

DRUG DISTRIBUTION METHODS



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Drug distribution is one of the basic service provided
by the hospital pharmacy

Drug distribution system falls in to 3 categories

- 1) Ward – controlled system
- 2) Pharmacy controlled imprest based system
- 3) Pharmacy controlled patient issue system



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graph TD; A[DRUG DISTRIBUTION SYSTEM] --> B[OUT-PATIENT SERVICES]; A --> C[IN-PATIENT SERVICES];
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**DRUG
DISTRIBUTION
SYSTEM**

**OUT-PATIENT
SERVICES**

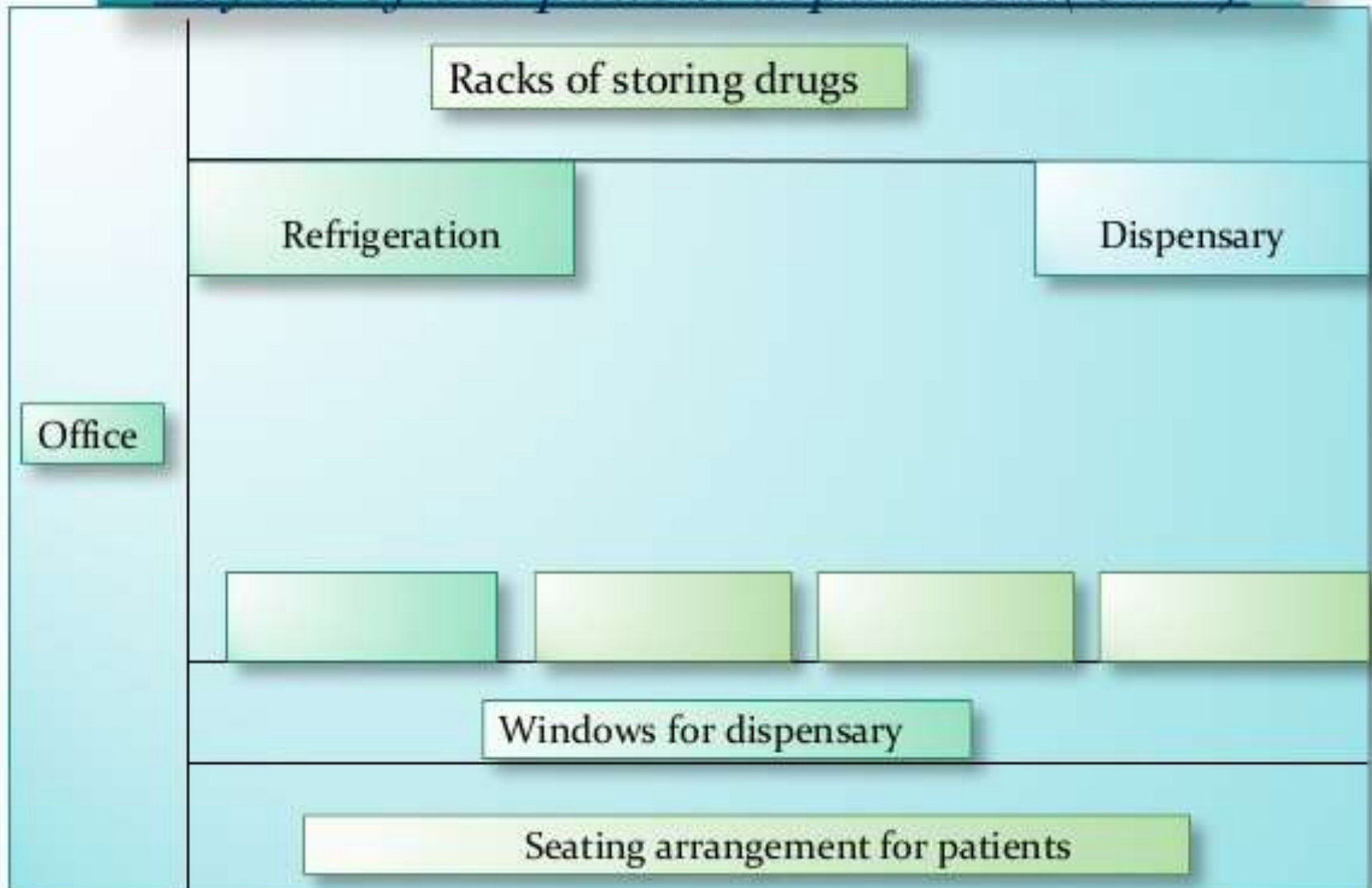
**IN-PATIENT
SERVICES**

OUT-PATIENT DEPARTMENT (O.P.D)

- ✓ Out patient refers to patients not occupying beds in a hospital, clinics, health centers
- ✓ The patients with minor and common illness go to O.P.D for consultation to the physician



Layout of out-patient department(OPD)



OUT-PATIENT ACTIVITY CHART

Rx written by doctor

Rx received by pharmacist

Filling of prescription

Dispensed to patient

- selection
- labelling
- pricing

Receipt of payment

Free Cash Charge

Statistics and reports

Prescription filed

Regular prescription file

Narcotic prescription file

IN – PATIENT SERVICES

- The drug distribution to the inpatient department can be carried out from the outpatient dispensing area.
- The staff involved in dispensing the drugs for outpatient can dispense drugs for inpatients too.
- If the work load seems to be heavy then additional personnel can be employed.



4 SYSTEMS FOR INPATIENT DRUG DISTRIBUTION

1. Individual prescription order system
2. Complete floor stock system
3. Combination of above mentioned
4. Unit dose dispensing method



1) INDIVIDUAL PRESCRIPTION ORDER SYSTEM

- This system is mainly used in small or private hospitals because of its economic consideration and reduced manpower requirements

ADVANTAGES:

- All medication orders are directly reviewed by pharmacist
- It provides closer liasion among pharmacist, physician , nurse and the patient
- It provides closer control of inventory

DISADVANTAGES:

- There may be possible delay in obtaining the required medications for administration to the patient
- Increase in the cost to the patient



2) COMPLETE FLOOR STOCK SYSTEM

- Drugs are stored at the nursing station and are administered by a nurse according to the chart order of the physician
- Only commonly used drugs are stocked on the floor

ADVANTAGES:

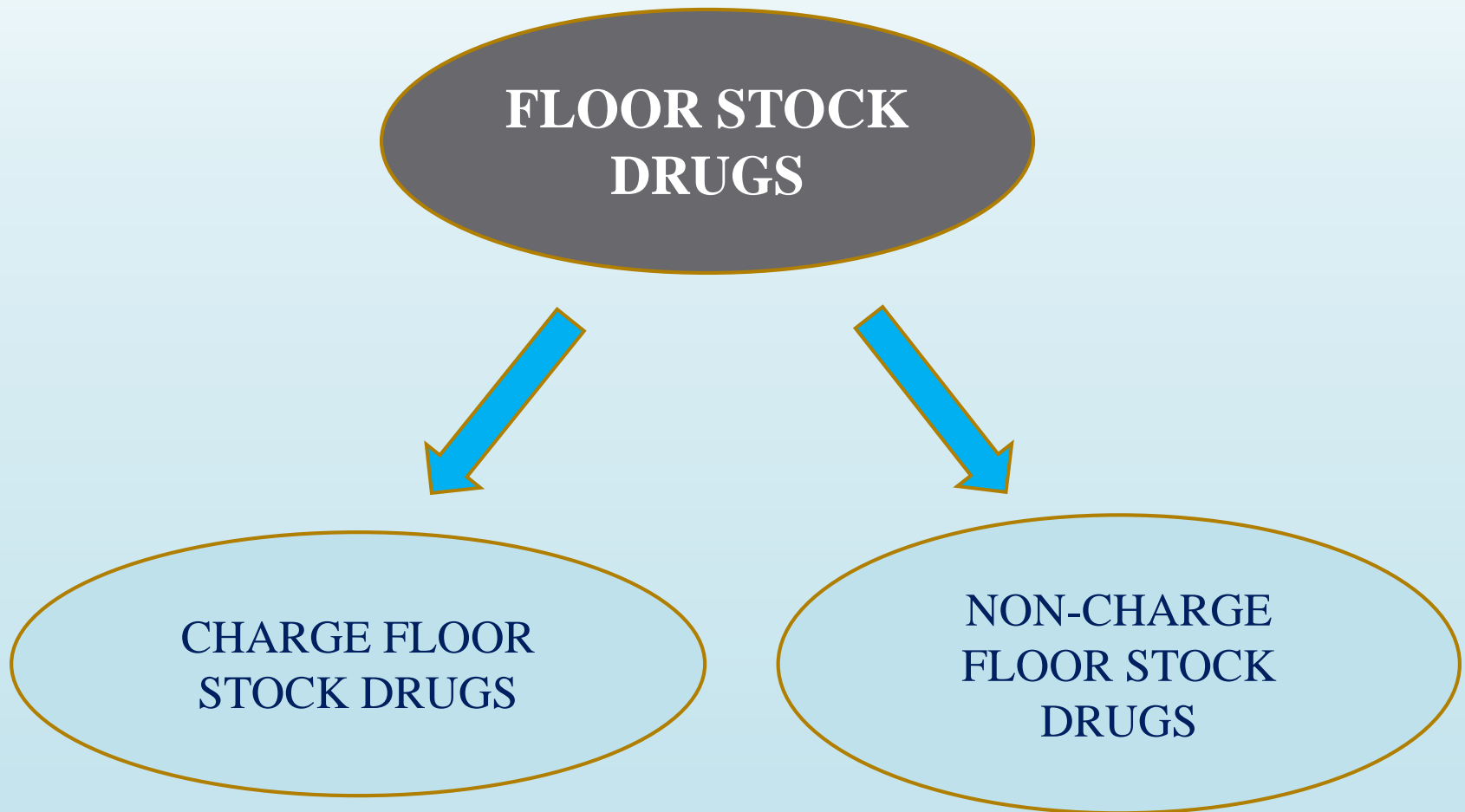
- The drugs are readily available for administration
- Minimum return of drugs
- Reduced in-patient prescription orders
- Reduction in number of pharmacy personnel required

DISADVANTAGES:

- Increase in chance of medication errors
- Increase in drug inventory
- Increase chances of drug deterioration due to lack of proper storage facilities and due to unnoticed drug degradation
- Increased workload on nurses



Drugs on the nursing station are known as Floor Stock Drugs



A) DISPENSING OF CHARGE FLOOR STOCK DRUGS

- These are drugs for which patient is charged for every single dose administered to him
- Selection of these drugs is made by PTC
- Charge floor stock drugs are stored at various nursing stations
- An envelope is used to dispense such drugs

B) DISPENSING OF NON-CHARGE FLOOR STOCK DRUGS

- These are medicaments placed at the nursing station for the use of all patients on the floor
- Drug basket method



MOBILE DISPENSARY UNIT

- It is a specially constructed stainless steel truck
- It measures 60 inches high, 48 inches wide and 25 inches deep



3) COMBINATIONS OF INDIVIDUAL DRUG ORDER AND FLOOR STOCK SYSTEM

It is a type of drug distribution system that uses individual prescription or medication order system as their primary means of dispensing but also utilize a limited floor stock

4) UNIT DOSE DISPENSING

Unit dose medication is defined as those medications which are ordered , packaged, handled, administered and charged in multiples of single doses units containing predetermined amount of drugs or supply sufficient for one regular dose, application or use.



ADVANTAGES:

- Patient receives improved services and are charged for only those doses which are administered
- Nurses get more time for direct patient care
- Medication errors are reduced
- More space is available in nursing station by eliminating bulky floor stock
- It eliminates wastage of drug and pilferage

DISADVANTAGES:

- It requires more space since packaging material increases the bulk of the dosage forms.
- It requires increased number of skilled personnel in the pharmacy
- The cost of medication is increased to the patient due to increased handling charges



**METHODS OF
DISPENSING UNIT
DOSES**

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graph TD; A([METHODS OF DISPENSING UNIT DOSES]) --> B([CUDD]); A --> C([DUDD]);
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CUDD

DUDD

1. CENTRALISED UNIT DOSE DRUG DISTRIBUTION SYSTEM

- All in-patient drugs are dispensed in unit doses and all the drugs are stored in central area of the pharmacy and dispensed at the time the dose is to be given to the patient
- To operate the system, delivery devices such as medication carts or pneumatic tubes are required

PNEUMATIC TUBE SYSTEM



2. DECENTRALISED UNIT DOSE DRUG DISTRIBUTION SYSTEM

- This operates through small satellite pharmacies located on each floor of the hospital
- The main pharmacy is for procurement, storage, manufacturing and packing

PROCEDURE:

- Patient profile card is prepared upon admission to the hospital
- Prescriptions are sent directly to the pharmacists

- Pharmacists checks the medication orders
- Junior pharmacists picks medication order and place drugs in cart
- Pharmacist check cart prior to release
- The nurse administers the drugs and make the entry in their records
- Upon return to the pharmacy the cart is rechecked

DISPENSING OF CONTROLLED DRUGS:

- These drugs should be kept under lock and key
- A separate register should be maintained to register them

PROCEDURE:

- ❑ Medical superintendent is overall responsible for handling of controlled drugs.
- ❑ Chief pharmacist procures, stores and dispenses the drugs



❑ Prescription of narcotic drugs under Narcotics and psychotropic substances act 1985 must include following information

- a) Patients full name
- b) Address
- c) Date
- d) Name and strength of drug
- e) Quantity of drug
- f) Signature of prescriber
- g) Dose and route of administration



- ❑ If the required drug is not in the stock the complete controlled drug prescription must be written on hospital prescription blank form by registered medical practitioner and signed
- ❑ Delivery of narcotic drugs from pharmacy to wards should be carried out by reliable person
- ❑ After dispensing, nurses resume responsibility for administration, control and auditing of the inventory
- ❑ If patient refuse or doctor cancels any dose , nurse should destroy the drug in to sink and record “Refused by patient” or “Cancelled by doctor”

NOVEL DRUG DISTRIBUTION METHODS

ADHERENCE PACKAGING PROGRAMME

- Each patient receives a medication strip with individual doses in individual pouches
- It is clearly marked with date and time of administration and the medication they contain
- All the patient needs to do is to tear open the pouch at the right time and take the contents

ADHERENCE PACKAGING



- Patient name
- Medication name and strength
- Time of administration
- Bar code

PACKAGING MACHINE



AUTOMATED DISPENSING CABINET

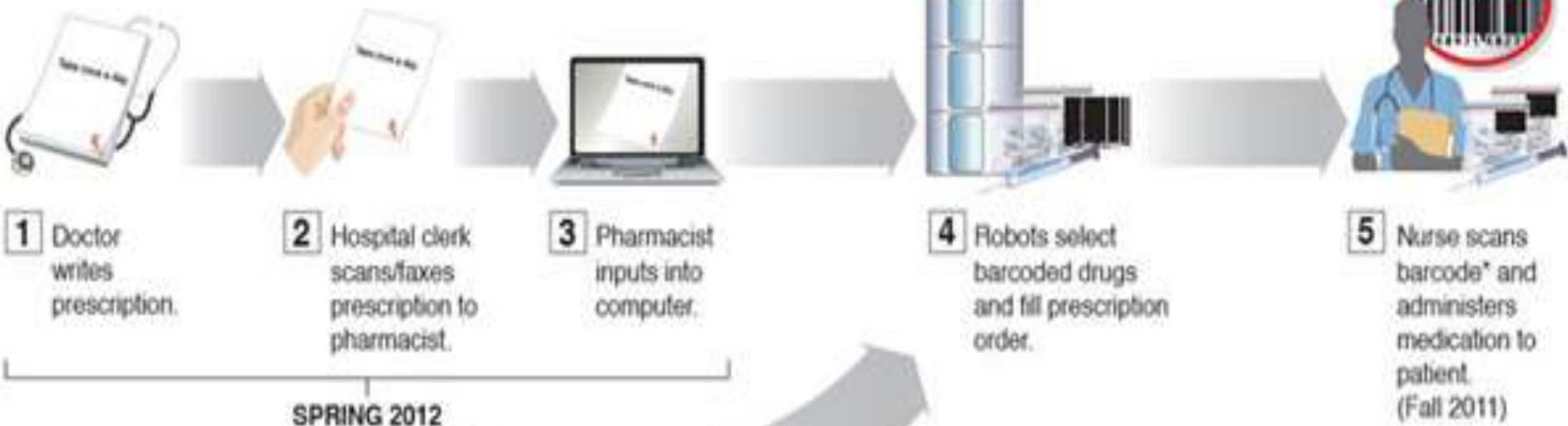


- Automated dispensing cabinet is a computerized drug storage device or cabinet designed for hospitals
- The ADM provides proper storage , inventory control and security for pharmaceuticals at the point of care
- It can be used only by authorized users who are authenticated by password
- It is placed in wards, ICU rather than in central pharmacy

ADVANTAGES:

- The commonly needed pharmaceuticals are at the point of care
- This will reduce the workload of nurses
- Controlled substances remain in secure lock box until needed and access is secured by multifactor authentication
- ADM can improve patient safety by providing drug allergy alerts, drug-drug interaction and advice on high risk medication

AUTOMATED PROCESS



1 Doctor enters prescription into computer.

ROBOTIC DRUG DISPENSING



- The robot can store up to 35000 medicines and dispense around 12 prescription in less than a minute
- So the patients waiting time is significantly reduced
- The dispensing process will be paper free as the robot will store the prescription as soon as a doctor documents it electronically
- This also allows the pharmacist to focus on giving the customers right instruction on taking the medication



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Thank
You

A blue hanging tag with the text "Thank You" in white, bubbly font. The tag is suspended by a thin brown string. The text is arranged in two lines: "Thank" on the top line and "You" on the bottom line. The tag has a soft shadow on the white background.