye drops Chloramphenical (antibiotic)		✓ Used to treat bacterial infections of the eye
Dexona eye/ear drop Dexamethasone (steroid) Neomycin (antibiotic)		✓ Used to treat allergies of the eye (or ear) associated with bacterial infection

Inhaler

Inhalers contain solutions or suspensions that are given in the form of sprays.

Inhalers deliver the medicine directly into the lungs.

They are used in the prevention and treatment of asthma.

Examples: Salbutamol (Vental) inhaler.

Drug Interactions

A drug interaction occurs when the effect of one drug is changed by the presence of another substance.

It may occur if two or more medicines are given to the client at the same time.

Drug interactions may also occur with herbal medicine or food eaten by the client.

Drug interactions may involve multiple medicines that are prescribed by the doctor on the same prescription.

Or

They may occur when a prescription medicine is taken with an OTC medicine.

Effect of drug interactions

- ✚ Drug interactions may reduce the overall effectiveness of the treatment.
- ✚ It may increase adverse drug reactions.
- ✚ It may lead to worsening of the disease or death.

Common drug–drug interactions

Drug combination	Effect	Measures to be taken
Doxycycline + iron supplements	✓ The absorption of both medicines will be affected.	✓ Separate administration by 2 hours.
Ciprofloxacin + magnesium antacids	✓ Magnesium antacids reduce the absorption and effectiveness of ciprofloxacin.	✓ Take ciprofloxacin first and wait for 2 hours before taking the antacid.
Birth control pills with amoxicillin	✓ Amoxicillin reduces the effectiveness of the pills.	✓ Tell the client to use extra protection, such as condoms, during the period of use of amoxicillin.

Drug combination	Effect	Measures to be taken
Omeprazole + magnesium antacids	✓ Antacids lead to the destruction of omeprazole in the stomach.	✓ Take omeprazole and wait for 2 hours before taking magnesium antacids.
Charcoal + any drug taken orally	✓ Charcoal prevents the absorption of any drug taken at the same time with it.	✓ Do not take charcoal with any drug at the same time.
Metronidazole + alcohol	✓ Alcohol reacts with metronidazole, making the client vomit a lot.	✓ Do not drink alcohol while on treatment with metronidazole.

Drug–food interactions

Drug–food combination	Effect	Measures to be taken
Ciprofloxacin + milk	✓ Milk reduces the effectiveness of ciprofloxacin.	✓ Take ciprofloxacin and the milk after 2 hours.
Ampicillin + any food	✓ Presence of food in the stomach reduces the absorption of ampicillin.	✓ Take ampicillin 1 hour before food.
Coartem + fatty food	✓ Fatty foods improve the absorption of Coartem and its effectiveness.	✓ Take Coartem with any fatty meal.
Griseofulvin + fatty food	✓ Fatty meals improve the absorption and effectiveness of griseofulvin.	✓ Take griseofulvin with a fatty meal.

SESSION FOUR: MAINTAINING GOOD QUALITY MEDICINES AT THE ADS

How can a medicine outlet prevent poor quality medicines?

Adhering to laws, regulations, policies, and guidelines is the most important way to prevent poor quality medicines in our market. As medicine sellers, it is important that we comply with the regulations discussed previously.

The following guidelines should be followed:

1. Make sure the building where medicines are sold does not allow exposure to moisture, excessive heat and light, and vermin.
2. Cross check all new consignments of medicines for any physical changes in the medicines; these are critical indicators of poor quality.
3. Routinely cross check medicines for quality.
4. Regularly clean the medicine outlet.
5. Maintain the medicines tidily on the shelves. Do not keep medicines on the floor.
6. Keep records of all purchases and sales to help track the source of poor quality medicines.
7. Make sure medicines are adequately packed when they are dispensed to clients.
8. Give clients information on how to keep medicines at home.
9. Remove all expired and damaged medicines from stock and contact the NDA for their proper disposal.
10. Refer to the job aids provided when conducting any tasks in the ADS.

Some signs of poor quality medicines

Medicines have particular properties or characteristics, such as colour, smell, viscosity, clearness, or shape. These are important indicators of quality of the medicines that can be noted through physical and visual examination. Changes in these characteristics may be indicators of

poor quality. Some of the attributes to look for on physical/visual examination of the product include:

✚ Packaging:

- broken
- ripped

✚ Labels:

- missing
- incomplete
- unreadable

✚ Tablets or capsules:

- discoloration
- stickiness
- crushed capsules
- crushed capsules or crumbled tablets
- unusual smell

✚ Liquids:

- discoloration
- sedimentation
- cloudiness
- unusual smell
- broken seal on bottle
- cracks on bottles
- dampness insides packages
- torn packages

✚ ***Expiry date must be indicated on the container. This should not be altered. None of the medicines on the shelves should have reached their expiry date. Sometimes the physical characteristics of the product may change before reaching the expiry date. Such medicines are not fit for human consumption and should be removed from stock.***

Keep all expired and damaged medicines separate from medicines for sale, preferably in a sealed box. Inform the NDA inspector nearest you for information about proper disposal.

Keep a record of all expired medicines. The following should be recorded:

- ✚ Name of the medicine
- ✚ Dosage form and strength
- ✚ Quantity
- ✚ Batch number
- ✚ Expiry date

List of job aids provided to the ADS seller that they should always refer to:

- ✚ For receiving medicines
- ✚ Storing medicines
- ✚ Dispensing medicines
- ✚ Cleaning the ADS
- ✚ ICCM job aid
- ✚ Family planning flip chart

Benefit of using the job aids:

- ✚ Minimization of variation and errors
- ✚ Promotion of the quality of services and medicines
- ✚ Promotion of compliance with regulations
- ✚ Reduction in work effort
- ✚ Help achieve maximum efficiency and effectiveness from the employees
- ✚ Makes it easy to delegate work and shift tasks

Counterfeit medicines

Counterfeits are medicines that are falsely labelled regarding their identity or source. They duplicate or copy existing medicines that are in high demand to create contaminated ones or

medicines that contain little or no active ingredient but have a similar appearance to the original medicines.

To ensure the quality of the medicine dispensed by an ADS, the seller should be on the look out to avoid stocking counterfeit medicines.

- Counterfeit medicines are intended to trick people into buying them as the correct medicine.

Example



- Private pharmacies, clinics, and drug shops are the major buyers of counterfeit medicine.

How to detect counterfeit medicines

What to check for?	Remarks
Price	<ul style="list-style-type: none"> ✓ Counterfeit medicines are usually very cheap compared to the real product. ✓ This is intended to attract buyers to buy the product with the intention of maximizing profits.

What to check for?	Remarks
Source of supply	<ul style="list-style-type: none"> ✓ Counterfeit medicines are usually sold by hawkers who do not have a registered pharmacy or drug shop. ✓ They usually sell on a cash basis. ✓ Some pharmacies may also be involved in wholesaling counterfeits.
Expiry dates	<ul style="list-style-type: none"> ✓ Some counterfeit medicines may not have expiry dates or if they do, it may have been altered. ✓ Expiry date on the primary package may differ from the secondary.
Batch number	<ul style="list-style-type: none"> ✓ The batch number on the main box may differ from that on the blister strip.
Colour and package size	<ul style="list-style-type: none"> ✓ The colour of the counterfeit medicines may differ slightly from an original product. ✓ The measurements of the counterfeit medicine box may differ from the original. ✓ Quality of packaging material is usually poor.
Texture of the tablet	<ul style="list-style-type: none"> ✓ Counterfeit medicines usually have a rough surface and easily get broken or form powders. ✓ Or the tablets tend to stick together.

Consequences of stocking counterfeit medicines

The use of counterfeit medicines may have long term effects on both the business and the clients being served.

Effects on the client

- ✚ Use of substandard antibiotics may lead to the development of resistance.
- ✚ Use of counterfeit medicines may worsen the disease and subsequently cause death.
- ✚ Use of counterfeit medicines increases the chances of developing adverse drug reactions, which may lead to permanent disability.
- ✚ Use of counterfeit contraceptives, e.g., pills and condoms, may lead to unwanted pregnancies that may progress to unsafe abortions and death.
- ✚ Transmission of STIs.

Effects on the business

Stocking of counterfeit medicines may lead to a lack of confidence in the drug shop since most of your clients won't get better.

Stocking of counterfeit medicines may lead to legal closure of the drug shop by the police or NDA.

Stocking of counterfeit medicines may lead to the loss of income as a result of a reduced number of clients.

Stocking of counterfeit medicines may lead to the loss of your practicing license as result of unethical conduct.

Where to report?

In case a counterfeit medicine is identified, report to any of the following:

- ✚ NDA representative (DADI, police, supplier) in your area
- ✚ District Health Officer

SESSION FIVE: HANDLING ADVERSE DRUG REACTIONS AT THE ADS

Definitions of terms

Side effects

These are unwanted but expected effects of a medicine that occur when a medicine is given in the right dose (e.g., Piriton makes the client feel sleepy).

All medicines produce side effects, whether prescription-only medicines or OTC medicines.

Adverse effects

These are unexpected effects of a medicine that occur when given at the normal dose.





Adverse drug reaction

A response to a medicine that is harmful and not intended.




These reactions occur when a medicine is given in the usual dose.

Adverse drug reactions (ADR) may have a major effect on the client.

Serious drug reactions may lead to:

-  Prolonged hospitalization
-  Death
-  Permanent damage to organs
-  Birth defects in newborn children

Examples of consequences of adverse drug reactions

Example	Remarks
	<p>Septrin reaction</p> <ul style="list-style-type: none"> ✓ This was a male HIV + client who was given Septrin for prophylaxis. ✓ He developed severe reactions and the medicine was stopped.
	<p>Reaction to antiretrovirals</p> <ul style="list-style-type: none"> ✓ This adult female client reacted to one of the antiretrovirals in the combination that had been given to her to treat HIV.
	<p>Body deformity</p> <ul style="list-style-type: none"> ✓ It occurred when a medicine that was thought to be safe for use during pregnancy was given to a pregnant woman. ✓ The baby was born with deformities. ✓ This explains the need to report ADRs so that such cases can be minimized.

Who is at highest risk of adverse drug reactions?

The chances of ADRs are higher in the following categories of people:

- ✚ People above 60 years of age
- ✚ A person taking many medicines at the same time
- ✚ A person using a newly discovered medicine, e.g., medications for HIV
- ✚ Pregnant mothers
- ✚ Alcoholics
- ✚ Drug abusers

Role of ADS in reporting ADRs

- ✚ Give proper instructions to clients, including the caregivers.
- ✚ Inform client/caregiver to immediately report back in case of any drug reaction.
- ✚ Refer all cases of ADRs to the nearest health unit.
- ✚ Ask all female clients whether they are pregnant or breast feeding and ensure that medicine is safe before dispensing it.
- ✚ Record ADRs on the NDA forms and send them to the DHO's office or the representative of the NDA.

SESSION SIX: BASIC COMMUNICATION SKILLS IN THE ADS

Introduction

- ✚ Communication is the exchange of messages between two people (sender & receiver).
- ✚ In dispensing practice, communication involves the seller and the client or caregiver.
- ✚ Effective communication involves sincere compassion and concern for the client and his/her wellbeing.
- ✚ Effective communication plays a very big role in ensuring the appropriate use of a medicine by the client and also enhances the disease healing process.

Terms used in communication

- ✚ **A sender/speaker:** This is a person who creates and delivers a message.
- ✚ **A receiver/listener:** This is a person to whom the sender directs the message.
- ✚ **A message** is the element being transferred between the sender and the receiver.
- ✚ **Medium of communication:** This is a channel through which the message is sent to the receiver.

Note: Communication is successful when the receiver interprets the sender's message as it was intended.

Types of communication

There are two major types of communication:

- ✚ Verbal communication
- ✚ Nonverbal communication

Verbal communication—What is said?

- ✚ Verbal communication involves the use of words.
- ✚ This type of communication is used during dispensing and client assessment.
- ✚ Verbal communication requires the receiver to be attentive in order to remember the information given to him/her.

Nonverbal communication—How you look and act!

- ✚ Nonverbal communication may include: tone of voice, physical appearance, touch, eye contact, rolling the eyes, yawning, leaning forward or backward, nodding the head, checking the watch, facial expression, being late, etc.
- ✚ Nonverbal communication is taken more seriously than verbal communication, therefore, always be conscious when using this type of communication.
- ✚ In a typical communication process, both verbal and nonverbal communication is used at the same time.

Note: For effective communication, there should be similarity in the messages conveyed by both verbal and nonverbal messages.

Medium of communication

Communication can be written or oral and can be sent through various media:

- ✚ Radio station, e.g., village community radios.
- ✚ Writing/drawing information, e.g., newspapers, writing on dispensing envelopes or prescriptions.
- ✚ Music, dance, and drama.

Qualities of a good communicator

Effective communication during dispensing requires a person to have all or some of the qualities outlined below.

Quality	Importance
Ability to keep the client's information secret (confidentiality)	<ul style="list-style-type: none">✓ Helps to earn/builds trust from the client.✓ Encourages sharing of information.
Ability to use simple and clear messages (Do not use medical terms when talking to clients)	<ul style="list-style-type: none">✓ Client gets clear instructions regarding medicines.✓ Improves client's compliance with treatment.✓ Helps the client to make informed decisions.

Quality	Importance
Empathy (putting yourself in the client's situation)	<ul style="list-style-type: none"> ✓ Shows interest and concern for the client's wellbeing. ✓ Improves information exchange.
Active listening	<ul style="list-style-type: none"> ✓ Helps to gather information from the client for decision making/diagnosis. ✓ Helps the client/caregiver to give all the relevant information.
Have a positive (caring) attitude	<ul style="list-style-type: none"> ✓ Helps the client to feel free to talk to the seller.
Good counseling skills	<ul style="list-style-type: none"> ✓ Helps the client to make informed decisions and use the medicines appropriately.
Ability to follow up on the client	<ul style="list-style-type: none"> ✓ Clients feel cared for. ✓ Helps the client to report the sickness early enough.
Using appropriate body language	<ul style="list-style-type: none"> ✓ Shows that you are interested, attentive, and willing to help the client.
Good questioning skills	<ul style="list-style-type: none"> ✓ Use open-ended questions that require explanation. ✓ This helps to get as much information as possible from the client. <p>Note: Limit use of questions that require a “Yes” or “No” answer.</p>

Active listening

Good communicators are also good listeners; therefore, to communicate very well, the seller should do the following:

- ✚ Clear your mind of anything that can interfere with listening, e.g., turn phones off/ in silence, reduce the volume of the radio/TV, etc.
- ✚ Face the sender or speaker.
- ✚ Focus your full attention on the speaker.

- ✚ Demonstrate your full attention through appropriate nonverbal gestures, e.g., nodding, sitting upright.
- ✚ Maintain eye contact as much as possible.
- ✚ Do not make quick judgments about what you are hearing.
- ✚ Do not interrupt the speaker.
- ✚ Be close enough to ensure privacy.

Barriers to effective communication

- ✚ Use of complex medical terms
- ✚ Noise in the background
- ✚ Lack of privacy
- ✚ Lack of concentration from the seller
- ✚ Unable to speak the language the client understands best
- ✚ Poor attitude of the seller
- ✚ Hearing problem of the client
- ✚ Reluctance by the client to discuss sensitive issues
- ✚ Misleading information by the client
- ✚ Misleading beliefs/myths
- ✚ Lack of patience
- ✚ Conflicting source of medical information
- ✚ Presence of physical barrier between seller and client
- ✚ Client's fear about the disease
- ✚ Being absent-minded
- ✚ Cultural and religious differences

- ✚ Effects of medicines the client is using
- ✚ Pain
- ✚ Angry clients & sellers

How to overcome barriers to effective communication

Effective communication is one of the key factors in health care delivery.

To overcome barriers to effective communication during dispensing, the seller should practice the following:

- ✚ Have a caring attitude as you talk to the client, e.g., smile.
- ✚ Do not act as if you are in a hurry.
- ✚ Listen carefully to the client's problem and concern.
- ✚ Have eye contact, i.e., look at the client in the eye.
- ✚ Involve the client in the decision making.
- ✚ Provide privacy to enable the client to talk freely.
- ✚ Clarify the client's communication if you are not sure of the meaning.
- ✚ Explain why the treatment is necessary.

How to handle an angry client

When dealing with an angry client, try to determine the cause and apologize in order to calm the client.

The following guidelines may be helpful:

- ✚ Never respond in a rude way to an angry client.
- ✚ Remain calm and attentive.
- ✚ Listen attentively to the client's concern.
- ✚ Apologize to the client if necessary.

- ✚ Do not raise your voice.
- ✚ Watch your body language.
- ✚ Express your concerns and interests.
- ✚ Address the client's concern.
- ✚ If you cannot solve the problem, invite a supervisor or co-worker to help.

Consequences of poor communication

- ✚ Client may not be satisfied with the instructions, thus leading to poor client compliance.
- ✚ Client may not take the medicine appropriately if the message is mixed up.
- ✚ May lead to overdose or under dose of medicines.
- ✚ May lead to loss of trust in the medical personnel and the drug shop.
- ✚ Loss of income for the drug shop.
- ✚ Clients may experience adverse effects because of inadequate counselling.