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HANDBOOK OF SUPPLY MANAGEMENT AT FIRST-LEVEL HEALTH CARE FACILITIES

1st version for country adaptation

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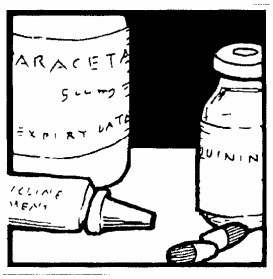


Introduction

All first-level health care facilities, namely primary health care clinics and outpatient departments based in district hospitals, use medicines and related supplies. It takes a team effort to manage these supplies, involving all health care facility staff: doctors, nurses, health workers and storekeepers. This is especially true in small facilities with only one or two health workers. Each staff member should know how to manage all supplies at the health care facility correctly. Each staff member has an important role.

The *Handbook of Supply Management at First-Level Health Care Facilities* describes all major medicines and supply management tasks, known as the standard procedures of medicines supply management[1] at first-level health care facilities. Each chapter covers one major task, explains how the task fits into the process of maintaining a consistent supply of medicines, and recommends which standard procedures to use. Annexes at the back of the handbook contain various checklists and examples of forms which can be introduced as needed at your health care facility.

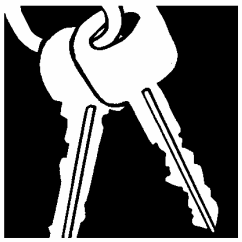
This handbook is part of a package used in an integrated training and capacity-building course targeted at first-level health care facilities. It can be used in conjunction with the existing Integrated Management of Adult and Adolescent Illness (IMAI) strategy developed by WHO. It can also be used for basic training activities independent of IMAI training courses.

After training, health workers returning to their health care facilities should explain the standard medicines management procedures to their staff. Whenever possible, all the facility's staff should rotate through the pharmacy store and dispensary to learn these procedures so that supplies will be managed correctly.

Ideally health workers who have been trained will receive structured follow-up visits. This may be part of routine monitoring and supportive supervision to ensure that what was learnt by the trained health workers is implemented correctly. During these follow-up visits, the trained health workers are supported to further improve their supply management practices.

Different countries have different ways of managing their delivery and distribution of medicines and related supplies. Some of the procedures described in this handbook may differ slightly from practices existing in different countries. In addition, some tasks described may not be relevant for some first-level health care facilities. If in doubt about any of the procedures in the handbook, national programme or district coordinators or supervisors should be contacted for further clarification. This handbook should be used in support of national training activities in supply management.

1 The contents are based on the publication Drug Supply Management Training. Geneva: WHO and BASICS; 1998.



1. How to prepare the pharmacy store

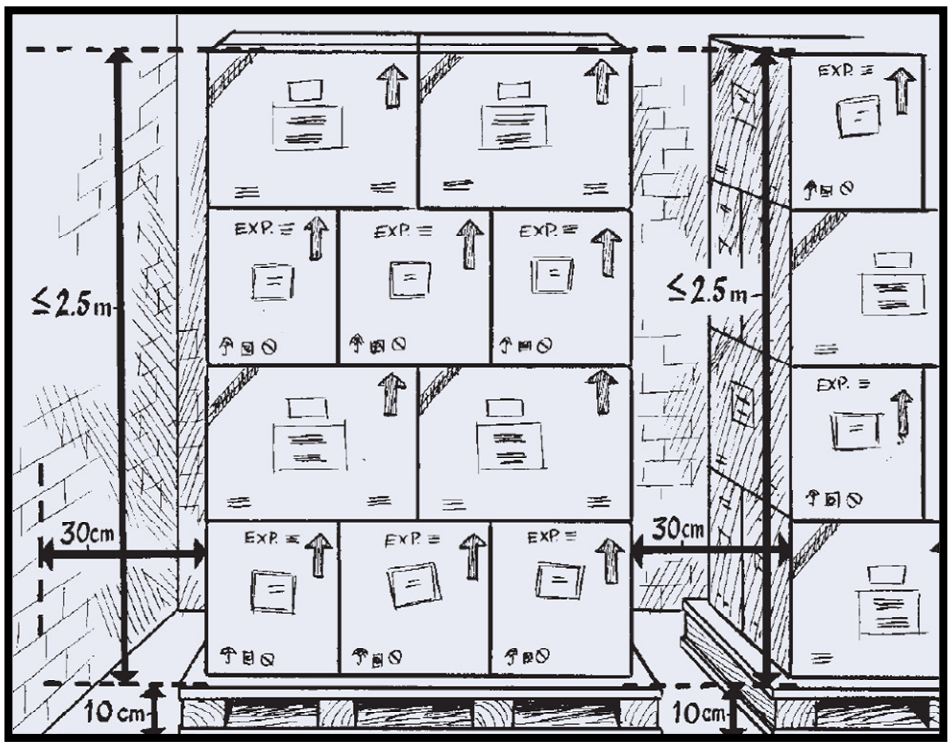
Medicines and related supplies, for example laboratory test kits and reagents, are expensive and valuable, especially medicines and diagnostics for HIV and AIDS. They need care otherwise they may deteriorate. If they deteriorate, they may lose their potency, have the wrong effects on patients or, in the case of test kits, they may produce incorrect results.

Therefore, items in stock should always be stored in a proper storage space. Your health care facility should have a room that can be locked, that is in good condition and is well organized. That room will be your pharmacy store. It should be separate from where you dispense medicines. You should keep all supplies in the store and take (or issue) what you need daily from the store to a dispensing area. If your health care facility does not have a room to use as a pharmacy store, you should have a lockable cupboard or cabinet with shelves to serve as your "store".

For a quick reference on procedures related to physical conditions, see the Physical Conditions Checklist in Annex 1.

IT IS IMPORTANT TO ARRANGE YOUR STORE ROOM PROPERLY

(Boxes should be stored with sufficient space from the wall and from the floor)



Source: JSI/WHO/UNICEF. Guidelines for the storage of essential medicines and other health commodities. Arlington, VA.: John Snow Inc./DELIVER; 2003.

To prepare a store at your health care facility

1. Choose a secured room at your health care facility to be the store.

Keeping supplies in a store makes it easy for you to always know what supplies you have. It is also a simple way to keep supplies safe. Secure all openings with grills or bars to prevent theft.

The store should be large enough to fit all of the supplies. It should be a room or, in the case of a very small health care facility, a cupboard or cabinet that is kept locked. Inside the store, there should be an additional secured area where narcotics and expensive items such as antiretroviral (ARV) medicines for HIV and AIDS are kept.

a. Lock your store.

Ideally, put two locks on the door of the room or cabinet. The locks should have different keys. Limit the number of keys that are made, especially for areas where narcotics and expensive items are kept.

Limit access to the store. Only the most senior storekeeper or pharmacist, and perhaps one other staff member, should have access to the store.

Locking the store helps to control the movement of stocks. It also prevents medicines and other supplies from disappearing.

2. Keep your store in good condition.

In principle, extreme temperatures, light or humidity may affect medicines and cause supplies to deteriorate. Heat affects all medicines, especially liquids, ointments and suppositories. Some medicines which are light sensitive, such as injectables, spoil very quickly when exposed to light. Humidity can spoil tablets and capsules as they can easily absorb water from the air making them sticky and causing them to deteriorate. All products need to be kept in their original packaging, containers or boxes. Follow the storage instructions given on the labels.

a. Inspect the physical structure of the store regularly.

Repair any damage to the roof, walls, door, windows and floor.

b. Control the temperature in the store.

Check that there is a ceiling in the store. If there is no ceiling, build one. You could use cardboard from discarded boxes.

Allow warm air to escape. Open the door and windows while someone is in the store. Put air vents in the walls or ceiling.

Be aware that refrigerators standing in the same room generate additional heat. This can raise the temperature in the room. If you have a fan, use it. Keep it in good working condition. If your store is small and refrigerators raise the temperature, move them out to other place and put two security locks on the door of the refrigerator.

c. Control the light in the store.

If light enters the store through windows, block the direct light. Either paint the windows white or hang curtains.

d. Prevent water damage and control humidity.

Check that there is good drainage. There should be drainage channels around your store. The roof should have gutters.

Allow air to move freely. Secure the air vents and windows.

Repair leaks as soon as they occur, to reduce moisture and water damage.

Containers of tablets and capsules may be packed with a sachet of desiccant (non-edible drying crystals). The desiccant keeps the inside of the container dry. Do NOT open the sachet. Keep the sachet in the container. Keep the container closed except when dispensing the medicines.

e. Keep the store free of pests.

Some common pests are rats, cockroaches, ants and wasps. Spilled items may attract pests. Clean spills and remove broken containers immediately. Use screens to keep out insects.

3. Keep your store clean and organized.

In a clean and organized store, it is easy to find supplies. The supplies are likely to be in good condition and ready to be used.

a. Clean the store and keep it tidy.

Dust contaminates supplies and makes labels difficult to read. Spills and breakages collect dirt.

Mop the floor, dust the shelves and wipe down the walls regularly.

b. Store supplies on shelves.

Using shelves is an easy way to organize supplies.

If there are no shelves in your store, make temporary shelves. Use boxes, stacked bricks and boards or pallets. Do NOT put boxes or boards directly on the floor. The floor may be wet. Moisture may rot the cardboard or wood.

Boxes and boards should be regarded as a temporary measure while you wait for adequate shelves to be made. Air should circulate around the boxes, which should be stored with sufficient space from the wall and from the floor (see page 3).

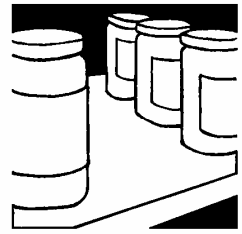
c. If there is a refrigerator or freezer, keep it in good working condition.

Use the refrigerator to store heat sensitive medicines and laboratory supplies. Opening and closing the door may increase the temperature and cause medicines or test kits to deteriorate. Do NOT keep staff food in the refrigerator.

Follow the instructions you received from your supervisor or district coordinator on how to pack a refrigerator or freezer.

Record the temperature daily. Check that there is enough space around the refrigerator so that air can move freely.

KEEPING YOUR STORE CLEAN AND TIDY
MAKES MANAGING YOUR SUPPLIES EASIER!



2. How to organize supplies

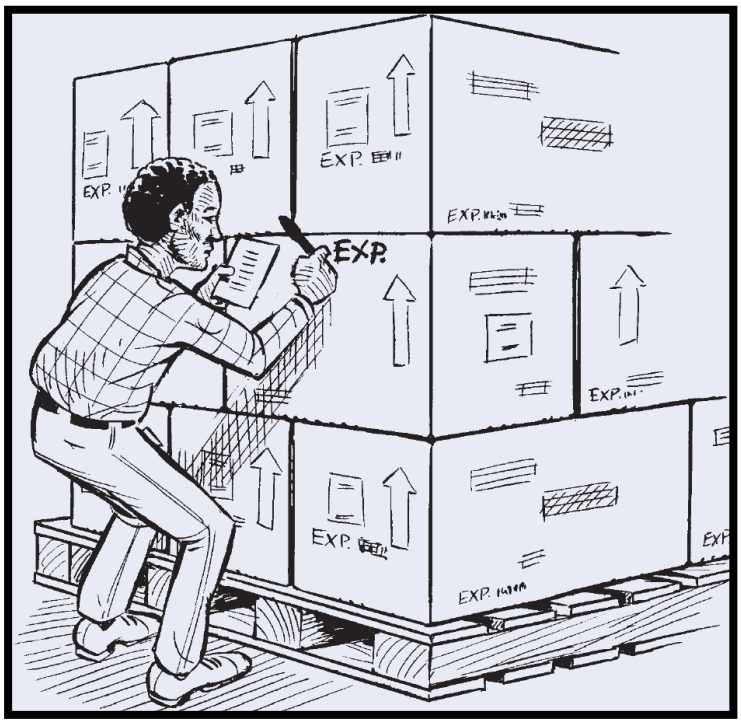
The organization of medicines and related supplies in the pharmacy store should facilitate the services offered at your health care facility. Anyone who works in your store should have access to and be able to find supplies easily.

All products should be stored in their original containers at all times. Similar supplies should be shelved together, arranged in alphabetical order or by therapeutic class or by classified groups (e.g. injectables, tablets, sundries) using their **generic name**. Items with a shorter shelf-life (short expiry dates or older stock) should be placed in front of similar items with a longer shelf-life (later expiry dates or newer stock).

For a quick reference on storage procedures, see the Storage Procedures Checklist in Annex 2.

ALWAYS KNOW WHAT YOU HAVE IN YOUR STORE

(make sure that the expiry dates are visible while the products are in storage)



Source: JSI/WHO/UNICEF. Guidelines for the storage of essential medicines and other health commodities. Arlington, VA.: John Snow Inc./DELIVER; 2003.

To organize medicines and related supplies in your store

Follow the procedures below in the regular storage area, the refrigerated area and in the secure area.

1. Store similar items together on the shelves.

When organizing supplies, "similar" refers to the route of administration (external, internal or injectable) and form of preparation (dry or liquid medicines).

Store medicines in the following classified groups: externals, internals and injectables. Shelve tablets and capsules together. Shelve liquids and ointments together. Shelve other supplies together. Organize each group of items in alphabetical order.

In the case of ARVs, store them separately from other medicines, e.g. in a lockable cupboard or cabinet. Arrange by therapeutic class or by their inclusion in first-line, substituted first-line or second-line antiretroviral treatment (ART) regimens.

In the case of controlled substances, such as narcotics and other opioid analgesics and psychotropic medicines, always store these substances in a secure area and in accordance with national guidelines.

EXAMPLE: STORING SIMILAR MEDICINES TOGETHER

- In the pharmacy store of the Taylor Clinic, ketoconazole 2% cream and ketoconazole 200 mg tablets are available. The cream is put on the skin (external) and the tablets are taken orally (internal). The health worker stores the cream with the externals and the tablets with the internals.
- Also in the store, amoxicillin 250 mg tablets and amoxicillin 125 mg/5 ml oral suspension are available. Both items are internals. The health worker stores the tablets with the other tablets and capsules. The oral suspension is placed with other liquids.
- A new supply of nevirapine tablets has arrived. The health worker stores the tablets in a locked cabinet with the other ARV tablets that are available.

If there are three or more shelves in your store, organize your supplies in the following way:

TOP SHELVES	Store dry medicines (tablets, capsules, oral rehydration packets). Use airtight containers. If the top shelf is near the ceiling or out of your reach, use that shelf to store items that are NOT sensitive to heat and are NOT used regularly.
MIDDLE SHELVES	Store liquids, including injectables and ointments. Do NOT put dryl medicines below them. If liquids leak, the medicines may spoil.
BOTTOM SHELVES	Store other supplies, such as surgical items, laboratory supplies, condoms and labels. Remember, do NOT store anything directly on the floor.

Store items, such as lopinavir/ritonavir and HIV test kits, in a refrigerator or freezer in accordance with the manufacturer's instructions.

2. Find the generic name of each medicine in your store.

The generic name of a medicine should be listed on its label. The generic name is different from the brand name. The generic name is the chemical name of the medicine. The brand name is a name given by the manufacturer.

There may be many brand names for the same generic medicine. For example, some of the brand names for cotrimoxazole (sulfamethoxazole + trimethoprim) are Cotrex, Cotrim, Bactrim and Septrin.

3. Arrange and label the supplies on the shelves.

Within each group, arrange the supplies in alphabetical order by generic name. Allow enough space for each item.

Group identical items in amounts that are easy to count, such as in pairs or groups of five or ten. Store injectables in groups of ten.

Print the generic name of each item on a label. Attach the label to the front of the items on the shelf.

When you organize your supplies in this way, it will be easy for you to see what and how much you have. You will be less likely to confuse items that are similar in appearance or name.

4. Store all medicines and related supplies with expiry dates by using "FIRST EXPIRY FIRST OUT" procedures.

Manufacturers print dates on containers to show how long the contents will remain effective. The dates are called expiry dates. After the expiry date, medicines may have reduced, adverse or no effects on patients. Expired tests for HIV and AIDS may give a false result. As a general principle, do NOT use expired products.

At regular intervals check all stocks in your store for expiry dates. Put items with shorter expiry dates in front of those with longer expiry dates. If two containers have the same expiry date, put the newly received one behind the one already on the shelves.

This method is referred to as FEFO, which is **FIRST EXPIRY FIRST OUT**. FEFO procedures reduce waste caused by product expiry.

The order in which you receive products is not necessarily the order in which they will expire. Products you received most recently may expire sooner than the products you received earlier. It is extremely important to check expiry dates and to make sure that the dates are visible while the products are in storage.

5. Store medical supplies and other commodities without expiry dates by using "FIRST IN FIRST OUT" procedures.

Store items with no expiry dates (e.g. soaps and detergents) in the order received. Put newly received items behind the items already on the shelves. There may be a manufacture date on the container, indicating the older stock that should be used first.

This method is referred to as FIFO, which is **FIRST IN FIRST OUT**.

6. Remove expired and poor quality items from the store.

Poor quality or damaged medicines and related supplies are as risky as expired ones. Products of different types, such as liquids, tablets and injectables, show damage in different ways.

The Indicators of Poor Quality or Damaged Supplies List (see box) describes what to look for when identifying poor quality items. Use it to help you determine unacceptable items in your store.

a. Identify all expired and other poor quality medicines and related supplies.

Follow your health facility's policy. In case of doubt, contact your supervisor or district coordinator.

b. Identify overstocked items and any items that are no longer used at your health care facility.

If items are still within their expiry date, arrange for them to be returned to central stores or sent to other facilities where they are needed. Follow your health facility's policy to remove these items. In case of doubt, contact your supervisor or district coordinator.

c. Keep a record of the removal of medicines and related supplies.

You will learn about record-keeping in the next chapter, How to Keep Records of Supplies. Each time you remove a poor quality or damaged item from your store, make sure you put it in writing. Note the date, time, name of a witness and manner of removal on the card. Follow your health facility's policy to remove these items. In case of doubt, contact your supervisor or district coordinator.

ORGANIZING YOUR STORE

MAKES IT EASIER FOR YOU TO MANAGE!

INDICATORS OF POOR QUALITY OR DAMAGED SUPPLIES

PACKAGING, LOOK FOR:

- Broken or ripped packaging (vials, bottles, boxes, etc.)

LABELS, LOOK FOR:

- Missing, incomplete or unreadable labels

IF LIQUIDS, LOOK FOR:

- Discolouration
- Cloudiness
- Sediment
- Broken seal on bottle
- Cracks in ampoule, bottle or vial
- Dampness or moisture in packaging
- Torn or ripped packaging

IF LATEX PRODUCTS, LOOK FOR:

- Dryness
- Brittleness
- Cracks

IF LUBRICATED LATEX PRODUCTS, LOOK FOR:

- Sticky packaging
- Discoloured product or lubricant
- Stained packaging
- Leakage of the lubricant (moist or damp packaging)

IF FOIL PACKS, LOOK FOR:

- Perforations in the packaging

IF CHEMICAL REAGENTS, LOOK FOR:

- Discolouration

IF TABLETS (PILLS), LOOK FOR:

- Discolouration
- Crumbled pills
- Missing pills (from blister pack)
- Stickiness (especially coated tablets)
- Unusual smell

IF CAPSULES, LOOK FOR:

- Discolouration
- Stickiness
- Crushed capsules

IF INJECTABLES, LOOK FOR:

- Liquid not returning to suspension after shaking

IF STERILE PRODUCTS (including intrauterine devices), LOOK FOR:

- Torn or ripped packaging
- Missing parts
- Broken or bent parts
- Moisture inside the packaging
- Stained packaging

IF TUBES, LOOK FOR:

- Stickiness
- Leaking contents
- Perforations or holes in the tube

Adapted from: JSI/WHO/UNICEF. Guidelines for the storage of essential medicines and other health commodities. Arlington, VA.: John Snow Inc./DELIVER; 2003.

3. How to keep records of supplies

It is important to keep good records of all of the medicines and related supplies you have in stock. This helps you to understand the flow of supplies into and out of your health care facility. You will also know:

- What items are available in stock
- How much is available of each item in stock
- How much stock is used on a regular basis
- When and how much of an item should be reordered.

Keeping records serves as the basis for the information needed when ordering new stocks of medicines and other supplies. This is especially important for chronic care programmes that will continue to enrol new patients, such as chronic HIV care and ART for HIV and AIDS patients.

Keeping records saves you time and protects you. If you are accused of theft or misuse of supplies, you will be able to refer to your records. Your records will document the movement of supplies. They can show that you are not responsible for the problem.

There are different ways of keeping records. The procedures recommended in this chapter are based on the use of a standard stock card format. Your health care facility or programme may have its own stock card format. Stock cards can be made or modified to fit any type of record-keeping system.

SPECIAL DONOR REQUIREMENTS

Donors may have special donor requirements for medicines and related supplies that they give to health facilities. Know the requirements before you accept such donations. Some examples of special donor requirements may include:

- Restricting those to whom the donated treatment can be supplied (e.g. nevirapine donation for Preventing Mother-to-Child Transmission only).
- Limiting which health care facility staff can prescribe the donated items to patients (e.g. only physicians allowed to write prescriptions for antiretroviral medicines).

If your facility accepts such donations, make sure your team knows if there are special donor requirements, what they are and how they apply to the management of medicines and related supplies in your store.

KEEPING RECORDS

For special recording and reporting requirements, it is likely that you will keep the donor's items separate from the same items that your facility received from the central store or other regular suppliers. In such cases:

- You will also have to keep separate stock records.
- Be sure you know how to do this and have the required forms available as soon as the donor's shipment of supplies arrives.

For a quick reference on record-keeping procedures, see the Stock Card Checklist in Annex 3 and the Stock Card in Annex 7.

The stock card

There should be a stock card for each item in your store. Keep the stock card with the item on the shelf. Use the stock card to track the movement of the item. Record when and how the item is used. This includes all movements, such as when a new shipment of an item arrives at the store, when an item is moved out of the store room to the dispensary, or when an item is dispensed directly to a patient.

If your health care facility receives supplies from donors, there may be special requirements. Follow the instructions you have received from your supervisor or district coordinator.

See the example of a stock card below. The top of the stock card lists:

- Item, name of product including its form and strength
- Code number, number that identifies the item, if there is one
- Unit + size, type of container: tin, bottle, tube, blister package, etc. + amount of item in the container
- Price, per unit cost, if this information is collected at your health care facility
- Reorder level, number of units needed in stock, below which an order should be placed to reach this level once again (threshold level for re-ordering).
- Name and address of your facility, if needed.

EXAMPLE: STOCK CARD

ITEM: CODE NUMBER:

UNIT + SIZE: PRICE: REORDER LEVEL:

DATE	RECEIVED FROM	QUANTITY RECEIVED	ISSUED TO	QUANTITY ISSUED	BALANCE IN STOCK	REMARKS	SIGNATURE

There may be an item in your store that has different forms, strengths or unit sizes. Examples of differences are:

- **Forms:** a medicine can be in **tablet**, **liquid** or **ointment** form
- **Strengths:** e.g. amoxicillin can be in **250 mg** tablets or **500 mg** tablets
- **Unit sizes:** a tin of tablets can contain **50**, **100**, **500** or more tablets.

If you have an item in your store with more than one form, strength or unit size, use a separate stock card for each one. **Do NOT use the same card for different forms, strengths or unit sizes of an item.**

The stock card also has columns for information about movement of the item:

- DATE, when item is received into the store or issued out of the store
- RECEIVED FROM, name of supplier
- QUANTITY RECEIVED, number of units received at the store
- ISSUED TO, name of dispensing area where item will be dispensed to patients
- QUANTITY ISSUED, number of units issued out of the store
- BALANCE IN STOCK, number of units remaining in the store
- REMARKS, important information about the movement of the item, batch numbers, expiry dates, borrowed from or returned to other health facility etc.
- SIGNATURE, person who records the movement of the item.

When you record information on a stock card:

- **Use a pen** to record ITEM, CODE NUMBER, and UNIT + SIZE and all information about the movement of the item. This information does not change.
- **Use a pencil** for the PRICE and REORDER LEVEL. This information may change. (REORDER LEVEL is discussed in the next chapter, How to Order Supplies).
- **Use a different coloured pen** (e.g. red) only for inventory control.

The information that you collect in the issued to and quantity issued columns records how much of the item is used on a bulk level. If you also use the stock card in the dispensary, the information that you collect records how many single units of the item, such as tablets, are given to patients over a given amount of time, such as daily, weekly, monthly, etc.

The information that you collect in the balance in stock column helps you to determine when it is time to order more and how much to order.

In the REMARKS column, record information about the stock:

- In the first line, record the words "balance brought forward" if this is a replacement stock card or "new stock" if this is the first time you are keeping this item in your store.
- For new or reordered stock, record the order requisition number, expiry date and price, if necessary.
- For expired, poor quality or overstocked items, record information about the removal of the items.
- Record any other information that is important to the management of medicines and related supplies at your health care facility.

Record every time you receive or issue an item. Record only one movement (that is, one receipt or one issue) per line. Record at the time of movement. See the examples on the stock card below.

EXAMPLE: STOCK CARD

ITEM: *Paracetamol 500 mg tablets* CODE NUMBER: *P500*

UNIT + SIZE: *Tin of 1000* PRICE: REORDER LEVEL: *3*

DATE 2005	RECEIVED FROM	QUANTITY RECEIVED	ISSUED TO	QUANTITY ISSUED	BALANCE IN STOCK	REMARKS	SIGNATURE
30/4					6	Stock Check	PG
5/5			Disp	1	5		KT
30/5			CMS	3	2	Return to CMS, expired 01/5	PG
7/6			Disp	1	1		KT
15/6	CMS	6			7	Req # 031 Exp 01/12	PG
22/6			Clinic	2	5		PG

To keep accurate stock records

Follow the procedures below to record the movement of items in and out of your health care facility's store.

1. Make a stock card for each item in your store.

This includes medicines, vaccines, diagnostic kits and related supplies. Remember that there may be more than one card needed for the same item. Donors may require that you keep their items separate from the stock received from central stores or other suppliers. You will need a separate stock card. This practice helps you to report back to donors on the exact use of the medicines they donated, if needed.

2. Keep the stock card with the item on the shelf.

Attach the card to the front of the shelf near the label of the item or place the card with the containers of the item on the shelf.

3. Record on the stock card every time you receive or issue an item.

Use a pen. This information does not change. Record at the time of movement, NOT at the end of the clinic session, the day, the week or the month.

a. Record all items when you receive them.

When you receive an item, put it in its place on the shelves. Record its movement on its stock card.

1. Record the DATE of receipt.
2. Record where the item was RECEIVED FROM.
3. Record the QUANTITY RECEIVED in units.
4. Add the QUANTITY RECEIVED to the previous BALANCE IN STOCK.

EXAMPLE:

On 6 December, there is **1 tin** of amoxicillin 250 mg tablets in stock. The health worker receives **12 tins**. The new BALANCE IN STOCK is **13 tins** of amoxicillin 250 mg tablets.

1 tin + 12 tins = 13 tins

5. Record the new BALANCE IN STOCK.
6. Record the requisition number of the order and the expiry date of the item in the REMARKS column.

b. Record an item when it is issued out of the store.

When an item goes out of the store, it should be a whole unit. Do NOT issue partial units.

1. Record the DATE of issue.
2. Record where the item was ISSUED TO.
3. Record the QUANTITY ISSUED in units.
4. Subtract the QUANTITY ISSUED from the previous BALANCE IN STOCK.

EXAMPLE:

On 20 December, there are **13 tins** of amoxicillin 250 mg tablets in stock. The health worker finds **1 tin** of amoxicillin that has expired. She sends (issues) the tin back to the medical supplier. The new BALANCE IN STOCK is **12 tins** of amoxicillin 250 mg tablets.

13 tins - 1 tin = 12 tins

5. Record the new BALANCE IN STOCK.
6. Record any significant information about the movement of the item in the REMARKS column.

4. Always keep an accurate running tally of the number of units in the BALANCE IN STOCK column.

You may have partial units remaining at the end of the clinic session. If so, do NOT put them back into the store. Lock them in the dispensary until the next session.

Make sure that the balance in stock number on the stock card is the same as the number of containers of the item in the store.

5. Count your stock at regular intervals, such as once a month.

Count the number of containers of each item in your pharmacy store regularly. This is called a **physical count** or **physical inventory**. A physical count checks that the amount actually in the store equals the BALANCE IN STOCK number on the stock card. When checking your inventory, make sure that each item you are counting has the same generic name, form, strength and unit size.

Physical counts are particularly important for **expensive medicines**, like **ARVs,** antibiotics and other medicines at high risk of theft, such as **narcotics.** Make a physical count of each item at least once a month.

a. Review the information on the top of the stock card.

Check that the information is current and correct.

b. Make a physical count of an item.

1. Draw a double line after the last entry on the card. You may use a different colour (red) for this and the following entries on the card.
2. Record the DATE of the count. Write the words "physical count" across the columns.
3. Count the actual number of units (e.g., tins) of the item. The number of units that you count is the physical count.
4. Record the physical count number in the BALANCE IN STOCK column. If the physical count and the previous balance are not the same, write "discrepancy" and note how many are missing in the REMARKS column.
5. Draw double lines before and after the physical count information. The double lines highlight the physical count information as shown in the example below.

EXAMPLE: STOCK CARD

ITEM: *Paracetamol 500 mg tablets* CODE NUMBER: *P500*

UNIT + SIZE: *Tin of 1000* PRICE: REORDER LEVEL: *3*

DATE 2005	RECEIVED FROM	QUANTITY RECEIVED	ISSUED TO	QUANTITY ISSUED	BALANCE IN STOCK	REMARKS	SIGNATURE
30/4					*6*	*Stock Check*	*PG*
5/5			*Disp*	*1*	*5*		*KT*
30/5			*CMS*	*3*	*2*	*Return to CMS, expiry date 01/5*	*PG*
7/6			*Disp*	*1*	*1*		*KT*
15/6	*CMS*	*6*			*7*	*Req # 031 Expiry 01/12*	*PG*
22/6			*Clinic*	*2*	*5*		*PG*
30/6			*Physical Count*		*5*		*PG*

6. Investigate any discrepancies in the information on the stock card.

If the physical count and the previous balance are not the same, INVESTIGATE.

There may be more items or fewer items on the shelf than noted on the stock card. Someone may have forgotten to record a movement on the stock card. Check who was on duty. Check who had access to keys. Watch for any unusual or suspicious activity over the next few days.

If a stock card is missing, INVESTIGATE.

Make a new stock card. Note that it is a replacement card in the REMARKS column. If you find the old stock card, copy the information from the replacement card to the old one. Then, destroy the replacement card.

Keep completed stock cards for two to five years or as instructed by your supervisor or district coordinator. Stock cards contain useful information about the medicines and related supplies used at your health care facility. They give you an idea of how to prepare for changes in stock that may be due to seasonal factors, epidemics or other such causes.

Stock cards are essential to manage supplies correctly. You will refer to the information recorded on the cards as you manage medicines and related supplies in your health care facility.

Display the stock card checklist in your store to inform staff members how to keep records. Encourage staff to follow the procedures or follow the instructions of your supervisor or district coordinator.

KEEPING ACCURATE RECORDS
HELPS YOU TO KNOW WHEN AND HOW MUCH YOU HAVE TO REORDER!

4. How to order supplies based on past consumption

NOTE: This chapter covers regular ordering when supply needs and consumption are known. For programmes whose patient enrolment is always increasing, such as chronic AIDS care and antiretroviral treatment for HIV and AIDS, see Chapter 5, How to Start Antiretroviral Treatment Services

Successful supply management means that the required items are available for the patients who need them. Supplies are more likely to be available if you order them regularly and in the correct quantities. In general, the amount of supplies to be ordered should be based on the amount that is used or their past consumption.

Why is it important to know what supplies are needed at your health care facility?
It is important in order to:

- Avoid not having enough stock (out of stock items)
- Avoid having too much stock (overstocked items)
- Avoid waste (loss or mismanagement of supply)
- Be able to offer reliable health care services, including medicines, to your community.

For a quick reference on supply ordering, see the Ordering Supplies Checklist in Annex 4.

To order supplies based on past consumption

1. Calculate the average monthly consumption of each item in your store.

The monthly consumption of an item is the number of units that your health care facility uses during a month. Some months you may use more; some months you may use less. Therefore, the **average monthly consumption** is the quantity that is calculated to be consumed during a month.

HOW TO CALCULATE AN AVERAGE

- Look at a set of numbers: 1, 5, 6
- Count how many numbers there are in the set: 3 numbers
- Add the numbers in the set: 1 + 5 + 6 = 12
- The answer (sum) is 12.
- Divide the sum (12) by the numbers in the set (3): 12 ÷ 3 = 4
- The answer (4) is the average.

EXERCISE 1: Calculate the average of the following set of numbers: 7, 5, 0, 8
EXERCISE 2: Calculate the average of 5, 4, 5, 3, 3, 2, 1, 1, 2, 2, 3, 5

(Answers at the end of this chapter)

a. Count the number of units issued during a month.

See the sample stock card below. The QUANTITY ISSUED column is circled. The number of units issued is the number of units consumed.

EXAMPLE: STOCK CARD

ITEM: CODE NUMBER:

UNIT + SIZE: PRICE: REORDER LEVEL:

DATE	RECEIVED FROM	QUANTITY RECEIVED	ISSUED TO	QUANTITY ISSUED	BALANCE IN STOCK	REMARKS	SIGNATURE

Count the number of units issued for as many months as you have records.

A 12-month count is adequate. After calculating the consumption for a few years, you will notice changes in use, for example, during different seasons of the year and epidemics. Counting for 24 or 36 months (2 or 3 years) gives a better picture of use. The number will vary from month to month due to variations in patient attendance and seasonal differences. Consumption depends on the demand for the item.

b. Add the number of units issued for each month counted.

The sum is the amount of the item consumed at your health care facility during the months counted.

c. Divide the sum by the number of months counted.

The answer is the average monthly consumption. It is the quantity usually consumed at your health care facility over the time period counted (for example, 3 months, 12 months, 24 months).

If an average monthly consumption is any part (½ , ¾ , etc.) of a whole number (1, 2, 3), round up to the next whole number (½ becomes 1, and 2 ¾ becomes 3). Part of a unit, such as half of a tin of aspirin, cannot be ordered. Therefore, always count to the next whole number.

If you are keeping records for the first time, calculate the average monthly consumption after 3 months. Calculate again after 6 months. Calculate again after 12 months.

Calculating the average monthly consumption does not work well if there are months when the item is not available (that is, not available at your health care facility or not available from the medical supplier). If this is your situation, calculate the average monthly consumption only during those months that the item was available.

Keep your records accurate. Update the average monthly consumption every year. Add the number of units of each item issued monthly during that year to the previous year's total. Divide the total number of units by the total number of months counted.

Updated counts and averages give a clear picture of past consumption. They show periods of increased or decreased use that may be due to seasonal changes, epidemics or other reasons specific to your area.

2. Decide how often your health care facility receives deliveries.

The delivery of supplies varies from place to place:

- A medical supplier, such as the district hospital or a central, regional or area medical store, may deliver supplies on a fixed schedule, such as monthly, 3-monthly or 6-monthly. This depends on the agreement with your medical supplier or the policies of specific programmes. Sometimes supplies may be delivered on different schedules for different services.
- Someone from your health care facility may regularly collect supplies from a medical supplier.
- Supplies may be delivered to you irregularly or as conditions allow, for example deliveries may be affected by weather conditions or transportation problems.

A **monthly** or **3-monthly** delivery or collection schedule is recommended as it is a reliable way to ensure supplies are available when they are needed. It is not recommended that supplies be delivered weekly, irregularly or only as conditions allow. If this happens at your health care facility, try to change to a monthly delivery schedule.

a. Note how often your health care facility receives supplies.

This could be monthly, every 3 months or every 6 months.

b. Note what day your health care facility receives supplies.

This could be the first day of every month or the last Monday of every 3 months, for example. Know your health care facility's schedule. This information is useful when you are organizing the work in your store.

3. Decide the reorder factor for your health care facility.

The reorder factor is a number that will help you calculate how much of each item you need to order.

The following reorder factors are recommended (supply interval (month) x 2) for most first-level health care facilities. If you use these frequencies for your health care facility, you will reorder less often. You are likely to have the supplies in stock when you need them.

REORDER FACTOR

- The reorder factor is **2** if supplies are delivered **once a month. (1 x 2 = 2)**
- The reorder factor is **6** if supplies are delivered **every 3 months. (3 x 2 = 6)**
- The reorder factor is **12** if supplies are delivered **every 6 months. (6 x 2 = 12)**

Decide the reorder factor for your health care facility. Base your number on when and how often your health care facility receives supplies, the number of patients served and amount of supplies that are available in your store.

4. Calculate the REORDER LEVEL for each item in your store.

The REORDER LEVEL of an item tells you:

- When to reorder
- How much to reorder
- How much is used at your health care facility over a known period of time.

Use the appropriate **reorder factor** for your health care facility to calculate the **REORDER LEVEL** for all of the items in your store. This is important. Maintaining reorder levels guarantees that you will have enough of the items you need even if a scheduled delivery is missed.

EXAMPLE: CALCULATING THE REORDER LEVEL

At the Taylor Clinic, supplies are delivered **every month**. The reorder factor is **2**.

The average monthly consumption of cotrimoxazole (sulfamethoxazole + trimethoprim 100+20 mg) paediatric tablets is **3** tins. The reorder level of cotrimoxazole is **6** tins.

3	**x**	**2**	**=**	**6**
AVERAGE MONTHLY CONSUMPTION		REORDER FACTOR		REORDER LEVEL

If supplies were delivered **every 3 months**, the reorder factor would be **6**.
The reorder level of cotrimoxazole would be **18** tins.

3	**x**	**6**	**=**	**18**
AVERAGE MONTHLY CONSUMPTION		REORDER FACTOR		REORDER LEVEL

a. Calculate the average monthly consumption of an item.

b. Know the reorder factor for the delivery schedule at your facility.

c. Multiply the item's average monthly consumption by the reorder factor.

The answer is the REORDER LEVEL.

See the sample stock card below. The REORDER LEVEL is circled. Use a pencil to record the reorder number in this space. The level may change due to changes in demand or to the reorder factor of deliveries.

EXAMPLE: STOCK CARD

ITEM: CODE NUMBER:

UNIT + SIZE: PRICE: REORDER LEVEL:

DATE	RECEIVED FROM	QUANTITY RECEIVED	ISSUED TO	QUANTITY ISSUED	BALANCE IN STOCK	REMARKS	SIGNATURE

If there is a change in average monthly consumption of an item, erase the REORDER LEVEL noted on the stock card. Calculate the new reorder level. Use a pencil to record the new number on the card. Make a note of the change in the REMARKS column. Remember to use the new number when determining how much to order.

5. Decide when and how much to order.

It is important that you place an order based on the difference between the item's REORDER LEVEL and the amount of stock remaining in the store.

On the day of the month that your health care facility orders supplies, check the BALANCE IN STOCK of each item in your store against that item's REORDER LEVEL. Order any items with a BALANCE IN STOCK that is less than the REORDER LEVEL.

For regular ordering when supply needs are steady, ALWAYS order the number of units you need to bring your stock up to the REORDER LEVEL. Use the following calculation:

REORDER LEVEL - (minus) BALANCE IN STOCK = amount to order.

a. Check the BALANCE IN STOCK recorded on the stock card for each item.

Look at the stock card. Read how many units of the item you have in stock in the BALANCE IN STOCK column. Check that it is the same as the number of units on the shelf.

b. Compare the BALANCE IN STOCK to the REORDER LEVEL.

c. Decide if it is time to reorder. Decide how much to order.

- If the balance is **less than** the REORDER LEVEL, **it is time to order** the item. Place an order for the difference between the REORDER LEVEL and the BALANCE IN STOCK amount of the item.
- If the balance is **more than** or **equal to** the REORDER LEVEL, **it is NOT time to reorder** that item. Do NOT order the item. This should not be common, as every order should bring the BALANCE IN STOCK back up to the REORDER LEVEL.

EXAMPLE: DETERMINING WHEN AND HOW MUCH TO ORDER

The REORDER LEVEL of cotrimoxazole (sulfamethoxazole + trimethoprim, 100 mg + 20 mg) paediatric tablets is **20** tins.

WHEN TO ORDER:

If there are **20** tins of cotrimoxazole in stock:

- Do NOT order at this time.
- The BALANCE IN STOCK is equal to the REORDER LEVEL.

If there are **19 or less** tins of cotrimoxazole in stock:

- Place an order at this time.
- The BALANCE IN STOCK is less than the REORDER LEVEL.

If there are **21 or more** tins of cotrimoxazole in stock:

- Do NOT order at this time.

The BALANCE IN STOCK is more than the REORDER LEVEL.

HOW MUCH TO ORDER:

For example: If there are **17** tins of cotrimoxazole in stock:

- The REORDER LEVEL of cotrimoxazole is **20**.
- The BALANCE IN STOCK is **17** tins.
- Calculate **20 – 17 = 3**.
- Place an order for **3** tins to bring the stock up to the REORDER LEVEL of 20.

6. Pay for supplies (if your health care facility pays for supplies).

Know the price of each item in your store. Calculate the value of a unit's stock in the store and the cost of the units to be ordered. This will show you the approximate differences in prices of similar items. For example, tablets may cost less than similar liquid preparations.

a. How to calculate the value of the stock in the store:

Multiply the BALANCE IN STOCK by the current PRICE per unit.

EXAMPLE: CALCULATING THE VALUE

The balance in stock of amoxicillin 250 mg tablets is **12 tins**. The current price per tin is **US$25.55.** The value of amoxicillin 250 mg stock is **US$306.60.**

12 tins x US$25.55 = US$306.60

b. How to calculate the cost of units to be ordered:

Multiply the number of units to be ordered by the current PRICE per unit.

EXAMPLE: CALCULATING THE COST

The health worker orders **10 tins** of amoxicillin 250 mg tablets from the supplier. The current price per tin is **US$25.55**. The cost of the order is **US$255.50.**

10 tins x US$25.55 = US$255.50

Check on the delivery note. When the price of an item changes, erase the old price and record the new price on the stock card. Use a pencil as the price may change again. Follow the financial instructions provided by your supervisor or district coordinator on how to pay for supplies. How to receive payment is summarized in Chapter 9.

IMPORTANT NOTE ABOUT ORDERING SUPPLIES FOR EMERGENCY SITUATIONS

If there is an epidemic, an emergency or seasonal disease, do NOT follow the procedures to order supplies based on past consumption. Plan for the emergency or new situation. Follow the instructions from your supervisor or district coordinator.

- **For an epidemic or emergency**, inform your supervisor or district coordinator. Determine your emergency needs based on anticipated monthly consumption. Estimate what emergency supplies you will need and place an urgent order. Make sure that you know where and how to get these supplies as quickly as possible.
- **For a seasonal disease** (such as malaria or diarrhoea), order enough of the appropriate supplies well in advance of when you think the disease season will begin. Determine the amount you order based on how much you used during the previous season, such as last year or last rainy season or drought.

In case of poor weather conditions, avoid delivery delays. Plan ahead. If the rainy season is approaching and roads will be flooded, the supplies will need to reach the health care facility before the rains begin. Order extra supplies or place an order earlier than planned. Determine the quantity to be ordered based on the estimated number of months to be covered.

7. Place an order for the supplies needed at your health care facility.

Know your health care facility's system for ordering supplies. Your facility may have a fixed schedule (e.g. every Monday, the last Monday of each month) for ordering supplies. You may order irregularly, such as when an item falls below its reorder level. Whatever your system, follow the procedures below to place an order.

a. Make a written request for supplies.

Ideally, your health care facility already has a requisition form. Your facility's form may be similar to the Monthly Report and Requisition Form in Annex 8, the Requisition and Issue Voucher in Annex 9, or the Requisition for Pharmaceutical Supplies Form in Annex 10. If your facility does not already have a requisition form, modify one of these examples to meet the needs of your health care facility.

A requisition form is an easy way to list and request the supplies that your facility needs. It should be used by the person who orders the supplies AND by the supplier from the central, district or regional medical store who fills the order. It records the location of the health service; type of health care facility; monthly reporting period; and the movement of each item in the store.

Every request should have a serial requisition number. The requisition number is for tracking orders with your supplier.

Sometimes separate requisition forms are used for different programmes, such as special donor programmes. Often donors have their own administrative procedures. Be sure to complete all of the necessary forms for such services in order to receive the needed supplies for your health care facility.

b. Complete your health care facility's order information accurately.

However you place your order, **print clearly** so that anyone can read it.

Note the date of the order. Include the name and address of your supplier.

Specify each item by name, including its strength and form, and unit size. Record the CODE NUMBER if the number is available in a medical supplier's catalogue or list. Request the amount needed. Determine the amount based on past consumption or, if ordering for a new or expanded service, on scale up conditions (see next chapter). Sign the form.

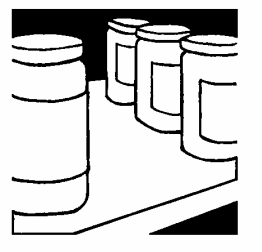
c. Send or deliver your order to your supplier.

Answers to CALCULATING AN AVERAGE at the beginning of this chapter:

1. Count the numbers in the set: *4 numbers*
   Add the numbers in the set: *7 + 5 + 0 + 8 = 20*
   Divide the sum by the numbers in the set: *20 ÷ 4 = 5*
   The answer is the average: *5*

2. Count the numbers in the set: *12 numbers*
   Add: *5 + 4 + 5 + 3 + 3 + 2 + 1 + 1 + 2 + 2 + 3 + 5 = 36*
   Divide the sum (*36*) by the numbers in the set (*12*):
   36 ÷ 12 = 3
   The average is *3*.

ORDERING SUPPLIES BASED ON PAST CONSUMPTION MAINTAINS STOCK LEVELS IN YOUR STORE!



5. How to start antiretroviral treatment services

In many countries medicines and related supplies for HIV and AIDS are often managed separately from the "normal" medicine supply system. This is because HIV- and AIDS-related medicines and supplies have to be managed according to different donor requirements. This often necessitates different procedures for ordering, receiving and managing supplies as well as additional security, storage and record-keeping.

Starting antiretroviral treatment (ART) services requires a team effort. Health workers at your facility will need to be informed and trained. You should discuss when the new ART service will begin and what changes need to be made. This often includes changes in storage space and storage requirements. It is also likely to include new or revised ordering and record-keeping procedures and forms.

Starting patients' antiretroviral treatment (ART) services means that patients will receive treatment for a **chronic disease** and that they will need **treatment for life**.

As the person who manages supplies, it will be your job to:

- Make sure that the full range of antiretrovirals (ARVs) and related supplies for the start up service are available
- Guarantee a constant flow of supplies
- Work with the health workers at your facility who register patients and those who work in the dispensing area.

In the first months after beginning your ART services, you will determine the quantities of different ART your HIV and AIDS patients need to receive. This should be done by working closely with the national AIDS programme or district coordinator, your supervisor and staff who are involved in ART.

To prepare for starting ART services at your health care facility

1. Decide who at your health care facility will be involved in starting ART.

Know who will manage the medicines and related supplies for HIV and AIDS.

Know who will be responsible for the other components of the ART service. Understand each other's role and work together.

2. Decide who outside your facility will be involved in starting ART services.

Decide how your team will communicate with the national programme or district coordinator. Know who will supply the medicines and related supplies for HIV and AIDS. It may be your regular supplier; it may be one or more donors. It may be that different medicines or supplies for your ART service come from different suppliers.

Make sure you have good and open communication with all involved, as this will promote the smooth introduction of the ART service.

3. Decide the initial number of patients for starting ART services.

A national programme or district coordinator may decide, together with your ART team, the number of patients who will receive treatment. Plan carefully the supplies needed to treat the agreed number of patients who will initially come for treatment at your health care facility.

4. Know the treatment regimens you will dispense to your patients.

Follow the treatment instructions provided by the national programme or district coordinator. These instructions are linked to recommended national or international treatment guidelines.

When patients begin ART, they are placed on a particular treatment regimen. This is often called a "first-line ART regimen." When one of three ARVs in the first-line ART regimen needs to be substituted by another ARV (mainly due to pregnancy or medicine intolerance, such as developing a rash), this is called a "substituted first-line ART regimen."

A treatment regimen is a combination of medicines and can be presented in different ways:

- Separate products that contain **one medicine in each tablet**. If this is the case, then each product should be counted as a separate unit.
- Combined products that contain two or three medicines in one tablet, known as **fixed dose combination** (FDC). If this is the case, then each FDC should be counted as one unit.

a. Find out how treatment regimens will be supplied.

Find out the difference in treatment regimens. You will want to know which regimens will be one medicine per tablet and which will be a combination of multiple medicines (FDC).

If all three medicines come as separate tablets, more units of the medicine will be needed to provide the right therapy. FDC that contains three medicines in one tablet will be used as triple therapy (e.g. d4T[1]+3TC[2]+NVP[3]). FDC with two medicines in each tablet (e.g. AZT[4]+3TC) will be used with a tablet containing an additional ARV (e.g. NVP or EFV[5]).

1 d4T: stavudine
2 3TC: lamivudine
3 NVP: nevirapine
4 AZT: zidovudine
5 EFV: efavirenz

b. Find out which other medicines will be supplied for HIV care.

Be aware of all medicines and supplies that will be needed for starting and maintaining your ART services.

There may be other medicines or products related to the ART services that are necessary for comprehensive chronic patient care. The medicines are used for treating opportunistic infections. For example, cotrimoxazole (sulfamethoxazole + trimethoprim (CTX)) tablets are used in preventive HIV care.

5. Estimate the quantities of ARVs needed to start ART at your facility.

Quantities of ARVs are determined by the recommended treatment guidelines for the agreed initial number of HIV and AIDS patients likely to come to your health care facility to start ART services. These quantities may have been based on ART service experiences from other health care facilities in your country. Remember to plan for a small supply of buffer stock in case there are delays in deliveries.

Follow the example in the next section if you have to calculate the quantities of ARVs to start ART services.

6. Know when the first supplies will arrive.

Inform your ART team when the first supplies of medicines and other supplies will arrive at your health care facility. Prepare team members to take appropriate action to organize the ART services.

Additional instructions may be provided by the national programme or district coordinator if the supplies are provided by a donor. Inform patients who have been selected to receive ART to come to your health care facility on the scheduled day and time.

7. Prepare your pharmacy store.

Organize your store. Find out how much space is needed for the various ARVs and other supplies that will be required to treat the expected number of patients. Make sure that your health care facility has the space for storing the additional supplies. Do this well in advance of actually receiving the supplies.

a. Remove unnecessary supplies.

Check all medicines, and medical supplies and equipment in stock. Remove any expired items or items that are not used anymore. Arrange for these stocks to be returned to the supplier.

Remove old, outdated or broken medical supplies and equipment. Remove any items that are no longer used from the store to make sufficient space for the new supplies of medicines and other commodities for your ART services.

b. Tidy the store.

Clean and tidy all storage areas in your health care facility. Organize or re-arrange the medicines, medical supplies and equipment in stock. Use the Physical Conditions Checklist and the Storage Procedures Checklist in Annexes 1 and 2 to help you.

c. Estimate how much storage space will be needed for the first supplies.

Discuss with your ART team where the new supplies will be stored. They may be kept in the pharmacy store or other storage area. Try to estimate which space is needed for each item and under what storage conditions the medicines and other supplies must be kept.

For each item, answer the following questions as a guide to help you with this task:

- Where will the items be stored? If on a shelf, which shelf?
- How much space does each item need?
- Is cold storage needed? If so, in a refrigerator or freezer?

Donors may have special storage requirements. If donor supplies have to be stored separately from other medicines in stock, make sure that you have the space or facility and can guarantee the correct storage conditions.

To calculate ART supplies

Estimating supply needs can be difficult if ARVs have not been dispensed in your health care facility before. The past consumption method **cannot** be used because you do not have information on average monthly consumption.

Therefore, it is important to calculate the needed quantities of ART as accurately as possible. To do this, use information on the agreed number of patients needing ART regimens as described in the treatment guidelines.

There are two methods of distributing ART to first-level health care facilities:

- Treatment kits for a fixed number of patients (fixed quantities).
- Indent ordering system (quantities ordered according to needs).

Using the following procedures will guide you in ordering supplies for the agreed number of patients on ART.

1. Decide the number of patients based on a fixed number of ARVs to be supplied.

During the start up phase, the national AIDS programme may have a policy in place for only using treatment kits for a fixed number of patients (e.g. 30, 50 patients etc.). In such a programme, the quantity of ART kits is based on the predetermined numbers of patients and the period of treatment, such as one month. Patient numbers include patients to be treated with a first-line ART regimen and patients to be treated with a substituted first-line ART regimen.

Estimate the number of kits according to the agreed number of patients to be treated at your facility. If extra kits are ordered, some can be kept as a security (or buffer) stock in case delivery of kits is delayed.

This is not a precise supply system. After some time, for example, six months after introducing ART services, you should inform the national programme or district coordinator about the consumption of ARVs and related supplies at your health care facility to avoid over-stocking.

2. Calculate ART supplies based on your facility's number of patients and their ARV treatment per month.

Follow the ordering instructions of the national programme or district coordinator carefully. This is especially important when supplies come from various sources, such as from central stores or from donors. Often medicines and other commodities for ART services have their own record-keeping, ordering and reporting procedures and delivery schedules.

Use special ordering and monthly reporting forms. Carefully prepare and complete the forms with your ART team.

EXAMPLE: CALCULATING THE INITIAL ART SUPPLIES FOR PATIENTS

The Taylor Clinic will start ART services for an initial number of 50 patients next month.

Forty of them will be treated with FDC (d4T+3TC+NVP) as first-line ART regimen. They are already on ART at other facilities but will be transferred to your facility. The remaining 10 patients will be treated with CA(d4T+3TC) and an additional ARV, either NVP or EFV. Of these 10 patients, there are 5 pregnant women who will be treated with CA+NVP and the other 5 patients, who are on TB treatment, will receive CA+EFV.

Step 1: For the planned 50 patients the ARV supplies for one month's treatment will be:

- **40 patients**: FDC tabs: 40 x 2 (tabs/day) x 30 (days treatment) = 2,400 tabs.
- **10 patients**:
  - CA tabs: 10 x 2 (tabs/day) x 30 (days treatment) = 600 tabs.
  - NVP tabs: 5 x 1 (tabs/day) x 14 (days treatment) = 70 tabs (first 2 weeks).
  - NVP tabs: 5 x 2 (tabs/day) x 16 (days treatment) = 160 tabs (after first 2 weeks).
  - EFV caps: 5 x 1 (caps/day) x 30 (days treatment) = 150 caps.

Step 2: Check the unit sizes carefully for each medicine.

- FDC comes in boxes of 60 tabs. For the required 2,400 tabs, you need: **2,400 ÷ 60 = 40 boxes.**
- CA comes in boxes of 60 tabs. For the required 600 tabs, you need: **600 ÷ 60 = 10 boxes.**
- NVP comes in boxes of 60 tabs. For the required 230 tabs (70+160 tabs), you need **230 ÷ 60 = 3.83**. As you cannot order less than a whole box, always round up to the nearest unit size which is **4 boxes.**
- EFV comes in boxes of 30 caps. For the required 150 caps, you need: **150 ÷ 30 = 5 boxes.**

Continued from previous page

Step 3: Know your reorder factor.

If you receive supplies once a month the reorder factor is 2.

If you receive supplies every 3 months the reorder factor is 6.

Step 4: Calculate the amount to order for the first month

Include the reorder factor into your calculations for the quantities to be ordered.

If the Taylor clinic receives supplies every month, the initial order of medicines will be:

Expected consumption	x	Reorder factor	=	Quantity to be ordered
FDC: 40	x	2	=	**80** boxes
CA: 10	x	2	=	**20** boxes
NVP: 4	x	2	=	**8** boxes
EFV: 5	x	2	=	**10** boxes

To monitor ART services at your health facility

1. Monitor the number of patients and ARVs dispensed carefully.

In the first 3-6 months of your ART services, your team will learn how to manage ART supplies. Keep accurate records of HIV and AIDS patient attendance and of quantities of ARVs dispensed.

a. Count the number of units issued during a month.

If you keep records of ART supplies separately, follow the special donor instructions carefully. In principle, use the same record-keeping procedures that you use for non-donor stock.

See the example of a stock card below. The QUANTITY ISSUED column is circled. The number of units issued is the number of units consumed.

EXAMPLE: STOCK CARD

ITEM: CODE NUMBER:

UNIT + SIZE: PRICE: REORDER LEVEL:

DATE	RECEIVED FROM	QUANTITY RECEIVED	ISSUED TO	QUANTITY ISSUED	BALANCE IN STOCK	REMARKS	SIGNATURE

Count the number of units issued during the past month. The number of units will vary from month to month due to small variations in HIV and AIDS patient attendance.

Follow the steps mentioned below to prepare yourself and your ART team for re-ordering ART supplies. These were already given in Chapter 3, How to Keep Records of Supplies.

b. Count your stock at regular intervals, such as once a month.

Decide how often stock levels will be checked. At the beginning of ART services, it may be weekly, bi-weekly, or monthly.

For a quick reference on record-keeping procedures, see the Stock Card Checklist in Annex 3 and the Stock Card in Annex 7.

Make sure to review:

- Stocks being used **more slowly** than originally planned.
- Stocks being used **more quickly** than originally planned.

In these cases, contact the programme or district coordinator to decide what actions to take to correct the situation. Remember, you and your team are responsible for the availability of treatment of a chronic disease your patients will need continuous treatment for life.

2. Calculate the quantities needed based on the number of patients and ARVs dispensed.

The ART team at your health care facility has to report monthly the number of patients receiving first-line ART or substituted first-line ART regimens. Use this information to calculate new ART supplies for the coming month or for a longer period of time.

Follow the special instructions to calculate these quantities carefully. This is especially important when supplies come from various sources, such as from central stores or from donors.

Reorder ART supplies

1. Determine monitoring and ordering procedures.

Discuss and decide with your ART team:

- How frequently will stock levels of ARVs and other commodities be checked?
- How frequently will ARVs and other commodities be ordered?
- Who will be responsible for this task?

For a quick reference on ordering supplies, see the Ordering Supplies Checklist in Annex 4, the Monthly Report and Requisition Form in Annex 8 and the Requisition and Issue Voucher in Annex 9.

2. Discuss with your team how to order supplies.

Discuss and decide the following with your team:
What forms will be used to order medicines and other supplies for HIV and AIDS?

- Will there be new forms?
  - Will existing forms to be modified?
- When donors are involved in supply provision, will there be special donor requirements?
  - Will separate ordering forms be used?
  - How frequently will supplies be ordered?
- Who will be responsible for placing orders and receiving supplies?

3. Decide when and how much to order.

Follow point 5 on page 25 in Chapter 4.

4. Place an order for the ART supplies needed at your health care facility.

Your health care facility may have a fixed schedule, for example, the last Monday of each month, for ordering ART supplies. Follow the ordering instructions of the national programme or district coordinator carefully.

a. Make a written request for supplies.

Your team already knows which forms to use for ordering ART supplies. Using a requisition form is an easy way to list and request the supplies that you need. It is useful for the person who orders the ART supplies AND for the supplier who fills the order. This often involves your programme or district coordinator.

Remember to:

- Print clearly so that anyone can read the form easily.
- Include a serial requisition number for each request.
- Note the date of the order.
- Include the name and address of the supplier, especially when you receive ART supplies from various suppliers or donors.
- Specify each item by name, including its strength and form, and unit size.
- Sign the requisition form.
- Track your order by using the requisition number on the form.

b. Complete your health care facility's order information accurately.

Be sure to complete all of the necessary forms to order ART supplies, or you may not receive the needed supplies for your health care facility.

c. Send or deliver your order to the national programme, district coordinator or supplier.

Whatever the ordering system, follow the instructions provided by the national programme, district coordinator or supplier carefully.

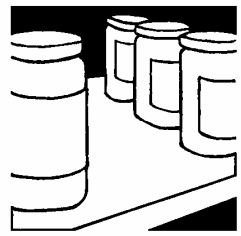
5. Keep the programme coordinator informed about your ART services.

Contact the proper authorities if your ART team encounters problems with patients, treatments, medicines and other HIV and AIDS supplies.

Contact the programme coordinator if ART stocks are consumed more slowly or more quickly than expected. This information will help to plan ordering supplies for the next time.

Try to overcome any problems as soon as possible so that your ART services will not be interrupted and will be appreciated by patients.

ORDERING SUFFICIENT ART SUPPLIES AND OTHER COMMODITIES REQUIRES TEAMWORK, CAREFUL RECORD-KEEPING AND MONITORING!



6. How to scale up antiretroviral treatment services

After an initial ART start up phase, your health care facility may be asked to enrol additional HIV and AIDS patients while continuing to treat existing patients. This is known as "scaling up" of existing ART services. It may also include adding the chronic management of opportunistic infections and cotrimoxazole prophylaxis for patients with HIV infection.

This means that the number of patients being treated at your health care facility will generally keep increasing, especially for long-term chronic care. It will be your job to make sure that the full range of ARVs and related supplies for HIV and AIDS are available for the additional patients and for the additional ART services.

When scaling up, you and your ART team should work closely together with the national programme or district coordinator. The calculation of new ART supplies may become more complex.

As stated before, ART will be a treatment for life. Patients will depend on continuous ARV treatment. **Your ART supplies cannot be out of stock**. This requires careful planning in advance! Often additional storage space, record-keeping and reporting may be necessary.

This often includes changes in storage space and storage requirements and the use of amended ordering and reporting forms. Delivery schedules may change too. Your team will need to organize itself to manage the increased workload adequately, including additional paperwork.

How to prepare for scaling up ART at your health care facility

A national programme or district coordinator may decide, together with you and your ART team, how many new patients will be treated at your health care facility each month. It is your job to effectively coordinate the scaling up phase of your ART services with your ART team. You will be the person responsible for ordering, receiving and managing sufficient supplies for your current and future numbers of HIV and AIDS patients.

Health workers at your health care facility will be involved when scaling up ART services and they need to be informed accordingly. Together, you should discuss when the scale up will begin.

In the first months after scaling up your ART services, you have to recalculate the quantities of different ART regimens your patients need. Do this by working closely with the programme coordinator and your ART team.

Follow the steps below. If necessary, refer to the information provided in Chapter 5, How to Start ARV Treatment Services.

1. Decide who at your health care facility will be involved in ART scale up.

2. Decide who outside your health care facility will be involved in ART scale up.

3. Decide the number of patients for scaling up ART.

4. Know the treatment regimens you will dispense to your patients.

a. Find out how treatment regimens will be supplied: as one medicine per pill or as a combination of multiple medicines in one pill (FDC).
b. Find out which other medicines will be supplied for HIV care.

5. Estimate the quantities of ART needed.

6. Know when the first supplies will arrive at your health care facility.

7. Prepare your pharmacy store.

Make sure that your health care facility has the space for storing the additional supplies of medicines and other commodities for HIV and AIDS. Rearrange your store in advance, as needed.

Follow the steps given below. If necessary, refer to the information provided in Chapter 5, How to Start ARV Treatment Services.

c. Remove unnecessary supplies.
d. Tidy the pharmacy store.
e. Estimate how much storage space will be needed for the first supplies.
f. Decide if additional storage or storage equipment is needed.

If additional storage is needed to scale up ART activities, identify what is needed, including:

- More furniture, such as extra shelves, larger cupboard, additional refrigerator or freezer equipment.
- More secure areas, locks and keys.

Make arrangements to get the necessary equipment.

Plan for sufficient ART supplies for scaling up

Follow the steps below. If necessary, refer to the information provided in the Chapter 5, How to Start ARV Treatment Services.

1. Decide monitoring and ordering procedures.
   - Make a plan with your team to check stock levels.
   - Discuss with your team how supplies have to be ordered.

Consider whether you will order treatment kits or use the indent ordering system.

If treatment kits: Scaling up of ART is relatively easy to manage. Treatment kits are provided for a fixed number of patients (e.g. 30, 50 patients etc.). Each treatment kit has ART regimens for the fixed number of patients and first-line and substituted first-line ART regimens have been estimated. The number of kits delivered to the health care facility corresponds to the number of patients that will be treated in the coming period.

If indent ordering system: This method requires more effort on the part of your team. Order based on the estimated number of patients you will likely treat at your health care facility per month and the quantity of ARV treatments to be used over that same time period.

To order ART supplies based on number of patients

Follow the steps below to prepare yourself and your ART team for scaling up ART at your health care facility. If necessary, refer to the information provided in Chapter 5, How to Start ARV Treatment Services.

1. Count ART supplies based on your facility's number of patients and their ART treatment per month.

a. Count the number of units issued during a month.
b. Count your stock at regular intervals, such as once a month.
c. Add the number of units issued for each month counted.
d. Perform a physical count or physical inventory of each ARV.

2. Calculate the quantities needed based on the number of patients and ARVs dispensed.

Ordering for scale up uses patient attendance figures for ART services and ART regimens dispensed. It is not based on average consumption per month. This requires careful planning with the ART team members at your health care facility.

After scaling up a service at your health care facility, the demand for ART supplies will increase. However, after a period of 6 to 12 months, at most health care facilities, enrolment of new patients each month is likely to stabilize.

When this happens, you and your ART team will be better able to calculate the ART supplies needed at your facility. Using your facility's data on the numbers of patients actually on various ART regimens, means you will be aware of the patient ART regimens at your facility.

a. Know your facility's reorder factor for scale up.

The **reorder factor** is a number that will help you calculate how much of each item you will need to order. The recommended reorder factor for monthly ordering under scale up conditions is 2. This is the same as for other medicines under stable conditions.

The REORDER LEVEL is the amount of supplies you need in stock to maintain an adequate supply to accommodate current and new patients. Multiply the amount needed for the next month by the reorder factor of 2. The answer is the reorder level. This will give you enough safety stock to maintain the scale up without excessive overstock.

b. Calculate the actual quantities of ART supplies needed.

Determine the amount of stock needed for each item. Note how much, if any, existing stock/stock on hand there is in the store. Subtract the amount of existing stock from the REORDER LEVEL.

EXAMPLE: HOW TO CALCULATE ART SUPPLIES FOR PATIENTS

The Taylor Clinic has been providing ART for 6 months, since July last year. Your ART team reviews the patient enrolment records from the past 6 months and finds the following enrolment numbers:

Month	New Patients +	Previous Month's Patients	= Total Patients
DEC.	40	260	300
NOV.	60	200	260
OCT.	60	140	200
SEPT.	50	90	140
AUG.	40	50	90
JUL.	50	0 (June)	50

There are currently 300 patients on treatment (end of December).

Of the 300 patients, 240 (80%) patients are treated with FDC (d4T+3TC+NVP) and the remaining 60 (20%) patients with CA (d4T+3TC) and an additional ARV, either NVP or EFV. Of these 60 patients, there are 40 pregnant women who receive CA+NVP and the other 20 patients, who are on TB treatment, receive CA+ EFV.

Step 1: For the 300 patients currently enrolled the ARV and CTX supplies for one month's treatment will be:

- **240 patients**: FDC tabs: 240 x 2 (tabs/day) x 30 (days treatment) = 14,400 tabs.
- **60 patients**:
  - CA tabs: 60 x 2 (tabs/day) x 30 (days treatment) = 3,600 tabs.
  - NVP tabs: 40 x 2 (tabs/day) x 30 (days treatment) = 2,400 tabs.
  - EFV caps: 20 x 1 (caps/day) x 30 (days treatment) = 600 caps.

Step 2: If 60 new patients will be enrolled in January, the ARV and CTX supplies for one month need to be increased as follows:

Of the 60 new patients, it is estimated that 30 patients (50%) will be treated with FDC as they are already on treatment and transferred to your facility. The remaining 30 patients (50%) will be treated with CA and an additional ARV. Tt is estimated that 20 out of 30 are new patients and another 6 are pregnant women. The remaining 4 patients will be on TB treatment.

(continued from previous page)

Therefore:

- **30 patients**: FDC tabs: 30 x 2 (tabs/day) x 30 (days treatment) = 1,800 tabs.

- **30 patients**:
  - CA tabs: 30 x 2 (tabs/day) x 30 (days treatment) = 1800 tabs.
  - NVP tabs: 26 x 1 (tabs/day) x 14 (days treatment) = 364 tabs (first 2 weeks).
  - NVP tabs: 26 x 2 (tabs/day) x 16 (days treatment) = 832 tabs (after first 2 weeks).
  - EFV caps: 4 x 1(caps/day) x 30 (days treatment) = 120 caps.

Step 3: Add up the quantities calculated for the existing patient group (300 patients) and the new patient group (60 patients): 300 + 60 = 360 patients in total.

- **270 patients**: FDC tabs: 14,400 + 1,800 = 16,200 tabs.
- **90 patients**:
  - CA tabs: 3,600 + 1800 = 5,400 tabs.
  - NVP tabs: 2,400 + 364 + 832 = 3,596 tabs.
  - EFV caps: 600 + 120 = 720 caps.

Step 4: Check the unit sizes carefully for each medicine.

FDC comes in boxes of 60 tabs.
For the required 16,200 tabs, you need **16,200 ÷ 60 = 270 boxes.**
CA comes in boxes of 60 tabs.
For the required 5,400 tabs, you need **5,400 ÷ 60 = 90 boxes.**
NVP comes in boxes of 60 tabs.
For the required 3,596 tabs, you need **3,596 ÷ 60 = 59.93 boxes.**
As you cannot order less than a whole box, always round up to the nearest unit size which is **60 boxes**.
EFV comes in boxes of 30 caps.
For the required 720 caps, you need **720 ÷ 30 = 24 boxes.**

Step 5: Know your reorder factor.

You receive supplies **once a month** and therefore the reorder factor is **2**. (reorder factor = delivery interval (months) x 2)

Step 6: calculate the reorder level.

QUANTITY NEEDED	x 2 (reorder factor)	= REORDER LEVEL
• FDC: 270	x 2	= **540** boxes
• CA: 90	x 2	= **180** boxes
• NVP: 60	x 2	= **120** boxes
• EFV: 24	x 2	= **48** boxes

Step 7: Check the balance in stock and compare with the reorder level.

A health worker notices that there are 240 boxes of FDC, 60 boxes of CA, 40 boxes of NVP, and 18 boxes of EFV in stock when preparing the monthly order. The quantities of medicines to be ordered are**:**

REORDER LEVEL	-	AMOUNT IN STOCK	=	AMOUNT TO BE ORDERED
• FDC: 540	-	240	=	**300** boxes
• CA: 180	-	60	=	**120** boxes
• NVP: 120	-	40	=	**80** boxes
• EFV: 48	-	18	=	**30** boxes

3. Place an order for the ART supplies needed at your health care facility.

Follow the steps mentioned below. If necessary, refer to the information provided in Chapter 5, How to Start ARV Treatment Services.

a. Make a written request for supplies.
b. Complete your health care facility's order information accurately.
c. Send or deliver your order to the national programme or district coordinator, or supplier.

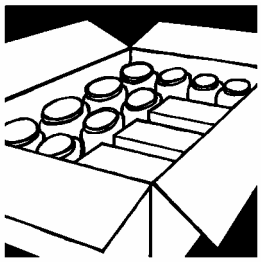
4. Keep your coordinator informed about your ART supplies.

5. Monitor stock movements and patient numbers.

Ordering for scale up activities requires constant attention to changing stock levels, and numbers of patients on treatment and new patients starting treatment. Check stock levels at regular intervals. This is important to avoid running out of stock or having too much stock. Check patient attendance regularly too.

As long as your **patient numbers are rising**, recalculate the monthly order according to the procedures above.

ORDERING FOR SCALE UP
REQUIRES CAREFUL PLANNING, MONITORING AND TEAMWORK!



7. How to receive supplies

First-level health facilities usually receive medicines and related supplies from central, regional or area medical stores. Sometimes supplies come to health centres from other sources, such as donors.

Some suppliers deliver the shipment to the health facility; some facilities collect their supplies from the medical store. Either way, when supplies are received, the responsible person who receives them should check the items in the delivery; that is, the goods from the supplier. The delivery should contain what was ordered. This person should check that no supplies have been lost or stolen, and that the delivered items are of assured quality and not expired or near their expiry date.

Discrepancies in orders are common. They may include missing items or fewer quantities than ordered. They may also include items that are or are nearly expired, damaged or are of poor quality. Discrepancies are very costly and should not be ignored.

For a quick reference on receiving supplies, see the Receiving Supplies Checklist in Annex 5.

To receive supplies

1. Receive the supplies in person.

All supplies should be received by at least one staff member at the time of delivery. Sometimes there will be an additional designated person to receive specific items, for example ARV medications, narcotics or psychotropic medicines. If this is the case at your health care facility, both you and the designated person must be present to receive and check the supplies.

Check the requisition form that came with the order. Check that the number of boxes is the same as the number listed on the requisition form.

2. Check the outside of the boxes for theft.

Check for opened boxes. The bottom of a box may be carefully opened and small items removed. Someone may empty the contents from a tin, place the empty tin back into the carton, and carefully reseal the bottom of the box.

Checking the number and quality of boxes may discourage someone from stealing supplies from your order. If you discover that something was taken, you may be able to decide when it happened and who is responsible.

3. Keep a record of deliveries.

Delivery trucks often carry orders for several health care facilities on a delivery route. Supplies intended for your health care facility may be delivered to another health care facility. Supplies may disappear. Keeping records of deliveries helps you to find and correct problems that may occur.

a. Record delivery information each time you receive supplies.

The delivery form issued by the supplier should be checked and signed off by the driver and the person receiving the supplies. Keep the delivery information organized on a delivery form, such as the example below.

EXAMPLE: DELIVERY FORM

DATE	REQUISITION (ORDER) NO.	ISSUE VOUCHER NO.	DELIVERY PERSON NAME + SIGNATURE	VEHICLE REG. NO.	NO. OF BOXES	STAFF MEMBER SIGNATURE

Record the following information:

- DATE of delivery
- REQUISITION (ORDER) NUMBER, number that identifies the order you place
- ISSUE VOUCHER NUMBER, if available:
  A medical supplier may assign a new serial number to the order. The number identifies the order that was sent. The number may also be called a PACKING NOTE NUMBER
- DELIVERY PERSON'S NAME + SIGNATURE
- VEHICLE REGISTRATION NUMBER (or licence number of the vehicle)
- NUMBER OF BOXES in the order
- STAFF MEMBER'S SIGNATURE, health worker who receives the supplies
- DESIGNATED OR SECOND STAFF PERSON'S SIGNATURE, if required for receiving ART and test kits.

Use a pen. This information does not change.

Always keep delivery information in a safe place. Make sure that there is a copy of the information for the driver/delivery person.

If your health care facility does not have a delivery form, you could make a form on a page in your health care facility's visitors' book. For a copy of this delivery form, see Annex 11.

b. Ask the delivery person to sign the form before leaving your facility.

Do NOT sign for the delivery person. Their signature is proof that they have delivered the supplies to your health care facility.

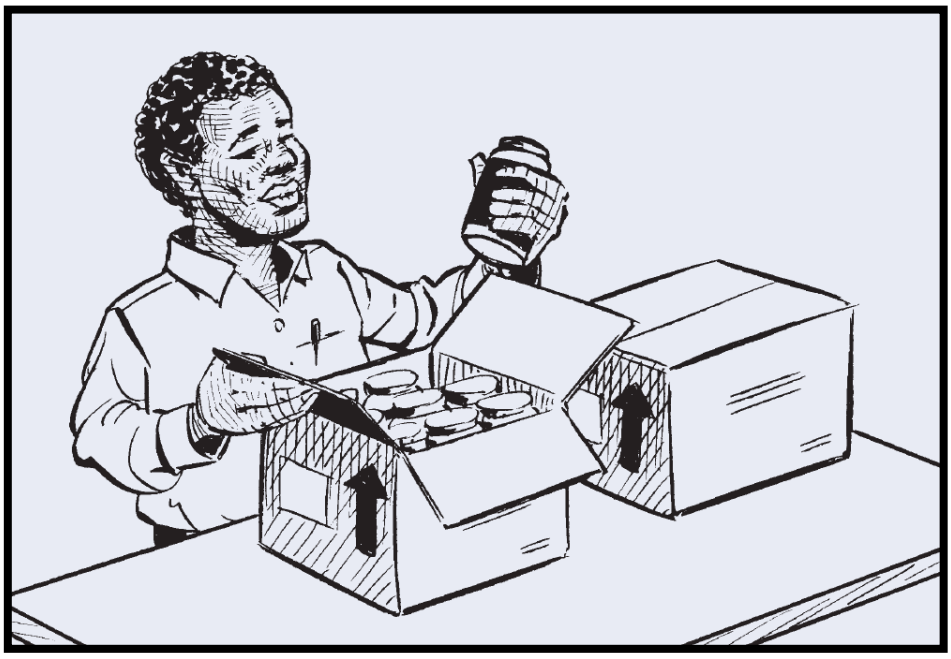
4. Check the supplies received against the items on the requisition form.

Remove the supplies from the box. Read the requisition form. Review the items ordered. Review the items and quantities you received in the box. Check that what you ordered is the same as what you received.

For a quick reference on discrepancies, see the Discrepancy Report Form in Annex 12.

If items are missing order them again. If fewer supplies were received than were ordered, keep and use them, but plan on reordering these items soon. Notify your supervisor or district coordinator.

ALWAYS CHECK THE SUPPLIES RECEIVED CAREFULLY



Source: JSI/WHO/UNICEF. Guidelines for the storage of essential medicines and other health commodities. Arlington, VA.: John Snow Inc./DELIVER; 2003.

If you receive items that were not ordered or that are not listed on the requisition form, follow your facility's policy for returning them. You may be able to keep and use some of the extra items if recommended by the Ministry of Health for use at first-level health care facilities and if the supplies come from a familiar and reputable supplier. Check with your supervisor or district coordinator.

If keeping the extra items means that your store will be overstocked or that items with shorter expiry dates will expire before you use them, return these extra items to the supplier.

Know the supplies that are stocked at your health care facility. Ask your supervisor or district coordinator to agree on a policy for handling discrepancies with each of your suppliers.

5. Check the expiry dates of all items.

Do NOT accept expired items. Expired items may harm a patient or have no effect on the patient at all. Follow your health care facility's policy to return or dispose of them. Fill in the expired items section of the discrepancy report form and notify your supervisor or district coordinator.

6. Check the basic quality of all items in the delivery.

Check for signs of damage or deterioration. Poor quality medicines or medicines that have been tampered with may be dangerous. Do NOT accept them.

a. Check refrigerated items.

Store all refrigerated items first, therefore check them first.

If refrigerated items, such as lopinavir/ritonavir (protease inhibitor) or vaccine, are not packed in cold packs, they may have spoiled. Do NOT accept them.

b. Check the colour of medicines and vaccines.

If medicines or vaccines are discoloured, they have deteriorated. Do NOT accept them.

c. Check for broken containers and for leaks.

Carefully remove broken containers. If there is a leak, remove and dispose of any supplies damaged by the leak, according to your health care facility's policies.

d. Check for unsealed or unlabelled items.

Someone may have tampered with unsealed items. It is dangerous to use unlabelled items. Do NOT accept them.

e. Check tablets and capsules.

Open sealed containers only if you suspect deterioration. Once opened, check the quality. Smell the contents. Pour a small amount onto a clean surface, such as a counting tray or table cover with a piece of paper. If tablets or capsules:

- Have unusual odours, they may have deteriorated. Do NOT accept them.
- Are broken, powdery, sticky, cracked or swollen, they are damaged. Do NOT accept them.

g. Check injectable liquids.

Shake the vial. Hold the vial to the light. Clear liquids should have no particles that reflect light. If a vial has small particles, the medicine has deteriorated. Do NOT accept the vial.

Store the good quality supplies in their proper place in the store immediately after checking them. This keeps the store tidy at all times.

Put any damaged or poor quality items in a box to return to the supplier. Dispose of or return expired and poor quality supplies at the earliest opportunity. Always follow your health care facility's policy on removing poor quality supplies from your store.

7. Document all discrepancies.

If any medicines or related supplies are missing or over-issued, expired, damaged or of poor quality, tell your supervisor and record it in writing.

- **If the discrepancy is noticed at the time of delivery,** ask the driver or delivery person about this and note it on the Delivery Form.
- **If the discrepancy is found after the delivery,** contact the supplier and follow your health care facility's policy on reporting a discrepancy.

Ideally, your health care facility should have a Discrepancy Report Form as this is an easy way to record discrepancies. Your facility's form may be similar to that in Annex 12. Record all missing or over-issued supplies, expired, damaged and poor quality items. Sign the form. Keep the form on file at your health care facility.

If you do not have a form, write a letter about the discrepancy, including all the information described in this Chapter on the Discrepancy Report Form. Agree with your supervisor on who should receive the letter. Usually a copy is sent to the appropriate authority, a copy is sent to the supplier, and one is kept on file at your health care facility. Documenting discrepancies protects you.

CHECK EXPIRY DATES AND QUALITY OF SUPPLIES BEFORE PLACING ITEMS IN YOUR STORE!

8. How to dispense medicines

In some health care facilities, a health worker other than you may be the dispenser. If this is the case at your facility, teach the following procedures to those health workers who are responsible for dispensing medicines at your facility.

When a medicine is given to a patient, it is important that the patient receives:

- The correct medicine.
- The correct amount of the medicine.
- The correct information on how to take the medicine.

Dispensing to a patient consists of the following: checking the prescription, collecting, counting and packaging the medicine, and dispensing it to the patient.

The dispenser should carefully and clearly explain to patients how to take their medicine. This is very important. Medicines are effective only if taken correctly. Then the dispenser should check that patients understand how to take their medicines. Patients should be able to repeat to the dispenser how they will take their medicines.

To dispense properly, what do you need to know?

- How to prepare medicines and related supplies.
- How to give them to patients.

Prescribing and dispensing medicines are two separate activities in a health care facility. Prescribe medicines in the clinical area. Dispense medicines from a dispensing area (or dispensary). Keep the areas separate, if possible. Do NOT dispense to patients directly from the store! The dispensary may be a room, part of a room, a cabinet or a dispensing trolley.

For a quick reference on dispensing, see the Dispensing Procedures Checklist in Annex 6.

To prepare medicines and related supplies

1. Go into the store. Select the supplies needed. Place the items on a tray. Take them to the dispensing area.

Estimate the number of units of each item that will be needed for the day or the clinic session. Base the amount on past use. If necessary, ask someone with experience of issuing supplies to help you.

Once items are issued to a dispensing area, do NOT return them to the store. Keep them in the dispensing area.

2. Keep supplies in the dispensing area safe and organized.

Make sure that the security in the dispensary is the same as in the pharmacy store. Staff should always be present in the dispensing area. Do NOT leave the area unattended and unlocked.

Organize supplies in the same way as they are organized in the store. Organize by route of administration and by form of preparation. Arrange each group of items in alphabetical order by generic name. If necessary, refer to the information provided in Chapter 2, How to Organize Supplies.

Some facilities use stock cards in the dispensary as well as in the store. Stock cards used this way become dispensing records. Health workers collect information about medicines and related supplies given to patients to treat certain illnesses. Therefore, it is better to use a notebook to keep dispensing records of medicines on a daily or weekly basis. This can be especially useful in scale up conditions.

To dispense a medicine (or other item) to a patient

3. Check that the prescription is appropriate for the patient.

Review the prescription. Find its generic name. If you cannot read it or if you have any questions about a prescription, ask the person who wrote it to explain it to you.

Check that the prescription is appropriate for the age, weight and sex of the patient. Also check that the medicine prescribed is appropriate in form, strength and dosage and in line with the agreed treatment guideline for this medicine.

If more than one item has been prescribed, do NOT combine them. Prepare **one prescription at a time**.

4. Collect a container of the item, and check its expiry date.

Some medicines look the same and may easily be confused. Read the generic name on the label of the container. Check that it is the correct medicine. Check that it is the correct form, strength and unit size. Check that the item has not expired.

Also collect a medicine envelope or small medicine tin to package the item for the patient.

5. Label the package to be given to the patient.

Some packages will have pre-printed labels on them. Some will not have labels and you have to write one.

Print clearly on the label. Include the patient's name, today's date, name of the item, quantity dispensed, and instructions that tell the patient how to take the medicine.

Use pictures or numbers to record the dose. Include written instructions also. Patients who cannot read may need pictures for instructions and should have someone at home who can read the instructions to them. After you record the information on the label, attach it to the empty package.

A clearly written label is important. When a patient returns to a health care facility with a previous prescription, any health worker should be able to read it.

6. Open the container. Check the quality of its contents.

Once the container is opened, check the contents. If medicines have an odd smell, they may have deteriorated. If tablets or capsules are cracked, broken, powdery or sticky, they are damaged. If capsules are swollen, softened or stuck together, they are damaged. Do NOT give patients poor quality medicines. Dispose of those medicines properly.

7. Count the quantity needed in a clean, safe manner.

Count tablets or capsules using a counting tray. If you do not have a tray, you can make one from a sheet of paper or used x-ray film, or you can use a clean surface covered with paper. Count the tablets or capsules with a clean spatula. Do NOT use your hands. You may contaminate both the medicine and your hands.

Do NOT use the same tray to count new medicines without cleaning the tray. If you use a sheet of paper to count, use a new sheet each time. If you reuse the same tray or paper, you may contaminate both the medicines and yourself.

8. Put the correct amount of the medicine into the package for the patient to take home.

Put the medicine into its own labelled package using the tray and spatula (or measuring device for liquids). Do NOT mix prescriptions or medicines.

9. Put any extra tablets or capsules back into the appropriate container immediately.

If more than one medicine has been prescribed, close one container before you open another container. Prepare all of the prescribed items before you dispense them to the patient.

10. Give the package to the patient. Teach the patient how to take the medicine.

If the patient is a child, go through the following steps with the mother (or caretaker).

Explain to the patient how to take the medicines (see steps a - d below). If the patient has more than one prescription, dispense one item at a time.

a. Tell the patient the name of the medicine, its form (tablet, syrup, etc.), what it is for and the dosage.

The dosage includes:

- **When** to take the medicine (for example, in the morning)
- **How much** of the medicine to take (for example, one tablet)
- **For how long** to take the medicine (for example, 2 days)
- **How** to take the medicine (for example, with food).

You may display the dosage instructions about how to take the most common medicines in the dispensary. Then your staff would be more likely to give the same (and correct!) instructions to patients.

In addition, you may consider displaying some instructional materials for frequently used medicines on a wall where patients can see them. This makes your message more meaningful.

b. Show the patient how to prepare the dose. Give the patient practise.

If a dose is less than a whole tablet, show the patient how to divide the tablet. If the medicine should be mixed with food, show how to crush the tablet and mix it with food.

If you are dispensing syrup, show how to measure the correct amount. Use the cap of the syrup bottle or show the patient common spoons to use.

Ask the patient to practise measuring the dose. Use the medicine that you have already packaged for the patient to take home. When you are confident that the patient understands how to prepare the dose, ask him/her to take the first dose.

c. Tell the patient to take all of the prescribed medicines.

Sometimes patients may feel better before they finish all of the prescribed medicines. Tell patients that, even if they feel better, it is important to take all of the medicines to stay well. This is especially true of antibiotics or antimalarials because bacteria or parasites may still be present. Also tell ARV patients that they need to return for follow-up treatment.

IMPORTANT NOTE FOR DISPENSING ARV MEDICATION

If you dispense ARVs as part of a directly-observed treatment plan, the patient comes to the health care facility to pick up his/her medicine. Watch the patient take the medicine and give feedback, if necessary. Do this on each visit.

When you have already dispensed ARV medication to a patient:

- If the patient's condition has changed since last the visit, report this to the health worker who prescribed the medicines. It may indicate that the treatment is not effective and has to be changed.
- If a patient is given another medicine for another problem, watch the patient carefully. If the patient appears to be getting sick, it is possible that there may be an interaction between the medicines.

d. Ask patients to tell you how they will take the medicine.

Each time you dispense a medicine, check the patient's understanding.

If patients answer correctly, compliment them! If not, explain the dosage to them again. Explain until they can answer you correctly.

If you are giving patients more than one prescription, give one item at a time. Give the next item only after you are sure that patients know how to take the medicines you have just given them.

Medicines are effective only if patients take them correctly. Sometimes even intelligent patients do not understand how to take their medicines. Medicines taken incorrectly may be poisonous or fatal. Always check the patient's understanding.

11. Tell the patient to keep all medicines and related medical supplies in a safe place at home, and out of the reach of children.

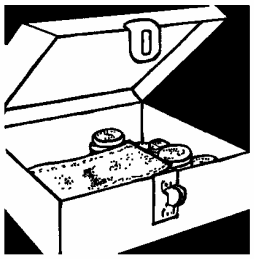
Tell the patient that medicines are expensive and need to be stored in a special place at home. The place must be cool, dark and dry, safe from pests, and out of reach of children. Recommend places typically found in homes in your area where patients could store their medicines.

12. Keep accurate dispensing records.

Complete dispensing records in accordance with the instructions given by your supervisor or district coordinator.

Be sure to follow any special requirements for controlled substances and medicines from donor programmes where separate recording requirements may apply.

DISPENSING MEDICINES TO PATIENTS
INCLUDES TEACHING PATIENTS HOW TO TAKE THEM AND CHECKING PATIENTS' UNDERSTANDING!



9. How to receive payment

In many countries there is a revolving drug fund mechanism in place which involves health care facilities at all levels in the health care system having to buy their medicines supplies from the central supply agency. The policy is that patients have to pay for the medicines dispensed to them at health care facilities. However, certain medicines may be free of charge to facilities and patients do not have to pay for these.

If your health care facility receives payments, it is likely that your national health authority has instructed you how to do this.

If you are the person responsible for receiving money at your health care facility, follow your health care facility's policy. Make sure you:

- Always supply the patient with a full course of treatment
- Keep a record of payments you receive from patients
- Check payments against the receipt
- Keep money in a secure place
- Keep good records
- Deposit money in a bank, council office or post office regularly.

FOLLOWING YOUR NATIONAL POLICIES FOR RECEIVING PAYMENT WILL PROTECT YOU!

References

1. World Health Organization and Basics (1998)
Drugs supply management training: Handbook for drug supply management at the first-level health facility. Geneva, WHO

2. John Snow Inc., World Health Organization and United Nations Children's Fund. (2003)
Guidelines for the storage of essential medicines and other health commodities. Arlington, VA.: John Snow Inc./DELIVER.

3. World Health Organization Regional Office for Africa (2004)
Management of drugs at health center level: training manual. Brazzaville, WHO AFRO.

ANNEXES

Supply Management Checklists and Forms

For the First-level Health Care Facility

CHECKLISTS

FORMS

To the Health Worker:

Use these checklists and forms as needed at your health facility. Use them as guides in the management of medicines and supplies in your facility store.