

## Chapter 1, The Foundation of Pharmacology: Quality and Safety

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1. A woman diagnosed with obsessive–compulsive disorder has been prescribed oral paroxetine hydrochloride. What is the expected effect for this prescription?
  - A. Curative effect on symptoms
  - B. Systemic effect on symptoms
  - C. Local effect on symptoms
  - D. Parenteral effect on symptoms

ANS: B

Rationale: Drugs that produce systemic effects are taken into the body, circulated through the bloodstream to their sites of action in various body tissues, and eventually eliminated from the body. Curative agents are given to cure a disease process. In this case, paroxetine hydrochloride will control the symptoms but not cure the disorder. Drugs with local effects, such as sunscreen and local anesthetics, act mainly at the site of application. Paroxetine hydrochloride is not administered parenterally. Parenteral agents are administered subcutaneously, intramuscularly, or intravenously.

PTS: 1

REF: p. 3, Introduction

OBJ: 1

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Understand NOT: Multiple Choice

2. A client has been prescribed an antibiotic. This medication is a naturally occurring substance that has been chemically modified. What is another name for this type of medication?
  - A. Synthetic drug
  - B. Semisynthetic drug
  - C. Biotechnology drug
  - D. Prototype drug

ANS: B

Rationale: Semisynthetic drugs (e.g., many antibiotics) are naturally occurring substances that have been chemically modified. Synthetic drugs are more standardized in their chemical characteristics, more consistent in their effects, and less likely to produce allergic reactions. Biotechnology drugs involve manipulating DNA and RNA and recombining genes into hybrid molecules that can be inserted into living organisms. Prototype drugs are the first drug of a particular group to be developed.

PTS: 1

REF: p. 3, Drug Sources

OBJ: 1

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Understand NOT: Multiple Choice

3. Which classification applies to morphine?
  - A. Central nervous system depressant
  - B. Central nervous system stimulant

- C. Anti-inflammatory
- D. Antihypertensive

ANS: A

Rationale: Drugs are classified according to their effects on particular body systems, their therapeutic uses, and their chemical characteristics. Morphine is classified as a central nervous system depressant and will produce this effect in the client. A central nervous system stimulant increases attention and raises mood. An anti-inflammatory agent decreases inflammation at the site of tissue or joint inflammation. An antihypertensive agent reduces blood pressure.

PTS: 1

REF: p. 3, Drug Classifications and Prototypes

OBJ: 1

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Remember NOT: Multiple Choice

4. A client is administered amoxicillin. The generic name of this medication belongs to which drug group?
- A. Selective serotonin reuptake inhibitors
  - B. Diuretics
  - C. Penicillins
  - D. ACE inhibitors

ANS: C

Rationale: The generic name often indicates the drug group (e.g., drugs with generic names ending in “cillin” are penicillins). Selective serotonin reuptake inhibitors are medications that have antidepressant effects; SSRI is a broad classification, not a generic name. Diuretics are medications that increase urine output; diuretic is a broad classification, not a generic name. ACE inhibitor is the broad classification for the angiotensin receptor blockers, not the generic name.

PTS: 1

REF: p. 3, Drug Names

OBJ: 2

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Understand NOT: Multiple Choice

5. The administration of diphenhydramine is regulated by which U.S. government agency?
- A. Public Health Service
  - B. Federal Trade Commission
  - C. Occupational Safety and Health Administration
  - D. Food and Drug Administration

ANS: D

Rationale: The Food and Drug Administration approves drugs for over-the-counter availability, including the transfer of drugs from prescription to OTC status, and may require clinical trials to determine the safety and effectiveness of OTC use. The Public Health Service is regulated by the state to maintain the health of individual citizens of the state. The Federal Trade Commission regulates imports and exports throughout the nation. The Occupational Safety and Health Administration regulates safety within the workplace.

PTS: 1 REF: p. 4, Prescription and Nonprescription Drugs

OBJ: 4

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Understand NOT: Multiple Choice

6. In the U.S., the administration of anabolic steroids is regulated by which law?
- A. The Food, Drug, and Cosmetic Act of 1938
  - B. The Comprehensive Drug Abuse Prevention and Control Act
  - C. The Harrison Narcotic Act
  - D. The Sherley Amendment

ANS: B

Rationale: The Comprehensive Drug Abuse Prevention and Control Act regulates the manufacture and distribution of narcotics, stimulants, depressants, hallucinogens, and anabolic steroids. The Food, Drug, and Cosmetic Act of 1938 revised and broadened FDA powers and responsibilities, giving the FDA control over drug safety. The Harrison Narcotic Act restricted the importation, manufacture, sale, and use of opium, cocaine, marijuana, and other drugs that the act defined as narcotics. The Sherley Amendment of 1912 prohibited fraudulent claims of drug effectiveness.

PTS: 1 REF: p. 4, Prescription and Nonprescription Drugs

OBJ: 3

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Remember NOT: Multiple Choice

7. A nurse is responsible for maintaining an accurate count and record of the controlled substances on the nursing division. This nursing action is regulated by which U.S. law or agency?
- A. The Food, Drug, and Cosmetic Act of 1938
  - B. The Public Health Service
  - C. The Drug Enforcement Administration
  - D. The Sherley Amendment

ANS: C

Rationale: The Drug Enforcement Administration enforces the Controlled Substances Act. Under this enforcement, nurses are responsible for storing controlled substances in locked containers, administering them only to the people for whom they are prescribed, recording each dose given, and maintaining an accurate inventory. The Food, Drug, and Cosmetic Act of 1938 revised and broadened FDA powers and responsibilities, giving the FDA control over drug safety. The Public Health Service is regulated by the state to maintain the health of individual citizens of the state. The Sherley Amendment of 1912 prohibited fraudulent claims of drug effectiveness.

PTS: 1 REF: p. 7, Testing Procedure OBJ: 4  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Understand NOT: Multiple Choice

8. In Phase 1 clinical trials, the potential uses and effects of a new drug are determined by which method?
- A. Administering doses to healthy volunteers
  - B. Administering doses to people with the disease
  - C. Administering in placebo-controlled design
  - D. Calculating the risk-to-benefit ratio

ANS: A

Rationale: Phase 1 studies allow for the administration of the medication to healthy volunteers to determine safe dosages, routes of administration, absorption, metabolism, excretion, and toxicity. In Phase 2 studies, a few doses are given to a certain number of subjects with the disease or symptom for which the drug is being studied and responses are compared with those of healthy subjects. Placebo-controlled designs are used in Phase 3 studies, in which half of the subjects receive the new drug and half receive the placebo. Calculating the risk-to-benefit ratio is used in Phase 2 studies to determine whether the potential benefits of the drug outweigh the risks.

PTS: 1 REF: p. 7, Testing Procedure OBJ: 5  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Understand NOT: Multiple Choice

9. A new medication for the treatment of Alzheimer's disease is being administered to a group of subjects with the disease. The subjects receiving this medication are unaware of whether they are being administered the medication or a placebo. This testing occurs in which phase?
- A. Phase 1
  - B. Phase 2
  - C. Phase 3
  - D. Phase 4

ANS: C

Rationale: In Phase 3, the drug is given to a larger and more representative group of subjects. In double-blind, placebo-controlled designs, half of the subjects receive the new drug and half receive a placebo (an inactive substance similar in appearance to the actual drug), with neither subjects nor researchers knowing which subjects receive which formulation. In Phase 1, a few doses are given to a certain number of healthy volunteers to determine safe dosages, routes of administration, absorption, metabolism, excretion, and toxicity. In Phase 2, a few doses are given to a certain number of subjects with the disease or symptom for which the drug is being studied and responses are compared with those of healthy subjects. In Phase 4, the FDA evaluates the data from the first three phases for drug safety and effectiveness, allows the drug to be marketed for general use, and requires manufacturers to continue monitoring the drug's effects.

PTS: 1 REF: p. 7, Testing Procedure OBJ: 5  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Understand NOT: Multiple Choice

10. Which organization is responsible for approving new drugs in the United States?
- A. The American Medical Association (AMA)
  - B. The American Pharmaceutical Association (APA)
  - C. The Food and Drug Administration (FDA)
  - D. The U.S. Pharmacopeia

ANS: C

Rationale: The Food and Drug Administration is responsible for approving new drugs in the United States. The American Medical Association represents the health care providers of the United States. The American Pharmaceutical Association represents the pharmacists of the United States. The U.S. Pharmacopeia was adopted in 1906 and is issued every 5 years under the supervision of a national committee of pharmacists, scientists, and health care providers to provide information concerning drug purity and strength.

PTS: 1 REF: p. 7, Testing Procedure OBJ: 3  
NAT: Client Needs: Safe and Effective Care Environment: Management of Care  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Remember NOT: Multiple Choice

11. A client with a long-standing dermatologic health problem has been advised to use a drug with a local effect. The nurse should recognize what characteristic of this drug?
- A. It affects only the organ system in which it is metabolized.
  - B. The drug requires application at multiple sites.
  - C. It is effective only as long as it is in contact with skin.
  - D. The drug acts primarily at the site where it is applied.

ANS: D

Rationale: Drugs with local effects, such as sunscreen lotions and local anesthetics, act mainly at the site of application. Those with systemic effects are taken into the body, circulated through the bloodstream to their sites of action in various body tissues, and eventually eliminated from the body. A drug with local effect does not necessarily have to be applied at multiple sites, and its action may affect tissues long after contact.

PTS: 1 REF: p. 3, Introduction OBJ: 1  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Analyze NOT: Multiple Choice

12. What is the **primary** importance of a black box warning?
- A. It will result in the medication being removed from the market.
  - B. It acknowledges that the medication has been tested on only a selected portion of the population.
  - C. It suggests that the prescription of the medication be avoided when treating certain populations.
  - D. It alerts health care professionals of the potential of serious adverse effects associated with the medication.

ANS: D

Rationale: Black box warnings identify the fact that a drug can cause serious adverse effects. Subsequent withdrawal of approved and marketed drugs has occurred, usually because of serious adverse effects that become evident only when the drugs are used in a large, diverse population. The warning does not address testing or target populations.

PTS: 1 REF: p. 7, Testing Procedure OBJ: 4  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Analyze NOT: Multiple Choice

13. A health care facility is complying with the mandates of U.S. The Drug Enforcement Administration (DEA) concerning Schedule II medications when implementing which nursing intervention? Select all that apply.
- A. Access to narcotics is controlled by key or codes.
  - B. Narcotics are administered by prescriptions only.
  - C. Only selected narcotics may be automatically renewed.
  - D. The administration of individual narcotic doses is recorded in specific unit documentation.
  - E. Any recognized discrepancy involving a narcotic must be reported to the appropriate facility authority.

ANS: A, B, D, E

Rationale: Nurses are responsible for storing controlled substances in locked containers, administering them only to the people for whom they are prescribed, recording each dose given on agency narcotic sheets and on the client's medication administration record, maintaining an accurate inventory, and reporting discrepancies to the proper authorities. Prescriptions for Schedule II drugs cannot be refilled; a new prescription is required.

PTS: 1 REF: p. 7, Testing Procedure OBJ: 5  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Analyze NOT: Multiple Select

14. Which medication reference is considered to be an authoritative, well-respected source of information? Select all that apply.
- A. *American Hospital Formulary Service*
  - B. *Drug Facts and Comparisons*
  - C. *Physicians' Desk Reference*
  - D. *Lippincott's Nursing Drug Guide*
  - E. Package inserts provided with each medication

ANS: A, B

Rationale: An authoritative source is a work known to be reliable because its authority or authenticity is widely recognized by experts in the field. Both the *American Hospital Formulary Service* and the *Drug Facts and Comparisons* are authoritative sources of drug information that have been recognized as reliable sources of medication information. The *Physicians' Desk Reference* is published yearly and contains manufacturers' published inserts for selected drugs. The package inserts are produced by the drug manufacturers and do not necessarily contain the details included in the correct options. *Lippincott's Nursing Drug Guide* is an example of a drug handbook, not a compilation of manufacturers' inserts and intended as a student resource.

PTS: 1 REF: p. 11, Sources of Drug Information OBJ: 7  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Understand NOT: Multiple Select

15. A nursing student in a pharmacology class should be encouraged to study the medications according to which categorization? Select all that apply.
- A. Prototype
  - B. Controlled substance
  - C. Drug use
  - D. Generic names
  - E. Therapeutic classification

ANS: A, E

Rationale: The nursing student should concentrate on therapeutic classifications and their prototypes. Controlled substances limit the medications studied to one broad classification. Drug use is only one part of the broad classification. Generic names are only one aspect of the medication.

PTS: 1 REF: p. 12, Strategies for Studying Pharmacology  
OBJ: 6  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Understand

NOT: Multiple Select

16. A client diagnosed with an autoimmune disorder has just been prescribed a synthetic drug. Which characteristic is a noted advantage of synthetic drugs?
- A. The client is at a lesser risk for an allergic reaction.
  - B. The client will require less frequent dosing.
  - C. The medication will be available on an over-the-counter basis.
  - D. The medication is available in a wider variety of administration routes.

ANS: A

Rationale: Synthetic drugs are more standardized in their chemical characteristics, more consistent in their effects, and less likely to produce allergic reactions. They do not necessarily require less frequent dosing and may or may not be available OTC. They are not noted to be available in a wider variety of administration routes than naturally occurring substances.

PTS: 1

REF: p. 3, Drug Sources

OBJ: 1

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Understand

NOT: Multiple Choice

17. A client is confused and has stated to the nurse, "I wasn't sure whether I'm supposed to take Tylenol or acetaminophen." To **best** address the client's concern, the nurse should base the response on what information concerning generic and trade names?
- A. Prescribers should refer solely to generic names in their recommendations and written prescriptions.
  - B. A generic name is independent of any particular drug manufacturer.
  - C. Generic names change frequently, but trade names are more consistent.
  - D. Prescribers should refer solely to trade names in their recommendations and written prescriptions.

ANS: B

Rationale: A generic name is related to the chemical or official name and is independent of the manufacturer. Drugs may be prescribed and dispensed by generic or trade name. Generic names do not change, while trade names vary according to time and place.

PTS: 1

REF: p. 3, Drug Names

OBJ: 2

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Analyze

NOT: Multiple Choice

18. What is the **primary** purpose of American drug laws?
- A. To ensure maximum choice for consumers
  - B. To expedite the workload of health care providers
  - C. To protect the safety of the public
  - D. To enhance the efficient delivery of health care



ANS: C

Rationale: The main goal of drug laws is to protect the public by ensuring that drugs marketed for therapeutic purposes are safe and effective. Efficiency and choice are valid considerations, but neither is the primary goal of American drug legislation. Workload is expedited when delivery of health care is efficient.

PTS: 1

REF: p. 4, Prescription and Nonprescription Drugs

OBJ: 3

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Understand

NOT: Multiple Choice

19. A nurse who provides care on a postsurgical unit frequently administers Schedule II drugs to clients. Which aspect of administering these drugs falls under the auspices of the U.S. Drug Enforcement Administration?
- A. Performing a thorough client assessment prior to administration
  - B. Recording each dose administration on an agency narcotic sheet
  - C. Informing clients of the potential risks and benefits of such drugs prior to the first dose
  - D. Assessing the client shortly after administration to ensure existence of the expected therapeutic effect

ANS: B

Rationale: Nurses are responsible for storing controlled substances in locked containers, administering them only to people for whom they are prescribed, recording each dose given on agency narcotic sheets and on the client's medication administration record, maintaining an accurate inventory, and reporting discrepancies to the proper authorities. The other given actions are appropriate nursing activities, but they are not within the scope of the DEA authority.

PTS: 1

REF: p. 7, Testing Procedure

OBJ: 5

NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies

TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety

KEY: Integrated Process: Nursing Process

BLM: Cognitive Level: Analyze

NOT: Multiple Choice

20. Trials of a new drug are scheduled to begin soon. The testing methodology will integrate the stipulations of the National Institutes of Health (NIH) Revitalization Act. According to this act, the manufacturer must address which requirement?
- A. Independently fund the entire testing process.
  - B. Make the results of the testing process publicly available.
  - C. Include women and minorities in the testing process.
  - D. Exclude any potential for financial gain during the testing process.

ANS: C

Rationale: In 1993, the United States Congress passed the National Institutes of Health (NIH) Revitalization Act, which formalized a policy of the NIH that women and minorities be included in human subject research studies funded by the NIH and that women and minorities be included in clinical drug trials. This act does not specifically address the financial structure of testing or the accessibility of information.

PTS: 1 REF: p. 7, Testing Procedure OBJ: 5  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Remember NOT: Multiple Choice

21. A hospital nurse is vigilant in ensuring the safe use of medications and consistently applies the rights of medication administration. What are the rights of medication administration? Select all that apply.
- A. Right to refuse prescribed medication
  - B. Right route for effective medication therapy
  - C. Right to effective medication education
  - D. Right evaluation of expected results
  - E. Right to low-cost medication therapy

ANS: A, B, C, D

Rationale: The traditional rights of medication administration (right drug, right dose, right client, right route, right time, right reason, and right documentation) now include additional rights that should also be considered (right education, right evaluation, and right to refuse the medication). While important, there is not a recognized right to low-cost medication.

PTS: 1 REF: p. 8, Rights of Medication Administration  
OBJ: 4  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Remember NOT: Multiple Select

22. A client's current medication administration record includes a drug that the nurse recognizes as an Institute for Safe Medication Practices (ISMP) high-alert medication. This designation signals the nurse to what characteristic of the drug?
- A. It can only be administered by a health care provider or advanced practice nurse.
  - B. Administration must be cosigned by a second registered nurse or practical/vocational nurse.
  - C. It is currently undergoing Phase 4 testing and is pending full FDA approval.
  - D. Administration errors carry a heightened risk of causing significant client harm.

ANS: D

Rationale: The Institute for Safe Medication Practices (ISMP) identifies drugs that when used in error have a heightened risk of causing significant client harm. Such drugs are not limited to health care provider or advanced practice nurse administration. The drug would have completed the testing and approval procedure, and administration does not necessarily require a cosignature.

PTS: 1 REF: p. 9, High-Alert Medications OBJ: 5  
NAT: Client Needs: Physiological Integrity: Pharmacological and Parenteral Therapies  
TOP: Chapter: 1: The Foundation of Pharmacology: Quality and Safety  
KEY: Integrated Process: Nursing Process  
BLM: Cognitive Level: Understand NOT: Multiple Choice