

(UNIT-V)

⊕ Drug Store Management and Inventory Control →

• Drug store -

- A drug store / Pharmacy / community pharmacy / chemist is a retail shop which provides prescription drugs among other products.
- At the drug store, a pharmacist oversees the fulfillment of medical prescription and is available to give advice on their offering of over the counter drugs.

A typical pharmacy would be in the commercial area of a community. Every hospital should have a medical store for the purpose of procuring, stocking and distributing the drugs and medicines to various department.

• Organisation of Drug Store →

Store are defined as a sub-organization in any hospital where materials obtained are held in Abeyance till inspected, approved and stocked. A store should have a standard specifications of materials and since the store procured the drug on behalf of the department for regular flow of materials, the condition of storage should be proper.

• Objectives of the Drug Store →

- # To stock all the drugs and accessories required in the hospital
- # To procure drugs from different sources
- # To supply drugs to the consuming department.
- # To store drugs required in research drugs works
- # To preserve records of receipt and issue of drugs

of receipt

- # To maintain succid² and issue of drugs.
- # To carry out all operations regarding drugs.

⊕ Layout of Drug Store ⊕ →

Organization of Drug Store ⊕

A Selection for a Drugstore —

- 1 Population density
- 2 No. of physicians
- 3 Proximity of physicians & health care centres
- 4 No. of already existing drug store
- 5 Nearness to market
- 6 Nearness to a packing facility
- 7 Traffic count
- 8 Income gp of people in the area
- 9 Scope for expansion
- 10 Economic factors

B Features of good layout design →

- 1 Proper ventilation
- 2 It must be located on the ground floor, close to pharmacy
- 3 It must have 2 entries, one for receiving and other for issuing of materials
- 4 Proper illumination
- 5 Walls and roof should be painted with washable paint.
- 6 Sufficient no. of wooden or steel racks should be provided
- 7 Movement of men & material should be minimized thus saving time
- 8 Fast moving items should be kept near the counter while slow moving items

(C) Perpetual inventory control system →

(#) This system enables the manufacturer to know about the actual position of materials available in the stores without undergoing the difficult task of physical stock verification under this system proper examination with regard to receipt issue and balance of material

(i) Bin card →

This is the document maintained by the store keeper in his store to keep record of all items of materials and goods in his store.

(ii) Store ledger →

It is kept in the cost accounting department. It is generally maintained in the form of loose leaf.

(iii) Continuous stock taking →

Under this system only a limited no. of items are verified on a day. The selection of

(D) Storage condition →

- Drug stores are used to store all kind of material like capsules, tablets, liquid dosage forms, injections.
- Cold storage for antibiotics
- Lock & key system for narcotics and psychotropic substances, separate track for poison
- Cold - 2° - 8° C
- Cool - 8° - 25° C
- Warm - 30° - 40° C
- Excessive heat - 40° C

(E) Store Management →

Storage at cool temperature

List A - These are drugs which requires storage

List B - Sera, vaccine, plasma, oxytocin, Vasopressin 2-8°C
These drugs require 8-25°C.

Antibiotics, hormones preparation etc. prep.

##

Purchase :- (A) Introduction to Purchasing

Purchasing has acquired a new dimension and it has become a specific function. It is a process which includes all the functions involved from the requirement to the receipt of material and its final acceptance.

Definition →

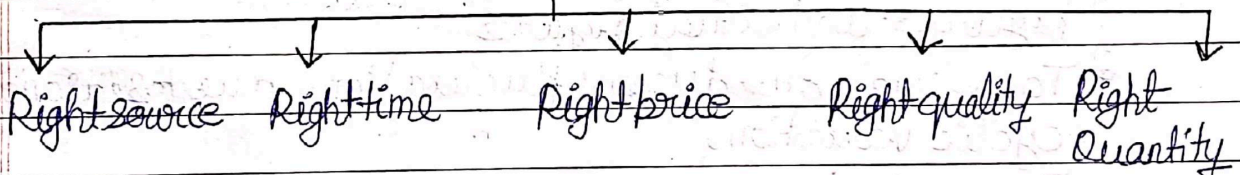
① In the words of Alford & Beat. "Purchasing is the procuring of materials, supplies, machine tools and services required for the equipment, maintenance and operation of a manufacturing plant.

② Purchasing is a activity directed towards securing the materials, supplies, equipment and services required in the operations of an enterprise.

(B) Principle of Purchasing →

For purchasing 5 R's of buying is important which are as follows

5 R's of buying



(C) Purchase Procedure :- →

The purchasing procedure means the sequence of steps in which purchase transactions is carried out. The purchasing procedure generally involves the following steps —

- ① Purchase requisition
- ② Selection of suppliers
- ③ Placing the order.
- ④ Receiving and checking of material
- ⑤ checking of invoice or bill
- ⑥ Recording of bills in books
- ⑦ Releasing the payment to the supplier.

Inventory Control →

- The term inventory means the value or amount of materials or resource on hand. It includes raw material, work-in-process, finished goods and stores and spares.
- Inventory control is the process by which inventory is measured and regulated a/c to predetermined norms such as economic lot size for order or production, safety stock, minimum level, maximum level and order level.

<u>Type of Inventory</u>	<u>Reasons for holding</u>
① Raw materials	To reap the price advantage available on seasonal
② Work in progress	To balance the production flow
③ Readymade components	When the components are brought ^{than made}
④ Scraps	They are disposed of in bulk.
⑤ Finished Goods	Lying in stock rooms and waiting dispatches.

Objectives of Inventory Control :

- To meet unforeseen future demand due to variation in forecast figures and actual figures
- To average out demand fluctuations due to seasonal or cyclic variation.
- To meet the customer requirement timely, effectively, efficiently, smoothly and satisfactorily.
- To smoothen the production process.
- To facilitate intermittent production of several products on the same facility
- To gain economy of production or purchase in lots.
- To reduce loss due to change in prices of inventory items.
- To meet the time lag for transportation of goods
- To balance the stock out cost/opportunity cost due to loss of sales against the costs of inventory.

Factors affecting Inventory Control →

- Type of product
- Type of manufacture
- Volume of production

Types of Inventory costs →

① Ordering (purchasing) cost →

- Cost of order
- Expenses from raising the indent
- Purchase requisition by user department till the execution of order
- Receipt and inspection of material.

② Inventory carrying (holding) costs →

Costs incurred for holding the volume of inventory and measured as a percentage of unit cost of an item -

- Capital cost
- Obsolescence cost
- Deterioration cost
- Taxes in inventory
- Insurance cost
- Storage and handling cost

③ Out of stock / shortage costs -

It is the loss which occurs or which may occur due to non availability of material

- Breakdown
- Back ordering
- Lost sales

◦ Loss of service to customers, loss of goodwill, loss due to lagging behind the competitors

④ Others cost →

- Capacity costs
- Machine setup
- Over-time payments
- Set-up & scrap
- Layoffs and idle time
- Over stocking costs

Classification of Inventory Control

① Always better control (ABC) Analysis
(Selective Inventory Control Method)

② Ved Analysis (Vital, Essential, Desirable (V.E.D.))

③ EOQ (Economic order quantity) Method

④ Lead time

$$EOQ = \sqrt{\frac{2ab}{c_3}}$$

Methods to determine EOQ

⑤ Buffer stock

① Tabular determination

② Graphical representation

③ Algebraic formulas

EOQ is balance between ordering cost and inventory carrying cost

Reorder \rightarrow

① Lead time \rightarrow It is the time gap between placing the order for purchase of certain items to the time of materials are actually received

(a) Administrative service

(b) Supplier lead time

② Safety stock method

③ Reorder level = ~~difference~~ ^{fixed} difference between the minimum and maximum stock levels

$$\text{Reorder level} = \text{minimum consumption during the period} \times \text{maximum reorder period}$$

④ Maximum stock level

⑤ Danger level

⑥ Minimum level -

Medication History →

A medication history is a detailed, accurate and complete account of all prescribed and non-prescribed medications that a patient had taken or is currently taking prior to a initially institutionalized or ambulatory care.

- It provides valuable insights into patient's allergic tendencies, adherence to pharmacological and non-pharmacological treatments and self-medication with complementary and alternative medicines.
- Interviewing a patient in collecting the data medical history

Importance —

- ① Preventing prescription errors.
- ② Useful in detecting drug-related pathology.
- ③ It should encompass all currently and recently prescribed drugs.

Goals → The goal of Medication history —

- ① Compare medication profile
- ② Verify medication history taken by other staffs and provide additional information

⊕ Pharmaceutical Care →

The pharmaceutical care is defined as "The responsible provision of drug therapy for the purpose of achieving definite therapeutic outcomes that improve the patient's quality of life".

Goal →

- To optimize the patient's health-related quality of life and achieve positive clinical outcomes, within realistic economic expenditures

⊕ Basic Elements of Pharmaceutical Care →

- Patient oriented
- Both ^{acute} chronic & problems
- offering continuous ^{care in systematic way}
- Stress on prevention of drug related problem
- Taking help of others
- Emphasis on optimizing

Three major functions—

- ① Identifying potential and actual drug-related problems
- ② Resolving actual drug-related problems &
- ③ Preventing potential drug-related problems.

⊕ Investigational Use of Drugs →

Investigational use drugs are these compounds or mixture which have not been released by the Federal Food and Drug Administration or by the legal authority of the respective country for general use—

OR →

- ⊕ Investigational use drugs are defined as those, which are being considered for, but not yet received approval by the Federal Food and Drug Administration legal authority of the respective country for human use.

Principle Involved in the Investigational Drugs in Hospitals →

Basic principles—Procedures in the use of investigational drugs should be built around these basic principle—

- An institution that is setting for investigational drug details

Classification of IUD →

① One simple, classification, which adapted by Hospital research program—

- (a) Class A
- (b) Class B
- (c) Class C
- (d) Class D

② Besides these another classification which can be adapted to any hospital pharmacy operation—

- ① General
- ② Conditional
- ③ Investigational

Objectives of IUD →

- ① To establish a drug classification
- ② To centralize pertinent information concerning drugs available
- ③ To define the availability of such drugs to staff ^{for research use}
- ④ To establish a single stocking and dispensing unit within the hospital.

Interpretation of Clinical Laboratory Test

Haematology →

① Hemoglobin—

Adult male—14-18%

“ female—12-16%

② RBC count

Adult male—4-6 million cells/cu. mm

“ female—3-5 “ “

③ WBC— (A, E)

— 4500-11000 cells/mm³

④ Differential WBC (DLC)

— 2-3% white normal—seg value—50-60%

⑤ Basophils— 0-1%

⑥ Eos

Need for the Patient Medication History Interview

- Medication histories are important in preventing prescription errors and consequent risks to patients.
- Apart from preventing prescription errors, accurate medication histories are also useful.
- A good medication history should encompass all currently and recently prescribed drugs, previous adverse drug reactions, including hypersensitivity reactions.
- A full medication history:
 - Identifies patients
 - Explores the patient perspective of illness and its treatment.

Interviewing Process

- ① Information sources
- ② Questions to ask
- ③ Medication history taking TIPS
- ④ Other questions
- ⑤ Additional questions to explore effectiveness
- ⑥ Client education
- ⑦ Cards for Medication History Script
- ⑧ Reconciliation and documentation.

Community Pharmacy Management →
Community pharmacy is the place where most pharmacist practice the profession of pharmacy. It consists of retail store, front with a dispensary where medicines are stored and dispensed.

- Functions of Community pharmacy Management
- ①* Providing health information to patient and public
 - ② Prescription handling
 - ③ Patient counselling
 - ④ Patient Medication records.
 - ⑤ Pharmacy administrations
 - ⑥ Compounding

Types of Pharmacies

- ① Own pharmacy
- ② chain pharmacy (Apollo, PGI)
- ③ Hospital pharmacy
- ④ Employee State Insurance Corporation (ESIC)
- ⑤ Pradhanmantri Jan Aushadi Kendra

Scope of Community pharmacy →

- 1) In processing prescriptions
- 2) Clinical pharmacy
- 3) Patient care
- 4) Alternative medicines
- 5) checking symptoms of minor ailments
- 6) Health care professionals

- Date: _____
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- 7) Advancement in research and technology - Newer drugs in market.
 - 8) Disease prevention and health promotion in society.

Establishment/Management of Community Pharmacy →

- 1) Finance purchasing and inventory of drugs ①
- 2) Location and or site selection
- 3) Layout and interior of pharmacy
- 4) Legal requirement and staff
- 5) Different storage condition
- 6) Stock arrangement
- 7) Documentation
- 8) Computer application

Plan of an Ideal Wholesale and Retail Drug Store →

Objectives →

- 1) To attract a large number of customers
- 2) To increase the sell of the store
- 3) To reduce the selling expenses to the minimum
- 4) To provide customer satisfaction
- 5) Have adequate space reserve stock, office and resting space
- 6) To have proper entrance for the newly arrived goods.
- 7) To project a professional

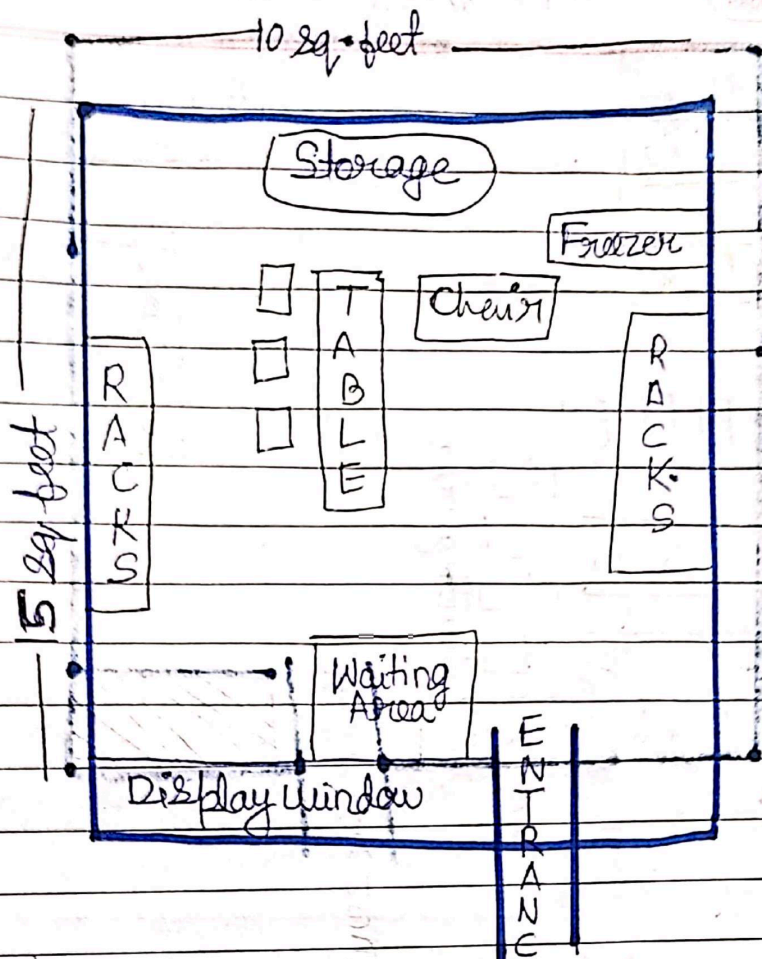


Fig → Retail drug store design

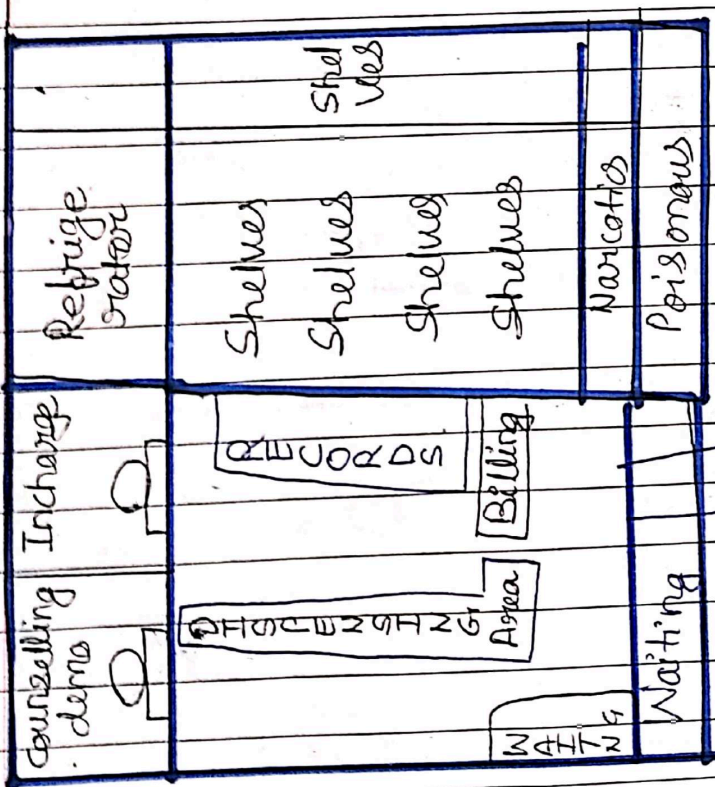


Fig → Structure of Ideal community pharmacy

10 Sq. feet

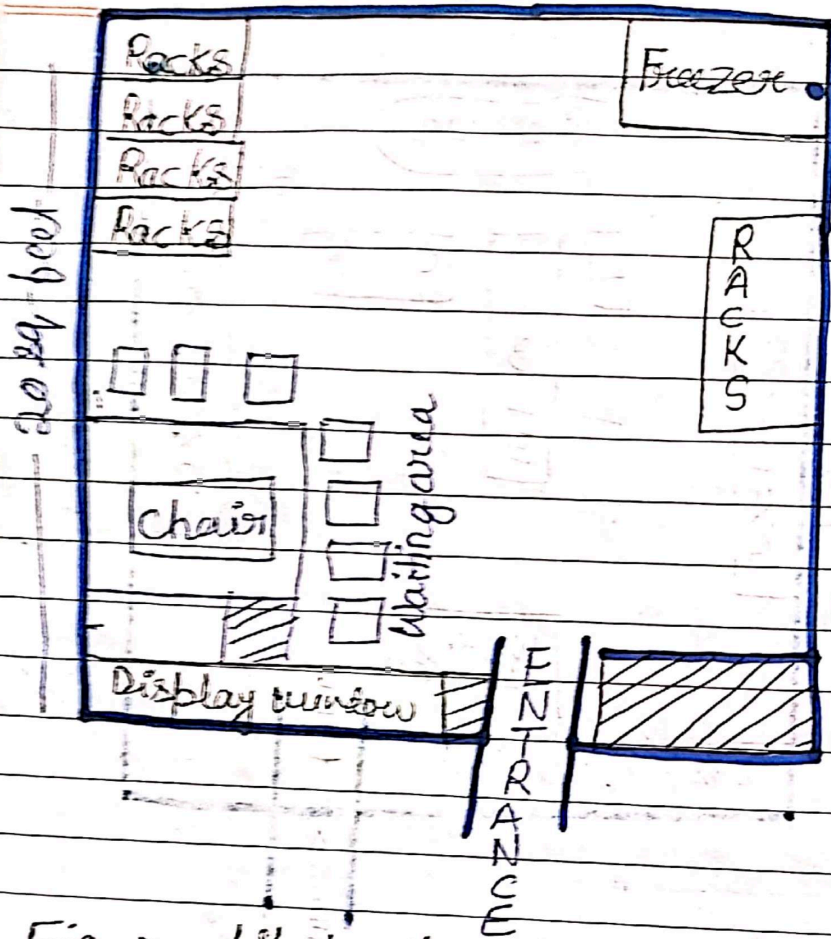


Fig → Wholesale drug Store