

PHARMACOLOGY A PATIENT-CENTERED NURSING PROCESS APPROACH, 11TH EDITION BY LINDA E. MCCUISTION:TEST BANK|COMPLETE CHAPTER 1-58

CHAPTER 01: THE NURSING PROCESS and Patient-Centered Care

McCuiston: Pharmacology: A Patient-Centered Nursing Process Approach, 11th Edition

MULTIPLE CHOICE

1. All of the following would be considered subjective data, EXCEPT:
- Patient-reported health history
 - Patient-reported signs and symptoms of their illness
 - Financial barriers reported by the patient's caregiver.
 - Vital signs obtained from the medical record.**

ANS: D.

Subjective data is based on what patients or family members communicate to the nurse. Patient-reported health history, signs and symptoms, and caregiver reported financial barriers would be considered subjective data. Vital signs obtained from the medical record would be considered objective data.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: Planning MSC: NCLEX: Management of Client Care

2. The nurse is using data collected to define a set of interventions to achieve the most desirable outcomes. Which of the following steps is the nurse applying?
- Recognizing cues (assessment)
 - Analyze cues & prioritize hypothesis (analysis)
 - Generate solutions (planning)**
 - Take action (nursing interventions)

ANS: C

When generating solutions (planning), the nurse identifies expected outcomes and uses the patient's problem(s) to define a set of interventions to achieve the most desirable outcomes. Recognizing cues (assessment) involves the gathering of cues (information) from the patient about their health and lifestyle practices, which are important facts that aid the nurse in making clinical care decisions. Prioritizing hypothesis is used to organize and rank the patient problem(s) identified. Finally, taking action involves implementation of nursing interventions to accomplish the expected outcomes.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: Nursing Intervention MSC: NCLEX: Management of Client Care

3. A 5-year-old child with type 1 diabetes mellitus has had repeated hospitalizations for episodes of hyperglycemia. The parents tell the nurse that they can't keep track of everything that has to be done to care for their child. The nurse reviews medications, diet, and symptom management with the parents and draws up a daily checklist for the family to use. These activities are completed in which step of the nursing process?

- a. Recognizing cues (assessment)
- b. Analyze cues & prioritize hypothesis (analysis)
- c. Generate solutions (planning)
- d. **Take action (nursing interventions)**

ANS: D

Taking action through nursing interventions is where the nurse provides patient health teaching, drug administration, patient care, and other interventions necessary to assist the patient in accomplishing expected outcomes.

DIF: Cognitive Level: Understanding
(Comprehension) TOP: Nursing Process: Nursing
Intervention
MSC: NCLEX: Management of Client Care

4. The nurse is preparing to administer a medication and reviews the patient's chart for drug allergies, serum creatinine, and blood urea nitrogen (BUN) levels. The nurse's actions are reflective of which of the following?

- a. **Recognizing cues (assessment)**
- b. Analyze cues & prioritize hypothesis (analysis)
- c. Take action (nursing interventions)
- d. Generate solutions (planning)

ANS: A

Recognizing cues (assessment) involves gathering subjective and objective information about the patient and the medication. Laboratory values from the patient's chart would be considered collection of objective data.

DIF: Cognitive Level: Understanding (Comprehension)
TOP: Nursing Process: Assessment MSC: NCLEX: Management of Client Care

5. Which of the following would be correctly categorized as objective data?

- a. A list of herbal supplements regularly used provided by the patient.
- b. **Lab values associated with the drugs the patient is taking.**
- c. The ages and relationship of all household members to the patient.
- d. Usual dietary patterns and food intake.

ANS: B

Objective data are measured and detected by another person and would include lab values. The other examples are subjective data.

DIF: Cognitive Level: Understanding (Comprehension)

6. The nurse reviews a patient's database and learns that the patient lives alone, is forgetful, and does not have an established routine. The patient will be sent home with three new medications to be taken at different times of the day. The nurse develops a daily medication chart and enlists a family member to put the patient's pills in a pill organizer. This is an example of which element of the nursing process?
- Recognizing cues (assessment)
 - Analyze cues & prioritize hypothesis (analysis)
 - Take action (nursing interventions)**
 - Generate solutions (planning)

ANS: C

Taking action (nursing interventions) involves education and patient care in order to assist the patient to accomplish the goals of treatment.

DIF: Cognitive Level: Applying (Application) TOP:

Nursing Process:

Nursing Intervention MSC: NCLEX:

Management of Client Care

7. A patient who is hospitalized for chronic obstructive pulmonary disease (COPD) wants to go home. The nurse and the patient discuss the patient's situation and decide that the patient may go home when able to perform self-care without dyspnea and hypoxia. This is an example of which phase of the nursing process?
- Recognizing cues (assessment)
 - Analyze cues & prioritize hypothesis (analysis)
 - Take action (nursing interventions)
 - Generate solutions (planning)**

ANS: D

Generating solutions (planning) involves defining a set of interventions to achieve the most desirable outcomes, which, for this patient, means being able to perform self-care activities without dyspnea and hypoxia.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: Planning MSC: NCLEX:

Management of Client Care

8. A patient will be sent home with a metered-dose inhaler, and the nurse is providing teaching. Which is a correctly written expected outcome for this process?
- The nurse will demonstrate the correct use of a metered-dose inhaler to the patient.
 - The nurse will teach the patient how to administer medication with a metered-dose inhaler.
 - The patient will know how to self-administer the medication using the metered-dose inhaler.
 - The patient will independently administer the medication using the metered-dose inhaler at the end of the session.**

ANS: D

Expected outcomes must be patient-centered and clearly state the outcome with a reasonable deadline and should identify components for evaluation.

DIF: Cognitive Level: Applying (Application)
Planning MSC: NCLEX: Management of Client Care

TOP: Nursing Process:

9. The nurse is generating solutions (planning) for a patient who has chronic lung disease and hypoxia. The patient has been admitted for increased oxygen needs above a baseline of 2 L/min. The nurse generates an expected outcomes stating, "The patient will have oxygen saturations of

>95% on room air at the time of discharge from the hospital." What is wrong with this goal? a.

It cannot be evaluated.

b. It is not measurable.

c. It is not patient-centered.

d. **It is not realistic.**

ANS: D

The expected outcome is not realistic because the patient is not usually on room air and should not be expected to attain that expected outcome by discharge from this hospitalization.

DIF: Cognitive Level: Applying (Application)
Planning MSC: NCLEX: Management of Client Care

TOP: Nursing Process:

10. The nurse is developing a teaching plan for an elderly patient who will begin taking an antihypertensive drug that causes dizziness and orthostatic hypotension. Which hypothesis (problem) documented by the nurse is appropriate for this patient?

a. Deficient knowledge related to drug side effects.

b. Ineffective health maintenance related to age.

c. Readiness for enhanced knowledge related to medication side effects.

d. **Risk for injury related to side effects of the medication.**

ANS: D

This patient has an increased risk for injury because of drug side effects, so this is an appropriate hypothesis (problem) to direct the type of care and follow-up the patient will receive.

DIF: Cognitive Level: Applying
(Application) TOP: Nursing Process:
Nursing Diagnosis MSC: NCLEX:
Management of Client Care

11. An older patient must learn to administer a medication using a device that requires manual dexterity. The patient becomes frustrated and expresses lack of self-confidence in performing this task. Which action will the nurse perform next?

a. Ask the patient to keep trying until the skill is learned.

b. Provide written instructions with illustrations showing each step of the skill.

- c. **Schedule multiple sessions and practice each step separately.**
- d. Teach the procedure to family members who can administer the medication for the patient.

ANS: C

Nurses should be sensitive to patient's level of frustration when teaching skills. In this case, breaking the steps down into individual parts will help with this patient's frustration level.

DIF: Cognitive Level: Applying (Application)
Planning MSC: NCLEX: Management of Client Care

TOP: Nursing Process:

12. A school-age child will begin taking a medication to be administered at 5 mL three times daily. The child's parent tells the nurse that, with a previous use of the drug, the child repeatedly forgot to bring the medication home from school, resulting in missed evening doses. What will the nurse recommend?

- a. Encourage the child to be more responsible and that it is important to take the medication as prescribed.
- b. Putting a note on the child's locker to encourage the child to take responsibility for medication administration.
- c. **Asking the provider if 7.5 mL may be taken in the morning and 7.5 mL may be taken in the evening so that the correct amount is given daily.**
- d. Taking the noon dose to school every day and giving it to the school nurse to administer.

ANS: C

For busy families with school-age children, it may be necessary to adjust the medication schedule to one that fits their schedule. The nurse should ask the provider if a revised schedule is possible. In this case, the most effective revised schedule would involve not taking the medication while at school. Putting a note on the locker is not likely to be effective. It is not correct to adjust the dose.

DIF: Cognitive Level: Applying (Application)
TOP: Nursing Process: Nursing Intervention | Nursing Process: Planning MSC:
NCLEX: Management of Client Care

13. A high-school student regularly forgets to use a twice-daily inhaled corticosteroid to prevent asthma flares and is repeatedly admitted to the hospital. The child's parent tells the nurse that the child has been told that forgetting to take the medication causes frequent hospitalizations.

The nurse will

- a. encourage the child to take responsibility for taking the medication.
- b. reinforce the need to take prescribed medications to avoid hospitalizations.
- c. **suggest putting the inhaler with the child's toothbrush to use before brushing teeth.**
- d. suggest that the child's parents administer the medication to increase compliance.

ANS: C

It is important to empower patients to take responsibility for managing medications. Putting the medication with the toothbrush can help this child remember to use it. Telling the child to take medications and reminding the child that failure to do so results in hospitalization is not

working. Asking the child's parents to administer the medication does not empower the adolescent to take responsibility.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Planning | Nursing Process: Nursing Intervention
MSC: NCLEX: Management of Client Care

14. An adolescent patient who has acne is given a regimen of topical medications and an oral antibiotic that generally clears up lesions to fewer than 10 within 6 to 8 weeks. At a 2-month follow-up, the patient continues to have more than 25 lesions. The child's parent affirms that the child is using the medications as prescribed. Which statement below is correct for this patient to evaluate the outcome?

- a. "Goal of fewer than 10 lesions in 6 to 8 weeks is not met."
- b. "Goal that the medication will be effective is not met."
- c. "Goal that the patient will take medications as prescribed is not met."
- d. "Goal that the patient understands the medication regimen is not met."

ANS: A

All indications are that this patient is taking the medications and they are not effective. The first statement is correct because it identifies a measurable desired outcome and a specific time frame.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Evaluation
MSC: NCLEX: Management of Client Care

15. Which of the following would not be considered an important element of health teaching in drug therapy?

- a. Assess the patients' health literacy skills.
- b. Assess all of the drugs on the patients' profile for possible drug interactions.
- c. **Avoid discussing potential side effects and adverse reactions with the patient to avoid nonadherence.**
- d. Determine if the patient needs laboratory monitoring.

ANS: C

Potential side effects and adverse reactions should always be discussed with the patient so they know what to report to their health care team should they occur. All other factors considerations listed are important elements of health teaching.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Assessment | Nursing Process: Nursing Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

Chapter 02: Drug Development and Ethical Considerations

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MULTIPLE CHOICE

1. The nurse is obtaining consent from a subject newly recruited for a clinical drug trial that will last for 6 months. All subjects will be given gift certificates for participating. One subject says, "Well, I guess if the drug doesn't work, I'll just have to put up with the symptoms for 6 months." What will the nurse tell the subject?
 - a. "Participation for the duration of the study is required."
 - b. "Participation may end at any time without penalty."
 - c. "Withdrawal from the study may end at any time, but the gift certificate will not be given."
 - d. "You can request placement in the treatment group."

ANS: B

All participants have the right to autonomy, which is the right to self-determination. Patients have the right to refuse to participate or to withdraw from a study at any time without penalty. Patients generally are not allowed to choose participation in either the treatment or the control group.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: Nursing Intervention
MSC: NCLEX: Management of Client Care

2. The nurse is assisting with a clinical drug trial in which the side effects of two effective drugs are being compared. A patient who would benefit from either drug has elected to withdraw from the study, and the nurse assists with the paperwork to facilitate this. This is an example of **a. autonomy.**
 - b. beneficence.
 - c. justice.
 - d. veracity.

ANS: A

All participants have the right to autonomy, which is the right to self-determination. Patients have the right to refuse to participate or to withdraw from a study at any time without penalty even if the health care provider disagrees with that choice.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

3. During a clinical drug trial for a new medication, researchers note a previously unknown serious adverse effect occurring in more than 50% of subjects. The study is discontinued. Which ethical principle is being exercised? **a. Beneficence**
 - b. Justice
 - c. Respect for persons
 - d. Veracity

ANS: A

Beneficence is the duty to protect subjects from harm. Once a serious adverse effect is noted and it is determined that the benefits do not outweigh the risks of the study, researchers have an ethical obligation to stop the study.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

4. In a 5-year clinical trial investigating a new cancer treatment, researchers note overwhelming improvement in almost all of the subjects in the treatment group during the second year of the trial. It is decided to stop the trial early and report the findings due to the overwhelmingly beneficial effects. This decision was made based on which ethical principle?
- a. Beneficence
 - b. **Justice**
 - c. Respect for persons
 - d. Veracity

ANS: B

The principle of justice requires that all people be treated fairly. Because the findings were overwhelmingly positive, an ethical decision was made to stop the study early and report findings so that additional people could gain benefit from the treatment.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

5. The nurse is enrolling subjects for a double-blind experimental study. One patient asks the nurse to explain the role of the experimental group. The nurse will explain that subjects in the experimental group in this type of study
- a. are selected for participation in that group.
 - b. have unique baseline characteristics.
 - c. receive a placebo.
 - d. receive the experimental treatment being evaluated.

ANS: D

In a double-blind experimental study, subjects in the experimental group receive the treatment or drug under study. They are randomly assigned and not selected. They should have similar baseline characteristics to those in the control group. They do not receive a placebo.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: Nursing Intervention: Patient Teaching MSC: NCLEX: Management of Client Care

6. The nurse is obtaining signatures on consent forms for participation in a clinical drug trial. One patient says, "I'm not sure I want to do this, but I need the cash." The nurse will take which action?
- a. Ask the patient to clarify concerns.
 - b. Reinforce that cash is given to all subjects equally.
 - c. **Report this statement to the lead investigator.**
 - d. Review the elements of the study and obtain consent.

ANS: C

If a nurse suspects that a patient is being coerced to participate in the study, the nurse should report this to the principal investigator. When a patient verbalizes participation based on a financial reward, there is a potential element of coercion.

DIF: Cognitive Level: Applying (Application)TOP:
Nursing Process:
Nursing Intervention MSC: NCLEX:
Management of Client Care

7. Which of the following best describes preclinical in vivo testing?
- A comparison of experimental and control data in animals.
 - A study conducted in a test tube in a laboratory.
 - A study that determines the effects of the experimental product in human participants.
 - A study to assess the seriousness of the disease to be treated.

ANS: A

Preclinical in vivo testing is performed in animals or other non-human living organisms. In vitro studies occur in test tubes. Safe therapeutic dose studies are part of clinical research. Prior to clinical trials, an assessment is made of the disease and its seriousness.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process:
N/AMSC: NCLEX: Management of Client Care

8. Drugs approved to the market in the 1980s may not be proven effective in a large portion of the population. The nurse understands that this is because these drugs
- did not pass through the appropriate phases of clinical trials.
 - did not require human subject protections and are invalid.
 - were not always tested in women, minorities, or children.
 - were tested on healthy subjects only.

ANS: C

Drug research was historically performed primarily in Caucasian males, causing uncertainty as to the validity of the research results in the broader population. The NIH Revitalization Act passed by Congress in 1993 helped establish guidelines to include women and minorities in clinical research.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX:
Management of Client Care

9. The nurse is assisting with data collection in a study of drug effects in a small group of healthy subjects. The nurse assists with blood and urine collection to determine serum drug levels and the presence of metabolites in urine. Which phase of drug development does this best represent?
- Phase I
 - Phase II
 - Phase III
 - Phase IV

ANS: A

Phase I drug trials are performed to assess safety and to identify the pharmacokinetics, such as metabolism and elimination, of drugs in healthy subjects.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

10. The nurse is enrolling subjects for a clinical drug trial in which subjects will be randomly assigned to either a treatment or a placebo group. The pills in both groups will be in identical packaging with identical appearance. The group that receives the intervention is the
- control group.
 - experimental group.
 - dependent group.
 - independent group.

ANS: B

The experimental group in a drug trial is the group that receives the drug being tested. The control group may receive no drug, a different drug, a placebo, or the same drug with a different dose, route, or frequency of administration. Dependent and independent are not terms to describe groups in a study; they denote the variables.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

11. Respect for persons is a core ethical principle of human subjects research. Which of the following best describes this principle?
- Duty to protect research subjects from harm.
 - Fair selection of research subjects.
 - Right to self-determination.
 - Patients are independent and capable of making decisions in their own best interests.

ANS: D

Respect for persons is based on the notion that patients should be treated as independent persons capable of making decisions in their own best interests.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

12. A clinical drug trial focused on determining the pharmacokinetics and safety of a drug in healthy individuals is concluding. The nurse will assist with enrollment of participants into the next phase of the study which will likely include which of the following subjects?
- Healthy subjects
 - Healthy and subjects with the disease the drug is being studied to treat
 - Subjects with the disease the drug is being studied to treat
 - Subjects with other diseases

ANS: C

After Phase I studies demonstrating drug safety and pharmacokinetics have been completed, the drug is tested on subjects who have the disease the drug is being investigated to treat.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: Nursing Intervention

MSC: NCLEX: Management of Client Care

13. Before marketing a new drug that has been approved for use based on clinical effectiveness and safety, the manufacturer wishes to study the potential new uses for the drug. This is an example of which phase of study?
- Phase I
 - Phase II
 - Phase III
 - Phase IV

ANS: D

Phase IV studies are performed, in part, to examine potential new indications for approved drugs.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

14. Which statement about the safety and efficacy of medications in children is accurate?
- Children cannot give consent, so clinical drug trials are not performed on children.
 - Children can only be subjects in quasi-experimental clinical studies.
 - Data from adult clinical drug trials should be extrapolated to children.
 - Federal law requires that drugs indicated for use in children be tested on children.

ANS: D

The U.S. Food and Drug Administration (FDA) Modernization Act of 1997 requires that drugs intended for use in children be tested on children.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Management of Client Care

15. The nurse is preparing to administer a schedule II injectable drug and is drawing up half of the contents of a single-use vial. Which nursing action is correct?
- Ask another nurse to observe and cosign wasting the remaining drug from the vial.
 - Keep the remaining amount in the patient's drawer to give at the next dose.
 - Record the amount unused in the patient's medication record.
 - Dispose of the vial with the remaining drug into a locked collection box.

ANS: A

Schedule II drugs are controlled substances, and all must be accounted for. When wasting a portion of a drug, another nurse should observe and cosign that a drug was wasted.

DIF: Cognitive Level: Applying (Application) TOP: Nursing Process: Nursing Intervention
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

16. A patient is prescribed a medication and asks the nurse if the drug is available in a generic form. The nurse understands that a generic drug name is
- a registered trademark.
 - always capitalized.

- c. related to the drug's chemical structure.
- d. nonproprietary.

ANS: D

The generic name is the official, nonproprietary name for a drug. The brand name is the trademark name and is always capitalized. The chemical name describes the chemical structure of the drug.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC:
NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

17. A patient receives a prescription on which the provider has noted that a generic medication may be given. The patient asks the nurse what this means. What will the nurse tell the patient about generic drugs?
- a. They contain the same inert ingredients as brand-name drugs.
 - b. They have chemical structures that are different from proprietary drugs.
 - c. They tend to be less expensive than brand-name drugs.
 - d. They undergo extensive testing before they are marketed.

ANS: C

Generic drugs are approved by the FDA if they are proved to be bioequivalent to the brand-name drug. They tend to be less expensive because manufacturers of these drugs do not have to do the extensive testing required of brand-name drugs before marketing. They are not identical to brand-name drugs and often have different inert ingredients.

DIF: Cognitive Level: Applying (Application)
TOP: Nursing Process: Nursing Intervention: Patient Teaching MSC:
NCLEX: Management of Client Care

18. The nurse reviews information about a drug and notes the initials "United States Pharmacopeia (USP)" after the drug's official name. The nurse understands that this designation indicates the drug
- a. is a controlled substance.
 - b. is approved by the FDA.
 - c. is available in generic form.
 - d. meets USP quality and safety standards.

ANS: D

The "USP" designation is given to drugs that have met high standards for therapeutic use, patient safety, quality, purity, strength, packaging safety, and dosage form by the United States Pharmacopoeia National Formulary. The FDA classifies controlled substances with Roman numerals from I to V. The USP designation does not indicate FDA approval. The USP designation does not indicate generic availability.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC:
NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

19. The nurse is preparing to give a medication to a child. The medication is approved for use in children. The child's parent asks whether the drug is safe for children. How will the nurse respond to the parent?
- "Drugs approved for use in children are tested on adults and safe doses for children are based on weights compared to adult weights."
 - "Drugs approved for use in children are deemed safe for children over time when repeated use proves effectiveness and safety."
 - "Drugs approved for use in children are tested for both efficacy and safety in children in order to be marketed for pediatric use."
 - "Drugs approved for use in children are tested on children in post-marketing studies and on a limited basis."

ANS: C

The Pediatric Research Equity Act requires drug manufacturers to test drugs on children.

DIF: Cognitive Level: Applying (Application) TOP:

Nursing Process:

Nursing Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

20. Which law(s) govern drug administration by nurses?
- Drug Regulation and Reform Act.
 - FDA Amendments Act.
 - Nurse Practice Acts.
 - The Controlled Substances Act.

ANS: C

Each state's Nurse Practice Act identifies how nurses administer medications. The other acts govern how drugs are marketed and tested.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

21. A patient is taking methadone as part of a heroin withdrawal program. The nurse understands that, in this instance, methadone is classified as which drug schedule?
- C-I
 - C-II
 - C-III
 - C-V

ANS: B

Methadone is a category II drug, with a high potential for drug abuse.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

22. The nurse is preparing to administer a combination drug containing acetaminophen and codeine. The nurse knows that this drug is classified as which drug schedule?
- C-I
 - C-II
 - C-III

- c. C-IV
- d. C-V

ANS: B

Codeine is normally a category II drug, except when it is part of a combination product such as with acetaminophen, making it a category III drug.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

MULTIPLE RESPONSE

1. Which of the following are responsibilities of the FDA? (*Select all that apply.*)
 - a. To ensure a drug has accurate labeling
 - b. To ensure a drug is affordable
 - c. To ensure a drug is effective
 - d. To ensure a drug is free from adverse reactions
 - e. To ensure a drug is tested for harmful effects

ANS: A, C, E

The FDA ensures that drugs are labeled correctly, that they are tested and proven effective for the conditions they are marketed to treat, and that they are tested for harmful effects. The FDA does not ensure affordability or freedom from adverse reactions, although these must be noted in drug information materials.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

Chapter 03: Pharmacokinetics and Pharmacodynamics

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MULTIPLE CHOICE

1. Which drug will go through a disintegration process after it is administered?
 - a. Intramuscular (IM) cephalosporins
 - b. Intravenous (IV) vasopressors
 - c. Oral analgesics
 - d. Subcutaneous insulin

ANS: C

When drugs are administered parenterally, there is no disintegration process, which occurs when a drug administered orally is broken down into smaller particles, eventually dissolving and becoming available for the body to absorb.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: Assessment

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

2. The nurse is preparing to administer an oral medication and wants to ensure a rapid drug action. Which form of the medication will the nurse prefer to administer?
- Capsule
 - Enteric-coated pill
 - Liquid suspension
 - Tablet

ANS: C

Liquid drugs are already in solution, which is the form necessary for absorption in the gastrointestinal (GI) tract. The other forms must disintegrate into small particles and then dissolve before being absorbed.

DIF: Cognitive Level: Understanding
(Comprehension) TOP: Nursing Process: Nursing
Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

3. The nurse is teaching a patient who will be discharged home with a prescription for an enteric-coated tablet. Which statement by the patient indicates understanding of the teaching?
- "I may crush the tablet and put it in applesauce to improve absorption."
 - "I should consume acidic foods to enhance absorption of this medication."
 - "I should expect a delay in onset of the drug's effects after taking the tablet."
 - "I should take this medication with high-fat foods to improve its action."

ANS: C

Enteric-coated tablets resist disintegration in the acidic environment of the stomach and disintegrate when they reach the small intestine. There is usually some delay in onset of actions after taking these medications. Enteric-coated tablets should not be crushed or chewed, which would alter the time and location of absorption. Acidic foods will not enhance the absorption of the medication. The patient should not eat high-fat food before ingesting an enteric-coated tablet because high-fat foods decrease the absorption rate.

DIF: Cognitive Level: Applying (Application) TOP:
Nursing Process:
Nursing Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

4. A patient who is newly diagnosed with type 1 diabetes mellitus asks why insulin must be given by subcutaneous injection instead of by mouth. The nurse will explain that this is because
- absorption is diminished by the first-pass effects in the liver.
 - absorption is faster when insulin is given subcutaneously.
 - digestive enzymes in the GI tract break down the drug and prevent absorption.
 - the oral form is less predictable with more adverse effects.

ANS: C

Insulin, growth hormones, and other protein-based drugs are destroyed in the GI tract by digestive enzymes and must be given parenterally. Because insulin is destroyed by digestive enzymes, it must be given parenterally and would not make it to the liver for metabolism with a first-pass effect.

DIF: Cognitive Level: Understanding (Comprehension)

TOP: Nursing Process: Nursing Intervention: Patient Teaching

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

5. The nurse is preparing to administer an oral medication that is water soluble. The nurse understands that this drug
- must be taken on an empty stomach.
 - requires active transport for absorption.
 - should be taken with fatty foods.
 - will readily diffuse into the GI tract.

ANS: B

Water-soluble drugs require a carrier enzyme or protein to pass through the GI membrane for absorption.

DIF: Cognitive Level: Understanding

(Comprehension) TOP: Nursing Process: Nursing Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

6. The nurse is preparing an injectable drug and wants to administer it via the route that will allow for the most rapid absorption possible. How will the nurse give this medication (if possible)?
- IM into the deltoid muscle
 - IM into the gluteal muscle
 - SQ into abdominal tissue
 - SQ into the upper arm

ANS: A

Drugs given IM are absorbed faster in muscles that have the highest blood flow, such as the deltoid, rather than those with fewer blood vessels, such as the gluteals. Subcutaneous absorption is slower when compared to IM drug administration.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Planning MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

7. The nurse is reviewing medication information with a nursing student prior to administering an oral drug and notes that the drug has extensive first-pass effects. Which statement by the student indicates an understanding of the first-pass effect?
- "The first-pass effect means the drug has 100% bioavailability."
 - "The first-pass effect means the drug is absorbed from the GI tract into the portal vein where it is transported to the liver and metabolized."
 - "The first-

pass effect means the drug was given by injection and immediately metabolized.”

d. “The first-pass effect means the drug may be unchanged as it passes through the liver.”

ANS: B

Drugs that undergo first-pass metabolism are absorbed into the portal vein from the intestinal lumen and go through the liver, where they are metabolized to an inactive or a more active form.

DIF: Cognitive Level: Understanding
(Comprehension) TOP: Nursing Process: Nursing
Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

8. The nurse prepares to change a patient’s medication from an IV to an oral form and notes that the oral form is ordered in a higher dose. The nurse understands that this is due to differences in
- bioavailability.
 - pinocytosis.
 - protein binding.
 - tachyphylaxis.

ANS: A

Oral drugs may have less bioavailability because a lower percentage of the drug reaches the systemic circulation. Pinocytosis refers to the process by which cells carry a solute across a membrane. Protein binding can occur with both routes. Tachyphylaxis describes a rapid decrease in response to drugs that occurs when tolerance develops quickly.

DIF: Cognitive Level: Understanding (Comprehension) TOP:
Nursing Process:
Assessment

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

9. The nurse is preparing to administer a drug and learns that it is 90% protein bound. The patient’s serum albumin level is low. The nurse will observe the patient for
- decreased drug absorption.
 - decreased drug interactions.
 - decreased drug toxicity.
 - increased drug effects.

ANS: D

Drugs that are highly protein-bound bind with albumin and other proteins, leaving less free drug in circulation. If a patient has a low albumin, less drug is bound, and there is more free drug to cause drug effects. There would be a potential for increased interactions with other drugs and increased toxicity.

DIF: Cognitive Level: Applying (Application) TOP: Nursing Process:
Evaluation MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

10. The nurse is administering two drugs to a patient and learns that both drugs are highly protein-bound. The nurse may expect
- decreased bioavailability of both drugs.
 - decreased drug effects.
 - decreased drug interactions.
 - increased risk of adverse effects.

ANS: D

Two drugs that are highly protein-bound may compete for protein-binding sites, leaving more free drug in the circulation and an increased risk of adverse effects as well as increased drug effects, and an increased risk for drug interactions.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Evaluation MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

11. A patient has been taking a drug that is 75% protein bound. The provider adds a new medication that is 90% protein bound. The nurse will expect a potential
- decreased drug effects of the first drug.
 - decreased therapeutic range of the first drug.
 - increased drug effects of the first drug.
 - increased therapeutic range of the first drug.

ANS: C

Adding another highly protein bound drug will potentially displace the first drug from protein binding sites and release more free drug, increasing the drug's effects. This does not alter the therapeutic range, which is the therapeutic serum level required for drug effectiveness before toxicity develops.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Nursing Intervention | Nursing Process: Evaluation

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

12. The nurse gives a highly metabolized medication to a patient with a history of liver disease. The nurse will monitor this patient for
- decreased drug effects.
 - increased drug effects.
 - decreased therapeutic range.
 - increased therapeutic range.

ANS: B

Liver diseases such as cirrhosis and hepatitis alter drug metabolism due to the liver having a lower capacity to metabolize medications. When the drug metabolism rate is decreased, excess drug accumulation can occur and lead to toxicity.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Assessment | Nursing Process: Nursing Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

13. The nurse gives 800 mg of a drug that has a half-life of 8 hours. How much drug will be left in the body in 24 hours if no additional drug is given?
- None
 - 50 mg
 - 100 mg
 - 200 mg

ANS: C

Eight hours after the drug is given, there will be 400 mg left. Eight hours after that (16 hours), there will be 200 mg left. At 24 hours, there will be 100 mg left.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Evaluation MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

14. If a drug has a half-life of 12 hours and is given twice daily starting at 0800 on a Monday, when will a steady state be achieved?
- 0800 on Tuesday
 - 0800 on Wednesday
 - 0800 on Thursday
 - 0800 on Friday

ANS: B

Steady-state levels occur after approximately 4 half-lives if the dose administered remains the same. Wednesday at 0800 is 4 half-lives from the original dose (12 hours \times 4 = 48 hours).

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Evaluation MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

15. The nurse is preparing to administer a drug that is ordered to be given twice daily. The nurse reviews the medication information and learns that the drug has a half-life of 24 hours. What will the nurse do next?
- Administer the medication as ordered.
 - Contact the provider to discuss daily dosing.
 - Discuss every-other-day dosing with the provider.
 - Hold the medication.

ANS: B

A drug with a longer half-life should be given at longer intervals to avoid drug accumulation.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Planning MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

16. The nurse is caring for a patient who has ingested a large dose of aspirin several hours prior. It is determined that the patient has overdosed on aspirin. The provider orders sodium bicarbonate to be given. The nurse understands that this drug is given for which purpose?
- To counter the toxic effects of the aspirin
 - To decrease the half-life of the aspirin
 - To increase the excretion of the aspirin
 - To neutralize the acid of the aspirin

ANS: C

Aspirin is a weak acid and is more readily excreted in alkaline urine. Sodium bicarbonate alkalizes the urine. It does not act as an antidote to aspirin, decrease the half-life, or neutralize its pH.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Planning MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

17. The nurse is preparing to administer a drug that is eliminated through the kidneys. The nurse reviews the patient's chart and notes that the patient has increased serum creatinine and blood urea nitrogen (BUN) and a low estimated glomerular filtration rate (eGFR). The nurse will perform which action?
- Administer the drug as ordered.
 - Anticipate a shorter than usual half-life of the drug.
 - Expect decreased drug effects when the drug is given.
 - Verify that the dose ordered is appropriate based on the patient's kidney function.

ANS: D

Increased creatinine and BUN and a low eGFR indicate impaired kidney function, so a drug that is eliminated through the kidneys can accumulate leading to toxicity. The nurse should verify that the ordered dose is appropriate based on the patient's kidney function, and if not, discuss a lower dose or alternative medication with the provider.

The drug will have a longer half-life and will exhibit increased effects with decreased kidney function.

DIF: Cognitive Level: Applying (Application) TOP:

Nursing Process:

Nursing Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

18. The nurse understands that the length of time needed for a drug to reach the minimum effective concentration (MEC) is the
- duration of action.
 - onset of action.
 - peak.
 - time response curve.

ANS: B

The onset of action is the time it takes to reach the MEC. Duration of action is the length of time a drug has a pharmacologic effect. A drug's peak occurs when the drug reaches its highest blood level. The time response curve is an evaluation of the other three measures.

DIF: Cognitive Level: Remembering (Knowledge)

TOP: Nursing Process:

N/AMSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

19. The nurse administers albuterol to a patient who has asthma. The albuterol acts by stimulating beta₂-adrenergic receptors to cause bronchodilation. The nurse understands that albuterol is a beta-adrenergic
- agonist.

- b. antagonist.
- c. inhibitor.
- d. depressant.

ANS: A

An agonist medication is one that stimulates a certain type of receptor to produce a therapeutic response.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: N/AMSC:
NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

20. The nurse is preparing to administer the first dose of digoxin (Lanoxin) to a patient and notes that the initial dose ordered is much higher than the ordered maintenance dose. Which of the following describes why the first dose is higher? a.

Digoxin requires a loading dose.

- b. Digoxin undergoes first-pass metabolism when initially administered.
- c. Digoxin has a long duration of action.
- d. Digoxin has a short half-life.

ANS: A

The reason the first dose is higher than the ordered maintenance dose is because a loading dose is required. This is performed to more quickly reach steady state for a drug with a long half-life.

The loading dose is not given due to first-pass metabolism or duration of action.

DIF: Cognitive Level: Applying (Application) TOP:
Nursing Process:
Nursing Intervention
MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

21. The nurse administers a centrally acting analgesic to a patient who has been receiving it for 1 day after orthopedic surgery with successful pain relief. The patient reports no change in pain 30 minutes after the medication is given. The nurse recognizes that this patient is likely exhibiting

- a. drug-seeking behavior.
- b. drug tolerance.
- c. the placebo effect.
- d. tachyphylaxis.

ANS: D

Tachyphylaxis is a rapid decrease in response, or acute tolerance. Tolerance to drug effects can occur rapidly with centrally acting analgesics, requiring increased doses in order to achieve adequate drug effects. Nurses often mistake drug-seeking behavior for drug tolerance. The placebo effect occurs when the patient experiences a response with an inactive drug.

DIF: Cognitive Level: Understanding (Comprehension) TOP:
Nursing Process:

Assessment

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

22. A patient has been taking a drug for several years and tells the nurse it is no longer working. The nurse learns that the patient has recently begun taking an over-the-counter (OTC) antacid medication. What does the nurse suspect is occurring?
- An adverse drug reaction
 - A drug interaction
 - Drug incompatibility
 - Drug tolerance

ANS: B

Drug interactions are an altered or modified action or effect of a drug as a result of interaction with one or more other drugs. An adverse drug reaction can occur with one or more drugs. It is possible in this scenario that the antacid is preventing adequate absorption of the other medication. Drug incompatibility is a chemical reaction of two or more drugs that occurs in vitro. Drug tolerance is the development of reduced response to a medication over time.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process:

Evaluation MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

23. The nurse is preparing to administer two IV medications that should not be given using the same IV tubing. The nurse understands that this is because of drug
- adverse reactions.
 - incompatibility.
 - interactions.
 - potentiation.

ANS: B

Drugs that are incompatible cannot be mixed together in solution and cannot be mixed in a syringe, IV bag, or other artificial environment. Adverse reactions are symptoms occurring from drug effects. Drug interactions occur in vivo. Potentiation is when one drug causes an enhanced response to another drug.

DIF: Cognitive Level: Applying (Application) TOP:

Nursing Process:

Nursing Intervention

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

24. The nurse is teaching a patient who will begin taking ciprofloxacin (Cipro). What instruction will the nurse include when teaching this patient about this drug?
- “Do not take this medication with oral contraceptive pills.”
 - “Take at least 1 hour after or 2 hours before taking antacids.”
 - “Take in the morning with your multivitamin tablet.”
 - “Take with milk to reduce gastric upset.”

ANS: B