COMMUNITY PHARMACY: SELECTION OF SITE, SPACE LAYOUT, AND DESIGN

SELECTION OF SITE, SPACE LAYOUT AND DESIGN

A community pharmacy must be properly located, planned, organized, and well-designed to function efficiently and profitably. The **location of the pharmacy** and the **internal layout** together influence the **customer flow, sales, service quality, and professional image** of the pharmacist.

A) SELECTION OF SITE

The **site** is the geographical location where the pharmacy will be established. Choosing the right site is extremely important because **even a well-managed pharmacy can fail in a poor location**, while an average pharmacy may survive in a good location.

Factors to Consider for Selecting a Pharmacy Site

1. **Population of the Area**
   - The location should have a **sufficient population** to support the business.
   - More population means **greater demand** for medicines and healthcare products.
2. **Income Distribution**
   - Understanding the **economic level** of the local community is important.
   - Areas with stable or higher income groups may allow stocking of **high-value prescription drugs**.
3. **Type of Area (Urban, Sub-urban, Rural)**
   - **Urban areas** have high competition but high customer flow.
   - **Rural areas** have low competition but limited demand.
   - The pharmacist must balance **demand, competition, and cost**.
4. **Proximity to Hospitals and Clinics**

- Pharmacies located near **hospitals, nursing homes, diagnostic centers, physician clinics** receive continuous prescriptions.
- This is considered the **most advantageous location**.

5. **Accessibility and Visibility**
   - The pharmacy should be on the **main road** or busy street for easy access.
   - **Ground floor** locations are preferred.
   - Good signboards improve recognition.
6. **Parking Facility**
   - Sufficient space must be available for customer vehicles.
   - Lack of parking discourages customers from returning.
7. **Competition Level**
   - Areas with **too many pharmacies** may reduce profit.
   - New pharmacies should fill **uncovered service zones** or specialized care needs (diabetes, paeds, geriatrics).
8. **Rent and Cost of Premises**
   - Very low-rent areas may be **poorly located**, reducing customer flow.
   - Very high rents increase expenses.
   - Choose **balanced rent with high business potential**.
9. **Future Growth Possibility**
   - Newly developing residential or commercial areas offer **long-term business expansion opportunities**.

B) SPACE LAYOUT AND DESIGN

Layout refers to the **internal arrangement of shelves, counters, storage areas, office desk and waiting space** inside the pharmacy.

A proper layout ensures **smooth workflow, hygienic conditions, privacy, and professional look**.

Objectives of Good Layout

1. To **attract and retain customers**.
2. To allow **quick and accurate dispensing**.
3. To **minimize movement and time wastage**.
4. To **provide adequate storage space and cleanliness**.
5. To ensure **customer comfort and professional environment**.
6. To fulfill **legal requirements (Schedule N, Drugs & Cosmetics Rules, 1945)**.

Essential Areas in a Retail Drug Store Layout

Area	Purpose
Dispensing Counter	Patient counseling and medicine issue
Prescription Receiving & Waiting Area	Patients submit prescriptions and wait
Drug Storage Shelves and Racks	Organized storage based on coding
Refrigerator Area	For insulin, vaccines, biologicals
Narcotic Drug Storage Cabinet	Lock-and-key secured storage (legal requirement)
Record and Billing Section	Maintaining billing and patient records
Office/Manager Desk	Administrative work
Wash Basin and Sink	Hygiene, hand-washing
Ventilated and Well-lit Environment	Ensures professional and safe handling

Minimum Space Requirements (as per Schedule N)

Type of Pharmacy	Minimum Required Area
Retail Pharmacy	150 sq. meters

Wholesale Pharmacy	200 sq. meters

Types of Drug Store Designs / Layout Styles

1. **Traditional Drug Store Design**
    - Most common
    - Pharmacist dispenses behind the counter; customers wait in front.
2. **Self-Selection Design**
    - Customers can freely choose OTC products from shelves.
3. **Personal (Clerk) Service Design**
    - Staff assists in selecting products; suitable for elderly-focused pharmacies.
4. **Super Drug Store Design**
    - Large pharmacy + supermarket facility under one roof.
5. **Prescription-Oriented Drug Store**
    - Maximum focus on prescription filling and counseling areas.

Characteristics of a Good Pharmacy Layout

- Clean, bright, and well-ventilated environment.
- Clearly labeled shelves and sections.
- **FIFO (First-In, First-Out)** stock arrangement to prevent expiry waste.
- Safety precautions for:
    - Flammable chemicals
    - Poisonous drugs
    - Refrigerated items
- **Professional appearance** that builds patient trust.

1. STAFF / PERSONNEL

A community pharmacy cannot function effectively without a **qualified and skilled staff**. The success of the pharmacy depends on **proper selection, training, management and motivation** of the personnel.

Types of Staff in a Community Pharmacy

Position	Role / Responsibility
Pharmacist (Registered Pharmacist)	*Head of pharmacy operations, dispensing, patient counseling, legal compliance.*
Pharmacy Assistants / Technicians	*Helps pharmacist in labeling, packing, handling prescriptions, stock management.*
Billing / Cashier Staff	*Maintains billing system and handles financial transactions.*
Store Manager / Purchase Officer	*Handles ordering, purchase, stock checking, dealing with suppliers.*
Cleaning & Support Staff	*Maintains hygiene and cleanliness of store.*

Criteria for Staff Selection

1. **Educational Qualification**
    - Pharmacist must be **registered under State Pharmacy Council**.
    - Assistants should ideally have **pharmacy training**.
2. **Experience**
    - Experience in **dispensing, stock handling, and patient interaction** is preferred.
3. **Communication Skills**
    - Ability to **counsel patients**, handle queries, and manage customer relations.
4. **Professional Conduct**
    - Must follow **ethical standards**, confidentiality, and maintain discipline.

5. **Physical and Mental Alertness**
    - Accuracy in dispensing is **critical** to avoid medication errors.

Orientation and Training of Staff

After selection, **training must be provided** to improve efficiency.

Training should include:

- Work schedule and shift rules
- Procedure for receiving and processing prescriptions
- Counseling skills and communication manners
- Use of billing software and inventory system
- Safety protocols and emergency procedures
- Handling of **narcotics, psychotropic drugs, and refrigerated drugs**

Well-trained staff improves **customer satisfaction, reduces errors, and increases productivity.**

2. MATERIALS MANAGEMENT IN PHARMACY

Material management involves **systematic handling of medicines and supplies** to ensure:

- Correct drug
- In correct quantity
- At correct time
- In correct condition
- At lowest possible cost

Functions of Materials Management

1. **Procurement**
    - Purchasing medicines from **licensed manufacturers/wholesalers**.
2. **Receiving and Inspection**
    - Checking **quantity, expiry date, batch number, manufacturer, seal integrity**, etc.
3. **Storage and Stocking**
    - Drugs stored under:
        - **Room temperature**
        - **Refrigerated conditions**
        - **Controlled access (e.g., Schedule X, Narcotics)**
4. **Issuing**
    - Dispensing medicines to patients **as per prescription**.
5. **Monitoring and Record Keeping**
    - Maintaining **inventory records**, expiration tracking, stock audits.
6. **Disposal of Expired / Damaged Goods**
    - Must be done as per **Drug & Cosmetic Rules**.

3. CODING OF MATERIALS / DRUGS

Coding means assigning **unique identification codes or symbols** to each item in the store for **easy recognition, record-keeping, and retrieval**.

CODING (or) CODIFICATION in Community Pharmacy

Definition:

Codification is the process of **assigning a unique number, letter, symbol or combination** to each item (drug or material) in the pharmacy or store.

This coding system allows **easy identification, recording, storing, and retrieval** of items in the drug store.

Pharmacies and drug stores usually handle **thousands of different drugs** with similar names, strengths, and dosage forms. Without a **systematic coding system**, locating, checking, and dispensing medicines becomes **difficult, slow, and prone to errors**.

Therefore, **coding ensures accuracy, organization, and efficiency** in pharmacy management.

Need for Coding

- Medicine names can be **long, complex, and similar** (e.g., Amoxicillin vs Ampicillin).
- Various **brands** of the same drug may confuse store staff.
- Medicines differ in **dosage form, strength, manufacturer, expiry date**, etc.
- To avoid **dispensing errors**, a structured identification system is required.

Objectives of Coding

1. To provide **quick and easy identification** of items.
2. To maintain **organized drug storage** in racks, shelves, and inventory.
3. To **reduce errors** in issuing medicines.
4. To **prevent duplication** of entries for the same item.
5. To **simplify stock recording and auditing**.
6. To support **faster billing and computerized inventory control**.
7. To **keep certain items confidential**, especially narcotics.

Advantages of Coding

Advantage	Explanation
Easy Identification	Helps staff locate medicines quickly.
Saves Time	Speeds up dispensing and stock handling.
Avoids Duplication	Prevents repeated purchase of same drug under different names.

Reduces Errors	Minimizes confusion between similar-sounding medicines.
Helps in Stock Checking	Easier physical verification of stock.
Maintains Secrecy	Used for costly, narcotic, and high-value items.
Simplifies Records	Short codes reduce lengthy names in store register and computer data.

METHODS OF CODIFICATION

Codification can be done in several ways based on pharmacy size and management needs.

1. Alphabetical Coding (Letter Code System)

- Each category is assigned a **letter**.
- Easy to remember, but not suitable for very large inventories.

Code	Meaning
T	Tablets
C	Capsules
S	Syrups
I	Injections

2. Mnemonic Coding

- Uses **letters based on the name / composition** of the drug.
- Helpful in remembering drug combinations.

Code	Drug/Meaning
APC	Aspirin + Paracetamol + Caffeine
PCD	Paracetamol + Caffeine + Diclofenac

Limitation:

Without a **code index list**, items may be difficult to recognize.

3. Numerical Coding (Sequence or Number System)

Numbers are assigned to drug groups and sub-groups.

(a) Block System

Certain **number blocks** are reserved for specific categories.

Code	Category
10–20	Tablets
21–40	Capsules
41–60	Syrups

Example:

Code	Drug Type
10.1	Antipyretic Tablets (e.g., Paracetamol)
10.2	Analgesic Tablets (e.g., Ibuprofen)
10.3	Anti-inflammatory Tablets

(b) Decimal System

Each digit in the code has a **specific meaning**.

Example:

- **10** = Tablets
- **10.01** = Paracetamol Tablet
- **10.02** = Ibuprofen Tablet
- **10.03** = Diclofenac Tablet

This system is **very systematic and computer-friendly**.

4. Combination Coding (Alpha-Numeric Coding)

Combination of **letters + numbers** for clarity and flexibility.

Examples:

Code	Drug
CPC 250	Chloramphenicol Capsule 250 mg
AMX 500	Amoxicillin 500 mg tablet
PCM-T 650	Paracetamol Tablet 650 mg

This system is **widely used in modern computerized pharmacies**.

5. Location Coding (Store Position Identification)

Used in **large stores and warehouses**.

Location Element	Meaning
Warehouse No.	Larger storage building
Rack No.	Shelf stand number
Shelf No.	Level inside rack
Row No.	Horizontal arrangement

Example:

W1-R2-S3-R5

Means: Warehouse 1, Rack 2, Shelf 3, Row 5

LEGAL REQUIREMENTS FOR STARTING AND RUNNING A COMMUNITY PHARMACY

Before starting a community pharmacy, certain **legal and structural requirements** must be fulfilled to ensure that the pharmacy is **authorized, safe, and professionally operated.**

Basic Requirements:

1. **Pharmacy Premises / Shop Layout**
    - The premises where the pharmacy is to be established must meet the minimum space requirement.
    - **Minimum area required:**
        - For **Retail Pharmacy ⟶ 120 sq. ft** (or ~ 10 sq. meter)
        - For **Wholesale Pharmacy ⟶ 200 sq. ft** (or ~ 15 sq. meter)
    - The space must be **clean, well-ventilated, and protected from heat, humidity, dust and contamination.**
2. **Rental or Ownership Proof**
    - If the shop is rented, a **legal rent agreement** between the landlord and the applicant is required.
    - Ownership documents are required if the premises belong to the applicant.
3. **Refrigerator Requirement**
    - A pharmacy must have a **refrigerator** for storing **Schedule C and C1 drugs** such as:
        - Vaccines
        - Insulin
        - Sera
        - Biological products
    - Proof of purchase of the refrigerator must be shown.
4. **Qualified Person**
    - The pharmacy **must be supervised by a Registered Pharmacist** with a valid registration from the **State Pharmacy Council.**

- His/her name must be displayed prominently inside the pharmacy.

2. LEGAL REQUIREMENTS IN PURCHASING

Purchasing drugs involves a **legal contract** between the **buyer (pharmacy)** and the **supplier (wholesaler/manufacturer)**.

Conditions for a Valid Purchase Agreement:

- There must be a **lawful offer** by one party.
- There must be a **lawful acceptance** by the other party.
- Both parties must enter into the agreement **voluntarily.**
- The agreement may be **oral or written**, but written agreements are preferred for legal clarity.

3. LEGAL REQUIREMENTS IN PAYMENT OF PRICE

The payment for goods purchased must follow three legal aspects:

Aspect	Meaning
Time of Payment	The buyer must pay within the agreed period.
Place of Payment	Payment must be made at the agreed location (e.g., supplier office, bank, online transfer).
Mode of Payment	Payment may be in cash, cheque, RTGS/NEFT, UPI or any mutually agreed method.

- If the buyer fails to inspect the goods within a reasonable time, the seller is **not responsible** for defects later discovered.

4. LEGAL REQUIREMENTS IN PRICING OF BULK DRUGS

Under **Drug Price Control Order (DPCO), 1987**, the Central Government has the authority to **fix maximum sale price of bulk drugs** to prevent overpricing.

Factors Considered While Fixing Bulk Drug Prices:

1. **14% return on net worth**
2. **22% return on capital invested**
3. **12% internal return on long-term marginal costing** for new plants

This ensures affordable medicine prices for the public.

5. LEGAL REQUIREMENTS IN PRICING OF DRUG FORMULATIONS

- DPCO, 1987 also authorizes the government to fix the **maximum retail price** (MRP) of drug formulations (finished, ready-to-use medicines).
- Manufacturers must print **MRP inclusive of all taxes** on the label.

6. LEGAL REQUIREMENTS TO START A COMMUNITY PHARMACY (LICENSING)

To sell drugs legally, the pharmacy owner must apply for the appropriate **license form** depending on the type of drugs to be sold.

License Forms for Retail and Wholesale Drug Sale

Sl.No	Application Form No.	Category of Drugs	Qualified Pharmacist Required?	License Issued in Form No.
1	**Form 19**	Wholesale or retail sale of drugs **other than Schedule X**	**YES**	**Form 20** (Retail – Schedule A drugs) / **Form 21** (Schedule C & C1 drugs) / **Form 20B** (Wholesale A drugs) / **Form 21B** (Wholesale C & C1 drugs)

2	**Form 19A**	Restricted License for retail sale of non-prescription drugs	**NO**	**Form 20A** (Retail A drugs) / **Form 21A** (Retail B drugs)
3	**Form 19AA**	Sale of drugs from motor vehicle (Mobile Pharmacy Van)	**YES**	**Form 20BB** (Wholesale A) / **Form 21BB** (Wholesale B)
4	**Form 19B**	Retail or wholesale sale of **Homeopathic medicines**	**YES**	**Form 20C** (Retail) / **Form 20D** (Wholesale) / Renewal ⟶ **Form 20E**
5	**Form 19C**	Sale of **Schedule X Drugs** (Narcotics, Psychotropics)	**YES**	**Form 20F** (Retail) / **Form 20G** (Wholesale)

MAINTENANCE OF VARIOUS REGISTERS IN COMMUNITY PHARMACY

Proper record keeping is an essential part of community pharmacy practice. Records help in **legal compliance, monitoring drug usage, preventing misuse, financial accounting, and ensuring safe patient care**. The **pharmacist is legally responsible** for maintaining accurate and up-to-date records.

The various types of records maintained in a community pharmacy can be classified into **three major categories**:

1. Records Regarding Acquisition and Disposition of Drugs

These records show **how drugs are obtained (purchase)** and **how they are issued or sold (disposition)**.

Purpose

- To ensure drugs are **purchased only from licensed suppliers**.

- To **prevent misuse or illegal sale**, especially of **controlled drugs**.
- To comply with **Drug and Cosmetic Act (1940)**, **Poison Act (1919)**, and **Narcotic Drugs & Psychotropic Substances Act**.

Examples of Registers Maintained

Record	Details maintained
Purchase Register	Name of supplier, invoice number, batch no., and expiry date of medicines received.
Schedule H / X Drug Register	Quantity purchased, quantity sold, balance stock — to prevent misuse.
Narcotic Drug Register	Mandatory daily log for storage and dispensing of narcotics.
Poison Register	Sale of poisonous substances with patient signature and identity proof.
Expiry and Damage Register	Stock nearing expiry or damaged goods.

Proper maintenance of these records is necessary to **avoid legal penalties**.

2. Records Regarding Patient Utilization of Drugs

These records contain **patient-specific drug information**, also known as **Patient Medication Profile**.

Purpose

- To ensure **safe and rational use of medicines**.
- To prevent **drug interactions, allergies, overdose, duplication, or therapeutic errors**.
- To provide **continuous patient counseling and follow-up**.

Details Included

- Patient name, age, gender and address.

- Diagnosis or disease condition (if known).
- Name of drugs prescribed.
- Dose, frequency, and duration.
- Any **allergies or adverse drug reactions (ADR)** noted.
- Past medication history (for chronic patients).

Such records are especially helpful in **lifestyle and chronic diseases** like diabetes, hypertension, asthma etc.

3. Records Regarding the Past and Present Financial Status of the Pharmacy

These records help in **managing the business operations** of the community pharmacy.

Purpose

- To track **income, expenses and profit**.
- To help in **inventory planning** and budgeting.
- For **tax filing, audits and financial reporting**.

Examples of Financial Records

Record Type	Purpose
Cash Book / Sales Register	Daily sale entries for medicines dispensed.
Profit and Loss Statement	Shows financial performance of pharmacy.
Tax Records (GST / Income Tax)	Legal requirement for tax payments.
Stock Inventory Reports	Helps determine fast-moving and slow-moving drugs.
Supplier Accounts Ledger	Payment records for purchased medicines.

Financial records ensure that the pharmacy **runs smoothly as a business** and remains economically sustainable.

USE OF COMPUTERS IN BUSINESS AND HEALTH CARE SOFTWARE

Computers play a crucial role in both the **business management** of a community pharmacy and the **clinical health care services** it provides. With the development of specialized software systems, computers help pharmacists perform daily activities **accurately, efficiently, and safely.**

A) USE OF COMPUTERS IN BUSINESS OPERATIONS OF A COMMUNITY PHARMACY

In a community pharmacy, computers are used to manage a wide range of **administrative and commercial** functions. They help in **record keeping, billing, accounts, and inventory management**.

1. Billing and Sales Management

- Computers generate **printed bills**, patient receipts, and tax invoices.
- Billing software calculates:
    - Price
    - Discounts
    - Taxes (GST/VAT)
    - Total amount
- Reduces calculation errors and saves time.

2. Inventory and Stock Control

Business software keeps a **real-time record** of:

- Quantity of each drug in stock
- Expiry dates and batch numbers
- Fast-moving and slow-moving items
- Automatic **re-order alerts** when stock is low

This prevents:

- Overstocking
- Shortage of medicines
- Loss due to expired medicines

3. Purchase and Supplier Records

Computers maintain:

- Supplier contact details
- Purchase order history
- Payment due dates

This helps in **smooth supply chain management** and avoids delays.

4. Accounting and Financial Management

Computers record:

- Daily sales
- Business expenses
- Profit and loss calculations
- Tax filing and financial reporting

They help the pharmacist understand business performance and make better financial decisions.

5. Customer Database and Loyalty Management

Many pharmacies maintain:

- Regular customer profiles
- Prescription history
- Discount or membership programs

This builds **customer trust and long-term professional relationships**.

B) USE OF COMPUTERS IN HEALTH CARE

Computers are widely used in **hospital and clinical pharmacy services** to support patient care.

1. Patient Records and Medical History

Electronic systems store:

- Patient demographics
- Diagnosis
- Allergies
- Previous prescriptions
- Laboratory results

This prevents medication errors and supports **continuity of care**.

2. Drug Information and Clinical Decision Support

Health care software helps pharmacists:

- Check drug interactions
- Identify contraindications
- Verify dosage
- Access latest treatment guidelines

This improves **medication safety and rational drug use**.

3. Prescription Processing Systems

Electronic prescribing (e-Rx) allows:

- Doctors to send prescriptions directly to the pharmacy
- Pharmacists to view, verify, and dispense medications safely

Reduces handwriting misunderstandings and dispensing errors.

4. Telemedicine and Remote Patient Counseling

Computers enable:

- Online consultations
- Video counseling
- Remote management of chronic diseases (e.g., diabetes, hypertension)

This increases access to healthcare services.

HEALTH CARE SOFTWARE (Examples)

Software Name	Purpose
Epi Info	Epidemiological data analysis and public health research
Spatiotemporal Epidemiological Modeler (STEM)	Disease outbreak prediction and mapping
Electronic Medical Records (EMR)	Digital patient health record system
Drug Information Databases (e.g., Micromedex, Medscape)	Provides dosage, interactions, ADR alerts

Hospital Management Information System (HMIS)	Manages hospital operations and patient flow

These software systems help in:

- Faster diagnosis
- Better treatment planning
- Improved coordination between healthcare workers

Use of Computers in Business and Health-Care Software

Introduction

Computers have become an integral part of the pharmaceutical field — not only in industries and hospitals, but also in community pharmacies.

They help in the management of patient information, inventory, accounting, research, and education.

In modern community pharmacy management, computers are indispensable for achieving accuracy, efficiency, and data security.

A) Use of Computers in Business

Computers are used to handle all business operations of the pharmacy.

They simplify financial management, inventory maintenance, and overall store administration.

1. Accounting and Financial Management

Helps in maintaining daily, weekly, monthly and yearly financial records.

Keeps track of sales, purchases, and expenses automatically.

Generates balance sheets, invoices, billing, and profit-loss statements.

Assists in tax calculation (GST, income tax) and submission.

Reduces chances of human error and provides quick financial reports.

2. Inventory Control

Monitors stock levels, expiry dates, and re-order levels.

Automatically generates purchase orders when stock goes below the minimum limit.

Prevents stock-outs and over-stocking.

Saves time and cost by maintaining a perpetual inventory system.

3. Staff and Salary Management

Computers store data related to employee attendance, payroll, and leave records.

Automates the calculation of salaries, overtime, deductions, and bonuses.

Maintains confidentiality and accuracy in staff data.

4. Communication

Internet-based communication systems such as email, online portals, and messaging keep pharmacists connected with suppliers, hospitals, and patients.

Helps in quick transmission of prescriptions and purchase orders.

5. Report Generation

Computers can instantly produce reports on sales, stock turnover, profit margins, and patient transactions, supporting managerial decisions.

B) Use of Computers in Health-Care Software

Health-care software provides specialized tools for patient management, clinical data, and hospital operations.

1. Clinical and Patient Care Applications

Maintains electronic medical records (EMR) and patient medication history.

Monitors drug allergies, interactions, and contraindications.

Facilitates telemedicine and remote consultations.

Generates alerts for dose limits and duplication of therapy.

2. Administrative and Hospital Management

Helps hospitals define the cost of nursing services and track resource utilization.

Maintains data on ward occupancy, patient admission, discharge, and billing.

Evaluates the cost-effectiveness and performance of healthcare services.

3. Research and Education

Supports data collection, statistical analysis, and epidemiological studies.

Used in computer-assisted learning (CAL), simulation, and tutorials for pharmacy and medical students.

Promotes innovation in drug discovery and clinical trials by managing large datasets.

4. Examples of Health-Care Software

Epi Info – Public domain statistical software for epidemiological studies (developed by CDC).

Spatiotemporal Epidemiological Modeler (STEM) – Used to visualize and model the spread of infectious diseases (maintained by Eclipse Foundation).

PharmaTrac – For inventory and sales tracking.

MediSoft – For hospital billing and patient management.

HealthCloud / ERP-based software – For integrated management of multiple hospital departments.

Conclusion