Part - II

Program Name - D.Pharm

Course Name - Hospital and Clinical Pharmacy

Session - 2020 - 2021

Topic - Hospital Pharmacy.

Sub-Topic - Drug Distribution System
Manufacturing

* Drug distribution System

A good drug distribution System ensures that a steady supply of Medicine is Maintained from the pharmacy to the service point from where it is to be dispensed to the Patient.

A good operational system should, therefore,

(a) Maintain a Continous supply of Medicines.

(b) have proper storage facilities for the procured Medicines.

(c) Maintain an accurate inventory.

(d) rationalize dispensing points.

(e) Prevent losses due to theft, spoilage and expiry of Medicines.

(f) Forecast demand Accurately.

(g) Adopt the Most suitable dispensing Method.

In - Patient Services

It is generally agreed that it is the doctor who prescribes the drug, which is dispensed by the Pharmacist and administered by the nurse.

* **Drug Procurement** :- The Pharmacy and therapeutic Committee (PTC) of a hospital prepares a list of the drugs required to be purchased.

→ The drug which is to purchased is always a matter of debate.

→ There are several drugs available to treat a particular Condition and the same drug may be available in the market with different brand names.

→ There are four general methods by which the medicines are dispensed to the Patients namely :-

(i) Individual in-patient prescription Order System.

(ii) Complete floor stock system.

(iii) Combination of (a) and (b); and

(iv) UDDDs.

(i) Individual in-patient Prescription Order :-

- This system is best suited for small and private hospitals.
- The system required the doctor to write prescription in triplicate, each copy being of a different colour.

* The Ward sends these prescriptions to the pharm-acy at fixed time intervals, usually everyday morning, where the Pharmacist will dispense the prescription for each individual in a seperate Container or Packet.

(ii) Floor Stock System

→ Drugs drawn from Pharmacy to the ward.

→ Distributed by nursing personal, no role for the pharmacist.

→ Drugs may be :- Charge floor stock drugs i.e those for which the patient is billed or non-Charge stock drugs which are not billed to the Patient.

→ Hospital Pharmacist should make available all necessary drugs at the nursing station.

→ List of drugs to be Kept in the Ward is periodically reviewed.

→ Pharmacist Should inspect all drugs stored in the Ward.

→ In Complete floor stock System both Charge and non-Charge drugs are stored in the Ward.

* Complete floor stock system — (Advantages):-

→ Availability of all necessary medicines whether charged or free.

→ No return of drugs to Pharmacy.

→ Reduction of drug order transcriptions for Pharmacy

→ Reduction in pharmacy personnel requirements.

*Disadvantages:- → No review of prescription orders and therefore, Medication errors are more likely:

→ Increased drug inventory.

→ Drug deterioration hazards.

→ Greater demand upon the nurses time

→ Facilities for storage have to be Made available at each nursing point.

* Unit dose Drug Distribution System (UDDS):-

→ Safe and efficient.

Package mentions relevant details.

Drugs dispensed in a ready to use form.

Chances of Medication error Minimized.

Wastage reduced as amount dispensed at one time is less.

→ Reduction in nursing time, no reordering of drug.
→ Record Keeping is simple Unit.
→ Dose Package Can be returned to the Pharmacy in Case drug is discontinued.
→ Reduction in Cost of Medication.

* Manufacturing

* **Economic Considerations** :- The Functions of the hospital pharmacy is to make available to the accomplish this by purchasing the drugs from pharmaceutical manufacturing Companies or may Undertake to Manufacture these itself.
The Main Aim to make quality preparations available at lower Cost.
It is beyond the scope of this text to exhaustively review all the factors but some important economic Concepts and terms are however outlined below :-

(i) Production
(ii) Consumption
(iii) Cost.

(iv) Land.
(v) Labour.
(vi) Capital
(vii) Entrepreneurial Ability.
(viii) Profit.
(ix) Equilibrium.
(x) Cost Analysis
(xi) Direct labour.
(xii) Indirect labour
(xiii) Direct Material.
(xiv) Indirect Material
(xv) Capital
(xvi) Overhead.
(xvii) Economic Order Quantity.

$$EOQ = 2CS / ID$$

where C = Consumption over a period of time
S = Set up Costs
I = inventory Carrying Charge expressed as a %
D = Direct production Cost per unit.

Estimation of Demand

(i) Relying on the pharmacy staff who on the basis of their experience can accurately project the demand of a particular item; this method is called the judmental method.

(ii) By extrapolating the past consumption pattern to forecast the demand for the future

(iii) By regression analysis of hospital admission number of surgeries performed, infection rate etc.

* Reference :- (i) Dandiya P.C, Mathur Mukul "A text book of Hospital and Clinical Pharmacy" Published by Vallabh Prakashan, Edition 4th 2005. Pageno - 1 - 40.

(ii) Churawala S.A, Dr. Paradkar "A text book of Hospital and Clinical Pharmacy" Published Nirali Prakashan, Edition 23rd, 2019.