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DRUG STORE AND BUSINESS MANAGEMENT

DP205T

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INTRODUCTION OF DRUG

Drugs & Medicines being expensive and resources limited, it becomes imperative to improve their supply, increase the use, and minimize the cost through a pharmaceutical management system to be effectively put in place. There are some 3000-4000 drugs at any point in time, registered in any country; of which almost 70% are non essential (WHO). Ideally, a National list of essential drugs should have 300-400 drugs; a district hospital needs some 150 to 200, while a health centre can manage with 40-50 drugs.

Shorter the list, it is easier to manage, procure and offer to the patients within the resources available.

In the overall management of drugs, the following objectives have to be borne in mind:

1 All **essential drugs** needed for health care should be **available** at all the times, at all the health facilities.

2 Drugs so made available should be of good **quality** and should be **safe**.

3 Systems of procurement should be such that **quality drugs** are procured at the most **competitive prices.**

Drugs have always remained and are likely to remain the core element in preventive as well as in curative health care. Medicinal drugs inclusive of vaccines, contraceptives, nutritional supplements etc. are indispensable for the prevention, control, treatment and amelioration of a number of maladies that affect human beings. Interestingly, pharmaceuticals are the largest item of expenditure within the public health sector budgets of developing countries, ranging from 8 to 12% of recurrent health budget; therefore asking for prudence.

There are four major areas related to drug management:

a) Rational use,

b) Affordable price,

c) Sustainable financing and

d) Reliable health and supply systems.

Let us start by learning **some common terms and their definitions** used in drug management:

Medicine:

a) An agent, such as a drug, used to treat disease or injury.

b) Something that serves as a remedy or corrective

c) Any drug or remedy for use in treating, preventing, or alleviating the symptoms of disease

d) Any substance administered in the treatment of disease; a remedial agent; a remedy; physic.

Drug:

a) A drug is a chemical substance that affects processes of body and mind.

b) Any chemical compound used or administered to humans and/ or animals in the process of diagnosis, treatment or prevention for relief of pain or sufferings or to control or improve a physiological process or pathological state.

c) A substance used recreationally for its effects on Central Nervous System.

Generic drugs:

The term "generic" has several meanings as regards drugs:

1. The chemical name of a drug.

2. A term referring to the chemical makeup of a drug rather than to the advertised brand name under which the drug is sold.
3. A term referring to any drug marketed under its chemical name without advertising

The use of generic names for these purposes has many advantages, like:
1. Easy recognition of type of drugs, particularly when many selected drugs exist in that category
(e.g. all Benzodiazepines have generic name ending with “zepam”).
2. Drugs can be purchased from multiple suppliers giving the advantage of buying at competitive
prices.
3. Product substitution is easy where bioavailability presents a problem.
4. Confusion with brand names can be avoided.

Since chemical names are usually long and complicated, the drugs are given a standard, shorter generic name. Manufacturers will usually give drugs brand names to identify that manufacturer's version of the product. An example of these three names, using a well known prescription drug is as follows:
Chemical name — 7-chloro-1, 3-dihydro-1- methyl-5-phenyl-2H-1, 4-benzodiazepin-2-one;
Generic name — diazepam
Brand name — Valium.
Since the research and development of the drug molecule has already been done, the cost of the generic drug is usually less.
All drugs considered to be generically equivalent to a brand name product must meet strict manufacturing requirements. These requirements include tests which assure that the product is bioequivalent to the brand name product.

Defining Rational Use of Drugs

The concept of rational drug use is age old, as evident by the statement made by the Alexandrian
physician Herophilus 300 B.C that is “Medicines are nothing in themselves but are the very hands of god if employed with reason & prudence.”

Rational use of drugs requires that patients receive medicines appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community. *(WHO Conference on Rational Use of Drugs in Nairobi in 1985).*

In simplest words rational use means-

"prescribing right drug, in adequate dose for the sufficient duration & appropriate to the clinical needs of the patient at lowest cost".

The requirements for rational use will be fulfilled if the process of prescribing is appropriately followed.

This process includes steps like-

1. Defining a patient's problems (or diagnosis);
2. Effective and safe treatments (drugs and non drugs);
3. Selecting appropriate drugs, dosage, and duration;
4. Writing a prescription;
5. Giving patients adequate information; and
6. Planning to evaluate treatment responses.

Unfortunately, in the real world, prescribing patterns do not always conform to these steps and can be

classified as inappropriate, irrational or pathological prescribing.

DRUG STORE MANAGEMENT

The pharmaceutical management:

The pharmaceutical management has different components, like

a) Selection of products

b) Procurement

c) Distribution

d) Use

The entire drug management can be assessed based on four major indicators

1. Total expenditure on drugs and medicines (percentage of total expenditure on health)

2. Total expenditure on drugs and medicines (per capita average)

3. Government expenditure on drugs (per capita average)

4. Private expenditure on drugs (per capita average)

The operational framework depends on the regulatory framework, morbidity pattern, and system's

priorities, type of services, level of health facility and availability of drugs besides the cost and management support (skilled manpower, financial resources and the information system)

Process of pharmaceutical management:

The general issues in drug management relate to overall Health care system in the state, particularly with

reference to:

a) Facilities and level of care (Primary, Secondary, Tertiary)

b) Presence of voluntary sector-NGOs

c) Services

d) Manpower

e) Priorities

f) Resources

The basic components of Drug management:

1. Component 1

a) Drug policy, laws and regulations

b) Selection of drugs

c) Procurement

d) Storage and distribution

2. Component 2

a) Rational use

b) Availability

c) Access

d) Financing

Drug policy and regulations are the larger issues for drug regulation and are dealt separately in this

module. Here we shall deal with operational areas that have a direct bearing on Drug management.

The **Drug selection process** involves:

a) Listing of common health problems

b) Review standard treatment options

c) Develop National guide lines

d) Develop list of Medicines (Essential drug list

e) Spell out Activities in procurement

i. Selection

ii. Procurement

iii. Distribution

iv. Storage

f) Rationalizing use

The Health sector determines the type of drugs and dosage forms that are put in use in health care

facilities, depending upon available financial resources, level of health care and the morbidity profile.

The criteria for selection of Drugs, depends on factors, like:

1. Cost and dosage form that are affordable making it cost-effective in view of the maximum use of

resources

2. Availability of drugs for majority of illnesses

3. Availability of safe, efficacious and cost effective drugs

4. National Health policy (Free/ subsidized drugs)

5. National Drug policy (Pricing and production)

6. Cost recovery/ sharing

Drug Procurement:

Principles of Drug Procurement:

Good procurement is a linchpin of access to quality and appropriate medicines. The WHO, in partnership

with UNICEF, United Nations Population Fund (UNFPA) and the World Bank, has drawn on a common
bank of extensive experience to produce "Operational Principles for Good Pharmaceutical Procurement",
to assist all involved in procurement to obtain lower prices, better quality and more reliable delivery of
essential medicines, based on four strategic objectives:

1 Procure the most cost-effective drugs in the right quantities.
2 Select reliable suppliers of high quality products.
3 Ensure timely delivery.
4 Achieve the lowest possible total cost.

The **12 guiding principles** of good Drug procurement, grouped in four categories, are outlined below:

A. Efficient and Transparent Management

1. Different procurement functions and responsibilities (selection, quantification, product specification, pre-selection of suppliers and adjudication of tenders) should be divided among different offices, committees and individuals, each with the appropriate expertise and resources for the specific function.
2. Procurement procedures should be transparent, following formal written procedures throughout
the process and using explicit criteria to award contracts.
3. Procurement should be planned properly and procurement performance should be monitored regularly; monitoring should include an annual external audit.

B. Drug Selection and Quantification:

1. Public sector procurement should be limited to an essential drugs list of national/local formulary
list.
2. Procurement and tender documents should list drugs by their International Nonproprietary Name
(INN), or generic name.
3. Order quantities should be based on a reliable estimate of actual need.

C. Financing and Competition

1. Mechanisms should be put in place to ensure reliable financing for procurement. Good financial
management procedures should be followed to maximize the use of financial resources.
2. Procurement should be effected in the largest possible quantities in order to achieve economies
of scale; this applies to both centralized and decentralized systems.
3. Procurement in the public health sector should be based on competitive procurement methods,
except for very small or emergency orders.
4. Members of the purchasing groups should purchase all contracted items from the supplier(s) which hold(s) the contract.

D. Suppliers Selection and Quality Assurance

1. Prospective suppliers should be pre-qualified, and selected suppliers should be monitored through a process, which considers product quality, service reliability delivery time and financial
viability.
2. Procurement procedures/systems should include all assurance that the drugs purchased are of
high quality, according to international standards. The **"Delhi Model"** of drug procurement has
been applauded worldwide for pooled procurement resulting in enormous savings and better availability of drugs.

Procurement of Drugs:

In view of the ever developing sophistication, modernization, automation and up-gradation of manufacturing technologies competing environment, an efficient procurement system is the only way to
improve access to medicines for the majority of the population within the given budgetary ceilings. Since

availability of financial resources is always a constraint for developing countries, it becomes all the more
important to improve efficiency in all aspects of management in the countries.

The procurement of drugs is dictated by a number of factors:

a. Estimating quantity of each drug required at given period

b. Assessing cost of drug dosage from required

c. Allocating resources to each drug dosage form depending on

i. Priority

ii. Resources

The requisition of drugs and dosage form has to come after consultation with the drug prescribers

DRUG DISTRIBUTION:

The primary management goal is to maintain a steady supply of drugs and supplies to facilities where
they are needed while ensuring that resources are being used in the most effective way. A well-managed
distribution system should:

a) Maintain a constant supply of drugs
b) Keep drugs in good condition
c) Minimize drug losses due to spoilage and expiry
d) Rationalize drug storage points
e) Use available transport as efficiency as possible
f) Reduce theft and fraud
g) Provide information for forecasting drug needs

The distribution cycle begins when drugs are dispatched by the manufacturer or supplier. It ends
when drug consumption information is reported back to the procurement unit.

The drug supply management at a health facility has **seven components**:

A. Preparation of drug store
B. Supply ordering
C. Receiving supplies
D. Organization of drug supplies
E. Inventory Management
F. Record keeping

This module shall discuss each component in detail:

A. Preparation of drug store at a health facility:

The drugs and medicines including kits are expensive and sensitive to changes in temperature and need

to be kept under ideal conditions to avoid deterioration.

Location: It must be accessible to all units to be served and there should be provision for vehicles
bringing the supplies directly to the store.

Shading: Locate the store in an area where trees can be planted to provide shade and offset high
temperatures.

Drainage: Build the store on a raised foundation to allow rainwater to drain away from the store.

Security: There should be proper fencing or perimeter walls to improve security and control access
besides double locking door of the rooms where costly medicines and supplies are kept.

Protection against fire:

1. Availability of standard fire extinguishers in every storage facility and inspecting them every 2-3 months to ensure pressures are maintained and the extinguisher is ready for use.
2. Service of fire extinguishers at least every 12 months.
3. Placing smoke detectors and checking them every 2-3 months.
4. Prohibiting smoking in the storage.
5. Conducting fire drills every 6 months.
6. Emergency exits should be clearly marked and checked regularly for accessibility and any blockage.
7. Display of fire protection signs at appropriate places.
8. Use of sand to extinguish fires where there are no fire extinguishers. Placing the sand bucket near the door.

Protection against pests:

1. Inside the storage facility:

a) Regular cleaning to prevent conditions that favor pests.

b) Do not store or leave food in the storage facility.

c) Keeping the interior as dry as possible.

d) Paint or varnish woods.

e) Regular inspection for evidence of pests.

2. Outside the storage facility:

a) Regularly inspect and clean the outside premises specially areas where garbage is stored.

b) Check for rodent burrows.

c) Using mercury vapor lighting where possible, and locate lighting away from the building to minimize the attraction of pests.

Designing a medical store

Consider the following when designing a storage facility:

Capacity/space: Storage facilities must have the capacity for both storage and handling. The required space will depend on– quantity and time of receiving supplies, space required for each item, length of stay, need of cold storage (refrigerator or freezer).

Cold storage: In larger facilities it is more efficient to use cold rooms while in smaller ones freezers or refrigerators can be used. Ideally, larger facilities should have one room with a negative temperature for frozen products (-20°C) and another room with a positive but cold temperature (2°-8°C) for products requiring refrigeration.

Ventilation: The location and design should ensure maximum air circulation to avoid concentrations of fumes or gases. Exhaust fan should be used. Windows should be high and wide. There should be provision for proper temperature and humidity control.

Roof: Proper drainage of water should be there from both roof and floor. Roof should be extended over the windows to give extra protection from rain and direct sunlight. Double ceiling should be installed to provide insulation and ensure that supplies are kept cool.

Walls and floor: These should be permanent and smooth for easy cleaning. Walls preferably should be constructed of brick or concrete blocks. Floors should withstand the frequent movement of

heavy products and equipment.

Doors: They should be wide enough to allow for the free and easy movement of supplies and strong
enough to provide adequate security.

Lighting: Provision of natural light should be there while florescent or incandescent bulb lighting should
be avoided as these emit ultraviolet rays and heat respectively, which have a negative effect on certain products.

Cupboards: To keep specific products free from dust or light, cupboards
should be there.

Shelves: Adjustable shelves and racks should be used in line with a
passageway not less than 90 cm wide. Also place the shelves 90
cm from the walls of the storeroom to ensure they are accessible
from both sides. Avoid placing shelves only around the edge of
the room.

B. Ordering supplies:

Ordering supplies has different steps to be followed. These are**a.**

Demand planning:

There are three methods to plan or forecast the demand for drugs and medicines in any health care
facility:

1. Consumption Method
2. Morbidity Method
3. Adjusted Consumption Method

1. **Consumption Method:** This method uses records of past consumption of individual drugs to
project future needs. It is the most precise method for forecasting drug usage, provided the

source data are complete, accurate and properly adjusted for stock-out periods and anticipated changes in demand and use.

It does not normally address the appropriateness of past consumption patterns, which may or may not correspond with public health priorities and needs. Thus irrational drug use may be perpetuated by total reliance on this method.

Steps of Consumption Method:

Step 1: Prepare a list of drugs to be quantified. The drug list should be prepared, sorted into the order that will best facilitate data collection and distributed to those concerned who will enter the consumption data.

Step 2: Determine the period of time to be reviewed for consumption. Data of twelve months, if available, can be reviewed. But if there are significant seasonal variations, it is best to use the same six-month period from the preceding year.

Step 3: Enter consumption data for each drug. Following should be entered for each drug on the list:

a) Total quantity used during the review period, in basic units,

b) Number of days in the review period that the drug was out of stock,

c) Lead time for the last procurement (or the average from last several procurements),

Consumption= opening stock + drugs received – closing stock

It is important to use the most accurate and current records available. The consumption and lead time data can be taken from Stock records and distribution reports; invoicing from suppliers and dispensing records besides daily use records and drug registers.

Step 4: Calculate the average monthly consumption. The simple way to get monthly consumption is to divide total consumption by the number of months reviewed. If there were stock-outs during that period, the average must be adjusted to include the consumption that would have occurred if stock had been available.

In practice, relatively short stock-outs of up to one month may be ignored because they are not likely to have significant effect on estimated drug requirements. But for stock-outs

more than 30 days an adjustment should be made. The formula to be used is:
Consumption adjusted = recorded consumption X period in calculation (in days, months)
for stock-outs period in stock (in days, months)
Example:
Consider entry for ampicillin 250mg capsule. The total consumption for a six month review period
was 89, 000 capsules. The drug was out of stock for 34 days in the six month period. Therefore, the average monthly consumption (CA) adjusted for stock-outs is:
Consumption adjusted for stock-outs = 89,000 X 6 months

Step 5: Calculate the safety stock needed for each drug. Safety (buffer) stock is needed to prevent stock-outs, although high levels of safety stock increase inventory holding costs and should be avoided. The preferred method is to calculate the safety stock based on the average consumption and the expected lead time. The average monthly consumption is multiplied by the average lead time. This safety stock should avoid stock-outs assuming that the item is reordered when only the safety stock remains, the supplier delivers within the projected lead time, and consumption is no greater than average.
Safety stock = LT XCA
Using this formula, the safety stock for Ampicillin 250mg capsules in the examples is 18,218 x 3 months = 54,654.
For vital items, it may be necessary to adjust the safety stock to cover variations in consumption or lead time. The simplest method multiplies the basic safety stock by an adjustment factor. For example, an adjustment factor of 1.5 would increase the safety stock of Ampicillin 250 mg capsules to 81,981 capsules. If this sort of adjustment is done for all items, the cost of safety stock will increase substantially; therefore, adjustments should be made only when there is true uncertainty about the lead-time or consumption.

Step 6: Calculate the quantity of each drug required in the next procurement period with the following formula:

QO = CA x (LT + PP) + SS – (S1 +S0)

QO = Quantity to order

CA = Monthly consumption adjusted for stock-outs

LT = Average lead time in months

PP = Procurement period in months

SS = Safety stocks

S1 = Stock now in inventory

S0 = Stock now on order

The calculation is done in three steps: firstly, the average consumption is multiplied by the sum of the lead time and the procurement period, yielding the total needs before considering safety stocks, stock on hand, or stock on order. Secondly, add the quantity needed for safety stock. Lastly, the quantity of stock on hand and the stock on order are added together, and then subtracted from the previous total. For our example the quantity to order is:

QO = 18218 x (3 +6) + 54654 – (81000 + 58000) = 79616

Step 7: Adjust for expected changes in consumption pattern. Using our example, if it is expected

that utilization will increase by 5 % in the coming year, it would be reasonable to adjust the six month forecast by 2.5%, this would raise the expected need by 1990 capsules, bringing the total to 81606 capsules.

Some changes in consumption may be independent of trends in overall patient utilization like seasonal variations in the consumption of cough and cold remedies.

Step 8: Adjust for losses: to avoid stock-outs, it is necessary to adjust quantification estimates to

allow for losses. If the supply system averaged 10% per year in losses, and this was applied to Ampicillin 250mg capsules, the allowance would add 8160 capsules to the estimate from step 7, bringing the total purchase quantity to 89766.

Step 9: Compile decentralized quantifications: In a decentralized quantification, staff at each facility or storage point enters their own consumption quantities and stock-out information, and the estimates of the individual facilities are totaled and compiled on the master quantification list.

Step 10: Estimate costs for each drug and total costs. In order to estimate procurement costs, multiply the quantities estimated for each drug by the most accurate prediction of the next purchase price. After the estimated value has been calculated for each drug, the final step in the basic quantification process is to add up the estimated procurement values for all drugs to obtain the total expected cost for the procurement.

Step 11: Compare total costs with budget and make adjustments. If the total expected procurement cost exceeds the available budget, there are really only two choices, either obtain more funds or reduce the number of drugs and/or the quantities ordered.

Morbidity Method: This estimates the need for specific drugs based on the expected number of

attendances, the incidence of common diseases and their standard treatment patterns.

The quantification by this method assumes that prescribing is rational and standard treatment guidelines should be made available.

The basic formula used is:

Quantity of the drug specified for a standard course of treatment ***x*** *Number of treatment episodes*

of the health problem = total quantity of a drug required for a given health problem

A treatment episode is a patient contact for which a standard course of drug treatment is required.

If a standard treatment is specified for particular health problem, then a new patient contact for this

problem counts as treatment episode. However, if this patient has to return for repeat contact before the problems is cured each repeat visit, where the standard treatment is again required also

counts as a treatment episodes. If no new drug treatment is again required, for example because the repeat visit is for a follow-up check on the patients' progress, then it does not count as a treatment episode.

A single patient contact may give rise to more than one treatment episode, if several health problems are diagnosed and a standard course of drug treatment is required for each one.

Where a particular health problem has several different standard treatments for different age groups or severities, then the number of treatment episodes for each of these must be established

separately.

It is complex and time consuming method. Data on patient attendance are often incomplete and inaccurate and it is difficult to predict what percentage of prescribers will actually follow the standard treatment regimens used for quantification. But this is the best alternative for health facilities where there are limited ranges of health problems.

Adjusted Consumption Method: The method uses data on disease incidence, drug consumption or utilization, and/or drug expenditures from a "standard" supply system and extrapolates the consumption or utilization rates to the target supply system, based on population coverage or service level to be provided. This method is best suitable when the other two methods are not feasible. This method is most likely to yield accurate projections when used to extrapolate from one set of facilities to another set that serves the same type of population in the same geographic and climatic area.

b. Reordering

Calculation of re-order is based on consumption data which is taken as average consumption over a period of time as in some months the health facility will use more as compared to others.

Reorder point: This is that level of drugs available at which a new order for supply of drugs is to be placed. In other words, at this level a purchase requisition is made out. This level is fixed somewhere between maximum and minimum levels. Order points are based on usage during time necessary to requisition order, and receive materials, plus an allowance for protection against stock out.

The order point is reached when inventory on hand and quantities due in are equal to the lead time usage quantity plus the safety stock quantity.

How to reorder: Formula

The following two formulas are used for the calculation of reorder level or point.

Ordering point or re-order level = Maximum monthly usage × Lead time

The above formula is used when usage and lead time are known with certainty; therefore, no safety

stock is provided.

When safety stock is provided then the following formula will be applicable:

Ordering point or re-order level = Maximum monthly usage × Lead time + Safety stock

Buffer Stock/ Safety Stock is the minimum quantity of supplies set apart as an insurance against

variation in supplies and demand. This can be calculated by multiplying the average demand for

maximum delay or the probable delay.

Delivery period/Lead time

It is important to know how long it will take to receive the supplies after placing the order and this

period is referred as Delivery time or Lead Time. This could be days, weeks or months depending

upon:

1. Distance and road conditions
2. Availability of delivery vehicle
3. Work load at issuing store
4. Consumption rate

Time to reorder: if the balance is less than the reorder level, reordering should be done.

c. **Placing an order:**

Make a written request for supplies

a) Use a requisition or order form to make a written request to get medicines and other supplies. Example of Requisition and Issue Voucher or Requisition for Pharmaceutical Supplies are given the annexure.

b) Order information should be completed accurately.

c) Use generic name of the medicines.

d) Keep a record of the order.

e) Make and keep a copy of the requisition or order form, or record the name of item, its

strength and form, and unit size. Write down the code number if the number is available in a medical supplier's catalogue or list and the amount requested. Sign the form.

f) Send or deliver your requisition or order form to your suppliers

g) Write down the date your order was sent to your suppliers.

Receiving supplies

When you receive health commodities-

1. Ensure there is sufficient storage space.

2. Prepare and clean the areas used for receiving and storing the products.

3. Inspect packages for damaged or expired products

Identification of poor quality and damaged supplies:

1. Packaging, look for

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

2. Labels, Look for

a) Missing, incomplete or unreadable labels

3. If liquids, look for

a) Discoloration

b) Cloudiness

c) Sediment

d) Broken seal on bottle

e) Cracks in ampoule, bottle or vial

f) Dampness or moisture in packaging

g) Torn or ripped packaging

4. If Latex products are there, look for

a) Dryness

b) Brittleness

c) Cracks

5. If lubricated latex products, look for

a) Sticky packaging

b) Discolored product or lubricant

c) Stained packaging

d) Leakage of the lubricant (moist or damp packaging)

6. If foil packs, look for

a) Perforations in the packaging

7. If Chemical reagents, look for

a) Discoloration

8. If tablets (pills), look for

a) Discoloration

b) Crumbled pills

c) Missing pills

d) Stickiness (especially coated tablets)

e) Unusual smell

9. If capsules, look for

a) Discoloration

b) Stickiness

c) Crushed capsules

10. If Injectables, look for

a) Liquid not returning to suspension after shaking

11. If sterile products (including intrauterine devices), look for

a) Torn or ripped packaging

b) Missing ports

c) Broken or bent parts

d) Moisture inside the packaging

e) Stained packaging

12. If tubes, look for

a) Stickiness

b) Leaking contents

c) Perforations

D. Organizing Drug supplies:

The basic concept in supply organization is that we should be able to locate the supply in the store easily which means supplies are shelved in a predetermined manner. The principle for organizing supplies of drugs and medicines are:

a) Drugs to be stored in original containers

b) Similar drugs (Oral/injectable, internal/external use) to be kept on same shelf

c) Supplies to be arranged in alphabetical order/groups

d) Items with short shelf life to be kept in front

e) Ensure expiry dates are visible clearly

f) Shelf storing principle to be followedi.

Top Shelves: dry medicines

ii. Middle shelves: liquid/injectables/ointments

iii. Bottom shelves: surgical items, laboratory supplies, condoms

g) Within each drug group, arrange supplies in a alphabetical orders

h) Store items in groups (easy to count)

i) Store medicines and supplies with expiry dates by labeling “first expiry first out”

j) Clear all expired/damaged supplies

k) Identify overstocked items

While storing the supplies, ensure

a) Supplies are kept at least 10 cms above the floor.

b) Supplies are kept at least 30 cms away from wall.

c) Supplies are kept at a height not more than 2.5 mts.

d) Manufacturer’s directions are followed.

e) Liquids are placed on the lower shelves.

f) Appropriate temperature is to be maintained.

g) High value products are kept at security zones.

h) Expiry date is visible from front

It is essential to follow the product manufacturer’s storage instructions to the extent possible. If this is not possible, the product must be kept in the most suitable conditions available and

used as quickly as possible. The product manufacture should be consulted before violating recommended storage conditions to determine how long the product will remain safe and effective under the actual storage conditions. If no specific storage instructions are given, “normal storage conditions” apply. Normal storage conditions for drugs have been defined as “storage in dry, well ventilated premises at temperatures of +15°C to 25°C, or depending upon climatic conditions, up to +30°C. Each storage zone should have at least one thermometer, and temperatures should be recorded daily at the hottest time of day.

Orderly arrangement of essential medicines

Medical stores must have a system for classifying or organizing medicines, and must ensure that all employees know the system being used.

Some common systems for arranging medicines includea)

Alphabetical order by generic name: When using this system, the labeling must be changed when the Essential Medicines List is revised or updated.

b) **Therapeutic or pharmacologic category**: Most useful in small storerooms or dispensaries where the storekeeper is very knowledgeable about pharmacology.

c) **Dosage form**: Medicines come in different forms, such as tablets, syrups, injectables, and external use products such as ointments and creams. In this system, medicines are categorized according to their dosage form. Within the area for each form, a fixed, fluid, or semi-fluid system

is used to store items. Any of the other methods of categorizing can be used to organize the items more precisely.

d) **System level**: Items for different levels of the health care system are kept together. This works well in stores at a higher level when storage of kits is required.

e) **Frequency of use**: Frequently used products that move quickly or often through the store should be placed in the front of the room or closest to the staging area. This system should be used in combination with another system.

f) **Random bin**: Identifies a specific storage space or cell with a code that corresponds to its aisle, shelf, and position on the shelf. This system requires computer automation.

g) **Commodity coding**: Each item has its own article and location code. This system has the greatest flexibility, but it is also the most abstract. Stores staff do not need any technical knowledge of the products to manage this system because the codes contain the information needed for storing products properly, such as temperature requirements, level of security, and

flammability. This system works well in computerized inventory control systems.

h) **Separate storage** of items of resale potential (high value items, narcotics, psychotropic drugs) and flammable liquids (acetone, alcohol, anesthetic ether and store in security zones.