

(UNIT-IV)

#. Budget preparation and Implementation →

Budget and its implementation are one of the most important task of the pharmacy department of any hospital. It requires several factors into consideration like planning and strategy for maintenance, development etc.

- The word 'Budget' means the financial plan of a hospital for the period of a year.
- Budget is a quantity of plan of action and aid to the coordination and implementation of plan.
- Financial or quantitative statement prepared for the purpose of attaining the given objectives.

#. Budget is describes as an instruments through which hospital administration, management at the department levels and the governing bodies can receive the hospital services in relationship to the prepared plan in a comprehensive and integrated form expressed in financial term.

#. Objectives →

1. Development of standards
2. Comparison of actual results with standards
3. Identification of deviation and fluctuation
4. Analysis of deviation
5. The responsible person will use the budget
6. Details to determine whether the proposal is economically feasible and realistic.
7. To monitor the hospital financial activity
8. Estimate the cost of completing objectives identified in the proposal.

Advantages of planning the budget Budget →

1. Develop better financial planning.
2. Gives a better focus on decision making to the management.
3. Effectively manage the financial aspect of the hospital.
4. Expose the reasons of over expenditure.
5. Help to focus on hospital priorities.
6. Enhance efficiency of staff and others.

Types of Budget Preparations

Based on the duration of Budget, it can be divided into—

1. Short-term budget (2 years)
2. Long term budget (5-10 years)

Divisions of Budget →

- (A) Income account or revenue accounts.
- (B) Expenditure account.
- (C) Asking for capital investment.

(A) ^{ve} Income account or revenue accounts:

- (i) Total income must be calculated for the implementation of the budget.
- (ii) Pharmacy department or account department maintain daily, weekly, monthly and annually cost of the pharmaceutical issues to the patients services.
- (iii) The other statistics include:
 - Number of prescription.
 - No. of prescription dispensed by each pharmacist.
 - Hours of work put in.
 - Prescription volume per hour of services.
 - Medication cost per patient day.

- o Average drug cost per patient day
- o Average salary cost per prescription
- o Average supply cost.

③ Expenditure account →

- ① Administrative and general expense.
- ② Professional care of the patient.
- ③ outpatient and Emergency expense.
- ④ Miscellaneous expense.

The expenditure accounts include the following categories..

- ① Salaries and wages
- ② Supply and Materials
- ③ Drug and Pharmaceutical expense
- ④ Purchase expense
- ⑤ Equipment and Construction budget
- ⑥ Miscellaneous appliances and expense.

① Salaries and wages →

- o Salaries & wages includes complete breakup of all salary and wages paid to permanent & temporary staff (fulltime or parttime).

o The chart should be prepared in a tabular form so as to give an overall view at a glance

o The chief pharmacist/administrator should subdivide the staff into three important categories like Administration, professional and Non-professional staff.

- (II) Expenses of supplies of material
and
• Chief pharmacist or the responsible person should prepare the financial statement.
• Regarding the req. of amt. in Rupees for supply and materials with the help of the latest financial budget.
• Necessary to show the actual cost of the material to the budget figure and the previous figure was the same then the previously prepared budget was well prepared.

(III) Drugs and Pharmaceutical Preparations are categorised as those dispensed by hospital pharmacist or those used in the OPD, emergency and other department.

(IV) Purchase expenses
It includes the cost of prescription purchased from outside pharmacy.

(V) Equipment construction budget
• In hospital always a separate budget is prepared for equipment and for construction because it require major vital funds.
• While preparing budget for machinery, equipment both professionals and administration takes place.

(VI) Miscellaneous Supply and Expense
Miscellaneous supply and expense includes glass wares, labels, stationery, uniform, repair

In practice there should be

Implementation of Budget :-

It includes the following parameters -

- (I) Requirement of different department
- (II) Actual fund position
- (III) Utility of particular item
- (IV) Cost of products
- (V) Quality of products

Factor affecting Budget :-

- 1. Local condition and compulsion
- (2) Management policy
- (3) Confidence of higher authority
- (4) Ability of higher authorities

Clinical Pharmacy :-

Introduction to Clinical Pharmacy - "Clinical pharmacy is defined as the branch of pharmaceutical sciences dealing with the utilization of pharmaceutical knowledge, skills & judgement related to biomedical & pharmaceutical sciences, to produce the safety, the cost of precision of the drug uses in the patient care."

Development of Clinical Pharmacy -

- In developed country like USA, Canada etc.
- Clinical pharmacy has already taken good shape
- In India it is in the infancy stage.
- The role of the retail pharmacist is viewed by many peoples as simply transferring pills from a large bottle to a small one - counting tablets, typing labels and calculating the price.

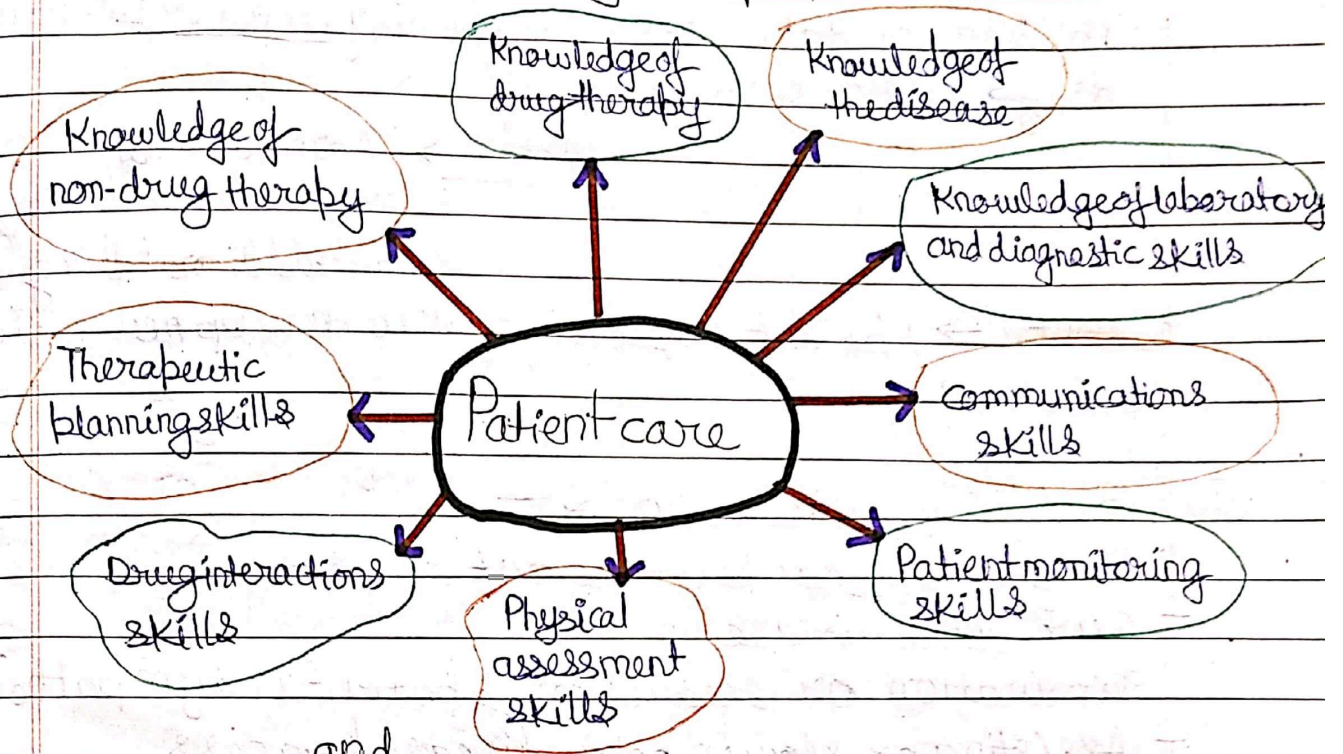
- India stand among top-15 in the world in pharmaceutical market with respect to pharmaceutical production export, import etc.
- There is still a need to develop the concept of clinical pharmacy.
- On one hand there is development of newer and and more effective drugs and on other hand their potential hazards on side effects are on rise.



Scope of Clinical Pharmacy

- (I) Preparation of Patient Medication history
- (II) Rational prescription
- (III) Bioequivalence & generic equivalence of pharmaceutical formulation
- (IV) Patient monitoring
- (V) Adverse drug reactions and Drug Interactions.
- (VI) Drug diagnostic test and interference.
- (VII) Intravenous Admixture
- (VIII) Drug information specialists
- (IX) Retail pharmacy store
- (X) Patient compliance
- (XI) Clinical research & continue education program
- (XII) Medical audit

Clinical Pharmacy Requirements:



#. Functions ^{and} Responsibilities of Clinical Pharmacy:

- Collection of patient data
- Identification of problems.
- Stabilizing outcome goals through a good therapeutic plan.
- Evaluating treatment alternative by monitoring & modified therapeutic plan.
- Monitoring outcomes

① Collection of patient data

- Demographics
- Current problems
- Past medical history
- Current medication
- Social habits
- Relevant laboratories data
- Subsequent modification of therapy plan

(i) Identification Problems —

The data collected can be used to identify actual or potential drug related problem.

Actual → A condition that requires the initiation of a new or additional drug

• Potential → A patient may be at risk to develop new medical problems.

(ii) Stabilising outcome goals —

Drug therapy can produce outcomes —

- Cure of the disease
- Elimination or reduction of patient's sympathology
- Assisting or slowing of a disease process
- Preventing a disease or symptoms —



Therapeutic Drug Monitoring (TDM) →

Drug therapy monitoring also k/a TDM, is a means of monitoring drug levels in the blood.

• TDM refers to the measurement and interpretation of principally blood or plasma drug conc. measurement with the purpose of optimising a patient drug therapy and clinical outcome while minimising the risk of drug induced toxicity?

• TDM involves tailoring a dose regimen to an individual patient by maintaining the plasma or blood conc. within a particular range.

• To achieve optimal drug therapy three objectives should be met —

(a) To attain desired pharmacological effect of the drug.

(b) To reach the maximal effect in shortest possible time.

① To decrease the risk of toxicity.

TDM is useful in drugs -

- # with a narrow therapeutic index
- # which are highly protein bound
- # which are liable to interact
- # in which the metabolite might be toxic

Medication Chart Review →

- It is a fundamental responsibility of a pharmacist to ensure the appropriateness of medication orders.
- It serves as a starting point for other clinical pharmacy activities (Medication counselling, TDM, ADR).
- Organising information according to medical problems (example - Disease) helps breakdown a complex situation into its individual parts.

Goals →

- To optimize the patient drug therapy
- To prevent or minimize drug related problems - medication errors.

Procedures →

- The patient medical record should be reviewed in conjunction with the medication, administration records
- Recent consultation, treatment plans and daily progress should be taken into account when determining the appropriateness of current medications, orders & planning each patient care.
- All current and recent medications order should be reviewed.

Practice principles of pharmaceutical care:
Pharmaceutical care involves the process through which a pharmacist collaborates with the patient and other professionals in designing, implementing and monitoring a therapeutic plan that will produce specific therapeutic outcomes of the patient.

- 4- Dosing pattern and Drug Therapy based on Pharmacokinetics and Disease pattern
- Dosing pattern or drug dose frequency is called dosage regimen.
- 6/ Designing the correct dosage regimen is important for achieving the desired therapeutic efficacy and avoiding undesired effects? Because of significant homogeneity among human, the dosage regimen is calculated on a population basis.
- Despite the same dose of drug, it produced variations in pharmacological responses, which is generally attributed to intersubject variability.
- The intersubject variability leads to pharmacokinetic or pharmacodynamic variations for the same drug administered in the same frequency in the different individuals.
- Various factors like metabolizing enzymes, Interactions (Drug-Drug, Drug-Food, Drug-Alcohol, herbal-drug interactions), multiple treatment and dosage regimen effect of the drug deposit on.

- Enzymes regulation, absorption, excretion, other pharmacokinetic or pharmacodynamic parameters, genetic factors may produce individual variation etc, hence resulting in drug disposition.

Different type of Doses:

① Effective dose \rightarrow It is the amount of drug which (ED_{50}) will produce specific intensity of effects either to treat or prevent the disease successfully.

② Median effective dose \rightarrow It is amount of the drug which produced a desired therapeutic effect in 50% of experimental animals.

OR

- It is the dose of drug required to produce a specific intensity of effect in 50% of individuals.
- It is measure of effectiveness of drug.

• Lethal dose (LD_{50}) \rightarrow It is the amount of drug which will kill certain percentage of experimental animals to whom drug is administered.

③ Fatal dose \rightarrow When lethal dose reaches 100% or LD_{100} is known as fatal dose.

④ Median Lethal dose \rightarrow It is the amount of a drug which is fatal to 50% of the experimental animals.