Pharma Unit

Hospital and Clinical Pharmacy

Top 10 Most Repeated Questions with Answers

According to New Syllabus ER 2020-21

2nd Year D. Pharmacy

1) Define Hospital pharmacy and write scope of hospital pharmacy?

Ans.

Definition: Hospital pharmacy is the department, service, or a domain in the hospital organization, managed under the direction of professionally competent legally qualified person.

Scope of Hospital pharmacy:

- To provide the right medicine to right patient at right time, in right quantity with minimum cost.
- To plan, organize and implement the policies of pharmacy.
- To implement the decision of PTC.
- To participate in research work.
- To act as profit centre of the hospital.
- To act as a counselling centre to the patient.
- To act as an information centre about drugs.
- To manufacture large volume parenteral or suitable dosage forms.

2) Explain pharmacy and therapeutics committee (PTC)? write composition and function of PTC?

Ans.

Definition: PTC is a policy framing and recommending body on matters related to rational use of drugs in the hospital and consists of members from various departments of the hospital.

Objectives:

A. Advisory Objectives:

- Assist in formulating policies for drug evaluation and selection.
- Advise medical staff and administrators on drug matters, including investigational drugs.
- Provide recommendations for effective drug distribution and control.
- Suggest drugs to be stocked in patient care areas.

B. Educational Objectives:

- Help formulate policies to ensure professional staff have up-to-date drug knowledge.
- Review adverse drug reactions and establish a hospital formulary system.
- Arrange training programs for staff involved in drug use.

Composition:

- At least 3 physicians.
- One nursing staff.
- One pharmacist (secretary).
- Hospital administrator (chairman).

Functions

1. Develops drug safety policies.
2. Establishes hospital formulary system.
3. Promotes rational drug use.
4. Reviews hospital formulary.
5. Provides training to staff.
6. Develops drug policies and procedures.
7. Manages staff education programs.
8. Advises pharmacy on drug purchasing and storage.
9. Manages hospital activities through subcommittees.
10. Inspects routine hospital activities.
11. Partially oversees hospital library.
12. Provides suggestions to hospital manufacturing.
13. Decides on 'automatic stop orders' for dangerous drugs.
14. Compiles lists of emergencies, dangerous, and narcotic drugs.
15. Interacts with FDA department.
16. Promotes rational drug use.
17. Guides addition and deletion of drugs in hospital.
18. Reviews Adverse Drug Reactions (ADR).
19. Sets quality norms for medication use.
20. Advises pharmacy on drug distribution and control procedures.

3) Write in detail about inventory control?

Ans.

Definition: Inventory control is an effective way to keep a watch over losses from misappropriation, damage, deterioration and carelessness and proper control over maintenance of stock.

Objectives of Inventory Control:

1. Ensure a consistent and steady supply of materials.
2. Minimize investment in inventory to optimize financial resources.
3. Reduce wastage of raw materials during storage.
4. Prevent misappropriation or misuse of materials.
5. Reduce incidents of theft.
6. Provide regular updates on product availability.
7. Maintain effective control over stock management.
8. Enhance efficiency and ensure smooth operations within the organization.
9. Ensure optimal utilization of available funds.

Functions of Inventory Control:

1. Maintain inventory levels as low as feasible while considering market conditions.
2. Eliminate situations of "out of stock" or "excessive stock."
3. Keep an adequate supply of finished products to meet market demands.
4. Maintain accurate records to estimate purchase requirements.
5. Predict market trends and supply conditions.
6. Safeguard materials during the storage period.
7. Provide a safety stock to address issues like strikes, transportation delays, etc.
8. Ensure proper lead time during material procurement processes.

Inventory control technique:

ABC analysis.
VED analysis.
EOQ method.
Recorder quantity level.
Inventory turnover.
Setting of various levels.
Perpetual inventory control system.
Input–output ratio analysis.
Effective purchase procedure.
Review of slow-moving and non-moving items.

4) What is hospital formulary? Explain the aim and needs of hospital formulary?

Ans.

Hospital Formulary: It is continuously revised collected information of pharmaceutical dosage forms which gives current clinical judgement to the medical staff. It is continuously revised compilation of pharmaceutical dosage forms.

Aim and Needs of Hospital formulary:

a) The primary goal of a hospital formulary is to ensure patients receive the most effective treatment at the lowest possible cost.
b) It keeps physicians, nurses, and pharmacists updated about newly available and more effective drugs within the hospital.
c) It prevents the use of brand-name drugs and duplication of therapeutic agents.
d) It encourages the rational and appropriate use of medications.
e) It provides clear guidelines for the procurement, prescribing, dispensing, and administration of drugs within the hospital.
f) It informs staff about the availability, dosage forms, and quantities of medicines in the hospital.
g) It educates staff on standard dosage regimens and potential adverse effects of drugs.
h) It offers instructions regarding the use of emergency drugs in the hospital.
i) It includes a directory of physicians, their contact details, qualifications, and working hours, which is helpful for reference or emergencies.
j) It notifies staff about adverse drug reactions (ADRs) reported within the hospital.

5) Explain medication error in detail?

Ans.

Definition:

Medication error is any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of healthcare professional, patient, or consumer.

Different types of medication error:

1. Prescribing error: It means those errors which occur due to improper drug selection dose, dosage form or route of administration. Examples of this type of error include Prescribing a dose of drug, i.e. too high or too low. Writing a prescription illegibly. Ordering duplicate therapies
2. Omission error: It occurs when a patient does not receive scheduled dose of medication.
3. Wrong time error: It occurs when a dose is not administered in accordance with a predetermined administration interval.
4. Wrong dose error: This type of error occurs when a prescriber orders an inappropriate dose of medication. It occurs due to wrong calculations or wrong units of measurement or not measured properly.
5. Wrong dosage form error: It occurs when a patient receives a dosage form different from that prescribed.
6. Wrong route of administration: This type of error occurs when an agent meant for intramuscular administration is given intravenously.
7. Wrong drug preparation: This type of error occurs when a medication requires some preparation before its administration such as reconstitution of solution by adding water for injection in the vial.
8. Unauthorized drug error: This type of error occurs when a patient receives the drug which is not prescribed to him.
9. Deteriorated drug error: This type of error occurs when a patient receives an expired drug or deteriorated prematurely due to improper storage conditions.
10. Monitoring error: This type of error occurs when the patient is not properly monitored

before or during the therapy, e.g. In warfarin therapy, not conducting the patient's response by doing adequate blood tests, life- threatening haemorrhage may happen.

11. Compliance error: This type of error occurs when the patient use medication inappropriately due to improper education of patient by the pharmacist or physician or both.

Strategies to Minimize or Prevent Medication Errors:

1. Review the patient's profile and medication history before prescribing any drugs.
2. Healthcare professionals should thoroughly understand the pharmacology, adverse effects, drug–drug interactions, and potential adverse reactions of prescribed medications.
3. Always double-check the frequency and dosage of high-alert medications.
4. Maintain precise and accurate documentation of every administered dose to minimize errors.
5. If unsure about the drug dosage, consult a pharmacist for clarification.
6. For illegible or confusing handwritten prescriptions, consult the prescribing physician.
7. Actively address and resolve any issues identified during the medication process.
8. Inform patients about the medications being administered and their expected benefits.
9. Avoid using abbreviations; instead, write the full forms for routes and dosing frequencies.
10. Clearly specify the duration of therapy in all prescriptions.
11. Always consider the potential for adverse reactions with each medication.
12. Be vigilant when dealing with high-risk medications.
13. Evaluate liver and kidney functions before prescribing medications, especially those with potential toxicity.
14. Provide ongoing education and training to healthcare providers to minimize errors.
15. Report medication errors immediately to the organization to prevent similar mistakes in the future.
16. Encourage patient counselling by pharmacists, nurses, and physicians to reduce errors.
17. Foster effective intraprofessional communication among healthcare teams to prevent misunderstandings.
18. Invest in health information technology and develop software to improve care quality and reduce medication errors.

6) Discuss in detail about radiopharmaceuticals?

Ans.

Definition: Radiopharmaceuticals are medicinal formulations containing radioisotopes which are used in major clinical areas for diagnosis and treatment.

Dispensing of Radiopharmaceuticals:

1. Dispensing area should be separate, secure, and hygienic.
2. The dispensing room should be away from imaging and injection areas.
3. All work surfaces should be smooth, impermeable, and easily cleanable.
4. Radiopharmaceuticals are dispensed as ready-to-use kits or cold kits.
5. Chemical reagents are prepared in a sterile environment.
6. Dosage levels are calculated based on patient history, age, weight, etc.
7. Dispensing follows applicable pharmacy laws and maintains accurate records.
8. Policies ensure correct drug, dosage, patient, time, and route.
9. Good radiation practices (GRP) should be followed to minimize unnecessary exposure.

Disposal Procedures of Radiopharmaceuticals

1. Disposal follows local regulations and considers environmental hazards.
2. Large volume waste production should be avoided.
3. Waste includes syringes, vials, needles, etc.
4. Waste bins are marked, dated, and stored.
5. Methods of disposal include dilution, decay, burial, incineration, etc.

6. Low-activity solid waste can be disposed as ordinary hospital waste.
7. Liquid waste with low activity can be flushed into the sewer system.
8. Radioactive waste is stored for decay before disposal.
9. Some waste may be sent to approved disposal sites or incinerated.
10. Waste with minimal radioactivity can be treated as non-radioactive.
11. Disposal methods include delay and decay, burial, incineration, etc.
12. Some materials can be disposed of in sanitary sewers or sent to disposal sites.
13. Sealed gauges and detectors may require specialized disposal.

7) Explain in detail about pharmacovigilance?

Ans.

Definition: Pharmacovigilance is defined as the science and activities concerned with the detection, assessment, understanding and prevention of adverse reactions to medicines.

Aims of Pharmacovigilance:

1. Improve patient safety and care with respect to the use of medication.
2. Early detection of unknown adverse reactions and interactions.
3. Detection of frequency of adverse reactions.
4. Improve public health and safety with respect to use of medication.
5. Provide information to healthcare professionals and patients to optimize safe and effective use of medicines.
6. Contribute to assessment of effectiveness, harm, benefit, and risk of medication encouraging their rational, safe, and effective use.

Scope and Objectives of Pharmacovigilance

1. To monitor adverse drug reactions (ADRs).
2. To monitor benefit–risk profile of medicines.
3. To create awareness among healthcare professionals about the importance of ADRs reported in India.
4. To generate independent evidence-based recommendations on the safety of medicines.
5. To communicate findings with all stockholders.
6. To create a national centre of excellence at par with global drug safety monitoring standards.
7. To build and maintain a vigorous pharmacovigilance system.

8) Explain Drug interaction in detail?

Ans.

Definition: The drug interaction is a reaction in which the effects of one drug are altered by prior or concurrent administration of another.

Classification of Drug Interactions:

A. Pharmaceutical Drug Interactions:
- a) Chemical
- b) Physical

B. Pharmacokinetic Drug Interactions:
- a) Alteration in absorption
- b) Alteration in distribution
- c) Alteration in metabolism

C. Pharmacodynamic Drug Interactions:
- a) Due to opposite pharmacological effects
- b) Due to similar pharmacological effects
- c) Alteration of electrolyte levels
- d) Alteration at receptor sites

e) Interaction with formulating additives

Factors Contributing to Drug Interactions:

a) Simultaneous Administration of Multiple Drugs: Prescribing multiple drugs at the same time is a common practice, and it can be a primary cause of drug interactions.
b) Multi-Prescription Practice: Patients may consult multiple doctors without disclosing their previous consultations, leading to the prescription of drugs that might interact with each other.
c) Concurrent Use of Prescribed and Non-Prescribed Drugs: Patients may take over-the-counter medications like aspirin or paracetamol along with prescribed drugs, potentially resulting in harmful drug interactions.
d) Patient Non-Compliance: Patients sometimes fail to follow the physician's instructions, such as consuming restricted foods, which can contribute to drug interactions.
e) Availability of Potent Drugs: The use of potent drugs increases the risk of interactions with other medications, potentially leading to severe complications.
f) Hepatic or renal diseases: Liver or kidney dysfunction can increase drug concentrations in the blood, raising the likelihood of interactions.
g) Drug Abuse: Misuse or abuse of drugs can lead to interactions with other medications.
h) Prescription Errors: Errors or a lack of knowledge on the part of prescribers may result in unintended drug–drug interactions.
i) Genetic Factors: Genetic variations affect the synthesis of enzymes that metabolize drugs. For instance, differences in cytochrome P450 isoenzymes can alter drug effects, leading to increased or decreased activity.
j) Old Age: Aging affects drug action due to declining kidney function, metabolism, nerve transmission, and bone marrow activity, which can lead to the accumulation of drugs and interactions.

Role of pharmacist to avoid drug interactions:

1. Pharmacist should do patient counselling to make the patients aware about drug interactions.
2. Pharmacist should provide vital information about the drugs to patients regarding drug selection and administration.
3. Pharmacist working in hospitals should maintain drug history and medical record of the patient.
4. Pharmacist can educate the public for safe and effective use of medications through verbal communication as well as by written materials and use of computers.
5. Pharmacist should warn the patients not to use OTC drugs without consultation of physician.
6. Pharmacist should tell the patients to strictly follow the instructions given by the physician regarding administration timing and dosage.
7. Pharmacist should guide the patient, not to take the treatment from multiple physicians.
8. Pharmacist should tell the patient not to consume excess drug than prescribed dose.
9. Pharmacist should tell the patient not to take different drugs at once.
10. Pharmacist should inform the patient about drug–food interactions and specific food during use of certain medications.

9) Explain poison?

Ans.

Definition: It is defined as a substance which when administered, inhaled, swallowed, applied locally, causes toxic effects on the body.

Types of Poisoning

A. According to purpose of poisonings it is classified as

- Suicidal poisoning: Person consumes poison to kill himself.
- Homicidal poisoning: Poison is used to kill another person.
- Accidental poisoning: The poison is consumed by mistake.

B. Based on onset of action poisoning is classified into two groups

a) Acute poisoning: It is generally due to consumption of a large amount of poison. It may be accidental, intentional, or non-intentional. The symptoms develop very rapidly in severity. The aggravation of symptom is fast; therefore, treatment should be given quickly otherwise death may occur. The malfunctioning of respiratory and cardiac function. General symptoms of acute poisoning are vomiting, diarrhoea, convulsions, coma, respiratory or circulatory failure. It requires supportive, symptomatic, and specific treatment.

b) Chronic poisoning: The symptoms are observed very slowly. It is due to consumption of small amount of poison but with definite period of interval. The aggravation of symptom is very slow. The death due to chronic poisoning is rarely observed because more time is available for the treatment. General symptoms of acute poisoning are GIT irritation, confusion, insomnia. Usually, symptomatic treatment is given if required.

10) Explain clinical pharmacy and write scope of clinical pharmacy in India?

Ans.

Definition: Clinical pharmacy is a part of hospital pharmacy which deals with the preparation of patient drug profiles, recording patient drug history, advise about possible drug–drug interactions to trainees and drug effects on clinical laboratory test results.

Objectives of Clinical Pharmacy:

1. Provide support to physicians in prescribing and monitoring drug therapy effectively.
2. Assist nurses in the proper administration of medications.
3. Enhance patient involvement in the drug use process.
4. Optimize drug therapy to achieve maximum effectiveness while minimizing side effects or adverse effects.
5. Reduce patient non-compliance through effective counseling.
6. Monitor drug therapy, maintain records of treatments, and report any adverse effects or drug interactions to the hospital's Pharmacy and Therapeutics Committee (PTC) and the attending physician.

Scope of clinical pharmacy:

1. Preparation of history of patient.
2. Preparation of drug history.
3. Participation in management of medical emergency.
4. Participation in drug investigation.
5. Participation in the management of chronic diseases like diabetes, hypertension, arthritis.
6. To control over drug utilization.
7. To monitor drug therapy.
8. To counsel with patient.
9. To help in selection of drug therapy to physician.
10. To communicate with physician and nurses through presentation and publication.

11. Detection and reporting of adverse drug reactions (ADRs).
12. To take part in educational programme related with medical pharmacy and nursing profession.
13. To provide the formal and informal consultation to the physician.
14. To explain the direction of use, route of administration and other related information to the patients.
15. Collection of knowledge of drug therapy and pharmacokinetics of drugs.
16. To take part in patients' education, vaccination programme and other programmes related to social welfare arranged by the hospital.

Extra Questions?

1. What are the daily activities of the clinical pharmacist?
2. What are the application of computers used in hospital pharmacy?
3. Discuss the role of pharmacist in preventing antimicrobial resistance?
4. Write a note on FIP based statements?
5. Write about medication history of the patient?
6. Explain good pharmacy practice in the hospital?
7. Write a note on the infection Control Committee (ICC)?
8. Define Drug related problem? write classification of drug related problems?
9. Explain FEFO and FIFO method of inventory control?

All The Best For Your Exam

Very Imp Note:

- Please Read All the chapters very carefully before Community Pharmacy and Management Exam.
- These questions are only for the reference purpose.