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Diploma in Pharmacy 2nd Year Hospital & Clinical Pharmacy Important Questions Chapter 3 : Supply Chain and Inventory Control	
Questions	**Page No**
Q1. Write about supply chain.	3
Q2. Write a short note on **High Risk Drugs** **Emergency Drugs** **Schedule H1 Drugs** **NDPS (Narcotics Drugs and Psychotropic Substance)** **Reserved Antibiotics**	3
Q3. What are the procedure of Drug Purchases.	5
Q4. Describe the Tender / e-Tender Process.	6
Q5. What is Inventory Control ? Write the Inventory Control Techniques.	6

Chapter 3
Supply Chain and Inventory Control
IMPORTANT Questions

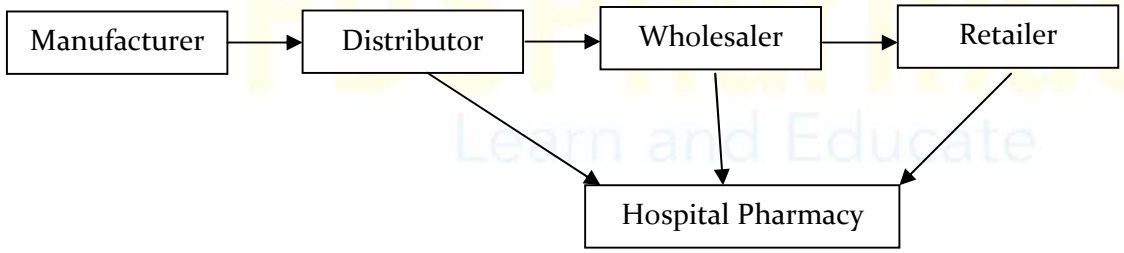
Q1. Write about supply chain.

Ans.

SUPPLY CHAIN

- → Pharmaceutical supply chain is the link through which prescription medicines are manufactured and delivered to patients.
- → Supply chain network is highly complex, requiring a number of steps that need to be taken to make medications available for and accessible to patients.
- → Multiple government agencies, hospitals, clinics, drug manufacturers, drug distributors, pharmacy chains, retailers, research organisations, and the FDA are involved in the pharmaceutical supply chain.
- → This very supply chain is responsible for distributing prescription drugs, OTC medicines, generic drugs, and biologics with different handling requirements and operational objectives.

Following Chart can help to understand the supply chain of drug to hospital Pharmacy



Q2. Write a short note on

High Risk Drugs
Emergency Drugs
Schedule H1 Drugs
NDPS (Narcotics Drugs and Psychotropic Substance)
Reserved Antibiotics

Ans.

High Risk Drugs

- → High risk drugs have an increased risk of causing significant harm to the patient if used incorrectly.
- → These medicines include :
  - Medicines with a low therapeutic index.
  - Medicines posing a high risk when administered through the wrong route or when errors occur in other system

High Risk Drugs list

1) adrenergic agonists IV (Epinephrine , norepinephrine ,)
2) adrenergic antagonists IV (propranolol , prazosin , atenolol)
3) anaesthetic agents (general) inhaled and IV ,(Ketamine , propofol

Emergency Drugs

→ Emergency drugs are essential to meet the immediate therapeutic needs of patients and which are not available from any other approved source in required time to prevent risk or harm to patients.

Or

→ These are the drugs which may be required immediately in emergency conditions to prevent the risk or harm to patients and can save their life,

→ These drugs have onset of action , and are administered by such route which facilitate onset of action like : Epinephrine in cardiac arrest.

Schedule H, Drugs

→ Schedule H, drugs comprise of sensitive antibiotics, habit-forming medications, and drugs with severe side effects if used without supervision and prescription of a registered medical practitioner.

Or

→ These are the sensitive antibiotics and habit forming drugs , which are not allowed to sale or distribute without a prescription of a registered Physician or pharmacist.

→ This Schedule was implemented to rigorously regulate the medications that were included for the general public welfare.

NDPS (Narcotic drugs And Psychotropic substances)

→ Narcotic Drugs : The opioids and their derivatives are called narcotic drugs .

→ Psychotropic substances : psychotropic substances are chemical substances which change the function of nervous system , and alter the mood , perception , consciousness like alcohol , marijuana , nicotine .

→ The NDPS Act, 1985 forbids cultivation, production, possession, sale, purchase, trade, use and consumption of narcotic drugs and psychotropic substances, except for medical and scientific purposes under license.

NDPS Drugs

- Alprazolam,
- Amfepramone,
- Barbital,
- Benzphetamine,

Reserved Antibiotics

→ The reserved antibiotics are those antibiotics which are reserved for the treatment of suspected or diagnosed infection caused by multi -resistant organism , and they are used when all other antibiotics have failed.

1. Aztreonam
2. Carumonam
3. Colistin (Oral)

Q3. What are the procedure of Drug Purchases.

Ans.

Procedure of Drug Purchases

- → **Drug Purchase :** means to obtain or get different types of medicines from external network.

→ Or

- → Purchasing means to gain different types of medicines from the external network.
- → It is a routine function of any pharmaceutical company, and it also represents as one of the tactical avenues of the company.
- → It is very essential for a pharmaceutical company to maintain a proper inventory of different medicines in the drug store and it should also ensure that these medicines are available to the pharmacists at affordable prices.

Purchase Procedure

Following steps are involved in the purchase procedure:

1) purchase request form / Purchase requisition :

- The pharmacist prepares the drug list to be buy and fills purchase request form.
- This form provides information regarding required drugs , their quality and quantity.
- This form will be sent to administration for approval , after approval it will sent to purchasing officer.

2) Quotation Invitation :

- Now the Purchasing officer send this form to different suppliers and ask their quotations.

3) Purchase form :

- The purchasing officer check all the quotations and select suppliers on the price , quality etc. and place the purchase orders.

4) Receipt of good products :

- When the ordered products delivered to the purchasing department , their quality , quantity and prices are checked . If the any product miss the desired quality , quantity ,or price they should retuned to supplier.

5) Payment :

- After satisfactory completion all these process , the purchasing officer pay the amount to the suppliers.

Q4. Describe the Tender / e-Tender Process.

Ans.

Tender/e-Tender Process

- → It is a process in which a person or organisation , who need goods / services etc. invites the other parties to submit a proposal to provide their goods or services.

→ Or

- → Tender is the process in which hospital invites bids for drugs that should be submitted within the given time limit.
- → Tenders are advertised to offer opportunities to a different supplier, facilitate competition, and ensure availability of greater offers to select forms.

Tender process includes the following steps :

1. Tenders are invited from various suppliers.
2. Suppliers send the tenders in sealed envelope before the due date.
3. Tenders are opened on due date and time in the presence of representatives of suppliers.
4. Purchase officers from the received tenders prepare a comparative statement.
5. Order is placed to the supplier which has quoted lowest rate. However, quality, supply period, other expenses like freight, sale tax, packaging and forwarding charges should also be considered.

E-Tender

- ➢ E-tender is the process in which tenders are sent and received by electronic means, instead of old paper-based technique.

Q5. What is Inventory Control ? Write the Inventory Control Techniques.

Ans.

INVENTORY CONTROL

- → **Inventory :** All the items , goods , materials and manufactured product a company have for sell is called Inventory.
- → inventory Control : Inventory control is a process of maintaining a business stock level to fulfill the customer 's demand and to minimize cost.

Inventory control techniques

1) **ABC analysis :** It is a inventory management technique that determine the value of inventory items on the basis of their importance to the business .

2) **VED Analysis :** It is also an inventory management strategy that classifies the materials according to their importance

		No. Goods	Expenses	Rs	Need of care
V. Vital	A	10%	70%	70 Rs	Good care, Good Storage, Evaluation
E.Essensial	B	20%	20%	20 Rs	General care ,general storage no evaluation
D . Desirable	C	70%	10%	10 Rs	No care, no storage , no evaluation

ABC = Always Better Good

3) Economy Order Quantity (EOQ) : It is a method to purchase appropriate quantity of row material for manufacturing at one time , to minimize ordering and caring cost .

Ordering Cost : It includes all those expenses are related to ordering , like traveling cost expenses during traveling etc .

Caring Cost : It includes all those expenses are related to goods like transportation charge , insurance , room rent , storage expenses etc.

Formula $EOQ = \sqrt{\frac{2 \times A.D. \times O.C.}{C.C.}}$ A. D. = annual demand , O.C.= ordering cost

C.C . = Caring Cost

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