Adams and Urban, *Pharmacology: Connections to Nursing Practice*, 3e Test Bank

Chapter 1

Question 1

Type: MCMA

The nurse is teaching a pharmacology class to a group of student nurses. Which key events does the nurse include in the history of pharmacology?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Early researchers used themselves and animals as test subjects.

2. Pharmacologists began to synthesize drugs in the laboratory in the 20th century.

3. Modern pharmacology began in the mid-1600s.

4. The first drugs included morphine, cocaine, and penicillin.

5. The Dark Ages provided much useful information that we still use today.

Correct Answer: 1,2

Rationale 1: Early researchers did use themselves and animals as test subjects.

Rationale 2: Pharmacologists did begin to synthesize drugs in the laboratory in the 20th century.

Rationale 3: Modern pharmacology began in the 1800s, not 1600s.

Rationale 4: The first drugs included morphine and cocaine, but not penicillin.

Rationale 5: Little is known about pharmacology during the Dark Ages.

Global Rationale: The nurse would state that early researchers did use themselves and animals as test subjects; pharmacologists did begin to synthesize drugs in the laboratory in the 20th century; and modern pharmacology began in the 1800s, not 1600s. The first drugs included morphine and cocaine, but not penicillin. Little is known about pharmacology during the Dark Ages.

Question 2

Type: MCSA

Although all areas of medicine, including pharmacology, have made great advances in the last century, the early roots of pharmacology still apply for the nurse and other health professionals. What were the early roots of pharmacology?

1. Applying products to relieve human suffering

2. Creating new drugs as quickly as possible

3. Finding medicinal alternatives to plants

4. Understanding how drugs take their effects

Correct Answer: 1

Rationale 1: The early root of pharmacology was to relieve human suffering.

Rationale 2: The early root of pharmacology was not to create new drugs quickly.

Rationale 3: Early pharmacology involved using plants to relieve symptoms of suffering.

Rationale 4: The early root of pharmacology was not to understand how drugs take their effects.

Global Rationale: The early root of pharmacology was to relieve human suffering, not to create new drugs quickly or to understand how drugs take their effects. Early pharmacology did involve using plants to relieve symptoms of suffering.

Question 3
Type: MCSA

Although many substances can be considered drugs, which drug definition is the most appropriate?

1. Any substance that is found in nature or that normally occurs in the body

2. Any substance that is synthesized and tested in the laboratory setting

3. Any substance that is taken to prevent, cure, or reduce symptoms of a medical condition

4. Any substance that can be isolated from natural substances in nature

Correct Answer: 3

Rationale 1: A drug is not a substance that is found in nature or that normally occurs in the human body.

Rationale 2: A drug is not only a substance that is synthesized and tested.

Rationale 3: A drug is considered to be any substance that is taken to prevent, cure, or reduce symptoms of a medical condition.

Rationale 4: A drug is not only a substance isolated from natural substances.

Global Rationale: A drug is considered to be any substance that is taken to prevent, cure, or reduce symptoms of a medical condition. A drug is not a substance that is found in nature or that normally occurs in the human body; it is not any substance that is synthesized and tested in the laboratory setting, nor is it only a substance isolated from natural substances.

Question 4
Type: MCSA

Pharmacotherapy is a critical intervention for many conditions, and a key part of nursing intervention. Which statement best describes pharmacotherapy?

1. The study of medicine and drug therapy

2. The application of natural substances to cure diseases

3. The application of drugs for the prevention and treatment of disease and human suffering

4. Understanding the difference between trade and generic medications

Correct Answer: 3

Rationale 1: Pharmacotherapy is not just the study of medicine and drug therapy.

Rationale 2: Pharmacotherapy is not the application of natural substances to cure diseases.

Rationale 3: Pharmacotherapy is the application of drugs for the prevention and treatment of diseases and human suffering.

Rationale 4: Pharmacotherapy comprises more than understanding the difference between trade and generic drugs.

Global Rationale: Pharmacotherapy is the application of drugs for the prevention and treatment of diseases and human suffering. It is not just the study of medicine and drug therapy nor is it the application of natural substances to cure diseases. Pharmacotherapy comprises more than understanding the difference between trade and generic drugs.

Question 5
Type: MCSA

Which principle best describes what the nurse is expected to understand when administering medication to a client?

1. The pharmacotherapeutics for all of the medications

2. The most common side effects of the drug's prototype

3. The trade and generic names for all of the medications

4. The cost of the drug therapy

Correct Answer: 1

Rationale 1: The nurse should understand the pharmacotherapeutics for all medications that the client is receiving.

Rationale 2: The nurse should understand much more about a drug than just the common side effects of the drug's prototype.

Rationale 3: The nurse should understand much more about a drug than just its trade and generic names.

Rationale 4: The cost of drug therapy is not a principle of drug administration.

Global Rationale: The nurse is expected to understand the pharmacotherapeutics for all medications that the client is receiving. The nurse should understand much more than the common side effects of the drug's prototype and the trade and generic names. The cost of drug therapy is not a principle of drug administration.

Question 6
Type: MCSA

The Food and Drug Administration classifies drugs by category, and these categories and drugs are found in the "Orange Book." To find out which drugs treat hypertension, the nurse would look under which classification?

1. Cardiac

2. Pharmacologic

3. Disease

4. Therapeutic

Correct Answer: 4

Rationale 1: There is no cardiac classification.

Rationale 2: The pharmacologic category describes how the drug works, not what condition the drug treats. However, the nurse could determine what condition the drug treats by knowing how the drug works.

Rationale 3: Disease is not a category.

Rationale 4: The nurse would look under the therapeutic category to find out what a drug will treat.

Global Rationale: To find out which drugs treat hypertension, the nurse would look under the therapeutic category to find out what a drug will treat. The pharmacologic category describes how the drug works, not what condition the drug treats. However, the nurse could determine what condition the drug treats by knowing how the drug works. Disease is not a category and there is no cardiac classification.

Question 7
Type: MCSA

The nurse is creating a teaching plan for a client on the cardiac unit and is researching the medications the client is currently taking to understand how each drug produces its effects in the body. To find this information, the nurse looks up which classification for each medication?

1. Therapeutic

2. Cardiac

3. Disease

4. Pharmacologic

Correct Answer: 4

Rationale 1: The therapeutic classification describes what condition is being treated by a drug, not how the drug works in the body.

Rationale 2: There is no cardiac category.

Rationale 3: There is no disease category.

Rationale 4: The nurse researches the pharmacologic classification to discover how a drug works in the body.

Global Rationale: The nurse researches the pharmacologic classification to discover how a drug works in the body. The therapeutic classification describes what condition is being treated by a drug, not how the drug works in the body. There is no cardiac or disease category.

Question 8
Type: MCMA

A prototype drug is a single drug in a class and can be compared with all other medications in the class. What are the benefits for the nurse to studying the prototype drug in predicting characteristics of other drugs in the same class?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Which drugs have the most favorable safety profile

2. Their therapeutic indications

3. Their actions and adverse effects

4. Their specific clinical use

5. Contraindications specific to any drug in that group

Correct Answer: 2,3,4

Rationale 1: The prototype drug does not provide a safety profile of other drugs in the same class.

Rationale 2: Studying the therapeutic indications of a prototype drug may allow the nurse to predict actions and adverse effects of other drugs in the same group.

Rationale 3: By studying the prototype, the nurse can predict the actions and adverse effects of other drugs in the same class.

Rationale 4: Studying the prototype drug may allow the nurse to predict the clinical use of another drug in the same class.

Rationale 5: Contraindications may differ for specific drugs in the same class as the prototype.

Global Rationale: Studying the therapeutic indications of a prototype drug may allow the nurse to predict actions and adverse effects of other drugs in the same group. The nurse can also predict the actions, adverse effects, and clinical uses of other drugs in the same class. The prototype drug does not provide a safety profile of other drugs in the same class. Contraindications may differ for specific drugs in the same class as the prototype.

Question 9
Type: MCMA

Chemical names are assigned for each drug. What are the major reasons for why nurses usually do not use the chemical name of the drugs?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. They are usually not brief or easy to remember.

2. They are often difficult to pronounce.

3. There is no standard for assigning names.

4. They do not explain the nature of the drug.

5. There is only one chemical name for each drug.

Correct Answer: 1,2

Rationale 1: Chemical names are usually not brief or easy to remember.

Rationale 2: Chemical names are often difficult to pronounce.

Rationale 3: Chemical names are assigned by a standard nomenclature.

Rationale 4: Chemical names do explain the nature of the drug.

Rationale 5: While it is true each drug has only one chemical name, this is not one of the reasons nurses do not use the chemical name.

Global Rationale: Nurses typically do not use the chemical names of drugs because they are not brief or easy to remember and they are often difficult to pronounce. Chemical names are assigned by a standard nomenclature and they do explain the nature of the drug. While it is true each drug has only one chemical name, this is not one of the reasons nurses do not use the chemical name.

Question 10
Type: MCSA

The trade name for a drug is usually selected to be short and easy to remember. What is the reason the nurse does not use the trade name for a drug?

1. There are no trade names for combination drugs.

2. A drug can have more than one trade name.

3. The trade name will expire and no longer be used.

4. A company might change the trade name for a drug.

Correct Answer: 2

Rationale 1: There are trade names for combination drugs.

Rationale 2: A drug can have more than one trade name.

Rationale 3: The trade name does not expire and will continue to be used.

Rationale 4: Companies usually do not change the trade name of a drug.

Global Rationale: Nurses typically do not use the trade name of medications because a drug can have more than one trade name. There are trade names for combination drugs. Trade names do not expire, and they will continue to be used. Companies usually do not change the trade name of a drug.

Question 11
Type: MCSA

Nursing students must memorize the generic names of drugs. What is the primary reason that generic names are used by health care providers over chemical and trade names?

1. A drug can have more than one chemical and trade name.

2. There is only one generic name for each drug, and it is easier to remember than the chemical name.

3. The trade names do not reflect the action of the drug as the generic name does.

4. Nursing students should actually strive to learn both the generic and trade names to avoid confusion with clients.

Correct Answer: 2

Rationale 1: A drug has only one chemical name; it can have multiple trade names.

Rationale 2: Each drug does have only one generic name.

Rationale 3: The generic name of a drug might not reflect the action of the drug.

Rationale 4: Nursing students should learn the generic name of a drug, since there can be multiple trade names.

Global Rationale: Generic drug names are typically used because each drug only has one generic name, while it can have multiple trade names. Chemical names are not often used because they are hard to remember and pronounce. The generic name of a drug might not reflect the action of the drug.

Question 12
Type: MCSA

Which is one of the main reasons a pharmaceutical company might be granted an exclusive period to market and distribute a new drug?

1. It allows the company to recoup the cost of research and development.

2. It allows consumers to get used to the trade name of the drug.

3. It allows all the adverse effects to be discovered.

4. Without competition, consumer savings are significant.

Correct Answer: 1

Rationale 1: Exclusivity allows a pharmaceutical company a period of time to recoup the costs of research and development of a drug.

Rationale 2: The period of exclusivity is not granted so that consumers will become familiar with a trade name.

Rationale 3: Adverse effects are discovered during the clinical drug trials, not during the period of exclusivity.

Rationale 4: Competition between pharmaceutical companies actually results in consumer savings.

Global Rationale: Exclusivity allows a pharmaceutical company a period of time to recoup the costs of research and development of a drug. Exclusivity is not granted so that consumers will become familiar with a trade name. Adverse effects are discovered during the clinical drug trials, not during the period of exclusivity. Competition between pharmaceutical companies actually results in consumer savings.

Question 13
Type: MCSA

Bioavailability of a drug can be affected by many factors. Which factor does not affect the bioavailability of a drug?

1. Inert ingredients

2. Rate of absorption

3. Safety margin

4. Tablet compression

Correct Answer: 3

Rationale 1: Inert ingredients can affect the bioavailability of a drug.

Rationale 2: Rate of absorption can affect the bioavailability of a drug.

Rationale 3: Safety margin will not affect the bioavailability of a drug.

Rationale 4: Tablet compression can affect the bioavailability of a drug.

Global Rationale: Safety margin will not affect the bioavailability of a drug. Inert ingredients, the safety margin, and the tablet compression can all affect the bioavailability of a drug.

Question 14
Type: MCSA

Bioavailability can be different between the generic and trade versions of a drug. When is it not appropriate for a generic drug to be substituted for a trade version?

1. The trade version costs the same as the generic.

2. The time for onset of action is different between the generic and trade versions.

3. The inert ingredients are different in the generic and trade versions.

4. The drug is a critical care drug, or one with a narrow safety margin.

Correct Answer: 4

Rationale 1: While the cost of the trade version is usually greater than that of the generic version of the same drug, cost does not affect bioavailability.

Rationale 2: The time of onset of action is not always an issue in using the generic over the trade version.

Rationale 3: The difference in inert ingredients is not always an issue in substitution of a generic over the trade version.

Rationale 4: The nurse should not substitute a generic drug for a trade version if the drug is a critical care drug or has a narrow safety margin.

Global Rationale: The nurse should not substitute a generic drug for a trade version if the drug is a critical care drug or has a narrow safety margin. While the cost of the trade version is usually greater than that of the generic version of the same drug, cost does not affect bioavailability. The time of onset of action is not always an issue in using the generic over the trade version. The difference in inert ingredients is not always an issue in substitution of a generic over the trade version.

Question 15
Type: MCSA

Before administering a drug, what pertinent information must the nurse obtain from the client?

1. Physical assessment, medical history, previous medications, and learning capabilities

2. Medical history, growth and development level of client, and ability to pay for the medication

3. Medical history, client's growth and development level, and potential adverse effects of the medication

4. Medical history, physical assessment, disease process, and learning needs

Correct Answer: 1

Rationale 1: Physical assessment, medical history, previous medications, and learning capabilities are all important pieces of information the nurse should have prior to administering drugs to clients.

Rationale 2: Medical history and growth and development are important pieces of information. However, while the client's ability to pay for the drug is important prescription information, it is not necessary for the nurse to know this prior to administering a drug.

Rationale 3: The medical history and growth and development information are important but the nurse would not obtain information regarding potential adverse effects of the medication from the client.

Rationale 4: The medical history, physical assessment, disease process, and learning needs are all important information the nurse needs. However, the nurse would not obtain information about the disease process from the client.

Global Rationale: Physical assessment, medical history, previous medications, and learning capabilities are all important pieces of information the nurse should have prior to administering drugs to clients. Medical history and growth and development are important pieces of information. However, while the client's ability to pay for the drug is important prescription information, it is not necessary for the nurse to know this prior to administering a drug. The nurse would not obtain information regarding potential adverse effects of the medication or the disease process from the client.

Question 16
Type: MCSA

When a drug is ordered for a client, what is the nurse responsible for knowing and understanding about the drug?

1. Name, intended use, special considerations, and adverse effects

2. Drug classification, contraindications, adverse effects, gender considerations, and cost of therapy

3. Drug classification, contraindications, special considerations, and severity of adverse effects

4. Name, intended use, effects, contraindications, special considerations, and adverse effects

Correct Answer: 4

Rationale 1: Name, intended use, special considerations, and adverse effects alone do not give the nurse a complete understanding of the drug.

Rationale 2: Drug classification, contraindications, and adverse effects are important for the nurse to know. Gender considerations and cost of therapy are not always necessary to know before giving a drug.

Rationale 3: Drug classification, contraindications, special considerations, and severity of the adverse effects do not give the nurse all the information needed to protect the client during drug administration.

Rationale 4: Name, intended use, effects, contraindications, special considerations, and adverse effects give the nurse the information needed to safely administer the drug as ordered.

Global Rationale: Name, intended use, effects, contraindications, special considerations, and adverse effects give the nurse the information needed to safely administer the drug as ordered. Name, intended use, special considerations, and adverse effects alone do not give the nurse a complete understanding of the drug. Drug classification, contraindications, and adverse effects are important for the nurse to know. Gender considerations and cost of therapy are not always necessary to know before giving a drug. Drug classification, contraindications, special considerations, and severity of the adverse effects do not give the nurse all the information needed to protect the client during drug administration.

Question 17
Type: MCSA

After successfully completing the pharmacology course, a student nurse tells the instructor that he is glad this difficult course is finished. What is the best response from the nursing instructor?

1. "It might be over, but now you will start your clinical courses and apply your knowledge."

2. “If you think this course was hard, you should try the graduate level.”

3. “Learning is an ongoing process in pharmacology; we must continue to stay up to date.”

4. “Learning difficult material is always painful, but it is necessary.”

Correct Answer: 3

Rationale 1: The student will apply the knowledge of drug therapy in the clinical setting, but this does not address the need for lifelong learning in drug therapy.

Rationale 2: Telling the student that the graduate course is hard does not address the need for lifelong learning for the student to stay current with drug therapy.

Rationale 3: Learning is an ongoing process in pharmacology to stay current with drug therapy.

Rationale 4: This statement does not describe the need for lifelong learning to stay competent in the field of pharmacology.

Global Rationale: The best response by the nurse is to tell the student that earning is an ongoing process in pharmacology to stay current with drug therapy. The other statements do not address the need for lifelong learning in drug therapy and the field of pharmacology.

Question 18
Type: MCMA

The client asks the charge nurse how the health care provider will decide which medication to prescribe. The nurses bases the response on which rationale regarding the “ideal drug”?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Effectively treats, prevents, or cures the client’s condition

2. Is not quickly eliminated by the body so that it can produce its effects over a prolonged period of time

3. Produces minimal adverse effects

4. Produces a rapid and predictable response

5. Is inexpensive and easily accessible

Correct Answer: 1,4,5

Rationale 1: The goal of pharmacology is to select a drug that will effectively treat, prevent, or cure a condition.

Rationale 2: The goal of pharmacology is to select a drug that will be quickly eliminated by the body after it produces its effects.

Rationale 3: The goal of pharmacology is to select a drug that will produce no short-term or long-term adverse effects.

Rationale 4: The goal of pharmacology is to select a drug that will produce a rapid, predictable response at relatively low doses.

Rationale 5: The ideal drug is affordable and easily accessible.

Global Rationale: The goals of pharmacology include selecting a drug that will: effectively treat, prevent, or cure a condition; produce rapid, predictable responses at relatively low doses; and be affordable and easily accessible. Other goals include selecting a drug that will be quickly eliminated by the body after it produces its effects and will produce no short-term or long-term adverse effects.

Question 19

Type: MCSA

A client is taking a medication for a condition whose indication is not listed and asks the nurse why the health care provider would prescribe this drug. Which response by the nurse is the most appropriate?

1. "Some medications may be used for conditions for which they have not been approved. This is called an 'off-label' indication."

2. "Some medications may be used as a prototype drug for a specific condition and are not listed in the nursing drug handbook."

3. "A medication can only be used for the specific condition for which it was approved."

4. "This is a generic drug, and not all generic drugs are in the nursing drug handbook. Only trade name drugs are listed."

Correct Answer: 1

Rationale 1: When a drug is prescribed for a condition for which it has not been approved, this is called an "off-label" indication.

Rationale 2: Prototype drugs are the early drugs to which all other drugs in the same class are compared. These drugs are FDA approved and can be found in the nursing drug handbook.

Rationale 3: Some drugs are used for conditions for which they have not been approved.

Rationale 4: All drugs, generic or trade name, are listed in the nursing drug handbook.

Global Rationale: When a drug is prescribed for a condition for which it has not been approved, this is called an "off-label" indication. This is the most appropriate response by the nurse. Prototype drugs are the early drugs to which all other drugs in the same class are compared. These drugs are FDA approved and can be found in the nursing drug handbook. Some drugs are used for conditions for which they have not been approved. All drugs, generic or trade name, are listed in the nursing drug handbook.

Question 20

Type: MCMA

A client is admitted to the emergency department with high blood pressure. The health care provider orders a diuretic and tells the client this medication will lower the blood pressure by decreasing intravascular fluid volume. What does this description address?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. The drug's mechanism of action

2. The drug's pharmacologic classification

3. How the drug produces its effects in the body

4. The drug's therapeutic classification

5. What condition is being treated by the drug

Correct Answer: 1,2,3

Rationale 1: Mechanism of action describes how a drug produces its effects in the body—in this case, how it lowers blood pressure.

Rationale 2: The pharmacologic classification describes how a drug produces its effects in the body—in this case, how it lowers blood pressure.

Rationale 3: The diuretic lowers blood pressure by lowering fluid volume in the vasculature.

Rationale 4: The therapeutic classification states what condition the drug is used to treat.

Rationale 5: A drug's therapeutic classification states what condition the drug is used to treat.

Global Rationale: This description addressed the mechanism of action, the pharmacologic classification, and how the drug produces its effect on the body. The description does not address the therapeutic classification which states what condition the drug is used to treat.

Question 21
Type: MCMA

A client who is admitted to the intensive care unit for monitoring notices the arthritis medication does not look like the one used at home and asks the nurse why. Which response by the nurse is the most appropriate?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "This is a different brand from the one you use at home, but it will give you the same pain relief."

2. "Your health care provider feels we can safely substitute this drug for the drug you use at home."

3. "This generic drug is the one we have on formulary in the pharmacy. It has the same ingredients as the one you use at home."

4. "This is what we have in the pharmacy. Go ahead and take it for now and let me know if it doesn't relieve the pain."

5. “The medications in the hospital often do not look like the ones you get from the pharmacy.”

Correct Answer: 1,2,3

Rationale 1: Most brand-name drugs can be safely substituted with generic drugs. The exceptions to this rule are critical care drugs and drugs with a narrow margin of safety.

Rationale 2: Most brand-name drugs can be safely substituted with generic drugs. The exceptions to this rule are critical care drugs and drugs with a narrow margin of safety.

Rationale 3: Most brand-name drugs can be safely substituted with generic drugs. The exceptions to this rule are critical care drugs and drugs with a narrow margin of safety.

Rationale 4: This response does not let the client know that it is very common to substitute noncritical care medications with various generic or brand-name versions.

Rationale 5: This response does not let the client know that it is very common to substitute noncritical care medications with various generic or brand-name versions.

Global Rationale: Most brand-name drugs can be safely substituted with generic drugs. The exceptions to this rule are critical care drugs and drugs with a narrow margin of safety. The other responses do not let the client know that it is very common to substitute noncritical care medications with various generic or brand-name versions.

Question 22

Type: MCMA

A client who received a refill for a medication returns to the pharmacy and says, “This medication is wrong! It doesn’t look anything like my usual prescription.” Which response by the pharmacist would be most appropriate?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. “Your usual prescription drug is too expensive, so I substituted it with a generic one.”

2. “There is no difference between this drug and the one you usually get.”

3. “Our state allows me to substitute a generic drug when the prescription calls for a brand-name drug.”

4. “Don’t worry. Can you see that the generic ingredients are exactly the same?”

5. “This medication is a generic form of your other medication. That is why it looks different. But it has the same ingredients and should work the same way.”

Correct Answer: 3,5

Rationale 1: It may be true that the client’s prescription is a brand name and more expensive, but this is not an appropriate explanation for the substitution.

Rationale 2: While this may be true, it does not give the client an appropriate explanation for the substitution.

Rationale 3: Some states allow the pharmacist to routinely substitute a generic drug for a brand-name drug. Other states prohibit this substitution and the pharmacist or client must request the substitution from the health care provider.

Rationale 4: The ingredients may be exactly the same, but this is not an appropriate explanation for the substitution.

Rationale 5: There may be several forms of a generic medication. Although they may look different, the ingredients and mechanism of action are the same.

Global Rationale: Some states allow the pharmacist to routinely substitute a generic drug for a brand-name drug. Other states prohibit this substitution and the pharmacist or client must request the substitution from the health care provider. There may be several forms of a generic medication. Although they may look different, the ingredients and mechanism of action are the same. It may be true that the client's prescription is a brand name and more expensive, but this is not an appropriate explanation for the substitution. While there may be no difference between the two medications, this does not give the client an appropriate explanation for the substitution. The ingredients may be exactly the same, but this is not an appropriate explanation for the substitution.

Question 23

Type: MCMA

The physician has written an order for a client for a new antihypertensive drug. Why is it important that the nurse have an understanding of the drug's prototype?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Knowledge of the prototype allows the nurse to surmise important information about an unfamiliar drug in the same class.

2. If the nurse knows the actions and adverse effects of the prototype drug, this information can be relevant to use of the unfamiliar drug.

3. The safety profile for the prototype is the same as the safety profile for the unfamiliar drug.

4. Knowledge of the prototype drug's therapeutic or pharmacologic classification can offer useful information about the unfamiliar drug.

5. Traditional prototype drugs are often older and infrequently prescribed, and the information about them should not be used.

Correct Answer: 1,2,4

Rationale 1: Prototype drugs are the drugs to which all other drugs in the class are compared. Knowledge of the actions and effects of a prototype drug can be extended to an unfamiliar drug in the same class.

Rationale 2: Prototype drugs are the drugs to which all other drugs in the class are compared. Knowledge of the actions and adverse effects of a prototype drug can be extended to an unfamiliar drug in the same class.

Rationale 3: Knowledge of the prototype drug includes therapeutic effects, mechanism of action, adverse effects, and contraindications but may not include an accurate safety profile for the unfamiliar drug.

Rationale 4: Prototype drugs are the drugs to which all other drugs in the class are compared. Knowing how the prototype drug works will reveal important information about the unfamiliar drug.

Rationale 5: Over time, a newer prototype may be chosen, but the older traditional prototype drug still affords valuable information for that class of drugs.

Global Rationale: Prototype drugs are the drugs to which all other drugs in the class are compared. Knowledge of the actions and effects of a prototype drug can be extended to an unfamiliar drug in the same class. Knowledge of the prototype drug may not include an accurate safety profile for the unfamiliar drug. Over time, a newer prototype may be chosen, but the older traditional prototype drug still affords valuable information for that class of drugs.

Question 24

Type: MCMA

A client says to the nurse, “I just don’t understand why my prescription costs so much. I tried to get a generic one, but the doctor said there isn’t one yet.” Which rationales are most appropriate for the nurse to use when responding to this client’s question?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. During the time of exclusivity, there is little competition, resulting in higher prices.

2. During the time of exclusivity, there are generic versions of the drug, but the pharmacist has the right to sell only the brand-name drug.

3. Once the time of exclusivity is over, other drug companies will be able to market generic drugs for less than the brand-name drug.

4. When the generic equivalent is released, the physician may routinely substitute the brand-name version for the generic version.

5. The period of exclusivity does not apply to Internet pharmacies based in other countries.

Correct Answer: 1,3,4,5

Rationale 1: During the time of exclusivity, the pharmaceutical company determines the cost of the medication. To offset research and development costs, brand-name drugs are often expensive.

Rationale 2: During the time of exclusivity, there are no generic versions of the drug, as the pharmaceutical company tries to recoup the money it took to research and develop the drug.

Rationale 3: Once the exclusive rights end, other pharmaceutical companies will be able to market the generic version at a lower cost.

Rationale 4: In some states, the physician may routinely substitute the brand-name drug for a generic drug.

Rationale 5: Other countries are not bound by U.S. drug laws, and clients may obtain brand-name drugs for a fraction of the price. However, these countries do not have the same quality control as the United States.

Global Rationale: During the time of exclusivity, the pharmaceutical company determines the cost of the medication. To offset research and development costs, brand-name drugs are often expensive. Once the exclusive rights end, other pharmaceutical companies will be able to market the generic version at a lower cost. In some states, the physician may routinely substitute the brand-name drug for a generic drug. Other countries are not bound by U.S. drug laws, and clients may obtain brand-name drugs for a fraction of the price. However, these countries do not have the same quality control as the United States. During the time of exclusivity, there are no generic versions of the drug, as the pharmaceutical company tries to recoup the money it took to research and develop the drug.

Question 25

Type: MCMA

A client tells the nurse that the health care provider has prescribed a new medication that "has just come on the market." The nurse has not heard of this particular medication but is able to give the client important information based on its prototype drug because of which principles?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Knowing the prototype drug allows the nurse to predict the mechanism of action of the new medication.

2. The information regarding the prototype drug can be extended to any drug in the same class.

3. The prototype drug is the drug to which all drugs in a class are compared.

4. Knowing the prototype drug's therapeutic or pharmacologic classification can reveal important information about other drugs in the same class.

5. This is a new drug on the market. It may not have a prototype drug yet and its properties cannot be predicted.

Correct Answer: 1,2,3,4

Rationale 1: Knowledge about the prototype drug can help the nurse predict important information such as actions, side effects, mechanism of action, and contraindications for other drugs in the same class.

Rationale 2: Knowledge about the prototype drug can help the nurse predict important information such as actions, side effects, mechanism of action, and contraindications for other drugs in the same class.

Rationale 3: The prototype drug is chosen to be the representative medication in a particular classification.

Rationale 4: Just knowing a drug's therapeutic or pharmacologic classification can reveal important information about the drug.

Rationale 5: Knowledge about the prototype drug can help the nurse predict important information such as actions, side effects, mechanism of action, and contraindications for other drugs in the same class.

Global Rationale: Knowledge about the prototype drug can help the nurse predict important information such as actions, side effects, mechanism of action, and contraindications for other drugs in the same class. The prototype drug is chosen to be the representative medication in a particular classification. Just knowing a drug's therapeutic or pharmacologic classification can reveal important information about the drug.

Question 26
Type: MCSA

The client is receiving a new and expensive medication. The client asks the nurse why the medication is so expensive compared with other medications. What is the nurse's best response?

1. "The drug companies spend too much money on marketing, and the cost gets passed on to you."

2. "It is expensive, but your insurance company will probably pay for it."

3. "These drugs are very expensive to develop and to bring to market."

4. "I agree with you. You would think they could lower the cost of the drug."

Correct Answer: 3

Rationale 1: Not all costs of a drug are related to marketing; other factors contribute to the cost.

Rationale 2: The insurance company might cover the costs, but this does not answer the client's question about the cost.

Rationale 3: The cost for researching and developing new drugs is tremendous. The Food and Drug Administration provides a time of exclusivity in which the drug company can try to recoup these costs.

Rationale 4: This response does not explain to the client the true reason behind the cost of the drug, which is research and development.

Global Rationale: The cost for researching and developing new drugs is tremendous. The Food and Drug Administration provides a time of exclusivity in which the drug company can try to recoup these costs. Not all costs of a drug are related to marketing; other factors contribute to the cost. The insurance company might cover the costs, but this does not answer the client's question about the cost. Agreeing with the client and stating that drug companies could lower the cost does not explain to the client the true reason behind the cost of the drug, which is research and development.

Adams and Urban, *Pharmacology: Connections to Nursing Practice*, 3e Test Bank

Chapter 2

Question 1
Type: MCSA

Which was the greatest problem with patent medicines in early America that lead to drug legislation?

1. They were only distributed in elixir formulation.

2. They had dangerous or addictive substances.

3. They smelled like medicine.

4. They could only be made out of natural products.

Correct Answer: 2

Rationale 1: They could be distributed in many forms, such as tablets and creams, not just elixirs.

Rationale 2: Many did contain dangerous or addictive substances such as morphine or cocaine.

Rationale 3: Some did smell like medicine, but this was not dangerous.

Rationale 4: They could be made out of many products, not just natural ones.

Global Rationale: In early America, many patent medicines did contain dangerous or addictive substances which lead to legislation. Patent medications were distributed in many forms, such as tablets and creams, not just elixirs. While some patent medicines did smell like medicine, this is not dangerous. Patent medicines could be made out of many products, not just natural ones.

Question 2
Type: MCMA

During the rise of patent medicines in America in the 1800s, there were few attempts to regulate drugs. Which statements accurately depict this situation?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Patent medicines contained a brand name that clearly identified the product.

2. Patent medicines claimed to cure just about any disease or condition.

3. Patent medicines were often harmless and ineffective.

4. Many patent medicines contained addictive substances.

5. Patent medicines could not make false therapeutic claims.

Correct Answer: 1,2,3,4

Rationale 1: Patent medicine did contain the brand name clearly identifying the product.

Rationale 2: Patent medicine claimed to cure everything from consumption to “all forms of weakness.”

Rationale 3: Many patent medicines contained coloring and flavoring and were both harmless and ineffective.

Rationale 4: Some elixirs contained up to 50% morphine. In the late 1800s, Coca-Cola contained about 9 mg of cocaine per serving.

Rationale 5: It was not until the Sherley Amendment was passed in 1912 that false therapeutic claims were prohibited.

Global Rationale: The statements that accurately depict the situation regarding patent medicines in the 1800s include that patent medicine did contain the brand name clearly identifying the product; patent medicine claimed to cure everything from consumption to “all forms of weakness”; many patent medicines contained coloring and flavoring and were both harmless and ineffective; and some elixirs contained up to 50% morphine. In the late 1800s, Coca-Cola contained about 9 mg of cocaine per serving. It was not until the Sherley Amendment was passed in 1912 that false therapeutic claims were prohibited.

Question 3
Type: MCSA

The student nurse taking a pharmacology class is studying the Food, Drug, and Cosmetic Act of 1938. What is important for the student to remember?

1. It prevented the sale of drugs that had not been tested before marketing.

2. It gave the government the power to change labeling content of medications.

3. It helped to standardize the quality of prepared food, drugs, and cosmetics.

4. It prohibited the sale of drugs labeled with false therapeutic claims to defraud the public.

Correct Answer: 1

Rationale 1: It did prevent sale of drugs that had not been tested before marketing.

Rationale 2: It did not give the government power over labeling contents; the Pure Food and Drug Act did.

Rationale 3: It did not standardize quality of food, drugs, or cosmetics.

Rationale 4: It did not prohibit sale of drugs labeled with false therapeutic claims to defraud the pubic; this was the Sherley Amendment.

Global Rationale: The Food, Drug, and Cosmetic Act of 1938 did prevent sale of drugs that had not been tested before marketing. The Act did not give the government power over labeling contents; the Pure Food and Drug Act did. It did not standardize quality of food, drugs, or cosmetics. It also did not prohibit sale of drugs labeled with false therapeutic claims to defraud the pubic; this was the Sherley Amendment.

Question 4
Type: MCSA

A client is talking to the nurse and is expressing doubt about whether to take a drug that is advertised on television. The client does not believe that commercials for drugs tell the truth. Which rationale will the nurse use when responding to the client?

1. Advertisements are not legally binding and can be misleading.

2. All drugs must be advertised in media to inform the public.

3. Manufacturers have some ability to change things when advertising drugs.

4. False claims of a drug's therapeutic effect are prohibited by law.

Correct Answer: 4

Rationale 1: It is illegal to advertise false claims; advertisements are legally binding.

Rationale 2: Drugs do not have to be advertised in the media.

Rationale 3: Manufacturers may not change the truth when advertising drugs.

Rationale 4: The Sherley Amendment of 1912 prohibits sale of drugs labeled with false therapeutic claims.

Question 5
Type: MCMA

The Pure Food and Drug Act (PFDA) of 1906 was significant in that it gave the government the power to prohibit drug labels from claiming false therapeutic benefits. However, there were still several weaknesses in the legislature of this act. Which statements most accurately describe these weaknesses?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. This law did not require drug manufacturers to prove that the drug was effective in its claims.

2. This law did not prevent drugs from being marketed for any disease.

3. This law required all drug labels to accurately describe their contents.

4. This law required adequate testing for safety prior to marketing.

5. This law did not encourage the development of drugs for rare or unusual disorders.

Correct Answer: 1,2

Rationale 1: The fact that manufacturers did not have to prove efficacy was a tremendous weakness in the regulation of drugs in the early 20th century.

Rationale 2: The PFDA of 1906 did not address false therapeutic claims.

Rationale 3: Requiring drug labels to identify their contents is not a weakness of the PFDA.

Rationale 4: The PFDA did not require testing for safety prior to marketing. It was not until Congress passed the Food, Drug, and Cosmetic Act that drugs had to be tested for safety prior to marketing.

Rationale 5: The act that encouraged the research and development of drugs for rare or unusual disorders is called the Orphan Act.

Global Rationale: The weaknesses of the PFDA of 1906 include the fact that manufacturers did not have to prove efficacy in the regulation of drugs in the early 20th century and the Act did not address false therapeutic claims. Requiring drug labels to identify their contents is not a weakness of the PFDA. The PFDA did not require testing for safety prior to marketing. It was not until Congress passed the Food, Drug, and Cosmetic Act that drugs had to be tested for safety prior to marketing. The act that encouraged the research and development of drugs for rare or unusual disorders is called the Orphan Act.

Question 6
Type: MCSA

One of the first standards used by pharmacists for preparation and potency of drugs was a formulary. What did early formularies contain?

1. Names of patent medicines and natural drugs

2. Lists of pharmaceutical products and drug recipes

3. Lists of various drugs' strengths based on individual pharmacies

4. Lists of various drugs' potency based on geographic region

Correct Answer: 2

Rationale 1: Early formularies did not contain the names of patent medicines and natural drugs.

Rationale 2: Early formularies did contain a list of pharmaceutical products and drug recipes.

Rationale 3: Formularies did not list drugs based on the individual pharmacies.

Rationale 4: Formularies did not list drugs by their geographical region.

Global Rationale: Early formularies contained a list of pharmaceutical products and drug recipes. Early formularies did not contain the names of patent medicines and natural drugs, list drugs based on the individual pharmacies, or list drugs by their geographical region.

Question 7
Type: MCMA

In the early 1800s, it became clear that the standardization of drug purity and strength was necessary. Which reasons reflected this need?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Strength and purity of products varied from region to region and batch to batch.

2. Strength and purity of products depended on the pharmacist’s experience.

3. Strength and purity of products would vary in size, taste, and nutritional value.

4. Strength and purity were mostly guaranteed if products were produced locally, which caused a hardship for those outside the region.

5. Strength and purity could be trusted when the product had gone through extensive local testing.

Correct Answer: 1,2,3

Rationale 1: The strength and purity of the products varied considerably because they were dependent on the experience of the pharmacist and the quality of the local ingredients, which could vary from region to region and batch to batch.

Rationale 2: The strength and purity of the products varied considerably because they were dependent on the experience of the pharmacist and the quality of the local ingredients, which could vary from region to region and batch to batch.

Rationale 3: The strength and purity of the products varied considerably because they were dependent on the experience of the pharmacist and the quality of the local ingredients, which could vary from region to region and batch to batch.

Rationale 4: Strength and purity could not be guaranteed, even if produced locally. Causing a hardship on those outside the region had nothing to do with determining that standardization was needed.

Rationale 5: Extensive testing prior to marketing did not occur until the early 1930s.

Global Rationale: The strength and purity of the products varied considerably because they were dependent on the experience of the pharmacist and the quality of the local ingredients, which could vary from region to region and batch to batch. Because of this, standardization was necessary. Strength and purity could not be guaranteed, even if produced locally. Causing a hardship on those outside the region had nothing to do with determining that standardization was needed. Extensive testing prior to marketing did not occur until the early 1930s.

Question 8
Type: MCSA

A pharmaceutical representative comes to the primary care office and states that his company is marketing a new drug that does not need approval by the Food and Drug Administration (FDA). What is the best response of the nurse?

1. "Is this a drug in clinical trials? Those are the only drugs that don't have to have FDA approval."

2. "Is this an over-the-counter drug? Over-the-counter drugs do not need FDA approval."

3. "Your company must be involved in academic research if the drug doesn't need FDA approval."

4. "Any pharmaceutical company must have FDA approval before marketing a drug."

Correct Answer: 4

Rationale 1: Drugs in clinical trials must have FDA approval to start and continue clinical trials.

Rationale 2: Over-the-counter drugs must have FDA approval before being marketed.

Rationale 3: Drugs involved in academic research must have FDA approval.

Rationale 4: All drugs marketed by pharmaceutical companies must have FDA approval.

Global Rationale: All drugs marketed by pharmaceutical companies must have FDA approval. Drugs in clinical trials must have FDA approval to start and continue clinical trials. Over-the-counter drugs must have FDA approval before being marketed. Drugs involved in academic research must have FDA approval.

Question 9
Type: MCSA

Nursing students are studying which drug types must have Food and Drug Administration (FDA) approval before being marketed. The students know that which drugs must have approval from the FDA before being marketed?

1. Biologics

2. Food supplements

3. Herbal preparations

4. Dietary supplements

Correct Answer: 1

Rationale 1: Biologics must have FDA approval before being marketed.

Rationale 2: Food supplements do not require FDA approval.

Rationale 3: Herbal preparations do not require FDA approval.

Rationale 4: Dietary supplements do not require FDA approval.

Global Rationale: Biologics must have FDA approval before being marketed. Food supplements, herbal preparations, and dietary supplements do not require FDA approval prior to being marketed.

Question 10
Type: MCMA

Which statements regarding the role of the U.S. Food and Drug Administration (FDA) are true?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. The FDA is responsible for ensuring the security of human drugs.

2. The FDA publishes a summary of the standards of drug purity and strength.

3. The FDA ensures the availability of effective drugs.

4. The FDA takes action against any supplement that is deemed to be unsafe.

5. The FDA facilitates the availability of safe drugs.

Correct Answer: 1,3,4,5

Rationale 1: The mission of the FDA is to protect public health by ensuring the safety, efficacy and security of human and veterinary drugs, biologic products, medical devises, the nation's food supply, cosmetics, and products that emit radiation.

Rationale 2: It is the role of the U.S. Pharmacopeia (USP) to publish a summary of drug standards (purity and strength).

Rationale 3: Ensuring the availability of effective drugs is one of the FDA's roles.

Rationale 4: It is the FDA's role to take action against any supplement that is deemed to be unsafe.

Rationale 5: It is the role of the FDA to facilitate the availability of safe drugs.

Global Rationale: The mission of the FDA is to protect public health by ensuring the safety, efficacy and security of human and veterinary drugs, biologic products, medical devises, the nation's food supply, cosmetics, and products that emit radiation. Ensuring the availability of effective drugs is one of the FDA's roles. It is the FDA's role to take action against any supplement that is deemed to be unsafe. It is the role of the FDA to facilitate the availability of safe drugs. It is the role of the U.S. Pharmacopeia (USP) to publish a summary of drug standards (purity and strength).

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.7 Explore ethical and legal implications of patient-centered care
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Current best practice
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-4 Evaluate the role of the U.S. Food and Drug Administration in the drug approval process.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 11
Type: MCSA

The nurse explains to the client that during the Food and Drug Administration (FDA) drug approval process, clinical investigators from many different medical specialties address concerns. What concerns are addressed?

1. Whether a New Drug Application (NDA) must be filed

2. The marketability of the drug

3. What the cost of the drug should be

4. Whether or not the drug is safe

Correct Answer: 4

Rationale 1: The pharmaceutical company files the NDA.

Rationale 2: The clinical investigators do not determine marketability of the drug.

Rationale 3: Clinical investigators do not determine the cost of the drug.

Rationale 4: Safety is determined by the FDA during the Investigational New Drug Application process.

Global Rationale: During the FDA drug approval process, clinical investigators address concerns on whether or not the drug is safe. Safety is determined by the FDA during the Investigational New Drug Application process. The pharmaceutical company files the NDA. The clinical investigators do not determine marketability of the drug or determine the cost of the drug.

Cognitive Level: Remembering

Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.7 Explore ethical and legal implications of patient-centered care
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Policies and procedures
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-5 Categorize the four stages of new drug approval.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 12
Type: MCSA

The client receiving a newly released medication is experiencing adverse effects. Why does the nurse report these adverse effects as part of the postmarketing surveillance stage of the drug approval process?

1. The clinical trials are continuing to collect new data.

2. Individual client response is compared with the clinical trial data.

3. The efficacy of the drug is determined for new drugs.

4. Harmful effects in the larger population continue to be monitored.

Correct Answer: 4

Rationale 1: The clinical trials end before the drug is released for use by the general public.

Rationale 2: The client's response is not compared with previous clinical trials.

Rationale 3: The efficacy for the drug is not evaluated via the adverse effects.

Rationale 4: Some harmful effects are subtle, take longer to appear, and are not identified until the drug is prescribed to a large number of people; thus, postmarketing surveillance for harmful effects must be reported.

Global Rationale: The nurse reports the adverse effects because some harmful effects are subtle, take longer to appear, and are not identified until the drug is prescribed to a large number of people; thus, postmarketing surveillance for harmful effects must be reported. The clinical trials end before the drug is released for use by the general public. The client's response is not compared with previous clinical trials. The efficacy for the drug is not evaluated via the adverse effects.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Policies and procedures

Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-5 Categorize the four stages of new drug approval.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 13
Type: MCMA

Which statements regarding the preclinical research stage of drug development are true?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Most drugs do not proceed past the preclinical stage because they are found to be too toxic or just ineffective.

2. At the end of the preclinical research stage, client variability is determined and potential drug-to-drug interactions are examined.

3. The preclinical stage of research involves extensive testing on animals in the laboratory to determine if the drug will cause harm to humans.

4. Preclinical research results are always inconclusive.

5. The Food and Drug Administration (FDA) is responsible for extensive testing for safety before the pharmaceutical company can begin the preclinical research stage of development.

Correct Answer: 1,3,4

Rationale 1: Most drugs do not proceed past the preclinical research stage of development because they are found to be either too toxic or just ineffective.

Rationale 2: Client variability and potential drug-to-drug interactions are examined in Phase 3 of the clinical investigation process after Food and Drug Administration (FDA) approval.

Rationale 3: The preclinical stage of development involves extensive testing on human, microbial cells, and animals to determine drug action and to predict whether the drug will cause harm to humans.

Rationale 4: Because lab tests cannot accurately predict human response to a drug, these results are always inconclusive.

Rationale 5: This extensive testing is done by the pharmaceutical company in the preclinical research stage of drug development, not the FDA.

Global Rationale: The true statements include: most drugs do not proceed past the preclinical research stage of development because they are found to be either too toxic or just ineffective; the preclinical stage of developmentinvolves extensive testing on human, microbial cells, and animals to determine drug action and to predict whether the drug will cause harm to humans; and because lab tests cannot accurately predict human response to a drug, these results are always inconclusive. Client variability and potential drug-to-drug interactions are examined in Phase 3 of the clinical investigation process after Food and Drug Administration (FDA) approval. Extensive testing is done by the pharmaceutical company in the preclinical research stage of drug development, not the FDA.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Policies and procedures
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-5 Categorize the four stages of new drug approval.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 14
Type: MCSA

Clients enrolled in a clinical drug trial are told that they might receive a placebo drug as part of a control group. A client asks the nurse what a placebo is. Which response by the nurse is the most appropriate?

1. “A placebo is a substance that has no therapeutic effect.”

2. "A placebo is a similar drug that is safe."

3. "A placebo is a drug that has been tested before."

4. "A placebo is an over-the-counter drug."

Correct Answer: 1

Rationale 1: A placebo is an inert substance that has no therapeutic effect and is used as a control.

Rationale 2: A placebo is not a similar drug

Rationale 3: A placebo is generally not another drug.

Rationale 4: A placebo is not an over-the-counter drug

Global Rationale: A placebo is an inert substance that has no therapeutic effect and is used as a control. A placebo is not a similar drug, generally not another drug, and is not an over-the-counter drug.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Current best practice
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-6 Explain the role of a placebo in new drug testing.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.

Page Number:

Question 15
Type: MCSA

The nursing student is studying how priority drugs receive accelerated approval by the Food and Drug Administration (FDA) as part of the FDA modernization. Which conditions are the priority drugs used to treat?

1. Diseases that previously were treated with older and less popular drugs

2. Diseases that affect only a small percentage of the population

3. Diseases for which the community raises money for treatment

4. Serious and life-threatening conditions that lack effective treatments

Correct Answer: 4

Rationale 1: The process does not cover only diseases that were covered with older drugs, but also diseases that are serious and lack effective treatment.

Rationale 2: There are serious diseases that affect only a small percentage of the population, but this is not a criterion for the accelerated process.

Rationale 3: Although the community might raise money for serious and life-threatening conditions, that is not a criterion for accelerated FDA approval.

Rationale 4: The accelerated approval process is for drugs for serious and life-threatening conditions.

Global Rationale: The accelerated approval process is for drugs for serious and life-threatening conditions. The process does not cover only diseases that were covered with older drugs, but also diseases that are serious and lack effective treatment. There are serious diseases that affect only a small percentage of the population, but this is not a criterion for the accelerated process. Although the community might raise money for serious and life-threatening conditions, that is not a criterion for accelerated FDA approval.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Policies and procedures
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-7 Discuss how changes to the approval process have increased the speed at which new drugs reach consumers.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 16

Type: MCSA

The nurse is teaching a class about over-the-counter (OTC) medications at a senior citizen center. Which statement by a participant indicates the teaching was effective?

1. "Over-the-counter medications are safe, as long as we don't take them at the same time as our prescription medications."

2. "Over-the-counter medications are safe; otherwise, they would require a prescription."

3. "We should not take any over-the-counter medications without first calling our primary health care provider because these medications can interact with other prescriptions or products."

4. "We must read all the label directions before taking any over-the-counter medications."

Correct Answer: 3

Rationale 1: Some OTC medications can be taken with prescription medications; others cannot.

Rationale 2: Although they have a high margin of safety, OTC medications are not without risks.

Rationale 3: Elderly clients often take multiple medications and should consult with their health care provider before taking any over-the-counter medication or supplement to ensure there are no risks for drug interactions.

Rationale 4: It is important for clients to read all directions on the label, but this will not protect them if there is a contraindication with another medication they are taking; therefore, they must consult their primary health care provider before taking any OTC medications.

Global Rationale: Elderly clients often take multiple medications and should consult with their health care provider before taking any over-the-counter medication or supplement to ensure there are no risks for drug interactions. This statement indicates adequate understanding of the session. Some OTC medications can be taken with prescription medications; others cannot. Although they have a high margin of safety, OTC medications are not without risks. It is important for clients to read all directions on the label, but this will not protect them if there is a contraindication with another medication they are taking; therefore, they must consult their primary health care provider before taking any OTC medications.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Current best practice
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 2-8 Compare and contrast prescription and over-the-counter drugs
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 17

Type: MCSA

The client was taking a prescription medication that is now available over the counter. The client asks the nurse, "Why do some medications become available over the counter and other medications remain prescription drugs?" Which response by the nurse is the most appropriate?

1. "Drugs with the least amount of side effects can become over-the-counter."

2. "Drugs that have a high safety margin may be reclassified to over-the-counter."

3. "The longer the drug is on the market, the better its chance of going over-the-counter."

4. "If the pharmaceutical company pays the FDA a large amount of money, it can have its drug reclassified."

Correct Answer: 2

Rationale 1: The number of side effects does not determine whether a drug is to be considered for over-the-counter (OTC) classification.

Rationale 2: Drugs that have a high safety margin may be reclassified as OTC drugs.

Rationale 3: The amount of time a drug is on the market does not influence the ability to change to OTC. Many drugs have been available for over 100 years and remain prescription.

Rationale 4: The FDA does not select drugs for OTC status based on fees paid by drug companies.

Global Rationale: Drugs that have a high safety margin may be reclassified as OTC drugs. The number of side effects does not determine whether a drug is to be considered for over-the-counter (OTC) classification. The amount of time a drug is on the market does not influence the ability to change to OTC. Many drugs have been available for over 100 years and remain prescription. The FDA does not select drugs for OTC status based on fees paid by drug companies.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Current best practice
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-8 Compare and contrast prescription and over-the-counter drugs
MNL Learning Outcome: 1.1.3 processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 18
Type: MCMA

A client says to the admitting nurse, “Why do you need to know the names of all the over-the-counter supplements I take? They aren’t drugs.” Which responses by the nurse are the most appropriate?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "The admitting physician needs to know everything you are taking."

2. "You're right. I'm not sure why the admitting paperwork asks for this information. Would you mind listing them anyway?"

3. "The law requires us to keep a list of over-the-counter drugs and supplements that you are taking."

4. "It is true that supplements are not considered drugs; however, some of these products can cause adverse effects with prescribed drugs."

5. "We need to know if you are having an allergic reaction to one of them."

Correct Answer: 1,4

Rationale 1: The health care providers involved in this client's care will need to know everything she is taking—both prescription and over-the-counter (OTC).

Rationale 2: While it is true that supplements are not considered drugs, there is a specific reason why the health care team needs to know this information, which is the reason for the requested list on the paperwork. The nurse's answer did not address the client's question appropriately.

Rationale 3: No law requires hospitals to keep records of OTC drugs and supplements that clients take. This information is needed, however, for other reasons.

Rationale 4: Supplements are not subject to the same regulatory process as drugs, and some of these products can cause adverse effects and interact with medications.

Rationale 5: It is possible that this client could be having an allergic reaction, but there is not enough information to determine this, and this is not the main reason why the health care team needs to know what OTC medications she is taking.

Global Rationale: The health care providers involved in this client's care will need to know everything she is taking—both prescription and over-the-counter (OTC). Supplements are not subject to the same regulatory process as drugs, and some of these products can cause adverse effects and interact with medications. While it is true that supplements are not considered drugs, there is a specific reason why the health care team needs to know this information, which is the reason for the requested list on the paperwork. The nurse's answer did not address the client's question appropriately. No law requires hospitals to keep records of OTC drugs and supplements that clients take. This information is needed, however, for other reasons. It is possible that this client could be having an allergic reaction, but there is not enough information to determine this, and this is not the main reason why the health care team needs to know what OTC medications she is taking.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Current best practice

Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-8 Compare and contrast prescription and over-the-counter drugs
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 19
Type: MCSA

The client says to the nurse, "I wonder if I am considered a drug addict. I went to pick up my medication from the drug store and the pharmacist told me that the drug was a controlled substance." Which response by the nurse is the most appropriate?

1. "If you continue on this medication for a long time, you will become addicted to it."

2. "You are not an addict, but the Drug Enforcement Agency (DEA) will be watching your prescription drug habits now."

3. "Any drug that has a potential for abuse is considered a controlled substance and is restricted. This does not mean the pharmacist will think you are an addict."

4. "Do you think that you are addicted to your medication?"

Correct Answer: 3

Rationale 1: Clients can be on controlled substances for various lengths of time without becoming addicted.

Rationale 2: The DEA does not monitor the prescription drug habits of every client who receives a controlled substance.

Rationale 3: The pharmacist recognizes all drugs with the potential for abuse are considered controlled substances and carry restrictions but most likely will not think the client is a drug addict.

Rationale 4: Asking the client if he thinks he is addicted does not answer his question about controlled substances.

Global Rationale: The pharmacist recognizes all drugs with the potential for abuse are considered controlled substances and carry restrictions but most likely will not think the client is a drug addict. Clients can be on controlled substances for various lengths of time without becoming addicted. The DEA does not monitor the prescription drug habits of every client who receives a controlled substance. Asking the client if he thinks he is addicted does not answer his question about controlled substances.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.7 Explore ethical and legal implications of patient-centered care
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Policies and procedures
Nursing/Integrated Concepts: Nursing Process: Implementation

Learning Outcome: 2-9 Explain how scheduled drugs are classified and regulated.
MNL Learning Outcome: 1.7.1 Compare the classes of medications used to treat pain.
Page Number:

Question 20
Type: MCSA

The nurse is working in a cancer treatment center. A client diagnosed with terminal cancer has received a prescription for morphine (MS Contin), a schedule II drug for pain control. After medication teaching, which statement by the client indicates appropriate understanding?

1. "I should call the office three days before I need a refill called in to the pharmacy."

2. "I will need to see the provider each time for my refill."

3. "This is an addictive drug, so I should try not to take it."

4. "After the first prescription, my doctor will be able to call in my prescription."

Correct Answer: 2

Rationale 1: Schedule II drugs cannot not have refills called into the pharmacy.

Rationale 2: The client will need to see the provider each time a refill is needed.

Rationale 3: The client should take the drug as it is needed and directed. Addiction is not a concern at this time.

Rationale 4: Schedule II medications cannot be called into the pharmacy.

Global Rationale: The client will need to see the provider each time a refill is needed and this indicates the client has understood the information presented. Schedule II drugs cannot not have refills called into the pharmacy. The client should take the drug as it is needed and directed. Addiction is not a concern at this time. Schedule II medications cannot be called into the pharmacy.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.7 Explore ethical and legal implications of patient-centered care
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Policies and procedures
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-9 Explain how scheduled drugs are classified and regulated.
MNL Learning Outcome: 1.7.1. Compare the classes of medications used to treat pain.
Page Number:

Question 21
Type: MCSA

A nurse educator is preparing a lecture regarding prescriptive authority for advanced practice registered nurses (APRNs). Which statement is appropriate for the educator to include in the lecture regarding this topic?

1. APRNs can only prescribe medications when under the supervision of a physician.

2. APRNs prescribe medication based on federal regulations.

3. APRNs prescribe medication based on state regulations.

4. APRNs prescribe medication based on local regulations.

Correct Answer: 3

Rationale 1: While some states mandate that APRNs can only prescribe under the supervision of a physician, this is not applicable for all states and is not an appropriate statement to include in the lecture.

Rationale 2: APRNs prescribe medication based on state regulations, not federal regulations.

Rationale 3: APRNs prescribe medication based on state regulations. This is an appropriate statement to include in the lecture.

Rationale 4: APRNs prescribe medication based on state regulations, not local regulations.

Global Rationale: APRNs prescribe medication based on state regulations. While some states mandate that APRNs can only prescribe under the supervision of a physician, this is not applicable for all states and is not an appropriate statement to include in the lecture.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: II.A.2 Describe scopes of practice and roles of health care team members
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Teamwork: Scope of practice, roles, and responsibilities of health care team members, including overlaps
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 2-10 Discuss the requirements and regulations needed for nurses to have the ability to prescribe drugs
MNL Learning Outcome: 1.3.3 Implement the nursing process in the administration of medications.
Page Number:

Question 22
Type: MCMA

The nurse is teaching a client the importance that a placebo plays in drug research. Which items are appropriate for the nurse to include in the teaching session?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. The research drug must be compared to an inert substance to determine effectiveness.

2. The placebo will be given to a control group, and those results will be compared to the group taking the research drug.

3. During the trials, neither group will know if they have the placebo drug or the research drug.

4. The research drug will be considered for a New Drug Application (NDA) if it is found to be effective and safe when compared to the placebo drug.

5. Before the clinical trials, the research drug will be tested on select clients against another standard drug used for the same condition.

Correct Answer: 1,2,3,4

Rationale 1: The primary focus of a clinical trial is to provide information regarding the effectiveness of the research drug. The effectiveness of the research drug will be compared to an inert substance taken by a nontreatment group, called the *control group*.

Rationale 2: The primary focus of a clinical trial is to provide information regarding the effectiveness of the research drug. The effectiveness of the research drug will be compared to an inert substance taken by a nontreatment group, called the *control group*.

Rationale 3: Clients may have a perceived or actual improvement in a medical condition if they know they are taking the research drug. Clients may also feel there is no improvement if they know they are taking a drug that has inert properties.

Rationale 4: If the research drug continues to show that it is effective and safe, an NDA will be submitted to the Federal Drug Administration (FDA).

Rationale 5: In some cases, the research drug may be compared to a standard drug used for the same condition, but only during clinical trials. Preclinical research does not include testing on humans.

Global Rationale: The primary focus of a clinical trial is to provide information regarding the effectiveness of the research drug. The effectiveness of the research drug will be compared to an inert substance taken by a nontreatment group, called the *control group*. If the research drug continues to show that it is effective and safe, an NDA will be submitted to the Federal Drug Administration (FDA). In some cases, the research drug may be compared to a standard drug used for the same condition, but only during clinical trials. Preclinical research does not include testing on humans.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Quality and Safety: Current best practices
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-6 Explain the role of a placebo in new drug testing.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology
Page Number:

Question 23
Type: MCMA

A nurse educator is discussing the prescriptive authority of health care providers to a group of new employees. Which health care providers are able to prescribe medications to clients?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Registered nurses

2. Physicians

3. Nurse practitioners

4. Nurse managers

5. Physical therapists

Correct Answer: 2,3

Rationale 1: Registered nurses can administer medications but it is outside the scope of practice to prescribe medications.

Rationale 2: Physicians are able to prescribe medications.

Rationale 3: Nurse practitioners are able to prescribe medications.

Rationale 4: A nurse manager may or may not be able to prescribe medications; this is dependent on the nurse manager licensure.

Rationale 5: Physical therapists can prescribe therapies but not medications.

Global Rationale: Physicians and nurse practitioners are able to prescribe medications. Registered nurses can administer medications but it is outside the scope of practice to prescribe medications. A nurse manager may or may not be able to prescribe medications; this is dependent on the nurse manager licensure. Physical therapists can prescribe therapies but not medications.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: II.A.2 Describe scopes of practice and roles of health care team members
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Teamwork: Scope of practice, roles, and responsibilities of health care team members, including overlaps
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 2-10 Discuss the requirements and regulations needed for nurses to have the ability to prescribe drugs.

MNL Learning Outcome: 1.3.3. Implement the nursing process in the administration of medications.
Page Number:

Adams and Urban, *Pharmacology: Connections to Nursing Practice*, 3e Test Bank

Chapter 3

Question 1
Type: MCSA

What are the four phases of pharmacokinetics that a drug goes through?

1. Absorption, distribution, ionization, and metabolism

2. Diffusion, bioavailability, metabolism, and excretion

3. Absorption, distribution, metabolism, and excretion

4. Active transport, ionization, diffusion, and excretion

Correct Answer: 3

Rationale 1: Ionization is the chemical property of a drug, not a phase of pharmacokinetics.

Rationale 2: Bioavailability refers to the amount of active drug available to body tissues.

Rationale 3: A drug undergoes the pharmacokinetics of absorption, diffusion, metabolism, and excretion.

Rationale 4: Ionization is the chemical property of a drug where it takes on positive or negative charges.

Global Rationale: A drug undergoes the pharmacokinetics of absorption, diffusion, metabolism, and excretion. Ionization is the chemical property of a drug, not a phase of pharmacokinetics. Bioavailability refers to the amount of active drug available to body tissues. Ionization is the chemical property of a drug where it takes on positive or negative charges.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-1 Identify the four primary processes of pharmacokinetics.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 2
Type: MCMA

The nurse is teaching a client the importance of taking the medication as prescribed. Client teaching is guided by the nurse's knowledge of which principles of pharmacokinetics?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. A medication taken by injection must cross the membranes of the gastrointestinal tract to get to the blood stream before it can be distributed throughout the body.

2. A drug may be exposed to several physiological processes while en route to target cells.

3. Liver enzymes may chemically change the drug.

4. Excretion organs such as kidneys and intestines must be healthy enough to eliminate the drug.

5. Many processes to which drugs are exposed are destructive, thereby helping facilitate the drug's movement throughout the body.

Correct Answer: 2,3,4,5

Rationale 1: Medications taken by mouth must cross the membranes of the GI tracts to get to the blood stream in order to be distributed throughout the body. This is not the case for medications administered by injection.

Rationale 2: Drugs taken orally are often exposed to physiological processes such as stomach acid and digestive enzymes.

Rationale 3: Enzymes in the liver may chemically change some drugs.

Rationale 4: Drugs will continue to act on the body until they are either metabolized to an inactive form or are excreted. Pathologic states such as kidney disease can increase the drug's action on the body.

Rationale 5: Many destructive processes, such as when stomach acid breaks down food, can break down the drug molecule before it can reach the target cells. This will facilitate the drug's movement throughout the body.

Global Rationale: The principles of pharmacokinetics that guide client teaching include: drugs taken orally are often exposed to physiological processes such as stomach acid and digestive enzymes; enzymes in the liver may chemically change some drugs; and drugs will continue to act on the body until they are either metabolized to an inactive form or are excreted. Pathologic states such as kidney disease can increase the drug's action on the body; and many destructive processes, such as when stomach acid breaks down food, can break down the drug molecule before it can reach the target cells. This will facilitate the drug's movement throughout the body. Medications taken by mouth must cross the membranes of the GI tracts to get to the blood stream in order to be distributed throughout the body. This is not the case for medications administered by injection.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-1 Identify the four primary processes of pharmacokinetics.

MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 3
Type: MCSA

When administering an intravenous (IV) medication to a client, the nurse understands that the medication has a high concentration in the blood and will move into areas of lower concentration by which action?

1. Facilitated diffusion

2. Active diffusion

3. Absorption

4. Simple diffusion

Correct Answer: 4

Rationale 1: Facilitated diffusion utilizes a membrane carrier protein to cross a concentration gradient.

Rationale 2: Active diffusion involves use of an energy source.

Rationale 3: Absorption is the first step of pharmacokinetics, in which a drug moves from the site of administration to the blood.

Rationale 4: The process of moving from an area of high concentration to low concentration is called *simple diffusion* or *passive transport*.

Global Rationale: The process of moving from an area of high concentration to low concentration is called *simple diffusion* or *passive transport*. Facilitated diffusion utilizes a membrane carrier protein to cross a concentration gradient. Active diffusion involves use of an energy source. Absorption is the first step of pharmacokinetics, in which a drug moves from the site of administration to the blood.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-2 Explain mechanisms by which drugs cross plasma membranes.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 4
Type: MCSA

When the nurse administers a drug that must move from an area of low concentration to an area of high concentration, what will the drug require?

1. Simple diffusion

2. Active transport

3. An intravenous route

4. A transdermal delivery system

Correct Answer: 2

Rationale 1: The movement from high to low concentration involves simple diffusion.

Rationale 2: The movement from low to high concentration is against a gradient, and will require energy, via the process of active transport.

Rationale 3: Drugs can be given via any route, and need to move from an area of low to high concentration; they do not need to be given via IV.

Rationale 4: Drugs do not need to be given transdermally.

Global Rationale: The movement from low to high concentration is against a gradient, and will require energy, via the process of active transport. The movement from high to low concentration involves simple diffusion. Drugs can be given via any route, and need to move from an area of low to high concentration; they do not need to be given via IV. Drugs do not need to be given transdermally.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-2 Explain mechanisms by which drugs cross plasma membranes.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 5
Type: MCMA

The nurse is reviewing the role of diffusion in the distribution of medications. Drugs that cannot be distributed by simple diffusion include those with which characteristics?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Large molecules

2. Ionization

3. Water-soluble agents

4. Alcohol

5. Urea

Correct Answer: 1,2,3

Rationale 1: Large molecules have difficulty crossing plasma membranes by simple diffusion. These molecules may require carrier, or transport, proteins to cross membranes.

Rationale 2: Ionized drugs have difficulty crossing plasma membranes by simple diffusion. These drugs may require carrier, or transport, proteins to cross membranes.

Rationale 3: Water-soluble agents have difficulty crossing plasma membranes by simple diffusion. These agents may require carrier, or transport, proteins to cross membranes.

Rationale 4: Diffusion assumes that the chemical is able to freely cross the plasma membrane. Drugs may also enter through open channels in the plasma membrane; however, the molecule must be very small, such as alcohol.

Rationale 5: Diffusion assumes that the chemical is able to freely cross the plasma membrane. Drugs may also enter through open channels in the plasma membrane; however, the molecule must be very small, such as urea.

Global Rationale: Large molecules have difficulty crossing plasma membranes by simple diffusion. These molecules may require carrier, or transport, proteins to cross membranes. Ionized drugs have difficulty crossing plasma membranes by simple diffusion. These drugs may require carrier, or transport, proteins to cross membranes. Water-soluble agents have difficulty crossing plasma membranes by simple diffusion. These agents may require carrier, or transport, proteins to cross membranes. Diffusion assumes that the chemical is able to freely cross the plasma membrane. Drugs may also enter through open channels in the plasma membrane; however, the molecule must be very small, such as alcohol or urea.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 3-2 Explain mechanisms by which drugs cross plasma membranes.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 6
Type: MCSA

The nurse is administering an albuterol (Ventolin) inhaler to a client with asthma. The absorption of the medication will occur in what manner?

1. Very slowly, since the airways are constricted

2. Over a 2- to 3-hour period

3. In a slow, steady fashion

4. Very rapidly

Correct Answer: 4

Rationale 1: Even though some airway constriction might be present, the airway membranes are very thin, and will absorb the medication.

Rationale 2: It will not take 2 to 3 hours for absorption to occur.

Rationale 3: Absorption will not occur in a slow, steady fashion.

Rationale 4: Drugs given via inhalation produce a rapid response, since the membrane separating the drug from the bloodstream is very thin and absorption occurs readily.

Global Rationale: Drugs given via inhalation produce a rapid response, since the membrane separating the drug from the bloodstream is very thin and absorption occurs readily. Even though some airway constriction might be present, the airway membranes are very thin, and will absorb the medication. It will not take 2 to 3 hours for absorption to occur. Absorption will not occur in a slow, steady fashion.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-3 Discuss factors affecting drug absorption.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 7
Type: MCSA

The nurse has just administered a client's morning dose of medications following a high-fat breakfast. How will the absorption of the medication be affected?

1. It will be blocked.

2. It will be slowed.

3. It will be accelerated.

4. It will not be affected.

Correct Answer: 2

Rationale 1: Fatty foods will not block absorption of medications.

Rationale 2: Fatty foods in the stomach almost always slow drug absorption.

Rationale 3: Absorption rate will increase if the stomach is empty.

Rationale 4: Most medications are affected by a full or empty stomach.

Global Rationale: Fatty foods in the stomach almost always slow drug absorption. Fatty foods will not block the absorption of medication. The absorption rate will be increased if the stomach is empty. Most medications are affected by either a full or empty stomach.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-3 Discuss factors affecting drug absorption.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 8
Type: MCSA

The nurse recognizes that adding a vasoconstrictor to a local anesthetic agent will have which effect on absorption of the anesthetic agent?

1. It will increase blood flow to the area.

2. It will help to eliminate the drug sooner.

3. It will produce a more localized effect.

4. It will slow absorption of the agent.

Correct Answer: 4

Rationale 1: Vasoconstriction will reduce blood flow to the area.

Rationale 2: Vasoconstrictors will not alter the anesthetics agent’s rate of elimination.

Rationale 3: It will not produce a more localized effect.

Rationale 4: Vasoconstriction reduces blood flow to the site and slows absorption of the agent.

Global Rationale: Vasoconstriction reduces blood flow to the site and slows absorption of the agent. Vasoconstriction will reduce blood flow to the area, will not alter the anesthetic agent's rate of elimination, nor will it produce a more localized effect.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-3 Discuss factors affecting drug absorption.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 9
Type: MCMA

The nurse is preparing an intramuscular (IM) injection for a client with strep throat. Which principles of absorption may have guided the health care provider's decision to order the medication by IM route?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. IM drugs are rapidly absorbed.

2. IM drugs bypass the gastrointestinal tract, resulting in increased absorption.

3. IM drugs avoid drug–drug and food–drug interactions, which can decrease absorption.

4. IM drugs have the ability to accumulate in the muscle and may remain in the body for an extended amount of time.

5. IM drugs bypass the gastrointestinal tract and are delivered to the small intestine, where most medications are rapidly absorbed.

Correct Answer: 1,2,3

Rationale 1: Muscles have a high blood flow, which maximizes absorption.

Rationale 2: The thick mucous layer of the stomach decreases absorption. IM drugs bypass this obstacle, resulting in increased absorption.

Rationale 3: Oral medications and food can interfere with absorption of medications. Bypassing the gastrointestinal tract will remove this possibility.

Rationale 4: Some tissues do have the ability to accumulate and store drugs. Muscle tissue is not one of these. The bone marrow, teeth, eyes, and adipose tissue have an affinity to store drugs.

Rationale 5: IM drugs do bypass the gastrointestinal tract but are not exposed to the small intestine. IM drugs are absorbed from the muscle into the blood stream.

Global Rationale: Health care providers may order medications by IM injection for many reasons. Some reasons include the fact that muscles have a high blood flow, which maximizes absorption; the thick mucous layer of the stomach decreases absorption, which IM drugs bypass; and oral medications and food can interfere with absorption of medications. Some tissues do have the ability to accumulate and store drugs. Muscle tissue is not one of these. The bone marrow, teeth, eyes, and adipose tissue have an affinity to store drugs. IM drugs do bypass the gastrointestinal tract but are not exposed to the small intestine. IM drugs are absorbed from the muscle into the blood stream.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-3 Discuss factors affecting drug absorption.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 10
Type: MCSA

A client is receiving antibiotic treatment for a wound abscess. What does the nurse recognize that drug distribution to this area requires, in order to be effective?

1. The drug to be lipid soluble

2. Adequate blood perfusion to the area

3. The drug to be bio-available in an acidic environment

4. Use of a topical antibiotic

Correct Answer: 2

Rationale 1: Lipid-soluble medications have a high affinity for adipose tissue and may not stay in the vascular compartment long enough to reach the abscess.

Rationale 2: Antibiotics can have difficulty reaching areas of necrotic or abscessed tissues, unless they have an adequate blood supply available.

Rationale 3: Ionization of a drug in an acidic environment affects absorption, not distribution, of the drug.

Rationale 4: A topical antibiotic might be indicated for external wounds, but abscesses are often internal and require medication to be delivered via blood vessels, unless they have been incised and drained.

Global Rationale: Antibiotics can have difficulty reaching areas of necrotic or abscessed tissues, unless they have an adequate blood supply available. Lipid-soluble medications have a high affinity for adipose tissue and may not stay in the vascular compartment long enough to reach the abscess. Ionization of a drug in an acidic environment affects absorption, not distribution, of the drug. A topical antibiotic might be indicated for external wounds, but abscesses are often internal and require medication to be delivered via blood vessels, unless they have been incised and drained.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-4 Discuss how drugs are distributed throughout the body.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 11
Type: MCSA

The nurse is caring for an obese client who has received thiopental (Pentothal), a lipid-soluble drug, during surgery. Of which fact about the drug should the nurse be aware?

1. It will need to be given at higher than normal doses.

2. It will be stored in adipose tissue.

3. It may have difficulty being distributed to body tissues.

4. It is often ineffective.

Correct Answer: 2

Rationale 1: Higher doses of the drug are not necessary.

Rationale 2: Thiopental is a lipid-soluble drug that has a higher affinity for bone marrow, teeth, the eye, and adipose tissue.

Rationale 3: Lipid-soluble drugs are more completely distributed to body tissues.

Rationale 4: The efficacy of the drug is not affected by the lipid solubility.

Global Rationale: Thiopental is a lipid-soluble drug that has a higher affinity for bone marrow, teeth, the eye, and adipose tissue. Higher doses of the drug are not necessary. Lipid-soluble drugs are more completely distributed to body tissues. The efficacy of the drug is not affected by the lipid solubility.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-4 Discuss how drugs are distributed throughout the body.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 12
Type: MCSA

The nurse recognizes that when a client is receiving a lipid-soluble medication, higher concentrations will accumulate in which tissues?

1. Cardiac muscle

2. Liver

3. Bone marrow

4. Skeletal muscle

Correct Answer: 3

Rationale 1: Lipid-soluble drugs do not have greater affinity for cardiac muscle tissue.

Rationale 2: Lipid-soluble drugs do not have greater affinity for the liver.

Rationale 3: Lipid-soluble drugs have a higher affinity for bone marrow, teeth, the eye, and adipose tissue.

Rationale 4: Lipid-soluble drugs do not have greater affinity for skeletal muscle tissue.

Global Rationale: Lipid-soluble drugs have a higher affinity for bone marrow, teeth, the eye, and adipose tissue. There is not greater affinity for cardiac muscle tissue, the liver, or in the skeletal muscle tissue.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-4 Discuss how drugs are distributed throughout the body.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 13
Type: MCMA

A client is admitted to the burn unit with 75% body surface area burns. Which orders would be appropriate for this client to control pain?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Morphine 10 mg IV every 2 to 4 hours as needed for pain

2. Morphine 10 mg IM every 2 to 4 hours as needed for pain

3. Morphine 10 mg transdermal patch every 2 to 4 hours as needed for pain

4. Morphine 10 mg sublingual every 2 to 4 hours as needed for pain

5. Morphine 10 mg subcutaneous every 2 to 4 hours as need for pain

Correct Answer: 1,4

Rationale 1: Pain medication given by the intravenous (IV) route will be rapidly and completely absorbed.

Rationale 2: The client has 75% surface area burns; there may not be an area available for intramuscular injections of morphine.

Rationale 3: The client has 75% surface area burns; there may not be an area available to place a transdermal patch.

Rationale 4: Sublingual morphine can be used as a rescue drug.

Rationale 5: The client has 75% surface area burns; there may not be an area available for subcutaneous injections.

Global Rationale: Pain medication given by the intravenous (IV) route or sublingually will be rapidly and completely absorbed. The client has 75% surface area burns; there may not be an area available for intramuscular, transdermal, or subcutaneous injections of morphine.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-4 Discuss how drugs are distributed throughout the body.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 14
Type: MCSA

When administering a drug-protein–bound drug to a client, what can the nurse expect?

1. Duration of action will be prolonged.

2. Drug excretion will be accelerated.

3. Metabolism of the drug will be delayed.

4. Onset of drug action will be prolonged.

Correct Answer: 1

Rationale 1: The portion of the drug that is protein bound is not available to the tissues, but as it is released, it becomes a free drug; a drug that is highly protein-bound has a high percentage of bound or unavailable drug that will produce a longer duration of action.

Rationale 2: Drug excretion will not be accelerated.

Rationale 3: Metabolism of the drug will occur as the free drug portion becomes available.

Rationale 4: Onset of action of the drug will not be affected.

Global Rationale: The portion of the drug that is protein bound is not available to the tissues, but as it is released, it becomes a free drug; a drug that is highly protein bound has a high percentage of bound or unavailable drug that will produce a longer duration of action. Drug excretion will not be accelerated. Metabolism of the drug will occur as the free drug portion becomes available. Onset of action of the drug will not be affected.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-5 Describe how plasma proteins affect drug distribution.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 15
Type: MCSA

The nurse checks a newly ordered medication and finds it to be 92% protein bound. How much of the medication will be readily available to the client once the nurse administers the medication?

1. 100%.

2. 8%.

3. 50%.

4. 92%.

Correct Answer: 2

Rationale 1: If 100% of the drug were available to the client, none of it would be protein bound.

Rationale 2: The percentage of drug that is unbound is free and able to reach target tissue. If a drug is 92% protein bound, then 8% is free and available to tissues.

Rationale 3: If 50% of the drug is available to the client, then 50% is protein bound.

Rationale 4: The percentage of drug that is unbound is free and able to reach target tissue.

Global Rationale: The percentage of drug that is unbound is free and able to reach target tissue. If a drug is 92% protein bound, then 8% is free and available to tissues. If 100% of the drug were available to the client, none of it would be protein bound. If 50% of the drug is available to the client, then 50% is protein bound. The percentage of drug that is unbound is free and able to reach target tissue.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-5 Describe how plasma proteins affect drug distribution.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 16
Type: FIB

A client who was recently started on the anticoagulant warfarin (Coumadin) asks about adverse reactions. The nurse explains that adverse effects may occur because the drug is highly bound with only ____% available to reach the target cells.

Standard Text: Record your answer rounding to the nearest whole number.

Correct Answer: 1

Rationale: When giving a medication that is highly bound, the nurse should carefully monitor for adverse effects. The anticoagulant warfarin (Coumadin) is highly bound; 99% of the drug in the plasma exists in drug–protein complexes and only 1% exists as a free drug available to reach target cells.

Global Rationale: When giving a medication that is highly bound, the nurse should carefully monitor for adverse effects. The anticoagulant warfarin (Coumadin), is highly bound; 99% of the drug in the plasma exists in drug-protein complexes and only 1% exists as a free drug available to reach target cells.

Cognitive Level: Applying
Client Need: Physiological Integrity

Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 3-5 Describe how plasma proteins affect drug distribution.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 17
Type: MCSA

A client has been started on diltiazem (Cardizem), a susbstrate of the cytochrome CYP3A4 isoenzyme system. The client also takes phenobarbital, an inducer of the CYP3A4 isoenzyme system, for seizures. What does the nurse recognize about diltiazem?

1. It will not be able to cross the blood brain barrier (BBB).

2. It will be metabolized by the kidneys.

3. It might be inactivated at a faster rate than normal.

4. It might be excreted at a slower rate.

Correct Answer: 3

Rationale 1: The cytochrome P460 enzyme system does not affect ability to cross the BBB. Lipid solubility of a drug determines the ability to cross the BBB.

Rationale 2: The drug will still be metabolized by the liver, not the kidneys.

Rationale 3: When one drug induces an enzyme system, it accelerates the metabolism of other drugs using the same isoenzyme substrate—in this case, the CYP3A4 system, which causes early inactivation of the drug.

Rationale 4: The drug will be metabolized faster and therefore excreted more quickly, not more slowly.

Global Rationale: When one drug induces an enzyme system, it accelerates the metabolism of other drugs using the same isoenzyme substrate—in this case, the CYP3A4 system, which causes early inactivation of the drug. The cytochrome P460 enzyme system does not affect ability to cross the BBB. Lipid solubility of a drug determines the ability to cross the BBB. The drug will still be metabolized by the liver, not the kidneys. The drug will be metabolized faster and therefore excreted more quickly, not more slowly.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-6 Explain the metabolism of drugs and its applications to pharmacotherapy.

MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 18
Type: MCSA

A client receiving metoprolol (Lopressor), a substrate of the CYP2D6 system, is started on amiodarone (Cordarone), an inhibitor of the CYP2D6 system. What should the nurse plan to do?

1. Monitor for signs of amiodarone toxicity.

2. Administer both drugs on an empty stomach.

3. Monitor for prolonged effects of the Lopressor.

4. Administer the medications at least two hours apart.

Correct Answer: 3

Rationale 1: Lopressor, not amiodarone, is more likely to be toxic, as it will take longer to be inactivated.

Rationale 2: It is not necessary to administer the drugs on an empty stomach; this will not alter the metabolism by the CYP enzyme system.

Rationale 3: The CYP enzyme system determines the speed at which most drugs are metabolized in the liver. When one drug inhibits the action of the same isoenzyme system, other drugs being metabolized by this same system might not be inactivated as quickly, leading to prolonged effects of the drug.

Rationale 4: It would not be necessary to administer the drugs two hours apart; this would not alter their metabolism by the CYP enzyme system.

Global Rationale: The CYP enzyme system determines the speed at which most drugs are metabolized in the liver. When one drug inhibits the action of the same isoenzyme system, other drugs being metabolized by this same system might not be inactivated as quickly, leading to prolonged effects of the drug. Lopressor, not amiodarone, is more likely to be toxic, as it will take longer to be inactivated. It is not necessary to administer the drugs on an empty stomach; this will not alter the metabolism by the CYP enzyme system. It would not be necessary to administer the drugs two hours apart; this would not alter their metabolism by the CYP enzyme system.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 3-6 Explain the metabolism of drugs and its applications to pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 19
Type: MCSA

What does the nurse anticipate about the medications ordered for a client with liver disease?

1. They will be in lower doses than normal.

2. They will be administered by the parenteral route.

3. They will need to be divided evenly throughout the day.

4. They will need to be given with an antacid.

Correct Answer: 1

Rationale 1: Liver function is decreased in cirrhosis, leading to a reduction in drug metabolism. Drugs given at normal doses could lead to toxicity.

Rationale 2: Drugs can still be administered by the oral route; the parenteral route would be indicated if the drug is altered by gastric juices or needs to avoid the first pass effect.

Rationale 3: The doses do not need to be evenly divided throughout the day.

Rationale 4: The medications do not need to be given with antacids. Most medications should not be given with antacids, since this alters the pH, and could interfere with adequate absorption.

Global Rationale: Liver function is decreased in cirrhosis, leading to a reduction in drug metabolism. Drugs given at normal doses could lead to toxicity. Drugs can still be administered by the oral route; the parenteral route would be indicated if the drug is altered by gastric juices or needs to avoid the first pass effect. The doses do not need to be evenly divided throughout the day. The medications do not need to be given with antacids. Most medications should not be given with antacids, since this alters the pH, and could interfere with adequate absorption.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 3-6 Explain the metabolism of drugs and its applications to pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 20
Type: FIB

The nurse has administered a dose of codeine to a client for the management of postoperative pain. The nurse monitors for respiratory depression because _____ % of codeine is metabolized and converted to morphine, which can cause respiratory depression in the clients.

Standard Text: Record your answer rounding to the nearest whole number.

Correct Answer: 10

Rationale: Chemical changes to drugs always result in functional changes. The products of drug metabolism, or metabolites, usually have less pharmacologic activity than the original molecule. On rare occasions a metabolite may have greater activity than the original drug. This is the case for codeine. Although 90% of codeine is changed to inactive metabolites by the liver, 10% is converted to morphine, which has significantly greater ability to relieve severe pain and has the potential to cause respiratory depression in clients.

Global Rationale: Chemical changes to drugs always result in functional changes. The products of drug metabolism, or metabolites, usually have less pharmacologic activity than the original molecule. On rare occasions a metabolite may have greater activity than the original drug. This is the case for codeine. Although 90% of codeine is changed to inactive metabolites by the liver, 10% is converted to morphine, which has significantly greater ability to relieve severe pain and has the potential to cause respiratory depression in clients.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-6 Explain the metabolism of drugs and its applications to pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 21
Type: MCSA

A client is seen in the emergency department for an overdose of diazepam (Valium), a weakly basic drug. In order to enhance excretion of the drug, what does the nurse anticipate that the client will receive?

1. High volumes of intravenous normal saline solution (NSS), a weakly basic solution

2. Large doses of a proton pump inhibitor, in an acidic solution

3. An intravenous solution containing sodium bicarbonate, which promotes alkaline urine

4. An intravenous solution with ammonium chloride, which acidifies filtrate

Correct Answer: 4

Rationale 1: Although high volumes of NSS will increase the glomerular filtration and promote diuresis, it will not promote the elimination of diazepam.

Rationale 2: A proton pump inhibitor would not help to promote elimination of the diazepam.

Rationale 3: Sodium bicarbonate is given to promote alkaline urine, but does not promote the elimination of diazepam.

Rationale 4: Ammonium chloride will provide acidic urine, in which the diazepam will be eliminated more quickly.

Global Rationale: Ammonium chloride will provide acidic urine, in which the diazepam will be eliminated more quickly. Although high volumes of NSS will increase the glomerular filtration and promote diuresis, it will not promote the elimination of diazepam. A proton pump inhibitor would not help to promote elimination of the diazepam. Sodium bicarbonate is given to promote alkaline urine, but does not promote the elimination of diazepam.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 3-7 Identify major processes by which drugs are excreted.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 22
Type: MCSA

The nurse determines that a client who is breast-feeding has understood teaching regarding medication use when the client makes which statement?

1. "I will be sure to take medications just before breast-feeding."

2. "I know it is safe to take over-the-counter meds, but not prescription meds."

3. "I will check with my health care provider before taking any medication."

4. "I will only use herbal supplements while breast-feeding."

Correct Answer: 3

Rationale 1: Although drug levels might be lower if the drug is taken just prior to feeding, the mother needs to determine that the drug is safe for the infant.

Rationale 2: OTC meds might be unsafe to use during pregnancy.

Rationale 3: This reflects the safest way to determine if a drug can be taken while breast-feeding.

Rationale 4: It is not safe to assume herbal medications are safe; they can be secreted in breast milk and might be unsafe for the infant.

Global Rationale: Checking with the health care provider prior to taking any medication reflects the safest way to determine if a drug can be taken while breast-feeding. Although drug levels might be lower if the drug is taken just prior to feeding, the mother needs to determine that the drug is safe for the infant. OTC meds might be unsafe to use during pregnancy. It is not safe to assume herbal medications are safe; they can be secreted in breast milk and might be unsafe for the infant.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-7 Identify major processes by which drugs are excreted.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 23
Type: MCMA

The nurse recognizes that medications can be excreted by which routes?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Fecal

2. Gastric

3. Glandular

4. Pulmonary

5. Renal

Correct Answer: 1,3,4,5

Rationale 1: Drugs can be excreted via feces.

Rationale 2: Drugs are not excreted through the gastric system.

Rationale 3: Drugs can be secreted glandularly.

Rationale 4: Drugs can be secreted via the lungs.

Rationale 5: Drugs can be excreted by the renal route.

Global Rationale: Drugs can be excreted via feces, glandularly, via the lungs, and by the renal route. Drugs are not excreted through the gastric system.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-7 Identify major processes by which drugs are excreted.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 24
Type: MCMA

A client asks the nurse why he experiences a metallic taste after taking certain medications. The nurse explains that a medication may cause glandular secretions that occur by which routes?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Saliva

2. Sweat

3. Breast milk

4. Urine

5. Feces

Correct Answer: 1,2,3

Rationale 1: Water-soluble drugs may be secreted into the saliva, which can cause a “funny taste” after the administration of a medication.

Rationale 2: Water-soluble drugs may be secreted into the sweat, which may cause an odor to be omitted by the person who has taken a medication.

Rationale 3: Water-soluble drugs may be secreted into the breast milk. Breast-feeding mothers must use caution in regards to medications while lactating as the medications can be passed to their infants via the breast milk.

Rationale 4: Urine is excreted by the kidneys and does not play a role in glandular activity.

Rationale 5: Feces are excreted by the gastrointestinal system and do not play a role in glandular activity.

Global Rationale: Water-soluble drugs may be secreted into the saliva, which can cause a “funny taste” after the administration of a medication. Water-soluble drugs may be secreted into the sweat, which may cause an odor to be omitted by the person who has taken a medication. Water-soluble drugs may be secreted into the breast milk.

Breast-feeding mothers must use caution in regards to medications while lactating as the medications can be passed to their infants via the breast milk. Urine is excreted by the kidneys and does not play a role in glandular activity. Feces are excreted by the gastrointestinal system and do not play a role in glandular activity.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-7 Identify major processes by which drugs are excreted.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 25
Type: MCSA

The nurse reads that a drug undergoes enterohepatic recirculation. How would the nurse explain this process to a colleague?

1. This drug must be given several times a day.

2. The drug will have a very low therapeutic effect.

3. The drug will be concentrated in the liver.

4. The drug might have a prolonged activity in the body.

Correct Answer: 4

Rationale 1: The drug will not need to be given several times a day.

Rationale 2: Enterohepatic recycling will not necessarily lower the therapeutic effect.

Rationale 3: The drugs are recirculated through the liver but are not concentrated in the liver.

Rationale 4: Drugs secreted into the bile are sent back to the liver through enterohepatic recirculation and can be recirculated several times, thus prolonging their activity.

Global Rationale: Drugs secreted into the bile are sent back to the liver through enterohepatic recirculation and can be recirculated several times, thus prolonging their activity. The drug will not need to be given several times a day. Enterohepatic recycling will not necessarily lower the therapeutic effect. The drugs are recirculated through the liver but are not concentrated in the liver.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research

NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-8 Explain how enterohepatic recirculation affects drug activity.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 26
Type: MCSA

A health care provider has discontinued the client's medication, digoxin (Lanoxin). Recalling that this drug undergoes enterohepatic recirculation, which statement does the nurse make to the client?

1. "You might continue to have effects of the drug for a few weeks."

2. "You might experience some toxic effects from the drug in the next few days."

3. "Expect to experience some side effects until the drug is totally eliminated."

4. "The drug will be totally out of your system in the next 48 hours."

Correct Answer: 1

Rationale 1: Since the drug is recirculated several times through enterohepatic recirculation, continued effects of the drug may be expected.

Rationale 2: The client should expect to continue experiencing some effects of the drug, but not toxic effects.

Rationale 3: The client might have some side effects of the drug if she has been having them all along, but she should not be told to expect side effects.

Rationale 4: The drug might take several weeks to be totally eliminated from the body.

Global Rationale: Since the drug is recirculated several times through enterohepatic recirculation, continued effects of the drug may be expected. The client should expect to continue experiencing some effects of the drug, but not toxic effects. The client might have some side effects of the drug if she has been having them all along, but she should not be told to expect side effects. The drug might take several weeks to be totally eliminated from the body.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Physiological Adaptation
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-8 Explain how enterohepatic recirculation affects drug activity.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 27
Type: MCMA

The nurse is caring for a client who is receiving medications from several different classifications for the treatment of multiple health problems. For which medications or classifications does the nurse anticipate prolonged activity due to enterohepatic recirculation?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Mebendazole (Vermox)

2. Digoxin (Lanoxin)

3. Phenothiazines

4. Topical steroids

5. Topical anti-infectives

Correct Answer: 2,3

Rationale 1: Certain oral drugs travel through the GI tract without being absorbed and are excreted in the feces. Mebendazole (Vermox), a drug used to kill intestinal worms, is such a drug.

Rationale 2: Some drugs may be recirculated numerous times with the bile, thus extending their stay in the body; biliary excretion is influential in prolonging the activity of digoxin (Lanoxin).

Rationale 3: Some drugs may be recirculated numerous times with the bile, thus extending their stay in the body; biliary excretion is influential in prolonging the activity of phenothiazines.

Rationale 4: Topical steroids are not subject to enterohepatic recirculation.

Rationale 5: Topical anti-infectives are not subject to enterohepatic recirculation.

Global Rationale: Some drugs may be recirculated numerous times with the bile, thus extending their stay in the body; biliary excretion is influential in prolonging the activity of digoxin (Lanoxin) and phenothiazines. Certain oral drugs travel through the GI tract without being absorbed and are excreted in the feces. Mebendazole (Vermox), a drug used to kill intestinal worms, is such a drug. Topical steroids are not subject to enterohepatic recirculation. Topical anti-infectives are not subject to enterohepatic recirculation.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-8 Explain how enterohepatic recirculation affects drug activity.

MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 28
Type: MCSA

A client has been started on a medication for postoperative pain. When does the nurse anticipate the client will receive optimal pain relief?

1. When the drug concentrates in the muscle tissue

2. When the drug reaches a therapeutic range

3. When the drug achieves a minimal effective concentration

4. When the drug approaches a toxic concentration

Correct Answer: 2

Rationale 1: The drug does not have to concentrate in muscle tissue in order to relieve pain.

Rationale 2: The goal of therapy is to reach and maintain a plasma level in the therapeutic range.

Rationale 3: The client might experience some pain relief at a minimum effective concentration but probably not optimal pain relief.

Rationale 4: A toxic concentration does not need to be reached in order to achieve pain relief; in fact, it should be avoided.

Global Rationale: The goal of therapy is to reach and maintain a plasma level in the therapeutic range. The drug does not have to concentrate in muscle tissue in order to relieve pain. The client might experience some pain relief at a minimum effective concentration but probably not optimal pain relief. A toxic concentration does not need to be reached in order to achieve pain relief; in fact, it should be avoided.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-9 Explain how a drug reaches and maintains its therapeutic range in the plasma.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 29
Type: MCSA

A client is receiving an antibiotic with the potential for nephrotoxicity. Which item should the nurse should plan to monitor?

1. Urinary concentration of the drug

2. Route of drug administration

3. Plasma levels of the drug

4. Rate of intravenous administration

Correct Answer: 3

Rationale 1: The urinary concentration of a drug will not provide an accurate measurement of nephrotoxicity.

Rationale 2: The route of administration will not determine nephrotoxicity.

Rationale 3: Plasma levels of a drug are an indicator of whether a drug is at a therapeutic or toxic level, and provide information as to whether a drug dosage needs adjustment.

Rationale 4: Although the rate at which a drug is administered intravenously can affect plasma levels and irritation to the vein, it would not provide the best measure of nephrotoxicity.

Global Rationale: Plasma levels of a drug are an indicator of whether a drug is at a therapeutic or toxic level, and provide information as to whether a drug dosage needs adjustment. The urinary concentration of a drug will not provide an accurate measurement of nephrotoxicity. The route of administration will not determine nephrotoxicity. Although the rate at which a drug is administered intravenously can affect plasma levels and irritation to the vein, it would not provide the best measure of nephrotoxicity.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 3-9 Explain how a drug reaches and maintains its therapeutic range in the plasma.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 30
Type: MCSA

The nurse is preparing to medicate a client for a migraine headache. The nurse should choose the drug with which half-life?

1. 10 to 20 hours

2. 5 to 10 days

3. 2 to 3 hours

4. 1 to 3 minutes

Correct Answer: 3

Rationale 1: A half-life of 10 to 20 hours is longer than would be needed to provide migraine pain relief.

Rationale 2: A half-life of 5 to 10 days is longer than would be needed to provide migraine pain relief.

Rationale 3: A drug with a half-life of 2 to 3 hours will be reduced by 50% in 2 to 3 hours, providing adequate time for the client to obtain pain relief.

Rationale 4: A drug with a half-life of 1 to 3 minutes would be eliminated in a very short time period and would not provide adequate pain relief.

Global Rationale: A drug with a half-life of 2 to 3 hours will be reduced by 50% in 2 to 3 hours, providing adequate time for the client to obtain pain relief. A half-life of 10 to 20 hours is longer than would be needed to provide migraine pain relief. A half-life of 5 to 10 days is longer than would be needed to provide migraine pain relief. A drug with a half-life of 1 to 3 minutes would be eliminated in a very short time period and would not provide adequate pain relief.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-10 Explain the applications of a drug's plasma half-life ($t_{1/2}$) to pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 31
Type: MCSA

The nurse is reviewing the concept of a drug's half-life for a student nurse, explaining that it is the time it takes for what to happen?

1. One-half of the drug to be absorbed

2. One-half of the drug to be eliminated by the body

3. The drug to elicit a therapeutic response

4. The drug to reach the target tissue

Correct Answer: 2

Rationale 1: A drug's half-life is the time it takes for one-half of the original dose to be eliminated by the body.

Rationale 2: A drug's half-life is the time it takes for one-half of the original dose to be eliminated by the body.

Rationale 3: A therapeutic response can be reached before the half-life occurs.

Rationale 4: Target tissue is reached on the onset of action, not at half-life.

Global Rationale: A drug's half-life is the time it takes for one-half of the original dose to be eliminated by the body. A therapeutic response can be reached before the half-life occurs. Target tissue is reached on the onset of action, not at half-life.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-10 Explain the applications of a drug's plasma half-life ($t_{1/2}$) to pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
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Question 32
Type: MCSA

The nurse is administering a drug with a half-life of 6 hours. The nurse understands the client will eliminate most of the drug in how many hours?

1. 36

2. 24

3. 6

4. 12

Correct Answer: 2

Rationale 1: After four half-lives, 94% of the drug has been eliminated by the body.

Rationale 2: After four half-lives, 94% of the drug has been eliminated by the body. A drug with a half-life of 6 hours will go through four half-lives in 24 hours.

Rationale 3: After four half-lives, 94% of the drug has been eliminated by the body.

Rationale 4: After four half-lives, 94% of the drug has been eliminated by the body.

Global Rationale: After four half-lives, 94% of the drug has been eliminated by the body. A drug with a half-life of 6 hours will go through four half-lives in 24 hours.

Cognitive Level: Understanding

Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-10 Explain the applications of a drug's plasma half-life ($t_{1/2}$) to pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 33
Type: MCMA

The nurse is preparing to administer felodipine to a hospitalized client. The nurse assesses the client for which disorders that may cause an increased risk for adverse effects associated with this medication due to its extended half-life?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Renal disease

2. Liver disease

3. Gastrointestinal disease

4. Cardiac disease

5. Pulmonary disease

Correct Answer: 1,2

Rationale 1: As drugs stay in the body for prolonged periods, the risk for long-term adverse effects increases. This can become particularly serious for clients with significant renal impairment; diminished metabolism and excretion will cause the plasma half-life of a drug to increase, and the concentration may reach toxic levels.

Rationale 2: As drugs stay in the body for prolonged periods, the risk for long-term adverse effects increases. This can become particularly serious for clients with significant hepatic impairment; diminished metabolism and excretion will cause the plasma half-life of a drug to increase, and the concentration may reach toxic levels.

Rationale 3: Gastrointestinal disease does not increase the risk of adverse drug effects.

Rationale 4: Cardiac disease does not increase the risk of adverse drugs effects.

Rationale 5: Pulmonary disease does not increase the risk of adverse drug effects.

Global Rationale: As drugs stay in the body for prolonged periods, the risk for long-term adverse effects increases. This can become particularly serious for clients with significant renal impairment; diminished metabolism and excretion will cause the plasma half-life of a drug to increase, and the concentration may reach

toxic levels. Gastrointestinal disease does not increase the risk of adverse drug effects. Cardiac disease does not increase the risk of adverse drugs effects. Pulmonary disease does not increase the risk of adverse drug effects.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Reduction of Risk Potential
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 3-10 Explain the applications of a drug's plasma half-life ($t_{1/2}$) to pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 34
Type: MCSA

A client is prescribed a loading dose of a cardiac glycoside for an exacerbation of heart failure. When the client comments, "I usually take a much lower dose," which response by the nurse is the most appropriate?

1. "Giving a large dose will reduce the incidence of side effects."

2. "You are being given a large dose in order to increase blood levels of the drug quickly."

3. "The health care provider ordered this dose, so I need to administer it."

4. "Your usual dose is probably no longer effective for your condition, and you need to be on a higher dose now."

Correct Answer: 2

Rationale 1: Giving a larger dose actually could increase the incidence of side effects.

Rationale 2: Loading doses of medications are used to provide a more rapid increase in the blood level of the drug, resulting in a quicker therapeutic response.

Rationale 3: Although this is an accurate statement, it does not provide an explanation to the client as to why a larger dose is being administered.

Rationale 4: A loading dose is usually only given once, and the client will then be put back on the average daily dose.

Global Rationale: Loading doses of medications are used to provide a more rapid increase in the blood level of the drug, resulting in a quicker therapeutic response. Giving a larger dose actually could increase the incidence of side effects. Although the health care provider did order the dose, it does not provide an explanation to the client as to why a larger dose is being administered. A loading dose is usually only given once, and the client will then be put back on the average daily dose.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 3-11 Differentiate between loading and maintenance doses.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 35
Type: MCSA

Following the administration of a loading dose of an antibiotic, the nurse anticipates that the client will receive which dosing schedule of additional antibiotic?

1. A second loading dose

2. Regularly intermittent doses of the antibiotic

3. Alternating high and low doses of the antibiotic

4. Daily bolus injections

Correct Answer: 2

Rationale 1: A loading dose of a medication is usually only given once. Repeating the loading dose could cause toxicity.

Rationale 2: Following a loading dose, the usual maintenance dose of a drug is given in order to maintain a therapeutic blood level of the drug.

Rationale 3: Alternating high and low doses would not allow for a plateau of the drug level to be reached, which is needed for a therapeutic response.

Rationale 4: Bolus injections are usually only given once, not daily.

Global Rationale: Following a loading dose, the usual maintenance dose of a drug is given in order to maintain a therapeutic blood level of the drug. A loading dose of a medication is usually only given once. Repeating the loading dose could cause toxicity. Alternating high and low doses would not allow for a plateau of the drug level to be reached, which is needed for a therapeutic response. Bolus injections are usually only given once, not daily

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 3-11 Differentiate between loading and maintenance doses.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.; 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.

Page Number:

Question 36
Type: FIB

The nurse is teaching a client about the loading dose of antibiotic that will be administered later in the day. The client demonstrates understanding by stating that the medication will reach a therapeutic dose in____ hour(s) versus the 48 hours that would be required for the routine medication dose.

Standard Text: Record your answer rounding to the nearest whole number.

Correct Answer: 12

Rationale: It takes almost five doses (48 hours) before a therapeutic level is reached using a routine dosing schedule. With a loading dose, a therapeutic level is reached within 12 hours.

Global Rationale: It takes almost five doses (48 hours) before a therapeutic level is reached using a routine dosing schedule. With a loading dose, a therapeutic level is reached within 12 hours.

Adams and Urban, *Pharmacology: Connections to Nursing Practice*, 3e Test Bank
Chapter 4

Question 1
Type: MCSA

The client and his wife receive the same medication for hypertension. The wife asks the nurse why she is receiving a higher dose of the medication. Which response by the nurse is the most appropriate?

1. "You have a greater percentage of body fat, so you need more medication."

2. "Females have a higher metabolism, so you need more medication."

3. "Your hormones are different from your husband's, so you need more medication."

4. "Everyone is unique and responds differently to medication."

Correct Answer: 4

Rationale 1: The percentage of body fat is only one of the variables involved in a client's response to medication.

Rationale 2: Females do not necessarily have higher metabolic rates than males.

Rationale 3: Hormones are only one of the variables involved in a client's response to medication.

Rationale 4: Many variables influence how clients respond to medications; each client must be evaluated for response.

Global Rationale: Many variables influence how clients respond to medications; each client must be evaluated for response. The percentage of body fat is only one of the variables involved in a client's response to medication. Females do not necessarily have higher metabolic rates than males. Hormones are only one of the variables involved in a client's response to medication.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes

AACN Essential Competencies: III.5. Participate in the process of retrieval, appraisal and synthesis of evidence in collaboration with other members of the healthcare team to improve patient outcomes

NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care

Nursing/Integrated Concepts: Nursing Process: Implementation

Learning Outcome: 4-1 Apply frequency distribution curves to explain interpatient variability in medication response.

MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.

Page Number:

Question 2
Type: MCSA

A client asks the nurse why his dose of an antihypertensive medication is different from his neighbor's dose, stating, "We both take the exact same drug, but I take 60 mg and he takes only 25 mg." Which response by the nurse is the most appropriate?

1. "If your neighbor is a lot younger than you, his dose might be a lot lower."

2. "Individuals often have widely different responses to the same medications and need different doses of the same medication."

3. "If your neighbor takes a lot of other medications, he might need to take a lower dose of the medication than you."

4. "If you are taking a generic brand of the medication, you will need a higher dose than you would of a brand name of the same medication."

Correct Answer: 2

Rationale 1: Age can be a factor in dosing of medications, but this is not the best explanation of why different doses are needed to for two different people.

Rationale 2: Genetic makeup and metabolism vary widely and account for the differences in response to drugs and the need for individualized doses.

Rationale 3: Taking other medications could be part of the reason why the dose is different, but this is not the best explanation.

Rationale 4: Generic and brand name drugs usually have the same dose equivalency.

Global Rationale: Genetic makeup and metabolism vary widely and account for the differences in response to drugs and the need for individualized doses. Age can be a factor in dosing of medications, but this is not the best explanation of why different doses are needed to for two different people. Taking other medications could be part of the reason why the dose is different, but this is not the best explanation. Generic and brand name drugs usually have the same dose equivalency.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes

AACN Essential Competencies: III.5. Participate in the process of retrieval, appraisal and synthesis of evidence in collaboration with other members of the healthcare team to improve patient outcomes

NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-1 Apply frequency distribution curves to explain interpatient variability in medication response.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 3
Type: MCSA

The nursing instructor is teaching student nurses about how the median effective dose of a medication is related to clinical practice. Which statement reflects the correct understanding by the student?

1. "About 50% of clients will experience severe side effects from the drug."

2. "About 50% of clients will not experience any effect from the drug."

3. "Some clients will respond differently, depending on their ethnic background."

4. "Some clients will require more or less than the average dose of the drug."

Correct Answer: 4

Rationale 1: The median effective dose does not predict how many clients will experience severe side effects from the drug.

Rationale 2: The median effective dose does not predict that 50% of clients will not experience an effect of the drug.

Rationale 3: The median effective dose is not related to ethnicity.

Rationale 4: The median effective dose is the dose required to produce a specific therapeutic response in 50% of a group of clients.

Global Rationale: The median effective dose is the dose required to produce a specific therapeutic response in 50% of a group of clients. The median effective dose does not predict how many clients will experience severe side effects from the drug. The median effective dose is not related to ethnicity.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 4-2 Explain the importance of the median effective dose (ED_{50}) to clinical practice.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 4
Type: MCSA

A client looks up the drug he is taking in a drug guide and asks the nurse why the health care provider prescribed a medication that has a lethal dose measure. Which response by the nurse is the most appropriate?

1. "*Lethal dose* just refers to what is done in research; it is not used by doctors to prescribe drugs."

2. "The lethal dose is a value determined in research that helps to establish the safe dose."

3. "All that means is that the drug could be lethal, but I will closely monitor you for side effects."

4. "Don't worry about that. I will have your doctor explain it to you."

Correct Answer: 2

Rationale 1: The lethal dose is considered by health care providers when prescribing medications.

Rationale 2: The difference between the median effective dose and the median lethal dose is measured to determine the drug's safety margin as well as the safe effective dose.

Rationale 3: All drugs have the potential to be lethal, but telling this to the client might be frightening.

Rationale 4: Telling the client not to worry is condescending and does not answer his question.

Global Rationale: The difference between the median effective dose and the median lethal dose is measured to determine the drug's safety margin as well as the safe effective dose. The lethal dose is considered by health care providers when prescribing medications. All drugs have the potential to be lethal, but telling this to the client might be frightening. Telling the client not to worry is condescending and does not answer his question.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-3 Compare and contrast median lethal dose (LD_{50}) and median toxicity dose (TD_{50}).
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 5
Type: MCMA

The nurse explains to a student nurse that the median lethal dose of drugs is often determined in laboratory preclinical trials. Which rationales best support why this is done?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. It would be unethical to determine these values in human subjects.

2. The safety of the medication must be determined prior to clinical trials.

3. It is difficult to obtain sufficient participants for clinical trials.

4. Clinical trials determine only the effective dose of a drug.

5. It is too costly to conduct the studies during clinical trials.

Correct Answer: 1,2

Rationale 1: Laboratory animals are used in clinical trials to determine the LD_{50}, or the dose that kills 50% of the subjects. It would be unethical to kill human subjects.

Rationale 2: Before a drug is released for trials in human subjects, its safety must be determined.

Rationale 3: It can be challenging to obtain sufficient subjects at times, but this is not the reason for doing lethal studies during preclinical trials.

Rationale 4: Clinical trials determine not only the effectiveness of a drug, but also its adverse and toxic effects.

Rationale 5: The cost of the trials is the reason they are conducted with animal subjects.

Global Rationale: Laboratory animals are used in clinical trials to determine the LD_{50}, or the dose that kills 50% of the subjects. It would be unethical to kill human subjects. Before a drug is released for trials in human subjects, its safety must be determined. It can be challenging to obtain sufficient subjects at times, but this is not the reason for doing lethal studies during preclinical trials. Clinical trials determine not only the effectiveness of a drug, but also its adverse and toxic effects. The cost of the trials is the reason they are conducted with animal subjects.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-3 Compare and contrast median lethal dose (LD_{50}) and median toxicity dose (TD_{50}).
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 6
Type: FIB

The nurse is educating a client who is participating in a drug study and describes the median toxicity dose as the dose that will produce toxicity in ____ % of a group of clients.

Standard Text: Record your answer rounding to the nearest whole number.

Correct Answer: 50

Rationale: The median toxicity dose (TD_{50}) is the dose that will produce a given toxicity in 50% of a group of clients.

Global Rationale: The median toxicity dose (TD_{50}) is the dose that will produce a given toxicity in 50% of a group of clients.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-3 Compare and contrast median lethal dose (LD_{50}) and median toxicity dose (TD_{50}).
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 7
Type: MCSA

The nurse is researching a drug recently released on the market to determine what the median lethal dose (LD_{50}) was in preclinical trials. The nurse recognizes that this number reflects which fact?

1. The dose at which 50% of the research animals died

2. A measurement of the potency of the drug

3. The value of relative safety of the drug

4. The dose that produced signs of toxicity in 50% of lab animals

Correct Answer: 1

Rationale 1: The dose at which 50% of animals in the preclinical trials are killed is the median LD_{50} dose.

Rationale 2: A comparison of two drugs is done when defining the potency of a drug.

Rationale 3: Relative safety of dose is reflected in the therapeutic index.

Rationale 4: The dose at which signs of toxicity are seen in 50% of laboratory subjects is the median toxicity dose.

Global Rationale: The dose at which 50% of animals in the preclinical trials are killed is the median LD_{50} dose. A comparison of two drugs is done when defining the potency of a drug. Relative safety of dose is reflected in the therapeutic index. The dose at which signs of toxicity are seen in 50% of laboratory subjects is the median toxicity dose.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 4-3 Compare and contrast median lethal dose (LD_{50}) and median toxicity dose (TD_{50}).
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 8
Type: MCSA

Prior to administering medications, the nurse reviews the therapeutic index. What is the therapeutic index used to identify?

1. Whether the health are provider has prescribed the best drug for the client

2. When a client will begin to experience toxic drug effects

3. Interactions among the drugs the client is receiving

4. Clients who will need to have serum blood levels monitored

Correct Answer: 4

Rationale 1: The therapeutic index does not help to determine whether the best drug has been prescribed for the client.

Rationale 2: The therapeutic index does not determine toxic doses of a drug, and clients differ in their response to drugs.

Rationale 3: The therapeutic index does not help to identify interactions among drugs.

Rationale 4: Drugs with a narrow therapeutic index have low margins of safety and need to be monitored through serum drug levels.

Global Rationale: Drugs with a narrow therapeutic index have low margins of safety and need to be monitored through serum drug levels. The therapeutic index does not help to determine whether the best drug has been prescribed for the client. The therapeutic index does not determine toxic doses of a drug, and clients differ in their response to drugs. The therapeutic index does not help to identify interactions among drugs.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-4 Relate a drug's therapeutic index to its margin of safety.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology; 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 9
Type: FIB

The nurse checks the margin of safety (MOS) for a drug that will be administered to a client, knowing that the MOS is the amount of drug that is lethal to ____ % of animals divided by the amount that produces a therapeutic effect in ____ % of animals.

Standard Text: Record your answer rounding to the nearest whole number.

Correct Answers: 1, 99

Rationale: The MOS is calculated as the amount of drug that is lethal to 1% of animals (LD_1) divided by the amount of drug that produces a therapeutic effect in 99% of the animals (ED_{99}).

Global Rationale: The MOS is calculated as the amount of drug that is lethal to 1% of animals (LD_1) divided by the amount of drug that produces a therapeutic effect in 99% of the animals (ED_{99}).

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-4 Relate a drug's therapeutic index to its margin of safety.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology; 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 10
Type: MCSA

The nurse is researching a drug that has a median effective dose (ED_{50}) of 5 mg and a median lethal dose (LD_{50}) of 20 mg. Which therapeutic index (TI) calculated by the nurse is correct?

1. 5

2. 4

3. 1

4. 10

Correct Answer: 2

Rationale 1: The TI is calculated by dividing the median LD by the median ED. Twenty divided by 5 does not equal 5.

Rationale 2: The TI is calculated by dividing the median LD by the median ED. Twenty divided by 5 equals 4.

Rationale 3: The TI is calculated by dividing the median LD by the median ED. Twenty divided by 5 does not equal 1.

Rationale 4: The TI is calculated by dividing the median LD by the median ED. Twenty divided by 5 does not equal 10.

Global Rationale: The TI is calculated by dividing the median LD by the median ED. Twenty divided by 5 equals 4.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality

AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 4-5 Identify the significance of the dose–response relationship to clinical practice.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 11
Type: FIB

The nurse is preparing to administer a medication to a client on a medical-surgical unit. The median lethal dose of the drug is 40 mg, and the median effective dose is 10 mg. The nurse calculates the therapeutic index to be _____.

Standard Text:

Correct Answer: 4

Rationale : The therapeutic index is calculated by dividing the median lethal dose (LD_{50}) by the median effective dose (ED_{50}).

Global Rationale: The therapeutic index is calculated by dividing the median lethal dose (LD_{50}) by the median effective dose (ED_{50}).

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-4 Relate a drug’s therapeutic index to its margin of safety.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology; 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 12
Type: MCSA

A client receiving antibiotics for a serious infection asks the nurse, "Why don't you just give me more of that drug to cure the infection faster?" Which response by the nurse is the most appropriate?

1. "I will check with the doctor to see if it is time to increase the medication."

2. "You are at maximum dose; taking more will not help."

3. "You are at a maximum dose; taking more will cause interactions with other medications."

4. "You must stay on this drug for two more weeks before the dosage can be increased."

Correct Answer: 2

Rationale 1: The drug plateau has been reached; the nurse can provide this explanation to the client.

Rationale 2: When the plateau of a drug has been reached, administering more of the drug will not produce additional benefit.

Rationale 3: An increase in dosage could cause interactions with other medications, but this is not the best answer.

Rationale 4: Once the plateau of a drug has been reached, there is no time frame for an increase in dosage because an increase will not produce a greater effect.

Global Rationale: When the plateau of a drug has been reached, administering more of the drug will not produce additional benefit. The drug plateau has been reached; the nurse can provide this explanation to the client. An increase in dosage could cause interactions with other medications, but this is not the best answer. Once the plateau of a drug has been reached, there is no time frame for an increase in dosage because an increase will not produce a greater effect.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-5 Identify the significance of the dose–response relationship to clinical practice.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 13
Type: MCSA

The nurse is administering narcotics to surgical clients and understands that which characteristic is true?

1. Codeine is less potent than morphine; it will not produce an allergic reaction.

2. Codeine is less potent than morphine; it will not relieve pain as well.

3. Morphine is more potent than codeine; it will produce more adverse effects.

4. Morphine is more potent than codeine; a lesser dose will be required.

Correct Answer: 4

Rationale 1: The potency of a drug is not related to its ability to cause an allergic reaction.

Rationale 2: Although codeine is less potent than morphine, less potent narcotics can be very effective with pain relief.

Rationale 3: Morphine is more potent than codeine, but greater potency does not imply the drug will produce more adverse effects.

Rationale 4: A drug that is more potent will produce a therapeutic effect at a lower dose.

Global Rationale: A drug that is more potent will produce a therapeutic effect at a lower dose. The potency of a drug is not related to its ability to cause an allergic reaction. Although codeine is less potent than morphine, less potent narcotics can be very effective with pain relief. Morphine is more potent than codeine, but greater potency does not imply the drug will produce more adverse effects.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-6 Compare and contrast the terms *potency* and *efficacy*.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 14
Type: MCSA

The nurse is discussing the difference between potency and efficacy with a client who has just received a prescription to treat congestive heart failure. Which statement by the client indicates that learning has occurred?

1. "The best drug for me is the one with the greatest efficacy."

2. "A drug with the greatest efficacy will produce the least side effects."

3. "Low-potency drugs have efficacy and do not produce side effects."

4. "The best drug for me is the one with the highest potency."

Correct Answer: 1

Rationale 1: Efficacy refers to the magnitude of maximal response that can be produced by a particular drug.

Rationale 2: Even though a drug is efficacious for a condition, it can still have side effects.

Rationale 3: Low potency does not guarantee a drug will not produce side effects.

Rationale 4: High-potency drugs do not necessarily provide the best response in the patient.

Global Rationale: Efficacy refers to the magnitude of maximal response that can be produced by a particular drug. Even though a drug is efficacious for a condition, it can still have side effects. Low potency does not guarantee a drug will not produce side effects. High-potency drugs do not necessarily provide the best response in the patient.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-6 Compare and contrast the terms *potency* and *efficacy*.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 15
Type: MCMA

A client with hypertension is prescribed a potent antihypertensive without results. The client is concerned when the health care provider orders a new drug. Which explanation by the nurse is the most appropriate?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "The drug you took is very potent and a higher dose is needed."

2. "The new drug has greater efficacy, so it will help reduce your blood pressure."

3. "The prescriber must have made an error in the orders."

4. "Efficacy in treating your hypertension is more important than potency."

5. "You are correct. I think the prescriber meant to order both drugs."

Correct Answer: 2,4

Rationale 1: A higher dose of a potent drug may cause more serious adverse effects without greater efficacy.

Rationale 2: Efficacy is more important than potency in providing blood pressure control.

Rationale 3: This is not an appropriate response by the nurse.

Rationale 4: Efficacy is more important than potency in pharmacologic treatment.

Rationale 5: This is not an appropriate response, and the nurse cannot assume the order was supposed to be for two drugs.

Global Rationale: Efficacy is more important than potency in providing blood pressure control. Efficacy is more important than potency in pharmacologic treatment. A higher dose of a potent drug may cause more serious adverse effects without greater efficacy. Telling the client that the prescriber made an error is not an appropriate response by the nurse. The nurse cannot assume the order was supposed to be for two drugs.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 4-6 Compare and contrast the terms *potency* and *efficacy*.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 16
Type: MCSA

The nurse administers a medication that binds to a beta receptor on the cardiac muscle, resulting in stimulation of the receptor. Which effect does the nurse anticipate when assessing the client?

1. A decrease in chest pain

2. An increase in heart rate

3. An increase in blood pressure

4. A decrease in electrical conduction

Correct Answer: 2

Rationale 1: Since stimulation of the beta receptors increases heart rate and workload, an increase in chest pain could occur.

Rationale 2: Stimulation of the beta receptors will cause an increase of sympathetic nervous system activity, resulting in an increased heart rate.

Rationale 3: Stimulation of the beta receptors is more likely to cause a decrease in blood pressure.

Rationale 4: Electrical conduction will be increased by beta stimulation.

Global Rationale: Stimulation of the beta receptors will cause an increase of sympathetic nervous system activity, resulting in an increased heart rate. Since stimulation of the beta receptors increases heart rate and workload, an increase in chest pain could occur. Stimulation of the beta receptors is more likely to cause a decrease in blood pressure. Electrical conduction will be increased by beta stimulation.

Cognitive Level: Analyzing
Client Need: Physiological Integrity

Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 4-7 Describe the relationship between receptors and drug action.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 17
Type: MCSA

The nurse is administering a medication that will bind to histamine-2 receptors in the stomach and block their action. The nurse explains to the client that this drug will cause which action?

1. A reduction in abdominal cramping

2. A decrease in stomach acidity

3. A reduction in nausea

4. An increase in stomach motility

Correct Answer: 2

Rationale 1: Histamine-2 stimulates the production of gastric acid; it will not affect abdominal cramping.

Rationale 2: Blocking the histamine-2 receptors will help to reduce the stimulation of gastric acid.

Rationale 3: Histamine-2 stimulates the production of gastric acid; it will not reduce nausea.

Rationale 4: Histamine-2 stimulates the production of gastric acid; it does not affect stomach motility.

Global Rationale: Blocking the histamine-2 receptors will help to reduce the stimulation of gastric acid. Histamine-2 stimulates the production of gastric acid; it will not affect abdominal cramping. Histamine-2 stimulates the production of gastric acid; it will not reduce nausea. Histamine-2 stimulates the production of gastric acid; it does not affect stomach motility.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-7 Describe the relationship between receptors and drug action.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.

Page Number:

Question 18
Type: MCMA

The nurse is reviewing the medication administration record for a group of clients and recognizes that which agents have nonspecific cellular responses?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Ethyl alcohol

2. General anesthetics

3. Osmotic diuretics

4. Calcium channel blockers

5. Alpha-adrenergic antihypertensives

Correct Answer: 1,2,3

Rationale 1: Ethyl alcohol is an example of an agent that acts by nonspecific mechanisms, independently of cellular receptors.

Rationale 2: General anesthetics are an example of agents that act by nonspecific mechanisms, independently of cellular receptors.

Rationale 3: Osmotic diuretics are an example of agents that act by nonspecific mechanisms, independently of cellular receptors.

Rationale 4: Calcium channel blockers have a specific mechanism of action.

Rationale 5: Alpha-adrenergic antihypertensives have a specific mechanism of action.

Global Rationale: Ethyl alcohol is an example of an agent that acts by nonspecific mechanisms, independently of cellular receptors. General anesthetics are an example of agents that act by nonspecific mechanisms, independently of cellular receptors. Osmotic diuretics are an example of agents that act by nonspecific mechanisms, independently of cellular receptors. Calcium channel blockers have a specific mechanism of action. Alpha-adrenergic antihypertensives have a specific mechanism of action.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care

Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 4-7 Describe the relationship between receptors and drug action.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 19
Type: MCSA

The nurse has taught a group of clients how their medications work in their bodies. Which comment by a client reflects correct understanding of the teaching?

1. "The normal function of a cell is enhanced or blocked by medications."

2. "Medications help the body produce new enzymes."

3. "Body tissue functions are changed by medications."

4. "Medications change the function of cells in the body."

Correct Answer: 1

Rationale 1: Many medications work by stimulating or enhancing the normal function of a cell or by blocking the normal function.

Rationale 2: Medications can stimulate enzyme reactions or even provide enzymes that are missing, but they do not help the body produce new ones.

Rationale 3: Body tissue functions are not changed.

Rationale 4: Functions of the cell can be enhanced or blocked, but they are not changed.

Global Rationale: Many medications work by stimulating or enhancing the normal function of a cell or by blocking the normal function. Medications can stimulate enzyme reactions or even provide enzymes that are missing, but they do not help the body produce new ones. Body tissue functions are not changed. Functions of the cell can be enhanced or blocked, but they are not changed.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 4-7 Describe the relationship between receptors and drug action.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 20

Type: MCSA

The health care provider has ordered naltrexone (ReVia), a narcotic antagonist, for a client in rehabilitation who is recovering from heroin addiction. The nurse explains that if heroin is used while taking the naltrexone, the client could experience which effect?

1. Severe nausea and vomiting

2. Lack of euphoria

3. Anger and rage

4. A severe craving for more heroin

Correct Answer: 2

Rationale 1: Severe nausea and vomiting will not occur.

Rationale 2: Euphoria will not occur.

Rationale 3: Anger and rage would not be effects.

Rationale 4: A severe craving for more heroin is not likely to occur.

Global Rationale: Euphoria will not occur. Severe nausea and vomiting will not occur. Anger and rage would not be effects. A severe craving for more heroin is not likely to occur.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-8 Distinguish between an agonist, partial agonist, and antagonist.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 21
Type: MCSA

A client has been receiving haloperidol (Haldol), a dopamine antagonist. When the psychiatrist changes the order to aripiprazole (Abilify), a partial dopamine antagonist, the nurse anticipates the client will experience which effect?

1. A greater reduction in symptoms

2. Fewer side effects

3. Greater adherence in taking the drug

4. Greater efficacy from the new drug

Correct Answer: 2

Rationale 1: A reduction in symptoms might occur, but is not certain to occur, with the new medication.

Rationale 2: Partial blocking of dopamine results in fewer side effects than does complete blocking.

Rationale 3: If the client experiences fewer side effects from the drug, adherence might be improved, but that is not guaranteed.

Rationale 4: The client will not necessarily experience greater efficacy; each client responds differently to a drug.

Global Rationale: Partial blocking of dopamine results in fewer side effects than does complete blocking. A reduction in symptoms might occur, but is not certain to occur, with the new medication. If the client experiences fewer side effects from the drug, adherence might be improved, but that is not guaranteed. The client will not necessarily experience greater efficacy; each client responds differently to a drug.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 4-8 Distinguish between an agonist, partial agonist, and antagonist.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 22
Type: MCSA

The student nurse has been reading about the Human Genome Project, and asks the nursing instructor how it will affect future pharmacological therapies. Which response by the nurse is the most appropriate?

1. "It will help prevent disease through gene manipulation, but will not impact drugs."

2. "We will be able to alter genes, so we will not need drugs,"

3. "We will be able to standardize drug doses to make prescribing easier."

4. "It will help to individualize drug therapy for people in a more effective way."

Correct Answer: 4

Rationale 1: Medications will be impacted greatly by this research.

Rationale 2: Altering genes to prevent illness is a possibility, but we will always need medications.

Rationale 3: Individuals will still respond differently to medications; not all drugs will have standardized doses.

Rationale 4: The goal of pharmacogenetics is to help individualize drug therapy for people in a more effective way.

Global Rationale: The goal of pharmacogenetics is to help individualize drug therapy for people in a more effective way. Medications will be impacted greatly by this research. Altering genes to prevent illness is a possibility, but we will always need medications. Individuals will still respond differently to medications; not all drugs will have standardized doses.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 4-9 Explain possible future developments in the field of pharmacogenetics.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 23
Type: MCSA

A male client of African descent has been prescribed sulfamethoxazole with trimethoprim (Bactrim), a sulfonamide anti-infective, for a bacterial infection. When the client arrives in the emergency department, the nurse should place priority on which assessment?

1. Urinary output

2. Level of red blood cells (RBCs)

3. Liver function tests

4. Renal function tests

Correct Answer: 2

Rationale 1: Urinary output is not the priority assessment based on the information provided.

Rationale 2: Males of African descent are more likely to be deficient in the enzyme G6PD, an enzyme that is essential in carbohydrate metabolism. The use of sulfonamides in this group of clients can cause an acute hemolysis of red blood cells due to the breaking chemical bonds in the hemoglobin molecule.

Rationale 3: Liver function tests are not the priority assessment based on the information provided.

Rationale 4: Renal function tests are not the priority assessment based on the information provided.

Global Rationale: Males of African descent are more likely to be deficient in the enzyme G6PD, an enzyme that is essential in carbohydrate metabolism. The use of sulfonamides in this group of clients can cause an acute hemolysis of red blood cells due to the breaking chemical bonds in the hemoglobin molecule. Urinary output is not the priority assessment based on the information provided. Liver function tests are not the priority assessment based on the information provided. Renal function tests are not the priority assessment based on the information provided.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 4-9 Explain possible future developments in the field of pharmacogenetics.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 24
Type: MCMA

The nurse on a medical–surgical unit identifies several clients as being at risk for hemolytic symptoms after the administration of oxidative medications. Which clients does the nurse correctly identify as being at risk?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. A male of Egyptian descent with no allergies

2. A male immigrant from Morocco with hypertension

3. An adolescent female from India with anemia

4. A Latina female with an allergy to fava beans

5. An older Native American male with diabetes

Correct Answer: 1,2

Rationale 1: Males of Mediterranean and African descent are known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications.

Rationale 2: Males of Mediterranean and African descent are known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications.

Rationale 3: Females are not known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications.

Rationale 4: Females are not known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications.

Rationale 5: Males of Native American descent are not known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications.

Global Rationale: Males of Mediterranean and African descent are known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications. Females are not known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications. Males of Native American descent are not known to have a deficiency of the enzyme G6PD, which can lead to hemolysis of red blood cells after administration of oxidative medications.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

Adams and Urban, *Pharmacology: Connections to Nursing Practice*, 3e Test Bank

Chapter 5

Question 1
Type: MCSA

A client develops angioedema and difficulty swallowing after receiving an intravenous medication. The nurse recognizes this is characteristic of which effect?

1. A minor adverse effect

2. A life-threatening adverse effect

3. An unpredictable side effect

4. A reaction secondary to urticaria

Correct Answer: 2

Rationale 1: Angioedema involves facial edema, which can lead to difficulty swallowing and is considered a serious or life-threatening adverse effect, not a minor adverse effect.

Rationale 2: Angioedema involves facial edema, which can lead to difficulty swallowing and is considered a serious or life-threatening adverse effect.

Rationale 3: Side effects are predictable and less severe than angioedema and difficulty swallowing.

Rationale 4: Urticaria is manifested by hives.

Global Rationale: Angioedema involves facial edema, which can lead to difficulty swallowing and is considered a serious or life-threatening adverse effect. Side effects are predictable and less severe than angioedema and difficulty swallowing. Urticaria is manifested by hives.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.1.Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-1 Differentiate between adverse effects and side effects.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 2
Type: MCSA

The nurse monitors a client on a newly prescribed antihypertensive drug. The nurse recognizes the symptom of hypotension would be indicative of which reaction?

1. An allergic response to the drug

2. A therapeutic drug effect

3. An adverse drug effect

4. An idiosyncratic drug reaction

Correct Answer: 3

Rationale 1: Hypotension is not indicative of an allergic response.

Rationale 2: The therapeutic effect of an antihypertensive drug is to lower blood pressure, but not cause hypotension.

Rationale 3: Hypotension with an antihypertensive drug would be considered an adverse effect of the drug.

Rationale 4: Hypotension is not an idiosyncratic reaction.

Global Rationale: While a decrease in blood pressure is expected with antihypertensive medication, hypotension would be considered an adverse effect of the drug. Hypotension is not indicative of an allergic response or an idiosyncratic reaction.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.1.Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-1 Differentiate between adverse effects and side effects.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 3
Type: MCSA

The nurse explains to a student nurse that side effects differ from adverse events in which way?

1. Adverse effects cause permanent damage.

2. Side effects are usually more serious than adverse effects.

3. Side effects are predictable at therapeutic levels.

4. Adverse effects are only dose-related.

Correct Answer: 3

Rationale 1: Adverse effects can produce permanent damage, but not all side effects are that serious.

Rationale 2: Adverse effects are more serious than side effects.

Rationale 3: Side effects are types of effects that are predictable and can occur even at therapeutic doses.

Rationale 4: Side effects can also be dose-dependent. Adverse effects can occur with any drug; they are not just related to drug dose.

Global Rationale: Side effects are types of effects that are predictable and can occur even at therapeutic doses. Adverse effects are more serious than side effects and can produce permanent damage. Not all side effects are serious. Side effects can also be dose dependent. Adverse effects can occur with any drug; they are not just related to drug dose.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.1.Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-1 Differentiate between adverse effects and side effects.

MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 4
Type: MCMA

When teaching the client about a new medication, the nurse should include which information?

Note: Credit will be given only is all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Adverse effects that can be expected

2. Which adverse effect to report to the health care provider

3. The drug's therapeutic action

4. Chemical composition of the drug

5. Name of the drug manufacturer

Correct Answer: 1,2,3

Rationale 1: In order to help the client identify and prevent adverse effects, the client should be taught the therapeutic action, adverse effects, and when to notify the health care provider of adverse effects.

Rationale 2: In order to help the client identify and prevent adverse effects, the client should be taught the therapeutic action, adverse effects, and when to notify the health care provider of adverse effects.

Rationale 3: In order to help the client identify and prevent adverse effects, the client should be taught the therapeutic action, adverse effects, and when to notify the health care provider of adverse effects.

Rationale 4: It is not necessary to teach the client the chemical makeup of the drug.

Rationale 5: It is not necessary to teach the client the name of the drug manufacturer.

Global Rationale: In order to help the client identify and prevent adverse effects, the client should be taught the therapeutic action, adverse effects, and when to notify the health care provider of adverse effects. It is not necessary to teach the client the chemical makeup of the drug or the name of the manufacturer.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.3 Provide patient-centered care with sensitivity and respect for the diversity of human experience
AACN Essential Competencies: III.6. Integrate evidence, clinical judgment, interprofessional perspectives and patient preferences in planning, implementing, and evaluating outcomes of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation

Learning Outcome: 5-2 Create a plan to minimize or prevent adverse drug events in patients.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 5
Type: MCSA

A client with a history of multiple allergies is prescribed a new anti-infective. At which time should the nurse plan to monitor the client for an anaphylactic reaction?

1. Within 24 hours of receiving the first dose

2. Immediately after receiving the first dose

3. At any time while receiving the drug

4. Within one hour of receiving the first dose

Correct Answer: 3

Rationale 1: Anaphylactic reactions can be unpredictable. They can occur immediately after a drug is taken or can be delayed. The nurse needs to be prepared for a reaction at any time.

Rationale 2: Anaphylactic reactions can be unpredictable. They can occur immediately after a drug is taken or can be delayed. The nurse needs to be prepared for a reaction at any time.

Rationale 3: Anaphylactic reactions can be unpredictable. They can occur immediately after a drug is taken or can be delayed. The nurse needs to be prepared for a reaction at any time.

Rationale 4: Anaphylactic reactions can be unpredictable. They can occur immediately after a drug is taken, or can be delayed. The nurse needs to be prepared for a reaction at any time.

Global Rationale: Anaphylactic reactions can be unpredictable. They can occur immediately after a drug is taken or can be delayed. The nurse needs to be prepared for a reaction at any time.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-4 Describe the incidence and characteristics of drug allergies.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 6

Type: MCSA

Which clinical manifestation would the nurse identify as an allergic reaction?

1. Urticaria

2. Photosensitivity

3. Abdominal cramping

4. Complaints of diarrhea

Correct Answer: 1

Rationale 1: Urticaria, or hives, is indicative of an allergic response to a medication.

Rationale 2: Photosensitivity is a predictable side effect of some medications.

Rationale 3: Abdominal cramping could be a side effect or adverse effect of medications.

Rationale 4: Diarrhea is a common side effect of many medications.

Global Rationale: Urticaria, or hives, is indicative of an allergic response to a medication. Photosensitivity is a predictable side effect of some medications. Abdominal cramping could be a side effect or adverse effect of medications. Diarrhea is a common side effect of many medications.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-4 Describe the incidence and characteristics of drug allergies.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 7
Type: MCSA

A client with a documented allergy to penicillin is prescribed cephalosporin. The nurse will monitor the client for allergic responses, since cephalosporin can cause which reaction?

1. A heightened drug reaction

2. Pseudoallergy

3. Cross-allergy

4. A hyporesponsive reaction

Correct Answer: 3

Rationale 1: The degree of drug response will not be affected by the cross-allergy.

Rationale 2: The allergy is not false, or pseudo.

Rationale 3: Drugs with similar structure can elicit an allergic response in a receptive client, which is called cross-allergy.

Rationale 4: An allergic response is a hyper-responsive reaction.

Global Rationale: Drugs with similar structure can elicit an allergic response in a receptive client, which is called cross-allergy. The degree of drug response will not be affected by the cross-allergy. The allergy is not false, or pseudo. An allergic response is a hyper-responsive reaction.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-4 Describe the incidence and characteristics of drug allergies.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 8
Type: MCSA

The nurse administers zolpidem (Ambien) to a client at 11 p.m. for sleep. The client awakens at 3 a.m. and is wide awake and agitated. How will the nurse document this client's reaction to the medication in the medical record?

1. Allergic response

2. Side effect

3. Adverse effect

4. Idiosyncratic reaction

Correct Answer: 4

Rationale 1: Allergic responses are usually manifested by rashes, urticaria, or anaphylactic reactions.

Rationale 2: Side effects for Ambien would include nausea, diarrhea, dizziness, daytime drowsiness, and abnormal thinking.

Rationale 3: Adverse effects for Ambien would include hallucinations and hypersensitivity reactions.

Rationale 4: The desired response of Ambien is sleep induction. An opposite or unexpected reaction would be an idiosyncratic reaction.

Global Rationale: The desired response of Ambien is sleep induction. An opposite or unexpected reaction would be an idiosyncratic reaction. Allergic responses are usually manifested by rashes, urticaria, or anaphylactic reactions. Side effects for Ambien would include nausea, diarrhea, dizziness, daytime drowsiness, and abnormal thinking. Adverse effects for Ambien would include hallucinations and hypersensitivity reactions.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-5 Explain how idiosyncratic reactions differ from other types of adverse effects.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 9
Type: MCSA

The nurse determines that an idiosyncratic reaction to a drug has occurred when the client experiences drug effects that have which characteristic?

1. Predictable

2. Unexplained

3. Irreversible

4. Life threatening

Correct Answer: 2

Rationale 1: Side effects of drugs are predictable.

Rationale 2: Idiosyncratic drug reactions are those that are unexpected or unexplained.

Rationale 3: Some adverse effects can be irreversible; this is not a characteristic of idiosyncratic reactions.

Rationale 4: Some adverse effects can be life threatening, but they are not considered to be idiosyncratic.

Global Rationale: Idiosyncratic drug reactions are those that are unexpected or unexplained. Side effects of drugs are predictable. Some adverse effects can be irreversible; this is not a characteristic of idiosyncratic reactions. Some adverse effects can be life threatening, but they are not considered to be idiosyncratic.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-5 Explain how idiosyncratic reactions differ from other types of adverse effects.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 10
Type: MCSA

A client is prescribed a medication and is concerned it might have teratogenic effects. Which response by the nurse is the most appropriate?

1. "Let me check the pregnancy risk category of the drug."

2. "Are you in your first trimester of pregnancy?"

3. "If your health care provider ordered the medication, it should be okay."

4. "You should avoid taking any medications while pregnant."

Correct Answer: 1

Rationale 1: The pregnancy risk category of a drug gauges the risk of birth defects or teratogenic effects.

Rationale 2: Although most drugs have more detrimental effects in the first trimester, they can have teratogenic effects throughout the pregnancy.

Rationale 3: This statement does not answer the client's question. The client could be asking about an over-the-counter drug as well.

Rationale 4: Although it is best to limit the amount of drugs taken during pregnancy, there are some drugs that are safe to take when pregnant and that do not have teratogenic effects.

Global Rationale: The pregnancy risk category of a drug gauges the risk of birth defects or teratogenic effects. Although most drugs have more detrimental effects in the first trimester, they can have teratogenic effects throughout the pregnancy. Telling the client that the health care provider ordered the medication and, therefore, it should be okay does not answer the client’s question. The client could be asking about an over-the-counter drug as well. Although it is best to limit the amount of drugs taken during pregnancy, there are some drugs that are safe to take when pregnant and that do not have teratogenic effects.

Cognitive Level: Applying
Client Need: Physiological Integrity

Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values.
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-6 Explain why certain drugs with carcinogenic or teratogenic potential are used in pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 11
Type: MCSA

A client is prescribed a chemotherapeutic drug for treatment of leukemia and asks the nurse why a drug that can also cause cancer is being used to treat cancer. Which response by the nurse is the most appropriate?

1. "The incidence of carcinogenic effects is really quite small, and you shouldn't be concerned about it."

2. "Since you are receiving such potent drugs, they have to warn of you of every possible side effect."

3. "The risk for causing another cancer is there, but sometimes the benefit of the treatment outweighs the risks."

4. "The carcinogenic effects often do not show up for a few decades, and we want to cure this leukemia now."

Correct Answer: 3

Rationale 1: The incidence of carcinogenic drugs differs among drugs and is not always predictable.

Rationale 2: This response does not answer the client's question.

Rationale 3: The benefits of treatment sometimes do outweigh the risks; this provides an honest answer to the client.

Rationale 4: Although carcinogenic effects often do not show up for 20 or more years, this is not the best explanation.

Global Rationale: The benefits of treatment sometimes do outweigh the risks; this provides an honest answer to the client. The incidence of carcinogenic drugs differs among drugs and is not always predictable. Telling the client that receiving potent drugs warrants a warning does not answer the client’s question. Although carcinogenic effects often do not show up for 20 or more years, this is not the best explanation.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values**.**
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care

Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-6 Explain why certain drugs with carcinogenic or teratogenic potential are used in pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 12
Type: MCSA

The nurse determines that the client is most at risk for renal toxicity while receiving an aminoglycoside anti-infective when which diagnostic lab result is abnormal?

1. Kidney function test

2. White blood cell count

3. Liver function test

4. Platelet count

Correct Answer: 1

Rationale 1: Abnormal kidney function tests would indicate kidney impairment.

Rationale 2: An elevated WBC is indicative of inflammation or infection.

Rationale 3: An elevated liver function test indicates liver impairment.

Rationale 4: An abnormal platelet count would indicate a bleeding problem.

Global Rationale: Abnormal kidney function tests would indicate kidney impairment. An elevated WBC is indicative of inflammation or infection. An elevated liver function test indicates liver impairment. An abnormal platelet count would indicate a bleeding problem.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 5-7 Report the characteristic signs, symptoms, and treatment for each of the following organ-specific adverse events: nephrotoxicity, neurotoxicity, hepatotoxicity, dermatologic toxicity, bone marrow toxicity, cardiotoxicity, and skeletal muscle toxicity.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 13
Type: MCSA

A client on long-term therapy with itraconazole (Sporanox) for treatment of a nail fungus is admitted to the hospital with right upper quadrant pain, nausea, and abdominal pain. Which laboratory results found in the medical record would support the diagnosis of hepatotoxicity?

1. Elevated liver function tests

2. Elevated creatinine levels

3. Decreased blood sugar

4. Decreased prothrombin time

Correct Answer: 1

Rationale 1: Elevated liver function tests, which include the enzymes ALT and AST, are indicative of liver inflammation and/or impaired function of the liver.

Rationale 2: Elevated creatinine levels are indicative of impaired renal function.

Rationale 3: A decreased blood sugar indicates hypoglycemia, which has many causes, but is not related to hepatotoxicity.

Rationale 4: Impaired liver function would cause an increased or prolonged prothrombin time.

Global Rationale: Elevated liver function tests, which include the enzymes ALT and AST, are indicative of liver inflammation and/or impaired function of the liver. Elevated creatinine levels are indicative of impaired renal function. A decreased blood sugar indicates hypoglycemia, which has many causes, but is not related to hepatotoxicity. Impaired liver function would cause an increased or prolonged prothrombin time.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-7 Report the characteristic signs, symptoms, and treatment for each of the following organ-specific adverse events: nephrotoxicity, neurotoxicity, hepatotoxicity, dermatologic toxicity, bone marrow toxicity, cardiotoxicity, and skeletal muscle toxicity.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 14

Type: MCSA

The nurse plans to monitor a client for dermatologic toxicities after administering which medication?

1. Salicylates

2. Antiseizure drugs

3. Antithyroid drugs

4. Loop diuretic

Correct Answer: 2

Rationale 1: Salicylates are associated with neurotoxicity.

Rationale 2: Antiseizure drugs are associated with dermatologic toxicity.

Rationale 3: Antithyroid drugs are associated with bone marrow toxicity.

Rationale 4: Loop diuretics are associated with neurotoxicity.

Global Rationale: Antiseizure drugs are associated with dermatologic toxicity. Salicylates are associated with neurotoxicity. Antithyroid drugs are associated with bone marrow toxicity. Loop diuretics are associated with neurotoxicity.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-7 Report the characteristic signs, symptoms, and treatment for each of the following organ-specific adverse events: nephrotoxicity, neurotoxicity, hepatotoxicity, dermatologic toxicity, bone marrow toxicity, cardiotoxicity, and skeletal muscle toxicity.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 15
Type: MCSA

When checking on the potential interactions of two drugs being administered at the same time, the nurse recognizes which principle?

1. Drug–drug interactions are more serious than drug–food interactions.

2. All drugs will have some type of interaction.

3. Drug interactions should always be avoided.

4. Some drug interactions can produce therapeutic effects.

Correct Answer: 4

Rationale 1: Drug–food interactions can be just as serious as drug–drug interactions.

Rationale 2: Although most drugs do have some type of interaction, it is possible that a drug might not have any.

Rationale 3: Therapeutic drug interactions do not need to be avoided.

Rationale 4: The combination of some drugs can produce a synergistic or additive effect, which often are therapeutic in nature.

Global Rationale: The combination of some drugs can produce a synergistic or additive effect, which often are therapeutic in nature. Drug–food interactions can be just as serious as drug–drug interactions. Although most drugs do have some type of interaction, it is possible that a drug might not have any. Therapeutic drug interactions do not need to be avoided.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-8 Use examples to explain the importance of drug interactions to pharmacotherapy.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 16
Type: MCSA

A client is receiving an antiviral drug that is a substrate of the CYP3A4 enzyme system. When a drug that is an inhibitor of the 3A4 system is added to the client's regimen, the nurse should assess the client for which result?

1. Toxicity of the antiviral drug

2. No change in viral-related symptoms

3. A decrease in the antiviral drug side effects

4. An increase in viral load

Correct Answer: 1

Rationale 1: The drug inhibitor will interact with the antiviral drug and inhibit metabolism of it, resulting in accumulation of the drug with possible toxic effects.

Rationale 2: A change in viral-related symptoms could occur, since the level of antiviral drug is increased.

Rationale 3: An increase in side effects of the antiviral drug could occur, since more of the drug will remain in the bloodstream.

Rationale 4: Since the serum level of the antiviral drug will be elevated, the viral load might decrease, not increase.

Global Rationale: The drug inhibitor will interact with the antiviral drug and inhibit metabolism of it, resulting in accumulation of the drug with possible toxic effects. A change in viral-related symptoms could occur, since the level of antiviral drug is increased. An increase in side effects of the antiviral drug could occur, since more of the drug will remain in the bloodstream. Since the serum level of the antiviral drug will be elevated, the viral load might decrease, not increase.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-9 Describe the mechanisms of drug interactions that alter absorption, distribution, metabolism, or excretion.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 17
Type: MCSA

A client is prescribed tetracycline for an infection. The nurse instructs the client to avoid which food to prevent a possible drug-to-food interaction?

1. Citrus juices

2. Dairy products

3. Legumes

4. Beef

Correct Answer: 2

Rationale 1: Citrus juices will not cause drug interactions with tetracycline.

Rationale 2: The calcium in dairy products can interfere with the absorption of tetracycline, and so should not be taken with the medication.

Rationale 3: Legumes will not cause drug interactions with tetracycline.

Rationale 4: Beef will not cause drug interactions with tetracycline.

Global Rationale: The calcium in dairy products can interfere with the absorption of tetracycline, and so should not be taken with the medication. Citrus juices will not cause drug interactions with tetracycline. Legumes will not cause drug interactions with tetracycline. Beef will not cause drug interactions with tetracycline.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 18
Type: MCSA

A client is scheduled to receive a diuretic and a beta blocker. The nurse determines the combination of these drugs will have which effect on the client's blood pressure?

1. Oppositional

2. Synergistic

3. Antagonistic

4. Additive

Correct Answer: 4

Rationale 1: The drugs have different actions, but they do not oppose each other.

Rationale 2: The two drugs together might not have a greater effect than the effects of each drug used separately.

Rationale 3: The two drugs will not antagonize or cancel the actions of each other.

Rationale 4: The two drugs together have an additive effect on blood pressure. The diuretic will reduce blood volume; the beta blocker will block vasoconstriction, causing a decrease in peripheral vascular resistance. These two different actions will both help to reduce blood pressure.

Global Rationale: The two drugs together have an additive effect on blood pressure. The diuretic will reduce blood volume; the beta blocker will block vasoconstriction, causing a decrease in peripheral vascular resistance. These two different actions will both help to reduce blood pressure. The drugs have different actions, but they do not oppose each other. The two drugs together might not have a greater effect than the effects of each drug used separately. The two drugs will not antagonize or cancel the actions of each other.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-10 Differentiate among additive, synergistic, and antagonistic drug interactions.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 19
Type: MCSA

The nurse administers ciprofloxacin (Cipro), a fluoroquinoline, to a client. In order to prevent a food–drug interaction, the nurse should remove which item from the client's lunch tray?

1. Orange juice

2. Tomatoes

3. Coffee

4. Chocolate cake

Correct Answer: 3

Rationale 1: Orange juice will not cause a food–drug interaction with Cipro.

Rationale 2: Tomatoes will not cause a food–drug interaction with Cipro.

Rationale 3: Cipro may increase the stimulatory effects of caffeine.

Rationale 4: Chocolate cake will not cause a food–drug interaction with Cipro.

Global Rationale: Cipro may increase the stimulatory effects of caffeine. Orange juice will not cause a food–drug interaction with Cipro. Tomatoes will not cause a food–drug interaction with Cipro. Chocolate cake will not cause a food–drug interaction with Cipro.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 20
Type: MCSA

The nurse recognizes that which food on a client's tray could cause a drug–food interaction with warfarin (Coumadin)?

1. Banana

2. Toasted cheese sandwich

3. Iced tea

4. Spinach salad

Correct Answer: 4

Rationale 1: A banana will not cause a food–drug interaction with warfarin (Coumadin).

Rationale 2: Toasted cheese will not cause a food–drug interaction with warfarin (Coumadin).

Rationale 3: Iced tea will not cause a food–drug interaction with warfarin (Coumadin).

Rationale 4: The vitamin K in the spinach can interfere with the action of warfarin (Coumadin) and prolong bleeding time.

Global Rationale: The vitamin K in the spinach can interfere with the action of warfarin (Coumadin) and prolong bleeding time. A banana will not cause a food–drug interaction with warfarin (Coumadin). Toasted cheese will not cause a food–drug interaction with warfarin (Coumadin). Iced tea will not cause a food–drug interaction with warfarin (Coumadin).

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care

Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 21
Type: MCSA

The nurse is conducting medication teaching for a client recently prescribed a calcium channel blocker. Which food will the nurse caution the client to avoid when taking this medication?

1. Grapefruit and grapefruit juice

2. Coffee

3. Dairy products

4. Green, leafy vegetables

Correct Answer: 1

Rationale 1: Grapefruit can enhance the absorption of calcium channel blockers, leading to elevated drug levels.

Rationale 2: Coffee can be taken with calcium channel blockers without risk of drug–food interactions.

Rationale 3: Dairy products can be taken with calcium channel blockers without risk of drug–food interactions.

Rationale 4: Green, leafy vegetables can be taken with calcium channel blockers without risk of drug–food interactions.

Global Rationale: Grapefruit can enhance the absorption of calcium channel blockers, leading to elevated drug levels. Coffee can be taken with calcium channel blockers without risk of drug–food interactions. Dairy products can be taken with calcium channel blockers without risk of drug–food interactions. Green, leafy vegetables can be taken with calcium channel blockers without risk of drug–food interactions.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 22
Type: MCMA

A nurse is preparing care for a newly admitted client with diabetic mellitus. Which information would be critical for the nurse to assess?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Medical history

2. Current lab results

3. Medication allergies

4. Use of dietary supplements

5. Number of previous hospitalizations

Correct Answer: 1,2,3,4

Rationale 1: Medical history may reveal conditions that contraindicate the use of certain drugs.

Rationale 2: Current lab results may reveal important information about the health of organs, such as the kidneys and liver, which would be important to metabolism and excretion of drugs.

Rationale 3: Allergies to one drug may cross over to another drug and would need to be avoided.

Rationale 4: Some dietary supplements can interact with drugs.

Rationale 5: While this is good information, it is not critical to this admission.

Global Rationale: Medical history may reveal conditions that contraindicate the use of certain drugs. Current lab results may reveal important information about the health of organs, such as the kidneys and liver, which would be important to metabolism and excretion of drugs. Allergies to one drug may cross over to another drug and would need to be avoided. Some dietary supplements can interact with drugs. While the number of previous hospitalizations is good information, it is not critical to this admission.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.3 Provide patient-centered care with sensitivity and respect for the diversity of human experience
AACN Essential Competencies: III.6. Integrate evidence, clinical judgment, interprofessional perspectives and patient preferences in planning, implementing, and evaluating outcomes of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-2 Create a plan to minimize or prevent adverse drug events in patients.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.

Page Number:

Question 23
Type: MCMA

A nurse is caring for a client diagnosed with acute asthma who is taking several medications. The nurse would suspect a common adverse drug effect when the client exhibits which symptoms?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Headache

2. Nausea

3. Vomiting

4. Changes in blood pressure

5. Loss of hearing

Correct Answer: 1,2,3,4

Rationale 1: Headache is a common adverse effect of some medications.

Rationale 2: Nausea is a common adverse effect of some medications.

Rationale 3: Vomiting is a common adverse effect of some medications.

Rationale 4: Changes in blood pressure is a common adverse effect of some medications.

Rationale 5: Loss of hearing would be considered a serious adverse effect, not a common one.

Global Rationale: Headache, nausea, vomiting, and changes in blood pressure are common adverse effects of some medications. Loss of hearing would be considered a serious adverse effect, not a common one.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.3 Provide patient-centered care with sensitivity and respect for the diversity of human experience
AACN Essential Competencies: III.6. Integrate evidence, clinical judgment, interprofessional perspectives and patient preferences in planning, implementing, and evaluating outcomes of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-2 Create a plan to minimize or prevent adverse drug events in patients.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 24
Type: MCMA

A nurse is caring for a client who may be experiencing an allergic response to medication. The nurse bases the assessment on which information?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Signs and symptoms of drug allergy range from minor to life threatening.

2. Drug allergy symptoms may appear the same as common allergies to other substances, such as environmental triggers.

3. It is important to determine the source of the allergy.

4. Nausea and vomiting are the most common drug allergy symptoms.

5. Drug allergies require previous exposure.

Correct Answer: 1,2,3,5

Rationale 1: Symptoms of drug allergies may range from skin rash to difficulty breathing.

Rationale 2: The symptoms of drug allergies may appear the same as common allergic triggers.

Rationale 3: It is important to determine the source of the allergic response in an effort to avoid it in the future.

Rationale 4: Nausea and vomiting are not caused by an overactive immune system and are therefore not truly allergic responses.

Rationale 5: Previous exposure to the allergic drug is required for a hyperimmune response.

Global Rationale: Symptoms of drug allergies may range from skin rash to difficulty breathing. The symptoms of drug allergies may appear the same as common allergic triggers. It is important to determine the source of the allergic response in an effort to avoid it in the future. Previous exposure to the allergic drug is required for a hyperimmune response. Nausea and vomiting are not caused by an overactive immune system and are therefore not truly allergic responses.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-4 Describe the incidence and characteristics of drug allergies.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.

Page Number:

Question 25
Type: MCMA

A nurse teaching a prenatal class is reinforcing precautions concerning the use of medications during pregnancy. The nurse determines the class understands when the students make which comments?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "There are some medications I cannot take because I am pregnant and they could hurt my baby."

2. "I need to check with my doctor before I take any medication because some drugs can hurt my baby."

3. "I should consider all drugs to be harmful to my baby unless my doctor tells me it is okay."

4. "I have to be very careful to let all my health providers know that I am pregnant before they prescribe medications for me."

5. "Once I am halfway through my pregnancy, I won't need to worry about taking over-the-counter medications because the baby will be more fully-formed."

Correct Answer: 1,2,3,4

Rationale 1: The pregnant client should consider all drugs are dangerous during pregnancy, unless her health care provider tells her otherwise.

Rationale 2: The pregnant client should always consult her health care provider before taking any medication.

Rationale 3: The pregnant client should consider all drugs to be dangerous during pregnancy unless her health care provider tells her otherwise.

Rationale 4: The pregnant client should consider all drugs to be dangerous during pregnancy unless her health care provider tells her otherwise.

Rationale 5: The pregnant client should consider all drugs to be dangerous during pregnancy unless her health care provider tells her otherwise.

Global Rationale: The pregnant client should consider all drugs are dangerous during pregnancy, unless her health care provider tells her otherwise. The pregnant client should always consult her health care provider before taking any medication.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: III.A.2 Describe EBP to include the components of research evidence, clinical expertise and patient/family values.
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care

Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-6 Explain why certain drugs with carcinogenic or teratogenic potential are used in pharmacotherapy.
MNL Learning Outcome: 1.1.1 Apply basic concepts related to pharmacology.
Page Number:

Question 26
Type: MCMA

The nurse is caring for a client who is taking a drug known to cause nephrotoxicity. Which interventions are appropriate to prevent drug-induced nephrotoxicity?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Encouraging hydration

2. Monitoring diagnostic lab tests for changes in kidney function

3. Identifying drugs that affect kidneys and discuss adjusting doses

4. Determining whether the client has kidney impairment

5. Providing proper nutrition

Correct Answer: 1,2,3,4

Rationale 1: Encouraging proper hydration will help to protect the kidneys by improving excretion of drugs.

Rationale 2: It is important to monitor lab tests for any indication that a nephrotoxic drug is having an adverse effect on the kidneys.

Rationale 3: It is important to recognize drugs that affect the kidneys, monitor lab values, and adjust doses if needed.

Rationale 4: Identifying present kidney impairment will allow the provider to adjust any nephrotoxic drug doses, which will minimize the strain on the kidney.

Rationale 5: Providing proper nutrition will not prevent drug-induced kidney problems.

Global Rationale: Providing proper nutrition will not prevent drug-induced kidney problems. Encouraging proper hydration will help to protect the kidneys by improving excretion of drugs. It is important to monitor lab tests for any indication that a nephrotoxic drug is having an adverse effect on the kidneys. It is important to recognize drugs that affect the kidneys, monitor lab values, and adjust doses if needed. Identifying present kidney impairment will allow the provider to adjust any nephrotoxic drug doses, which will minimize the strain on the kidney.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-7 Report the characteristic signs, symptoms, and treatment for each of the following organ-specific adverse events: nephrotoxicity, neurotoxicity, hepatotoxicity, dermatologic toxicity, bone marrow toxicity, cardiotoxicity, and skeletal muscle toxicity.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 27
Type: MCMA

A nurse caring for a client taking a drug that can cross the blood-brain barrier determines the client is experiencing possible neurotoxicity when which symptoms are observed?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Visual changes

2. Loss of balance

3. Sedation

4. Depression

5. Nausea and vomiting

Correct Answer: 1,2,3,4

Rationale 1: Symptoms of neurotoxicity may include visual changes.

Rationale 2: Symptoms of neurotoxicity may include loss of balance.

Rationale 3: Symptoms of neurotoxicity may include drowsiness.

Rationale 4: Symptoms of neurotoxicity may include depression.

Rationale 5: Nausea and vomiting is a symptom of hepatotoxicity and nephrotoxicity.

Global Rationale: Symptoms of neurotoxicity may include visual changes, loss of balance, sedation, and depression. Nausea and vomiting is a symptom of hepatotoxicity and nephrotoxicity.

Cognitive Level: Applying
Client Need: Physiological Integrity

Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-7 Report the characteristic signs, symptoms, and treatment for each of the following organ-specific adverse events: nephrotoxicity, neurotoxicity, hepatotoxicity, dermatologic toxicity, bone marrow toxicity, cardiotoxicity, and skeletal muscle toxicity.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 28
Type: MCMA

A nurse is caring for a client recently prescribed an oral antibiotic who is exhibiting signs of dermatologic toxicity. Which assessment findings support dermatologic toxicity?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Rash

2. Itching

3. Urticaria

4. Sunburn

5. Photosensitivity

Correct Answer: 1,2,3,4

Rationale 1: Rash is a common hypersensitivity response.

Rationale 2: Itching is a common hypersensitivity response.

Rationale 3: Hives are common in a hypersensitive response.

Rationale 4: Certain drugs can cause the skin to be sensitive to the sun, resulting in sunburn.

Rationale 5: Photosensitivity is light-sensitive reaction to medication and is not considered a dermatologic response.

Global Rationale: Rash, itching, and hives are all common hypersensitivity response. Certain drugs can cause the skin to be sensitive to the sun, resulting in sunburn. Photosensitivity is light-sensitive reaction to medication and is not considered a dermatologic response.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care

Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-7 Report the characteristic signs, symptoms, and treatment for each of the following organ-specific adverse events: nephrotoxicity, neurotoxicity, hepatotoxicity, dermatologic toxicity, bone marrow toxicity, cardiotoxicity, and skeletal muscle toxicity.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 29
Type: MCMA

A nurse is planning care for a client taking a medication with the potential to cause bone marrow toxicity. Which interventions exemplify the nurse's role in preventing complications?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Assess the client for signs and symptoms of infection.

2. Assess the client for signs and symptoms of anemia.

3. Monitor the client for signs and symptoms of fatigue.

4. Monitor the client for evidence of bruising.

5. Monitor the client for insomnia.

Correct Answer: 1,2,3,4

Rationale 1: Bone marrow toxic drugs can affect the production of white blood cells.

Rationale 2: Bone marrow toxic drugs can affect the production of red blood cells.

Rationale 3: Bone marrow toxic drugs can affect the production of red blood cells.

Rationale 4: Bone marrow toxic drugs can affect the production of platelets.

Rationale 5: Bone marrow toxic drugs do not affect sleep.

Global Rationale: Bone marrow toxic drugs can affect the production of white blood cells, red blood cells, and platelets. The affect on the red blood cells can cause fatigue. Bone marrow toxic drugs do not affect sleep.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-7 Report the characteristic signs, symptoms, and treatment for each of the following organ-specific adverse events: nephrotoxicity, neurotoxicity, hepatotoxicity, dermatologic toxicity, bone marrow toxicity, cardiotoxicity, and skeletal muscle toxicity.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 30
Type: MCMA

The nurse is caring for a client who is prescribed laxatives. Which statements are most relevant to the absorption of medications?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Drugs that increase peristalsis may decrease absorption.

2. Drugs that decrease peristalsis may increase absorption.

3. The presence of food will usually decrease absorption.

4. Drug–drug interactions that affect absorption may be prevented by taking the drugs 2 hours apart.

5. Increasing fluid intake will increase absorption.

Correct Answer: 1,2,3,4

Rationale 1: The less time drugs stay in the stomach or small intestine, the less the time of absorption.

Rationale 2: The longer the drug is exposed to the stomach lining and small intestine, the greater the time of absorption.

Rationale 3: Absorption is increased when the stomach is empty.

Rationale 4: Many drug–drug interactions that cause decreased absorption can be avoided by separating the drugs by 2 to 3 hours.

Rationale 5: Increasing fluid intake will not affect absorption.

Global Rationale: The less time drugs stay in the stomach or small intestine, the less the time of absorption. The longer the drug is exposed to the stomach lining and small intestine, the greater the time of absorption. Absorption is increased when the stomach is empty. Many drug–drug interactions that cause decreased absorption can be avoided by separating the drugs by 2 to 3 hours. Increasing fluid intake will not affect absorption.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-9 Describe the mechanisms of drug interactions that alter absorption, distribution, metabolism, or excretion.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 31
Type: MCMA

The nurse is caring for a client who has been admitted for uncontrolled hypertension. When the health care provider orders a second antihypertensive drug for the client, the client asks the nurse why the health care provider ordered another drug instead of increasing the first drug. The nurse's response is based on which principles?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. A second drug from the same class is added to prevent the dose of the first drug from being increased.

2. Adding a second drug may allow both drugs to be used at a lower dose.

3. The effect of two drugs from different classes may have a greater effect than two drugs from the same class.

4. Adding the second drug will result in the diminished response of the first drug, which will increase the effects.

5. It is important to counteract the increased dose with another drug to decrease the potential for adverse effects.

Correct Answer: 1,2,3

Rationale 1: Keeping both doses low and taking advantage of an additive effect reduces the potential for adverse effects.

Rationale 2: Keeping both doses low and taking advantage of an additive effect reduces the potential for adverse effects.

Rationale 3: The two drugs will affect different receptor site to achieve the same goal, resulting in a greater response but at lower doses.

Rationale 4: Adding a second drug that has an antagonistic effect will result in canceling out the therapeutic effects of the first drug.

Rationale 5: Adding a second drug within the same class or from another class will allow lower dosing, which will decrease the potential for adverse effects.

Global Rationale: Keeping both doses low and taking advantage of an additive effect reduces the potential for adverse effects. The two drugs will affect different receptor site to achieve the same goal, resulting in a greater response but at lower doses. Adding a second drug that has an antagonistic effect will result in canceling out the therapeutic effects of the first drug and also increase the potential for adverse effects.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-10 Differentiate among additive, synergistic, and antagonistic drug interactions.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 32
Type: MCMA

A nurse is reinforcing discharge instructions concerning food–drug interactions. Which statements by the client indicate correct understanding of the discharge instructions?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. “I should take my medications with water to avoid any problems with my medications being absorbed.”

2. “I cannot take one of my medications with grapefruit juice because it will decrease the absorption of the medication.”

3. “I need to be sure to read the prescription label because the pharmacist will indicate if I need to take my medication with food or without food.”

4. “I should take my daily vitamin 2 hours after my medication so they do not affect each other.”

5. “If I take my medication with hot tea, it will not affect absorption.”

Correct Answer: 1,2,3,4

Rationale 1: The safest fluid to take with medications is water.

Rationale 2: Grapefruit juice can increase absorption of certain drugs and should be avoided.

Rationale 3: The pharmacist will indicate on the medication label if the medication should be taken with or without food.

Rationale 4: Herbal supplements and vitamins can cause adverse effects when taken with medication.

Rationale 5: Taking medication with caffeine or a hot drink can affect absorption and the effectiveness of medication.

Global Rationale: The safest fluid to take with medications is water. Grapefruit juice can increase absorption of certain drugs and should be avoided. The pharmacist will indicate on the medication label if the medication should be taken with or without food. Herbal supplements and vitamins can cause adverse effects when taken with medication. Taking medication with caffeine or a hot drink can affect absorption and the effectiveness of medication.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug
Page Number:

Question 33
Type: MCMA

A client reports an adverse effect to the Adverse Event Reporting System. The nurse recognizes if a potential safety concern is identified, the Food and Drug Administration (FDA) may take which actions?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Determine the extent of the safety concern by conducting additional studies

2. Require changes be made to the product’s labeling information

3. Recall the product

4. Restrict the product’s use in certain populations

5. Continue to log in public concerns regarding the safety of the product before taking further action

Correct Answer: 1,2,3,4

Rationale 1: The FDA will conduct additional epidemiologic studies to determine the validity or extent of the concern.

Rationale 2: The FDA will require the pharmaceutical company to change the product's label to reflect this concern.

Rationale 3: The FDA will recall a product that may have performance concerns.

Rationale 4: The FDA will restrict the product's use in certain populations.

Rationale 5: The FDA will not just continue to log in concerns regarding the safety of the product. At this point, additional studies, additional product labeling, recall, or removal of the product will occur.

Global Rationale: The FDA will conduct additional epidemiologic studies to determine the validity or extent of the concern, require the pharmaceutical company to change the product's label to reflect this concern, recall a product that may have performance issues, and restrict the product's use in certain populations. The FDA will not just continue to log in concerns regarding the safety of the product. At this point, additional studies, additional product labeling, recall, or removal of the product will occur.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-3 Explain the advantages and disadvantages of the Adverse Event Reporting System.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 34
Type: MCMA

The nurse is planning care for a client newly diagnosed with emphysema who complains that the medication is causing a "shaky" feeling. What does the nurse recognize this to be?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. A predictable side effect of the medication

2. An annoying side effect of the medication

3. A dose-dependent side effect of the medication

4. An allergic response to the medication

5. A serious adverse effect of the medication

Correct Answer: 1,2,3

Rationale 1: Many drugs used for emphysema cause nervousness, which may result in the client feeling unsteady.

Rationale 2: Many drugs used for emphysema cause annoying sides effects such as nervousness, which may result in the client feeling unsteady.

Rationale 3: Many drugs used for emphysema cause side effects such as nervousness, resulting in the client feeling unsteady. This side effect is often dose dependent.

Rationale 4: The nurse recognizes that unsteadiness is a common symptom. It does not have the characteristics of an allergic response, such as hives and swelling.

Rationale 5: The nurse recognizes that unsteadiness is a common symptom, not a serious adverse effect.

Global Rationale: Many drugs used for emphysema cause nervousness, which may result in the client feeling unsteady. Many drugs used for emphysema cause annoying sides effects such as nervousness, which may result in the client feeling unsteady. This side effect is often dose dependent. The nurse recognizes that unsteadiness is a common symptom. It does not have the characteristics of an allergic response, such as hives and swelling. The nurse recognizes that unsteadiness is a common symptom, not a serious adverse effect.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-1 Differentiate between adverse effects and side effects.
MNL Learning Outcome: 1.1.4 Examine adverse effects of medication administration and risk reduction measures taken by the nurse.
Page Number:

Question 35
Type: MCMA

A client is prescribed tetracycline for acne. Which foods should the nurse ask the client to avoid while taking this medication?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Milk

2. Almonds

3. Ice cream

4. Hamburgers

5. Grapefruit juice

Correct Answer: 1,3

Rationale 1: Milk products contain calcium, which will decrease absorption.

Rationale 2: Almonds are not a source of calcium.

Rationale 3: Milk products decrease absorption.

Rationale 4: Hamburgers do not contain calcium and will not have an effect on absorption.

Rationale 5: Grapefruit juice does not decrease absorption.

Global Rationale: Milk products contain calcium, which will decrease absorption. Almonds are not a source of calcium. Hamburgers do not contain calcium and will not have an effect on absorption. Grapefruit juice does not decrease absorption.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug
Page Number:

Question 36
Type: MCMA

A client returns to the clinic for follow up after taking a newly prescribed medication for a month. The nurse recognizes medication teaching was successful when the client makes which statement?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. “I’ve been taking my medication on an empty stomach, like the prescription label said to do.”

2. “I always take my medication with a full glass of water.”

3. “I’m not drinking any alcohol close to the time that I take my medication.”

4. “I switched all my medications to one pharmacy, like you suggested.”

5. “I was glad I could take my medications and supplements together. I don’t really like to take a lot of pills during the day.”

Correct Answer: 1,2,3,4

Rationale 1: Some medications must be taken on an empty stomach. It is important to know if the medication should be taken with food or on an empty stomach.

Rationale 2: Taking medications with water will decrease the chance of an interaction that can occur with other juices or fluids.

Rationale 3: Alcohol can cause adverse interactions with medications.

Rationale 4: Filling all prescriptions at the same pharmacy will assist the pharmacist in comparing current and new medications for interactions.

Rationale 5: It is best not to take herbal supplements and vitamins with prescribed medications to avoid interactions.

Global Rationale: Some medications must be taken on an empty stomach. It is important to know if the medication should be taken with food or on an empty stomach. Taking medications with water will decrease the chance of an interaction that can occur with other juices or fluids. Alcohol can cause adverse interactions with medications. Filling all prescriptions at the same pharmacy will assist the pharmacist in comparing current and new medications for interactions. It is best not to take herbal supplements and vitamins with prescribed medications to avoid interactions.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug
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Question 37
Type: MCMA

A nurse is caring for a client who is exhibiting signs of an adverse reaction to warfarin (Coumadin). Which statements made by the client would lead the nurse to suspect that this is the case?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "I'm from the South, and we have buttermilk almost every meal."

2. "I was suffering so much from hot flashes until my friend told me to try an herb called St. John's wort. I don't seem to have as many symptoms as before."

3. "My husband makes me put garlic in everything! He heard it helps keep our blood pressure normal."

4. "I heard ginkgo was really good for improving memory so I started taking it a couple of months ago."

5. "I was having difficulty sleeping a couple months ago, and my neighbor recommended I try kava. It seems to calm my nerves."

Correct Answer: 2,3,4

Rationale 1: Calcium products do not affect the action of warfarin.

Rationale 2: St. Johns's wort may increase the risk for bleeding when taken with warfarin.

Rationale 3: Garlic may increase the risk for bleeding when taken with warfarin.

Rationale 4: Ginkgo may increase the risk for bleeding when taken with warfarin.

Rationale 5: Kava can increase drowsiness and sedation when taken with CNS depressants. It does not interact with warfarin.

Global Rationale: St. Johns's wort may increase the risk for bleeding when taken with warfarin. Garlic may increase the risk for bleeding when taken with warfarin. Ginkgo may increase the risk for bleeding when taken with warfarin. Calcium products do not affect the action of warfarin. Kava can increase drowsiness and sedation when taken with CNS depressants. It does not interact with warfarin.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug
Page Number:

Question 38
Type: MCSA

A client is admitted to the emergency department in a hypertensive crisis. The client's spouse said the client ate food containing tyramine. The nurse immediately rules out which types of drugs as the cause of the client's hypertensive crisis?

1. Tetracycline

2. Warfarin (Coumadin)

3. Calcium channel blockers

4. Monoamine oxidase inhibitors (MAOIs)

Correct Answer: 4

Rationale 1: Foods with tyramine are not restricted in Tetracycline.

Rationale 2: Foods with tyramine are not restricted with warfarin (Coumadin).

Rationale 3: Foods with tyramine are not restricted with calcium channel blockers.

Rationale 4: Foods with tyramine can cause hypertensive crisis when taken with MAOIs.

Global Rationale: Foods with tyramine can cause hypertensive crisis when taken with MAOIs. Foods with tyramine are not restricted in Tetracycline, warfarin (Coumadin), or calcium channel blockers.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.2. Demonstrate an understanding of the basic elements of the research process and models for applying evidence to clinical practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-11 Identify examples of drug–food interactions that may impact pharmacotherapeutic outcomes.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug
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Question 39
Type: MCMA

A nurse in the emergency department is preparing to care for a client suspected of an opiate overdose. The nurse is preparing to give the client a medication called naloxone (Narcan). Which rationales support the use of this medication?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. It reverses the effects of the overdose.

2. It is an antagonist.

3. It has an additive effect.

4. It has a synergist effect.

5. It causes CNS depression.

Correct Answer: 1,2

Rationale 1: Narcan is an antagonist that will reverse the effects of an opiate overdose.

Rationale 2: Narcan is an antagonist.

Rationale 3: Narcan will not have an additive effect.

Rationale 4: Narcan will not have a synergist effect.

Rationale 5: Narcan reverses life-threatening CNS depression.

Global Rationale: Narcan is an antagonist that will reverse the effects of an opiate overdose. Narcan will not have an additive effect or a synergistic effect. Narcan reverses life-threatening CNS depression.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 5-10 Differentiate among additive, synergistic, and antagonistic drug interactions.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 40
Type: MCMA

The nurse would anticipate an alteration in drug excretion in clients with which conditions?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Kidney disease

2. Heart disease

3. Diarrhea

4. Asthma

5. Alzheimer disease

Correct Answer: 1,2

Rationale 1: Any condition which decreases or impairs glomerular filtration rate will decrease excretion of drugs from the body.

Rationale 2: Glomerular filtration rate is directly related to cardiac output. Any heart disease that decreases cardiac output will decrease excretion of drugs from the body.

Rationale 3: The quick transit of medication through the small intestines alters absorption, not metabolism.

Rationale 4: The lungs do not metabolize drugs.

Rationale 5: Alzheimer disease will not affect the metabolism of drugs.

Global Rationale: Any condition which decreases or impairs glomerular filtration rate will decrease excretion of drugs from the body. Glomerular filtration rate is directly related to cardiac output. Any heart disease that decreases cardiac output will decrease excretion of drugs from the body. The quick transit of medication through the small intestines alters absorption, not metabolism. The lungs do not metabolize drugs. Alzheimer disease will not affect the metabolism of drugs.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 5-9 Describe the mechanisms of drug interactions that alter absorption, distribution, metabolism, or excretion.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 41
Type: MCMA

The nurse would anticipate an alteration in drug absorption in clients with which conditions?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Vomiting

2. Diabetes

3. Diarrhea

4. Asthma

5. Alzheimer disease

Correct Answer: 1,3,4

Rationale 1: The drug cannot be absorbed if it is vomited.

Rationale 2: Diabetes will not alter absorption; if the kidneys are impaired, it may alter excretion.

Rationale 3: The quick transit of medication through the small intestines may alter absorption.

Rationale 4: Bronchoconstriction could alter inhaled medications.

Rationale 5: Alzheimer disease will not affect the absorption of drugs.

Global Rationale: The drug cannot be absorbed if it is vomited. The quick transit of medication through the small intestines may alter absorption. Bronchoconstriction could alter inhaled medications. Diabetes will not alter absorption; if the kidneys are impaired, it may alter excretion. Alzheimer disease will not affect the absorption of drugs.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: III.A.1 Demonstrate knowledge of basic scientific methods and processes
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 5-9 Describe the mechanisms of drug interactions that alter absorption, distribution, metabolism, or excretion.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 42
Type: MCMA

A nurse educator explaining drug allergies to students includes which statements in the teaching?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. “Drug allergies occur with very small amounts of drug.”

2. “The symptoms of drug allergies are unrelated to the pharmacologic actions of the drug.”

3. “Drug allergies require a previous exposure to the drug.”

4. “The symptoms of a drug allergy are produced by an underactive response by the body’s defenses.”

5. “The severity of the allergic response is directly related to the dose of the drug.”

Correct Answer: 1,2,3

Rationale 1: Drug allergies can occur with very small amounts of drug.

Rationale 2: The symptoms of drug allergies are unrelated to the pharmacologic actions of the drug and are attributed to the response of the body’s defenses.

Rationale 3: Drug allergies require a previous exposure to the drug or a similar drug.

Rationale 4: The symptoms of a drug allergy are produced by a hyper-response of the body’s defenses.

Rationale 5: The severity of the allergic response is unrelated to the dose of the drug.

Global Rationale: Drug allergies can occur with very small amounts of drug. The symptoms of drug allergies are unrelated to the pharmacologic actions of the drug and are attributed to the response of the body’s defenses Drug allergies require a previous exposure to the drug or a similar drug. The symptoms of a drug allergy are produced by a hyper-response of the body’s defenses. The severity of the allergic response is unrelated to the dose of the drug.

Adams and Urban, *Pharmacology: Connections to Nursing Practice*, 3e Test Bank

Chapter 6

Question 1
Type: MCMA

The nursing instructor teaches the students how medication errors can occur. Which common causes of errors will the instructor discuss?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. The nurse does not validate a written order with the health care provider.

2. The nurse administers the incorrect drug.

3. The nurse miscalculates the medication dose.

4. The nurse misinterprets a health care provider’s order.

5. The nurse does not check the client's identification band.

Correct Answer: 2,3,4,5

Rationale 1: As long as the health care provider's order is clear, there is no need to validate a written order.

Rationale 2: Medication errors can be related to misadministration.

Rationale 3: Medication errors can be related to miscalculations.

Rationale 4: Medication errors can be related to misinterpretations.

Rationale 5: Not correctly identifying a client may lead to giving the wrong client the medication.

Global Rationale: Medication errors can be related to misadministration, miscalculations, and misinterpretations. Not correctly identifying a client may lead to giving the wrong client the medication. As long as the health care provider's order is clear, there is no need to validate a written order.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Reduction of Risk Potential
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-1 Critique the following statement: "All medication errors can be prevented."
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 2
Type: MCSA

Drug administration is a multiple, complex process that involves more than one person. The potential for a medication error can occur during any step in that process. Which individual would not be involved in the process?

1. Pharmacist

2. Health care provider

3. Client

4. Nurse manager

Correct Answer: 4

Rationale 1: The pharmacist is always involved in the process.

Rationale 2: The health care provider is always involved in the process.

Rationale 3: The client is always involved in the process.

Rationale 4: The nurse manager would only be involved in the process if there were a problem on the unit with medication administration.

Global Rationale: The nurse manager would only be involved in the process if there were a problem on the unit with medication administration. The pharmacist, health care provider, ad client are always involved in the process.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-1 Critique the following statement: "All medication errors can be prevented."
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 3
Type: MCMA

The nurse makes a medication error, but the client is not harmed. The client's family asks the nurse manager what is considered a medication error. Which are potential responses by the nurse manager?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Failure to follow health care provider's orders

2. Failure to give the right medication

3. Failure to give a medication at the ordered time

4. Failure to call the pharmacy and report that the medication has been given

5. Failure to give the right dose of the medication

Correct Answer: 1,2,3,5

Rationale 1: In this medication error, the client does not receive the drug as the health care provider intended it to be given.

Rationale 2: In this medication error, the client does not receive the drug the health care provider intended to be given.

Rationale 3: In this medication error, the client does not receive the drug at the time the health care provider intended it to be given.

Rationale 4: The delivery of the medication is recorded on the medical administration record (MAR); the nurse does not report to the pharmacy each time a medication has been given.

Rationale 5: In this medication error, the client does not receive the dose of the drug the health care provider intended to be given.

Global Rationale: Medication errors include the wrong drug being administered, the wrong route being used, the wrong time, and the wrong dose. The delivery of the medication is recorded on the medical administration record (MAR); the nurse does not report to the pharmacy each time a medication has been given.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-3 Using specific examples, analyze major types of medication errors and how they can be prevented.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 4
Type: MCSA

The nurse in the emergency department miscalculates, and administers the wrong dosage of an antibiotic to a 9-month-old baby. As a result, the baby suffers permanent brain damage. Which factor most likely contributed to the error?

1. Lack of adequate oral or written communication

2. Name confusion involving similar-sounding drugs

3. Mislabeled products

4. Human factors

Correct Answer: 4

Rationale 1: Lack of communication is not indicated in the scenario.

Rationale 2: There is no indication of name confusion.

Rationale 3: There is no indication the products were inappropriately labeled.

Rationale 4: This was a human factor. The dosage was miscalculated.

Global Rationale: This was a human factor. The dosage was miscalculated. Lack of communication is not indicated in the scenario. There is no indication of name confusion or that the products were inappropriately labeled.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-3 Using specific examples, analyze major types of medication errors and how they can be prevented.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 5
Type: MCSA

The FDA uses the information reported to it on specific types and incidences of medication errors to determine contributing factors. Which factor would be included on this list?

1. Never taking a verbal or phone order without receiving a written order before administering the drug

2. Performing an agency system check

3. Failure to account for client variables

4. Following the rights of drug administration

Correct Answer: 3

Rationale 1: Taking a verbal or phone order without receiving a written order before administering the drug would be incorrect procedure.

Rationale 2: Performing an agency system check is correct procedure.

Rationale 3: Variables such as age, body size, and renal and hepatic function must be assessed and taken into account when administrating medications.

Rationale 4: Following the rights of drug administration is correct procedure.

Global Rationale: Variables such as age, body size, and renal and hepatic function must be assessed and taken into account when administrating medications. Taking a verbal or phone order without receiving a written order before administering the drug would be incorrect procedure. Performing an agency system check is correct procedure. Following the rights of drug administration is correct procedure

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-3 Using specific examples, analyze major types of medication errors and how they can be prevented.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 6
Type: MCSA

The FDA uses the information reported to it on specific types and incidences of medication errors to determine contributing factors. What is a common factor involving the client or caregiver?

1. Taking medications as the practitioner has ordered

2. Never trading drugs with anyone

3. Taking drugs prescribed by more than one practitioner

4. Filling prescriptions at several pharmacies

Correct Answer: 4

Rationale 1: Taking medications as the practitioner has ordered is correct procedure.

Rationale 2: Never trading drugs with anyone is correct procedure.

Rationale 3: It is safe for the client to take drugs prescribed by more than one practitioner as long as each practitioner is aware of all the drugs the client is taking.

Rationale 4: Pharmacists are the key members of the health care team who can recognize potential drug interactions and adverse effects.

Global Rationale: Pharmacists are the key members of the health care team who can recognize potential drug interactions and adverse effects. Taking medications as the practitioner has ordered and never trading medications with anyone are both correct procedure. It is safe for the client to take drugs prescribed by more than one practitioner as long as each practitioner is aware of all the drugs the client is taking.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-3 Using specific examples, analyze major types of medication errors and how they can be prevented.

MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 7
Type: MCSA

The nurse administers an evening medication to the client in the morning. The medication did go to the correct client. What is the nurse's best course of action at this time?

1. Notify the health care provider to ask if any further action needs to be taken.

2. Notify the health care provider about the error, and complete an incident report.

3. Tell the evening nurse to hold the evening dose just for tonight.

4. Change the medication administration time to the morning.

Correct Answer: 2

Rationale 1: There is no need to ask the health care provider if any further action needs to be taken. An incident report must be completed.

Rationale 2: The health care provider must be notified of the medication error and an incident report must be completed.

Rationale 3: The health care provider will decide if the evening dose should be held.

Rationale 4: The time for medication administration cannot be changed without an order from the health care provider.

Global Rationale: The health care provider must be notified of the medication error and an incident report must be completed. There is no need to ask the health care provider if any further action needs to be taken. The health care provider will decide if the evening dose should be held. The time for medication administration cannot be changed without an order from the health care provider.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies

QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-4 Describe procedures for reporting and documenting medication errors and incidents.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 8
Type: MCSA

The nurse commits a medication error. The nurse documents the error in the client's record and completes the incident report. What does the nurse recognize as the primary reason for this action?

1. To protect the nurse from liability

2. To verify that the client's safety was protected

3. To protect the client from further harm

4. To protect the healthcare facility from litigation

Correct Answer: 2

Rationale 1: Documentation of an error does not necessarily protect the nurse from liability.

Rationale 2: Documentation in the client's medical record and completion of an incident report verify that the client's safety was protected.

Rationale 3: The client has been harmed; the documentation will not protect the client from further harm.

Rationale 4: Documentation of an error does not necessarily protect the healthcare facility from litigation.

Global Rationale: Documentation in the client's medical record and completion of an incident report verify that the client's safety was protected. Documentation of an error does not necessarily protect the nurse from liability. The client has been harmed; the documentation will not protect the client from further harm. Documentation of an error does not necessarily protect the healthcare facility from litigation.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Reduction of Risk Potential
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-4 Describe procedures for reporting and documenting medication errors and incidents.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 9
Type: MCSA

The nurse assesses an adverse effect of a medication that has been administered. No medication error was committed. To which federal database would the nurse report the adverse effect?

1. The Food and Drug Administration's (FDA) Safe Medicine

2. The Food and Drug Administration's (FDA) MedWatch

3. The Food and Drug Administration's (FDA) Institute for Safe Medication Practices (ISMP)

4. The Centers for Disease Control (CDC)

Correct Answer: 2

Rationale 1: *Safe Medicine* is a consumer newsletter produced by the ISMP.

Rationale 2: Adverse events with medication should be reported to the FDA's Safety Information and Adverse Event Reporting Program, known as *MedWatch*.

Rationale 3: The ISMP is a nonprofit agency that helps standardize medication reporting systems and promote medication safety.

Rationale 4: The FDA, not the CDC, coordinates the reporting of medication errors at the federal level.

Global Rationale: Adverse events with medication should be reported to the FDA's Safety Information and Adverse Event Reporting Program, known as *MedWatch*. *Safe Medicine* is a consumer newsletter produced by the ISMP. The ISMP is a nonprofit agency that helps standardize medication reporting systems and promote medication safety. The FDA, not the CDC, coordinates the reporting of medication errors at the federal level.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Reduction of Risk Potential
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: IV.1. Demonstrate skills in using patient care technologies, information systems, and communication devices that support safe nursing practice
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-4 Describe procedures for reporting and documenting medication errors and incidents.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 10
Type: MCSA

The nurse recognizes that agency system checks are in place to decrease medication errors. Who commonly collaborates with the nurse on checking the accuracy of the medication prior to administration?

1. The nursing supervisor

2. The pharmacist

3. The health care provider

4. The nursing unit manager

Correct Answer: 2

Rationale 1: The nursing supervisor does not commonly collaborate with the nurse on the accuracy of the medication prior to administration.

Rationale 2: Pharmacists and nurses must collaborate on checking the accuracy and appropriateness of drug orders prior to client administration.

Rationale 3: The health care provider does not commonly collaborate with the nurse on the accuracy of the medication prior to administration.

Rationale 4: The nursing unit manager does not commonly collaborate with the nurse on the accuracy of the medication prior to administration.

Global Rationale: Pharmacists and nurses must collaborate on checking the accuracy and appropriateness of drug orders prior to client administration. The nursing supervisor does not commonly collaborate with the nurse on the accuracy of the medication prior to administration. The health care provider does not commonly collaborate with the nurse on the accuracy of the medication prior to administration. The nursing unit manager does not commonly collaborate with the nurse on the accuracy of the medication prior to administration.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Reduction of Risk Potential
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: II.5. Participate in quality and patient safety initiatives, recognizing that these are complex system issues, which involve individuals, families, groups, communities, populations and other members of the healthcare team
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care

Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-5 Explain how rules, policies, and procedures can help prevent medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 11
Type: MCSA

The nurse was very busy and unfamiliar with a new medication, but administered it anyway. Later the nurse looked up the medication. How would the nurse manager evaluate this behavior?

1. An error did occur because the nurse could have administered the medication via the incorrect route.

2. This was acceptable as long as the nurse looked up the action and side effects of the drug at some point.

3. The nurse manager was partially at fault because the nursing unit was understaffed and the nurse was too busy.

4. An error could have occurred because the nurse was unfamiliar with the medication.

Correct Answer: 4

Rationale 1: An error could have occurred, but not necessarily because of the route of administration.

Rationale 2: Nurses should never administer a medication unless they are familiar with its uses and side effects; an error could have occurred because the nurse was unfamiliar with the medication.

Rationale 3: There is no information in the question to indicate that the nursing unit was understaffed; therefore the nursing manager is not partially at fault.

Rationale 4: An error did not occur, but could have because the nurse was not familiar with the medication.

Global Rationale: An error did not occur, but could have because the nurse was not familiar with the medication. An error could have occurred, but not necessarily because of the route of administration. Nurses should never administer a medication unless they are familiar with its uses and side effects; an error could have occurred because the nurse was unfamiliar with the medication. There is no information in the question to indicate that the nursing unit was understaffed; therefore the nursing manager is not partially at fault.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Reduction of Risk Potential
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: II.9. Apply quality improvement processes to effectively implement patient safety initiatives and monitor performance measures, including nurse-sensitive indicators in the microsystem of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-6 Develop a list of strategies that the nurse can implement in practice to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 12
Type: MCSA

The nurse is preparing medications for a group of clients. Another nurse begins telling the nurse about her recent engagement. What is the best plan of action by the first nurse?

1. Tell the second nurse that the conversation is distracting and must cease while medications are being prepared.

2. Ask the second nurse to help with administering medications so they can have more time to talk.

3. Continue to prepare the medications for administration and pretend to listen to the first nurse.

4. Stop preparing medications until the first nurse has finished talking about her engagement.

Correct Answer: 1

Rationale 1: When preparing medications, the nurse must focus entirely on the task at hand, and instruct others who are talking to stop.

Rationale 2: It is inappropriate to ask another nurse to help with medications so there is more time to talk.

Rationale 3: Pretending to listen to the second nurse's conversation would be distracting.

Rationale 4: The nurse cannot stop preparing medications; the clients must receive them on time.

Global Rationale: When preparing medications, the nurse must focus entirely on the task at hand, and instruct others who are talking to stop. It is inappropriate to ask another nurse to help with medications so there is more time to talk. Pretending to listen to the second nurse's conversation would be distracting. The nurse cannot stop preparing medications; the clients must receive them on time.

Cognitive Level: Analyzing
Client Need: Physiological Integrity

Client Need Sub: Reduction of Risk Potential
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: II.9. Apply quality improvement processes to effectively implement patient safety initiatives and monitor performance measures, including nurse-sensitive indicators in the microsystem of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-6 Develop a list of strategies that the nurse can implement in practice to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 13
Type: MCMA

The nurse is working hard to prevent medication errors. Which plans will assist the nurse in preventing most errors?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Plan to validate all orders with another nurse prior to administration of medications.

2. Plan to assess for patient variables such as age, weight, and diagnostic lab studies prior to administration.

3. Plan to tell health care providers that verbal orders will not be accepted.

4. Plan to always check the client's identification band prior to administration of medications.

5. Plan to record the medication on the medication administration record (MAR) immediately prior to administration.

Correct Answer: 2,3,4

Rationale 1: Only high-risk drugs (e.g., insulin) need to be validated with another nurse. It is okay to validate any drug with another nurse if the nurse giving the medications wants a second opinion.

Rationale 2: Nurses should always account for patient variables such as age, weight, and any diagnostic studies that may impact the administration of medication.

Rationale 3: Requiring a written medication order also reduces the possibility of an error related to similar-sounding drug names.

Rationale 4: This is one of the five rights of drug administration to prevent errors.

Rationale 5: Medications should never be documented on the MAR until they have been administered. Documenting anything prior to the actual event is false documentation.

Global Rationale: Nurses should always account for patient variables such as age, weight, and any diagnostic studies that may impact the administration of medication. Requiring a written medication order also reduces the possibility of an error related to similar-sounding drug names. Checking the client identification band is one of the

rights of drug administration to prevent errors. Only high-risk drugs (e.g., insulin) need to be validated with another nurse. It is okay to validate any drug with another nurse if the nurse giving the medications wants a second opinion. Medications should never be documented on the MAR until they have been administered. Documenting anything prior to the actual event is false documentation.

Cognitive Level: Evaluating
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: II.9. Apply quality improvement processes to effectively implement patient safety initiatives and monitor performance measures, including nurse-sensitive indicators in the microsystem of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 6-6 Develop a list of strategies that the nurse can implement in practice to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 14
Type: MCSA

The nurse is working hard to prevent medication errors. Which intervention would assist the nurse in preventing most errors using the assessment step of the nursing process?

1. Be aware of stressful situations and distractions during medication administration.

2. Assess the client for expected outcomes and determine if any adverse side effects have occurred.

3. Ask the client about food or medication allergies, including OTC medications and herbal supplements.

4. Avoid using abbreviations that could be misunderstood.

Correct Answer: 3

Rationale 1: This is part of the implementation step of the nursing process.

Rationale 2: This part of the evaluation step of the nursing process.

Rationale 3: This is part of the assessment step of the nursing process.

Rationale 4: This is part of the planning step of the nursing process.

Global Rationale: Asking the client about food or medication allergies, including OTC medications and herbal supplements, is part of the assessment step of the nursing process. The other options illustrate other steps of the nursing process, not assessment.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others

AACN Essential Competencies: II.9. Apply quality improvement processes to effectively implement patient safety initiatives and monitor performance measures, including nurse-sensitive indicators in the microsystem of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 6-6 Develop a list of strategies that the nurse can implement in practice to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 15
Type: MCSA

It is common for older clients to receive multiple prescriptions that might have conflicting pharmacological actions. What is the term for keeping track of the client's medications as the client moves through the health care system?

1. Assessment

2. Medication transition

3. Pharmacological evaluation

4. Medication reconciliation

Correct Answer: 4

Rationale 1: Assessment is the first step of the nursing process.

Rationale 2: This is not the correct term for this process.

Rationale 3: This is not the correct term for this process.

Rationale 4: Medication reconciliation is the process of tracking clients' medications as they progress through the health care system.

Global Rationale: Medication reconciliation is the process of tracking clients' medications as they progress through the health care system. The other terms do not describe this process.

Cognitive Level: Remembering
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: IV.3. Apply safeguards and decision making support tools embedded in patient care technologies and information systems to support a safe practice environment for both patients and healthcare workers
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-7 Explain how medication reconciliation can lead to a reduction in medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 16
Type: MCSA

The nurse is instructing a client about how to help prevent medication errors while in the hospital. What is a priority question for the nurse to ask the client?

1. "Do you know what your illness is, and if you will need surgery?"

2. "Do you have a friend to verify that you are receiving the correct medication?"

3. "Do you trust your health care provider to order the correct medication?"

4. "Do you know the names of all the medications you take?"

Correct Answer: 4

Rationale 1: Knowing the illness, and anticipating surgery, will not necessarily help prevent medication errors.

Rationale 2: It is inappropriate for friends of clients to verify medications prior to administration.

Rationale 3: This is an inappropriate question to ask the client.

Rationale 4: Knowing the names of all the medications the client is taking can help reduce medication errors when the client is admitted to the hospital.

Global Rationale: Knowing the names of all the medications the client is taking can help reduce medication errors when the client is admitted to the hospital. Knowing the illness, and anticipating surgery, will not necessarily help prevent medication errors. It is inappropriate for friends of clients to verify medications prior to administration. The other answer option is an inappropriate question to ask the client.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Reduction of Risk Potential
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-8 Design patient teaching information that can be used to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 17
Type: MCSA

The nurse is instructing a client about how to prevent medication errors after discharge from the hospital. What is a priority recommendation the nurse should make?

1. Ask questions about drug safety. Health care providers should be partners in maintaining safe medication principles.

2. Remember that OTC and herbal supplements are not considered medications. They cannot cause any harm.

3. It is okay to use household measuring devices to measure medications. These devices yield the same measurements that are used by professionals.

4. Do not question the medications received from the pharmacist. The pharmacist is a professional and should not be questioned.

Correct Answer: 1

Rationale 1: This recommendation will help to reduce medication errors. Working together to understand information is an important process in medication reconciliation.

Rationale 2: OCT and herbal supplements are medications that can interact adversely with prescribed medications.

Rationale 3: Household measures and metric measures are not the same. Using household measures could result in medication errors.

Rationale 4: Clients should ask questions if the medications look different, or if they do not understand the instructions for taking them. This action reduces medication errors.

Global Rationale: Asking questions and working with the health care provider to understand information is an important process in medication reconciliation. OCT and herbal supplements are medications that can interact adversely with prescribed medications. Household measures and metric measures are not the same. Using household measures could result in medication errors. Clients should ask questions if the medications look different, or if they do not understand the instructions for taking them. This action reduces medication errors.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-8 Design patient teaching information that can be used to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 18
Type: MCSA

The nurse is discharging a client from the hospital. Which is a priority intervention for the nurse at this time?

1. On discharge from the facility, the nurse should provide the client with a complete list of medications to be taken, as well as instructions on how to take any newly prescribed medications.

2. The nurse should consult the client's pharmacy and inform the pharmacist that the client is being discharged.

3. The nurse should call a friend to come before giving discharge instructions to the client.

4. The nurse should inform the client's primary health care provider that the client is being discharged.

Correct Answer: 1

Rationale 1: This intervention will help to reduce medication errors because the client is better informed about the medications.

Rationale 2: The nurse does not inform the client's pharmacy of the discharge.

Rationale 3: It is inappropriate for the client's friends to be there when discharge instructions are being given.

Rationale 4: The primary health care provider's order would have been required to discharge the client.

Global Rationale: Providing a complete list of medications upon discharge will help to reduce medication errors because the client is better informed about the medications. The nurse does not inform the client's pharmacy of the discharge. It is inappropriate for the client's friends to be there when discharge instructions are being given. The primary health care provider's order would have been required to discharge the client.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-8 Design patient teaching information that can be used to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 19
Type: MCSA

The nurse is working in the risk management department to examine risks and minimize the number of medication errors. Which intervention can the nurse put in place to prevent errors?

1. Make sure there is an overstock of all medications to ensure availability.

2. Remove outdated reference books.

3. Store all medication in well-lighted areas.

4. Transfer all small amounts of medications into smaller containers to save space.

Correct Answer: 2

Rationale 1: Overstocking results in an increase in expired medications.

Rationale 2: Current reference books ensure current information, reducing medication errors.

Rationale 3: Medications should not be stored in the light or in extreme temperatures.

Rationale 4: Medications must be left in their original containers to prevent mixing up medications.

Global Rationale: Current reference books ensure current information, reducing medication errors. Overstocking results in an increase in expired medications. Medications should not be stored in the light or in extreme temperatures. Medications must be left in their original containers to prevent mixing up medications.

Cognitive Level: Analyzing
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.11 Employ principles of quality improvement, healthcare policy, and cost-effectiveness to assist in the development and initiation of effective plans for the microsystem and/or system-wide practice improvements that will improve the quality of healthcare delivery
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-9 Identify strategies that health care agencies use to prevent medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 20
Type: MCSA

The nurse is on a committee to reduce medication errors in a large healthcare facility. Which strategy can the nurse recommend that is being adopted in many healthcare facilities?

1. Use robots to prepare all medications for administration by the nurse.

2. Use automated, computerized cabinets on all nursing units.

3. Designate nurses whose only function is to administer medication.

4. Train medication technicians to administer medications.

Correct Answer: 2

Rationale 1: Healthcare agencies are not planning for the use of robots in medication preparation.

Rationale 2: Healthcare agencies are using automated, computerized cabinets to reduce medication errors.

Rationale 3: Healthcare agencies are not planning to designate nurses to do only medication administration.

Rationale 4: Healthcare agencies are not planning to train technicians whose sole function would be to administer medications.

Global Rationale: Healthcare agencies are using automated, computerized cabinets to reduce medication errors. Healthcare agencies are not planning for the use of robots in medication preparation. Healthcare agencies are not planning to designate nurses to do only medication administration. Healthcare agencies are not planning to train technicians whose sole function would be to administer medications.

Cognitive Level: Remembering
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.11 Employ principles of quality improvement, healthcare policy, and cost-effectiveness to assist in the development and initiation of effective plans for the microsystem and/or system-wide practice improvements that will improve the quality of healthcare delivery
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 6-9 Identify strategies that health care agencies use to prevent medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 21
Type: MCMA

A nurse on the medical–surgical unit is caring for several very ill clients. One client says, “I was supposed to get my medications an hour ago.” The nurse recognizes that medication errors can have what repercussions?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Medication errors can potentially extend the client’s length of hospital stay.

2. Medication errors can result in expensive legal costs to the facility.

3. Medication errors can damage the facility’s reputation.

4. Medication errors can be physically devastating to nurse and client.

5. Medication errors cause preventable deaths during hospitalizations.

Correct Answer: 1,2,3,5

Rationale 1: Medication errors can cause harm, which can extend the client’s length of stay.

Rationale 2: If a medication error causes harm to a client, it can result in expensive legal fees for hospital defense.

Rationale 3: If the incidence of medication errors is publicized, it can cause the facility to be seen as unsafe or to be delivering substandard care.

Rationale 4: Medication errors can be physically devastating to clients but would be emotionally devastating to the nurse.

Rationale 5: Medication errors are the most common cause of morbidity and preventable death within hospitals.

Global Rationale: Medication errors can cause harm, which can extend the client's length of stay. If a medication error causes harm to a client, it can result in expensive legal fees for hospital defense. If the incidence of medication errors is publicized, it can cause the facility to be seen as unsafe or to be delivering substandard care. Medication errors are the most common cause of morbidity and preventable death within hospitals. Medication errors can be physically devastating to clients but would be emotionally devastating to the nurse.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: II.A.2 Describe scopes of practice and roles of health care team members
AACN Essential Competencies: II.2. Demonstrate leadership and communication skills to effectively implement patient safety and quality improvement initiatives within the context of the interprofessional team
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-2 Describe the impact of a medication error on all aspects of health care delivery, including patients, nurses, and health care agencies.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 22
Type: MCMA

A new nurse on the orthopedic unit makes a medication error. Which statements by the nurse manager foster a safe environment in which nurses will report medication errors?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "Many of us have made a medication error in our careers. The most important issue is to identify why the error occurred."

2. "I know you could not feel any worse than you already do. We need to discuss how this error happened and how we can prevent it from happening again."

3. "It's really good that your patient is okay and did not suffer any harmful effects of this error. We should discuss why this error occurred and how it can be prevented in the future."

4. "Because you are a new nurse, we should sit down and discuss the procedure you followed to see what you could have done to prevent this error."

5. "We need to sit down as soon as possible and write up an incident report describing everything you did incorrectly that caused this error."

Correct Answer: 1,2,3,4

Rationale 1: All errors should be investigated with the goal of identifying why they occurred. This investigation should be done in a manner that is not punitive and will encourage staff to report errors without fear of punishment.

Rationale 2: All errors should be investigated with the goal of identifying why they occurred. This investigation should be done in a manner that is not punitive and will encourage staff to report errors without fear of punishment.

Rationale 3: All errors should be investigated with the goal of identifying why they occurred. This investigation should be done in a manner that is not punitive and will encourage staff to report errors without fear of punishment.

Rationale 4: All errors should be investigated with the goal of identifying why they occurred. This investigation should be done in a manner that is not punitive and will encourage staff to report errors without fear of punishment.

Rationale 5: An incident report will need to be written, but the nurse who made the error should feel the report would identify factors contributing to the error rather than place blame.

Global Rationale: All errors should be investigated with the goal of identifying why they occurred. This investigation should be done in a manner that is not punitive and will encourage staff to report errors without fear of punishment. An incident report will need to be written, but the nurse who made the error should feel the report would identify factors contributing to the error rather than place blame.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-3 Using specific examples, analyze major types of medication errors and how they can be prevented.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 23
Type: MCMA

A community health nurse is preparing a teaching plan regarding medications and safety for a new parent class. Which topics should be addressed?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Parents should maintain a list of current medications for each child.

2. Parents should be aware of each child's medication allergies.

3. Parents should know what the child's prescribed medication is for, how it should be administered, and when to expect the child to feel better.

4. Parents should be aware that any leftover medication should be appropriately disposed of, not saved for future use.

5. Parents should read the drug label for any foods the child should avoid while taking the medication and for possible adverse effects to watch out for.

Correct Answer: 1,2,3,4

Rationale 1: Parents should make a complete list of all prescribed medications, over-the-counter drugs, and any vitamins the child takes.

Rationale 2: It is very important that parents be aware of a child's allergies in order to prevent an unnecessary allergic response.

Rationale 3: Parents should know what condition the child's medication is prescribed for, and how, when, and how much to administer. It is also important for parents to know when to expect the child to feel better so a follow-up visit can be made if the child is not feeling better.

Rationale 4: Parents should be aware that it is not safe to self-diagnose and treat with leftover medication.

Rationale 5: Parents should be aware the label often describes food and drinks to avoid. The label will not describe possible adverse effects; the nurse will need to describe these to the parents.

Global Rationale: Parents should make a complete list of all prescribed medications, over-the-counter drugs, and any vitamins the child takes. It is very important that parents be aware of a child's allergies in order to prevent an unnecessary allergic response. Parents should know what condition the child's medication is prescribed for, and how, when, and how much to administer. It is also important for parents to know when to expect the child to feel better so a follow-up visit can be made if the child is not feeling better. Parents should be aware that it is not safe to self-diagnose and treat with leftover medication. Parents should be aware the label often describes food and drinks to avoid. The label will not describe possible adverse effects; the nurse will need to describe these to the parents.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-8 Design patient teaching information that can be used to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 24
Type: MCMA

A community health nurse working with a group of migrant workers is reinforcing instruction on how to avoid medication errors. What should the nurse encourage clients to do in order to avoid medication errors?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Have all medications filled at the same pharmacy.

2. Let the health care provider know if they have difficulty acquiring their medications.

3. Ask questions about how and when to take medications if they are unsure.

4. Take all the medication as directed, and not to save the medication for a future illness.

5. Ask friends or family if they have any of the same medication and are willing to share it with the client.

Correct Answer: 1,2,3,4

Rationale 1: The pharmacist can recognize possible drug interactions if all medications are filled at one pharmacy.

Rationale 2: Many indigent clients do not have the means to fill prescriptions and may be embarrassed to tell the health care provider.

Rationale 3: Taking the wrong amount of medication at the wrong time is a very common medication error.

Rationale 4: The nurse should emphasize the importance of taking all the prescribed medication as directed.

Rationale 5: It is never safe to share medications.

Global Rationale: The pharmacist can recognize possible drug interactions if all medications are filled at one pharmacy. Many indigent clients do not have the means to fill prescriptions and may be embarrassed to tell the health care provider. Taking the wrong amount of medication at the wrong time is a very common medication error. The nurse should emphasize the importance of taking all the prescribed medication as directed. It is never safe to share medications.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-8 Design patient teaching information that can be used to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 25
Type: MCMA

The nurse is preparing a teaching plan for an older adult client who is taking multiple medications. Which principles should the nurse keep in mind during the planning phase?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. The client should use only one pharmacy to fill prescriptions.

2. The client should keep a list of all medications for easy accessibility.

3. Polypharmacy is a common cause of medication errors in older clients.

4. Polypharmacy is unique to older clients and is the most common cause of medication errors.

5. The client should be aware of each prescribed medication, the dose, and possible side effects.

Correct Answer: 1,2,3,5

Rationale 1: It is common for older clients to have medical conditions requiring the use of multiple medications that could have possible interactions. Using one pharmacy will ensure the pharmacist will discover any problematic interactions between multiple drugs.

Rationale 2: Keeping a list available is important for unexpected trips to a healthcare facility.

Rationale 3: The use of multiple drugs for multiple chronic conditions is a common cause for medications errors in older clients.

Rationale 4: Polypharmacy is not unique to older clients, although it is most often seen in this group.

Rationale 5: Knowing the names, dose, and possible side effects of medications will reduce the risk for medication errors.

Global Rationale: It is common for older clients to have medical conditions requiring the use of multiple medications that could have possible interactions. Using one pharmacy will ensure the pharmacist will discover any problematic interactions between multiple drugs. Keeping a list available is important for unexpected trips to a healthcare facility. The use of multiple drugs for multiple chronic conditions is a common cause for medications errors in older clients. Knowing the names, dose, and possible side effects of medications will reduce the risk for medication errors. Polypharmacy is not unique to older clients, although it is most often seen in this group.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 6-8 Design patient teaching information that can be used to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 26
Type: MCMA

During a staff meeting, a nurse asks how risk management reduces medication errors in the facility. Which statements by the director of the risk management department accurately describe its functions?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "We examine each reported incident to determine risks that could have contributed to the error."

2. "We investigate each incident report to determine strategies that may be helpful to decrease the risk for medication errors."

3. "We use data from reported incidences to identify common themes that may increase the risk for medication errors."

4. "We use data to make changes in policies and procedures that may prevent medication errors."

5. "We track data to determine if specific nurses are making errors so we can notify the nursing board."

Correct Answer: 1,2,3,4

Rationale 1: Risk management personnel investigate reported incidents to determine the cause or causes for medication errors.

Rationale 2: Risk management personnel use data from incident reports to recommend strategies that may decrease medication errors.

Rationale 3: Risk management personnel use the information from incident reports to identify common factors that increase the risk for medication errors.

Rationale 4: Risk management personnel recommend strategies to decrease medication errors based on information gained during the investigation.

Rationale 5: Risk management personnel use data from the investigation to recommend strategies to prevent medication errors, not to report nurses to the nursing board.

Global Rationale: Risk management personnel investigate reported incidents to determine the cause or causes for medication errors; use data from incident reports to recommend strategies that may decrease medication errors; use the information from incident reports to identify common factors that increase the risk for medication errors; recommend strategies to decrease medication errors based on information gained during the investigation. Risk management personnel use data from the investigation to recommend strategies to prevent medication errors, not to report nurses to the nursing board.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.11 Employ principles of quality improvement, healthcare policy, and cost-effectiveness to assist in the development and initiation of effective plans for the microsystem and/or system-wide practice improvements that will improve the quality of healthcare delivery
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-9 Identify strategies that health care agencies use to prevent medication errors
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.

Page Number:

Question 27
Type: MCMA

A new nurse on the pediatric unit is very nervous about making a medication error. Which statements by a more experienced nurse are accurate?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "One of the main causes of medication errors is the human factor. So, just be sure you ask for help if you are not sure about a dosage calculation."

2. "If you are not sure you are reading an order correctly, always call the provider and ask. This will keep you from misinterpreting an order."

3. "Our facility has a list of drugs that have similar names that have contributed to medication errors in the past. You might want to take a look at those so you will be aware of them."

4. "You really don't have to look at the diagnostic lab work from yesterday. It has been charted in the nurse's notes."

5. "As long as two nurses take a phone order, it does not have to be written by the health care provider."

Correct Answer: 1,2,3

Rationale 1: It is important to double-check any calculations that the nurse may be unsure about with another nurse or the pharmacist.

Rationale 2: The nurse must always call the health care provider to confirm or clarify any orders that may be in question.

Rationale 3: Medications with similar names are a common cause for medication errors. If the facility has a list, it would be good for the new nurse to see what they are.

Rationale 4: Nurses should always review recent diagnostic lab work. The previous nurse could have misread the lab work.

Rationale 5: Orders must be in writing before any medication can be administered.

Global Rationale: It is important to double-check any calculations that the nurse may be unsure about with another nurse or the pharmacist. The nurse must always call the health care provider to confirm or clarify any orders that may be in question. Medications with similar names are a common cause for medication errors. If the facility has a list, it would be good for the new nurse to see what they are. Nurses should always review recent diagnostic lab work. The previous nurse could have misread the lab work. Orders must be in writing before any medication can be administered.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others

AACN Essential Competencies: II.9. Apply quality improvement processes to effectively implement patient safety initiatives and monitor performance measures, including nurse-sensitive indicators in the microsystem of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-6 Develop a list of strategies that the nurse can implement in practice to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 28
Type: MCMA

A nurse preparing to give medications to clients in the emergency department avoids making medication errors by following drug administration rights. Which "rights" did the nurse use?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Evaluating the client following drug administration.

2. Assessing the client prior to administering any drug.

3. Documenting all medications immediately following administration.

4. Educating the client regarding medications.

5. Administering prescribed medication even if the client refuses it.

Correct Answer: 1,2,3,4

Rationale 1: Right evaluation following drug administration is one of the 10 rights of drug administration.

Rationale 2: Right assessment prior to drug administration is one of the 10 rights of drug administration.

Rationale 3: Right documentation is one of the 10 rights of drug administration.

Rationale 4: Right client education is one of the 10 rights of drug administration.

Rationale 5: All clients have the right to refuse medication. This is one of the 10 rights of drug administration.

Global Rationale: Right evaluation following drug administration, right assessment, right documentation, and right client education are all one of the 10 rights of drug administration. All clients have the right to refuse medication. This is also one of the 10 rights of drug administration.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others

AACN Essential Competencies: II.9. Apply quality improvement processes to effectively implement patient safety initiatives and monitor performance measures, including nurse-sensitive indicators in the microsystem of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-6 Develop a list of strategies that the nurse can implement in practice to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 29
Type: MCMA

The nurse makes a medication error. The nurse manager determines the error was based on a common misinterpretation of which abbreviation?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. IU

2. SQ

3. Q.O.D.

4. U

5. mcg

Correct Answer: 1,2,3,4

Rationale 1: This is the abbreviation for *international unit* but can be mistaken for *IV* or *10*. The prescriber should write out “international unit.”

Rationale 2: This is the abbreviation for *subcutaneous* but can be mistaken for *5q* or *5 every*. The prescriber should write out “subcutaneous.”

Rationale 3: This is the abbreviation for *every other day* but can be mistaken for *every day* or *four times a day*. The prescriber should write out “every other day.”

Rationale 4: This is the abbreviation for *unit* but can be mistaken for *4*. The prescriber should write out “unit.”

Rationale 5: This abbreviation for *microgram* is not commonly misinterpreted.

Global Rationale: IU is the abbreviation for *international unit* but can be mistaken for *IV* or *10*. The prescriber should write out “international unit.” SQ is the abbreviation for *subcutaneous* but can be mistaken for *5q* or *5 every*. The prescriber should write out “subcutaneous.” Q.O.D. is the abbreviation for *every other day* but can be mistaken for *every day* or *four times a day*. The prescriber should write out “every other day.” U is the abbreviation for *unit* but can be mistaken for *4*. The prescriber should write out “unit.” Mcg is abbreviation for *microgram* is not commonly misinterpreted.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: II.9. Apply quality improvement processes to effectively implement patient safety initiatives and monitor performance measures, including nurse-sensitive indicators in the microsystem of care.
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-6 Develop a list of strategies that the nurse can implement in practice to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 30
Type: MCMA

The nurse has returned from an in-service in which "high-alert" drugs were discussed. For which drugs should the nurse be particularly alert?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. IV epinephrine

2. Heparin

3. Digoxin

4. IV morphine

5. Oral propranolol

Correct Answer: 1,2,3,4

Rationale 1: An incorrect dose of IV epinephrine can result in a dangerous dysrhythmia.

Rationale 2: An incorrect dose of heparin can cause a client to hemorrhage.

Rationale 3: Digoxin has a narrow therapeutic range and is considered a high-alert drug.

Rationale 4: An incorrect dose of IV morphine can stop a client's respirations, resulting in death.

Rationale 5: IV, not oral, propranolol is on the high-alert list. Giving an incorrect dose of propranolol IV can result in hypotension and circulatory collapse.

Global Rationale: An incorrect dose of IV epinephrine can result in a dangerous dysrhythmia. An incorrect dose of heparin can cause a client to hemorrhage. Digoxin has a narrow therapeutic range and is considered a high-alert drug. An incorrect dose of IV morphine can stop a client's respirations, resulting in death. IV, not oral, propranolol is on the high-alert list. Giving an incorrect dose of propranolol IV can result in hypotension and circulatory collapse.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.11 Employ principles of quality improvement, healthcare policy, and cost-effectiveness to assist in the development and initiation of effective plans for the microsystem and/or system-wide practice improvements that will improve the quality of healthcare delivery
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-9 Identify strategies that health care agencies use to prevent medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 31
Type: MCMA

A client newly diagnosed with diabetes mellitus is being prepared for discharge. The nurse knows discharge teaching on how to reduce the risk of at-home medication errors is successful when the client makes which statement?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "I know all about my new medications, including their names, what they do, and how to take them."

2. "I know what side effects need to be reported immediately to my doctor."

3. "I have a list of all my medications right here in my wallet."

4. "I know I can call anytime I have a question about any of my medications."

5. "First thing in the morning, I will take all my prescriptions to the pharmacy to make sure they are safe for me to take."

Correct Answer: 1,2,3,4

Rationale 1: Clients should know each medication's name, what it is for, what it does, and how to take it.

Rationale 2: It is important for clients to know what adverse effects need to be immediately reported.

Rationale 3: Clients should carry a list of all medications for quick reference or in case of an unexpected hospital or clinic visit.

Rationale 4: Clients should be encouraged to call and ask any questions.

Rationale 5: These particular medications should be safe to take. If the client decides to add a supplement or nutrient, that medication profile should be checked by the health care provider or pharmacist for interactions with the other medications.

Global Rationale: Clients should know each medication's name, what it is for, what it does, and how to take it. It is important for clients to know what adverse effects need to be immediately reported. Clients should carry a list of all medications for quick reference or in case of an unexpected hospital or clinic visit. Clients should be encouraged to call and ask any questions. These particular medications should be safe to take. If the client decides to add a supplement or nutrient, that medication profile should be checked by the health care provider or pharmacist for interactions with the other medications.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Provide appropriate patient teaching that reflects developmental stage, age, culture, spirituality, patient preferences, and health literacy considerations to foster patient engagement in their care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-8 Design patient teaching information that can be used to reduce medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 32
Type: MCMA

The nurse prepares to administer medications to clients on the orthopedic unit. Which outcomes will result from following the unit's rules, policies, and procedures?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Minimizing medication errors

2. Positively verifying client identification prior to medication administration

3. Guiding accurate documentation

4. Holding nurses accountable for medication errors

5. Determining which medication errors are preventable

Correct Answer: 1,2,3

Rationale 1: Facility rules, policies, and procedures are in place to minimize medication errors.

Rationale 2: Facility rules, policies, and procedures are in place to ensure that positive client identification occurs prior to medication administration.

Rationale 3: Facility rules, policies, and procedures ensure accurate documentation.

Rationale 4: Facility rules, policies, and procedures do not hold nurses accountable for medication errors; the risk management department will determine factors responsible for these errors.

Rationale 5: Facility rules, policies, and procedures do not determine which medication errors are preventable; they are in place to prevent errors from occurring.

Global Rationale: Facility rules, policies, and procedures are in place to minimize medication errors; to ensure that positive client identification prior to medication administration; and to guide accurate document. They are not in place to hold nurses accountable for medication errors or to determine which medication errors are preventable.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.2 Demonstrate effective use of strategies to reduce risk of harm to self or others
AACN Essential Competencies: II.5. Participate in quality and patient safety initiatives, recognizing that these are complex system issues, which involve individuals, families, groups, communities, populations and other members of the healthcare team
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 6-5 Explain how rules, policies, and procedures can help prevent medication errors.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 33
Type: MCMA

The nurse receives a verbal order for subcutaneous insulin but gives the insulin IV instead to a client in the intensive care unit (ICU). Which medication errors have been committed?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Medication based on verbal order

2. Wrong route for medication

3. Stressful workplace

4. Illegible medication order

5. Failure to review diagnostic lab work

Correct Answer: 1,2

Rationale 1: Medication orders must be written prior to administration.

Rationale 2: The wrong route was used because the verbal order was misunderstood.

Rationale 3: The ICU is stressful, but there is nothing in the scenario to suggest this as a factor.

Rationale 4: The medication order was not written; it was verbal.

Rationale 5: The medication was given IV instead of subcutaneously; this did not require diagnostic lab work.

Global Rationale: Medication orders must be written prior to administration. The wrong route was used because the verbal order was misunderstood. The ICU is stressful, but there is nothing in the scenario to suggest this as a factor. The medication order was not written; it was verbal. The medication was given IV instead of subcutaneously; this did not require diagnostic lab work.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Safety and Infection Control
QSEN Competencies: V.B.1 Demonstrate effective use of technology and standardized practices that support safety and quality
AACN Essential Competencies: II.7. Promote factors that create a culture of safety and caring
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Evaluation
Learning Outcome: 6-3 Using specific examples, analyze major types of medication errors and how they can be prevented.
MNL Learning Outcome: 1.1.2 Apply key principles related to safe drug administration.
Page Number:

Question 34
Type: MCMA

The nurse in the emergency department administers an adult dose of an antibiotic to a 3-month-old baby. As a result, the baby suffers permanent brain damage. What are the likely ramifications of this error?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. The reputation of the healthcare facility will suffer

2. The healthcare facility may pay high legal fees and a large settlement.

3. The morale of the staff will be adversely affected.

4. The nurse will lose the professional license to practice and can never practice again.

5. The healthcare facility will lose its accreditation and may be closed.

Correct Answer: 1,2,3

Rationale 1: If this error is made public, the reputation of the facility may suffer.

Rationale 2: If the family sues, the facility's legal fees and settlement conditions could be significant.

Rationale 3: An error of this nature may result in self-doubt and loss of morale.

Rationale 4: The nurse may or may not lose the license to practice, depending on the circumstance of the case.

Rationale 5: It is not likely the facility will be closed.

Global Rationale: If this error is made public, the reputation of the facility may suffer. If the family sues, the facility's legal fees and settlement conditions could be significant. An error of this nature may result in self-doubt and loss of morale. The nurse may or may not lose the license to practice, depending on the circumstance of the case. It is not likely the facility will be closed.

Adams and Urban, *Pharmacology: Connections to Nursing Practice*, 3e Test Bank

Chapter 10

Question 1
Type: MCSA

Why is polypharmacy so prevalent in the elderly population?

1. Multiple medical problems can usually be treated with a single drug.

2. Clients rarely see more than one prescriber.

3. Clients might be taking multiple medications for their comorbidities.

4. Use of over-the-counter medications is uncommon in this age group.

Correct Answer: 3

Rationale 1: Multiple medical problems usually require the use of several drugs.

Rationale 2: Seeing more than one prescriber is typical of elderly clients.

Rationale 3: Many comorbidities increase the likelihood of polypharmacy.

Rationale 4: Use of over-the-counter medications is more common, not less, in the elderly.

Global Rationale: Many comorbidities increase the likelihood of polypharmacy. Multiple medical problems usually require the use of several drugs. Seeing more than one prescriber is typical of elderly clients. Use of over-the-counter medications is more common, not less, in the elderly.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: VII.3. Assess health/illness beliefs, values, attitudes, and practices of individuals, families, groups, communities and populations
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-1 Describe factors that lead to polypharmacy in older adults.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 2
Type: MCSA

Why should the nurse ask the client about all medications the client takes, including over-the-counter and herbal medications?

1. Minimizing the cost of medications is the highest priority.

2. They might interact with each other or with prescribed medications.

3. Clients should not use over-the-counter or herbal medications.

4. Use of these agents must be reported to the Food and Drug Administration.

Correct Answer: 2

Rationale 1: Minimizing the cost of medications is one of many competing priorities.

Rationale 2: Interactions with other medications can occur with over-the-counter or herbal medications.

Rationale 3: Over-the-counter and herbal medications can be important parts of an individual's regimen.

Rationale 4: There is no requirement that use of these medications be reported to anyone.

Global Rationale: Interactions with other medications can occur with over-the-counter or herbal medications. Minimizing the cost of medications is one of many competing priorities. Over-the-counter and herbal medications can be important parts of an individual's regimen. There is no requirement that use of these medications be reported to anyone.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: VII.3. Assess health/illness beliefs, values, attitudes, and practices of individuals, families, groups, communities and populations
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-1 Describe factors that lead to polypharmacy in older adults.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 3
Type: MCSA

A health care provider in a clinic writes several prescriptions for an older client. The nurse notices several medications are in the same class as drugs listed on the client’s intake form. What should the nurse do next?

1. Set the prescriptions to the side and follow up on the issue at a later date.

2. Ask the primary health care provider if he was aware his client had been prescribed medications in the same drug class as those prescribed by the cardiologist.

3. Throw the prescriptions away.

4. Give them to the client.

Correct Answer: 2

Rationale 1: Not addressing this issue while the client is still in the clinic is likely to result in its being lost to follow-up.

Rationale 2: Duplication in therapy appears to be present; this needs to be clarified with the prescriber.

Rationale 3: The nurse should not throw the prescriptions away unless it is determined that they are inappropriate.

Rationale 4: A duplication in therapy is likely to result in a poor outcome.

Global Rationale: Duplication in therapy appears to be present; this needs to be clarified with the prescriber. Not addressing this issue while the client is still in the clinic is likely to result in its being lost to follow-up. The nurse should not throw the prescriptions away unless it is determined that they are inappropriate. A duplication in therapy is likely to result in a poor outcome.

Cognitive Level: Applying
Client Need: Safe Effective Care Environment
Client Need Sub: Management of Care
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: VII.3. Assess health/illness beliefs, values, attitudes, and practices of individuals, families, groups, communities and populations
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-1 Describe factors that lead to polypharmacy in older adults.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 4
Type: MCSA

Which of these is an age-related physiological change that occurs in older adults?

1. Brain mass increases.

2. GI motility increases.

3. The kidneys filter better and function more efficiently as a client ages.

4. Blood flow to the liver decreases.

Correct Answer: 4

Rationale 1: Brain mass typically gets smaller, not larger.

Rationale 2: GI motility decreases, not increases, with age.

Rationale 3: Kidney function declines, not improves, with advancing age.

Rationale 4: Liver blood flow typically decreases with advancing age.

Global Rationale: Liver blood flow typically decreases with advancing age. Brain mass typically gets smaller, not larger. GI motility decreases, not increases, with age. Kidney function declines, not improves, with advancing age.

Cognitive Level: Remembering
Client Need: Health Promotion and Maintenance
Client Need Sub:

QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-2 Identify age-related physiological changes in the older adult.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 5
Type: MCSA

A nurse notices that an older adult client has not urinated all day, despite drinking three liters of water. Which physiological change is the most likely cause for this issue?

1. Reduction in plasma protein levels

2. Increased glomerular filtration rate

3. Increase in body fat

4. Renal function impairment

Correct Answer: 4

Rationale 1: A reduction in plasma protein levels occurs as liver function declines. This will not affect urine output.

Rationale 2: Urine output will be affected when glomerular filtration rate is decreased, not increased. Glomerular filtration rate will be decreased in the elderly, not increased.

Rationale 3: Changes in body fat are not related to urine output.

Rationale 4: A decline in renal function, especially if acute, would best explain why the client has not urinated.

Global Rationale: A decline in renal function, especially if acute, would best explain why the client has not urinated. A reduction in plasma protein levels occurs as liver function declines. This will not affect urine output. Urine output will be affected when glomerular filtration rate is decreased, not increased. Glomerular filtration rate will be decreased in the elderly, not increased. Changes in body fat are not related to urine output.

Cognitive Level: Applying
Client Need: Health Promotion and Maintenance
Client Need Sub:
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-2 Identify age-related physiological changes in the older adult.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 6
Type: MCSA

Why can a reduction in albumin synthesis that may occur with aging result in exaggerated effects of a medication?

1. Blood flow to the liver decreases.

2. More unbound drug will be present.

3. Pharmacodynamics will be altered.

4. Renal elimination of the drug will be decreased.

Correct Answer: 2

Rationale 1: Blood flow to the liver is indeed decreased, but this is not related to protein binding.

Rationale 2: If the drug is protein-bound, a decrease in albumin will result in higher concentrations of free drug and increased pharmacologic effects.

Rationale 3: Pharmacodynamics is unrelated to protein binding.

Rationale 4: Renal elimination will be unchanged or increased.

Global Rationale: If the drug is protein-bound, a decrease in albumin will result in higher concentrations of free drug and increased pharmacologic effects. Blood flow to the liver is indeed decreased, but this is not related to protein binding. Pharmacodynamics is unrelated to protein binding. Renal elimination will be unchanged or increased.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 7
Type: MCSA

What is the definition of pharmacodynamics?

1. The mechanisms by which drugs affect the body

2. Complying with one's medication regimen as prescribed

3. Taking multiple medications

4. The mechanisms by which the body handles the drug

Correct Answer: 1

Rationale 1: Pharmacodynamics deals with how a drug affects bodily systems.

Rationale 2: This is the definition of adherence, not pharmacodynamics.

Rationale 3: This is the definition of polypharmacy, not pharmacodynamics.

Rationale 4: This is the definition of pharmacokinetics, not pharmacodynamics.

Global Rationale: Pharmacodynamics deals with how a drug affects bodily systems. Adherence is complying with one's medication regimen, as prescribed. Polypharmacy is taking multiple medications. Pharmcokinetics is the mechanism by which the body handles the drug.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 8
Type: MCSA

A nurse who works at a nursing home notices that a client's hearing has diminished significantly over the past couple of days. The client has been receiving gentamicin IV for an infection. Which action by the nurse is the most appropriate?

1. Continue gentamicin IV and check the peak level in a week.

2. Suggest checking the client's peak gentamicin level and immediately report the loss in hearing in the chart and to the health care provider.

3. Tell the client that she is going to need a hearing aid.

4. Continue gentamicin IV and suggest adding vancomycin IV to improve the ototoxicity.

Correct Answer: 2

Rationale 1: Gentamicin is a narrow-therapeutic-window drug, and levels should be assessed sooner.

Rationale 2: Gentamicin is a narrow-therapeutic-window drug that can cause ototoxicity and nephrotoxicity. A peak level can help determine the likelihood that it is the drug causing the hearing loss.

Rationale 3: It would be inappropriate to notice a sudden change in hearing and not consider that it might be drug related. Also, all adverse effects should be documented..

Rationale 4: Both vancomycin and gentamicin have the ability to cause nephrotoxicity and ototoxicity. Giving both together would not help the ototoxicity.

Global Rationale: Gentamicin is a narrow-therapeutic-window drug that can cause ototoxicity and nephrotoxicity. A peak level can help determine the likelihood that it is the drug causing the hearing loss. Gentamicin is a narrow-therapeutic-window drug, and levels should be assessed sooner. It would be inappropriate to notice a sudden change in hearing and not consider that it might be drug related. Also, all adverse effects should be documented. Both vancomycin and gentamicin have the ability to cause nephrotoxicity and ototoxicity. Giving both together would not help the ototoxicity.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: II.8. Promote achievement of safe and quality outcomes of care for diverse populations
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-6 Identify specific drugs that are particularly hazardous for use in older patients.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 9
Type: MCSA

Which strategy can nurses implement to improve drug therapy adherence in older adult clients?

1. Discourage the use of check-off calendars because older clients do not have adequate eyesight to use them properly.

2. Suggest the client forgo obtaining medications that are too expensive.

3. Suggest the client use a daily or weekly pill counter.

4. Suggest stopping any medications that do not seem to be having an effect.

Correct Answer: 3

Rationale 1: While some older clients might have difficulty in using aids such as check-off calendars, for most they can be a valuable tool.

Rationale 2: If access to medications is limited because of cost, the nurse should help the client explore what support resources might be available.

Rationale 3: Daily or weekly pill counters are an effective, inexpensive way to promote adherence.

Rationale 4: While stopping medications that are ineffective might be appropriate, not all medications have benefits that are obvious, and medication changes should be discussed with other members of the health care team.

Global Rationale: Daily or weekly pill counters are an effective, inexpensive way to promote adherence. While some older clients might have difficulty in using aids such as check-off calendars, for most they can be a valuable tool. If access to medications is limited because of cost, the nurse should help the client explore what support resources might be available. While stopping medications that are ineffective might be appropriate, not all medications have benefits that are obvious, and medication changes should be discussed with other members of the health care team.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.2 Describe how diverse cultural, ethnic and social backgrounds function as sources of patient, family, and community values
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-4 Explain strategies that the nurse may implement to improve adherence with drug therapy in geriatric patients.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 10
Type: MCSA

Which evidence-based client-level factor affects nonadherence?

1. Management of instructions by the health care provider

2. Simplification of the regimen

3. Identification of the client's social support network

4. Belief that the treatment will be effective

Correct Answer: 4

Rationale 1: The management of instructions is a health care provider-level factor, not a client-level factor.

Rationale 2: Making the regimen less complex is a health care provider-level factor, not a client-level factor.

Rationale 3: The social support network is a separate factor, not a client-level factor.

Rationale 4: Belief that the treatment will be effective is a client-level factor likely to improve adherence.

Global Rationale: Belief that the treatment will be effective is a client-level factor likely to improve adherence. The management of instructions is a health care provider-level factor, not a client-level factor. Making the regimen less complex is a health care provider-level factor, not a client-level factor. The social support network is a separate factor, not a client-level factor.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.2 Describe how diverse cultural, ethnic and social backgrounds function as sources of patient, family, and community values
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-4 Explain strategies that the nurse may implement to improve adherence with drug therapy in geriatric patients.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 11
Type: MCSA

Why are older adults more prone to adverse drug reactions and interactions than younger adults?

1. Presence of fewer chronic disease states

2. More predictable pharmacokinetics and pharmacodynamics

3. Use of fewer chronic medications

4. Physiologic changes in body composition

Correct Answer: 4

Rationale 1: Older clients tend to have more chronic disease states, not fewer.

Rationale 2: Pharmacokinetics are less predictable in older clients, not more.

Rationale 3: Older clients tend to use more chronic medications, not fewer.

Rationale 4: Physiologic changes in body composition can affect drug pharmacokinetics, increasing the risk of adverse drug reactions and interactions.

Global Rationale: Physiologic changes in body composition can affect drug pharmacokinetics, increasing the risk of adverse drug reactions and interactions. Older clients tend to have more chronic disease states, not fewer. Pharmacokinetics are less predictable in older clients, not more. Older clients tend to use more chronic medications, not fewer.

Cognitive Level: Understanding
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-5 Explain why older adults are more likely to experience adverse drug reactions and interactions.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 12
Type: MCSA

Which group of medications should be used cautiously, if at all, in older adult clients?

1. Beers list

2. Polypharmacy

3. *Washington Manual*

4. *Physicians' Desk Reference*

Correct Answer: 1

Rationale 1: Beers list or Beers criteria is the correct name for this group of medications that are usually poor choices for older clients.

Rationale 2: Polypharmacy does not refer to a group of medications that are usually poor choices for older clients.

Rationale 3: The *Washington Manual* is a handbook of therapeutics, not a group of medications that are usually poor choices for older clients.

Rationale 4: The *Physicians' Desk Reference* is a compendium of FDA-approved labeling, not a group of medications that are usually poor choices for older clients.

Global Rationale: Beers list or Beers criteria is the correct name for this group of medications that are usually poor choices for older clients. Polypharmacy does not refer to a group of medications that are usually poor choices for older clients. The *Washington Manual* is a handbook of therapeutics, not a group of medications that

are usually poor choices for older clients. The *Physicians' Desk Reference* is a compendium of FDA-approved labeling, not a group of medications that are usually poor choices for older clients.

Cognitive Level: Remembering
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: II.8. Promote achievement of safe and quality outcomes of care for diverse populations
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-6 Identify specific drugs that are particularly hazardous for use in older patients.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 13
Type: MCSA

A nurse working at a clinic notices that a client is having problems reading the prescription bottles. Sometimes the client takes medications incorrectly because of difficulty reading the small print. Which suggestion by the nurse can alleviate this problem?

1. Put the medication in a zip-top bag with the instructions written on it in large print.

2. Let the pharmacist get easy-open caps.

3. Stop taking the medications, as they are more likely to cause problems than to help if not taken correctly.

4. Ask the pharmacist to provide labels with large print that explain how to take the medication.

Correct Answer: 4

Rationale 1: Medications generally should be stored only in properly labeled containers.

Rationale 2: Although effective for clients without good dexterity, easy-open caps will not help in this instance.

Rationale 3: If the medications are necessary, then it is inappropriate to stop them.

Rationale 4: Large-print labels will make the instructions easier for the client to read.

Global Rationale: Large-print labels will make the instructions easier for the client to read. Medications generally should be stored only in properly labeled containers. Although effective for clients without good dexterity, easy-open caps will not help in this instance. If the medications are necessary, then it is inappropriate to stop them.

Cognitive Level: Applying
Client Need: Health Promotion and Maintenance
Client Need Sub:
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-5 Explain why older adults are more likely to experience adverse drug reactions and interactions.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 14
Type: MCSA

An older adult client comes to the emergency department with complaints of confusion. Which recently prescribed medication is most likely responsible for this assessment finding?

1. Lansoprazole (Prevacid)

2. Atorvastatin (Lipitor)

3. Hydroxyzine (Atarax)

4. Amlodipine (Norvasc)

Correct Answer: 3

Rationale 1: Lansoprazole rarely causes confusion.

Rationale 2: Atorvastatin rarely causes confusion. Its major adverse effects are gastrointestinal upset and muscle weakness.

Rationale 3: Hydroxyzine is a sedating antihistamine with significant anticholinergic effects.

Rationale 4: Amlodipine rarely causes confusion. Its major adverse effects are pedal edema and headache.

Global Rationale: Hydroxyzine is a sedating antihistamine with significant anticholinergic effects, which can cause confusion. Lansoprazole rarely causes confusion. Atorvastatin rarely causes confusion. Its major adverse effects are gastrointestinal upset and muscle weakness. Amlodipine rarely causes confusion. Its major adverse effects are pedal edema and headache.

Cognitive Level: Evaluating
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: II.8. Promote achievement of safe and quality outcomes of care for diverse populations
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-6 Identify specific drugs that are particularly hazardous for use in older patients.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.

Page Number:

Question 15
Type: MCSA

An older adult client comes in to the office with severe sunburn. When reviewing the client's medication list, which is the likely cause of the client's sunburn?

1. Phenytoin (Dilantin)

2. Cyclobenzaprine (Flexeril)

3. Naproxen (Aleve)

4. Alprazolam (Xanax)

Correct Answer: 3

Rationale 1: Phenytoin (Dilantin) does not cause increased sensitivity to sunlight. Its major adverse effects are sedation and ataxia.

Rationale 2: Cyclobenzaprine (Flexeril) does not cause increased sensitivity to sunlight. Its major adverse effects are sedation, confusion, and anticholinergic effects.

Rationale 3: Naproxin (Aleve) can cause an increase in sensitivity to sunlight.

Rationale 4: Alprazolam (Xanax) does not cause increased sensitivity to sunlight. Its major adverse effect is sedation.

Global Rationale: Naproxin (Aleve) can cause an increase in sensitivity to sunlight. Phenytoin (Dilantin) does not cause increased sensitivity to sunlight. Its major adverse effects are sedation and ataxia. Cyclobenzaprine (Flexeril) does not cause increased sensitivity to sunlight. Its major adverse effects are sedation, confusion, and anticholinergic effects. Alprazolam (Xanax) does not cause increased sensitivity to sunlight. Its major adverse effect is sedation.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: II.8. Promote achievement of safe and quality outcomes of care for diverse populations
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-6 Identify specific drugs that are particularly hazardous for use in older patients.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 16
Type: MCSA

An older adult client recently started digoxin (Lanoxin) and is in the office for a routine checkup. Lab tests show a decline in the client's renal function. Which is a priority concern for the nurse based on the lab results?

1. Digoxin causing the decrease in renal function.

2. Digoxin interfering with the lab test, making it appear that the client's renal function has worsened.

3. Increased likelihood of toxicity due to the inability to excrete digoxin.

4. Diminished response to digoxin due to alterations in pharmacodynamics.

Correct Answer: 3

Rationale 1: Digoxin does not cause decreases in renal function.

Rationale 2: Digoxin does not interfere with laboratory tests of renal function.

Rationale 3: Digoxin is largely eliminated by the kidneys. Serious toxicity can occur if the dose is not adjusted after a decline in renal function.

Rationale 4: Changes in renal function do not affect the pharmacodynamics of digoxin.

Global Rationale: Digoxin is largely eliminated by the kidneys. Serious toxicity can occur if the dose is not adjusted after a decline in renal function. Digoxin does not cause decreases in renal function. Digoxin does not interfere with laboratory tests of renal function. Changes in renal function do not affect the pharmacodynamics of digoxin.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-7 Differentiate medication responses that result from age-related alterations in specific body systems from those that occur in younger individuals.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 17
Type: MCSA

Which is the best description of the anatomic and physiological changes that occur as a result of aging?

1. They result of pathologic changes.

2. They are reversible.

3. They are normal and predictable.

4. They are a potential target for drug therapy.

Correct Answer: 3

Rationale 1: Age-related changes are not generally pathologic in nature.

Rationale 2: Anatomic and physiological changes are not generally reversible, with even the most advanced modern interventions.

Rationale 3: The anatomic and physiological changes are a normal and predictable part of aging.

Rationale 4: Because the anatomic and physiological changes are considered normal, they are not amenable to drug therapy.

Global Rationale: The anatomic and physiological changes are a normal and predictable part of aging. Age-related changes are not generally pathologic in nature. Anatomic and physiological changes are not generally reversible, with even the most advanced modern interventions. Because the anatomic and physiological changes are considered normal, they are not amenable to drug therapy.

Cognitive Level: Understanding
Client Need: Health Promotion and Maintenance
Client Need Sub:
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-2 Identify age-related physiological changes in the older adult.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various commu-

nity health settings.
Page Number:

Question 18
Type: MCSA

What is the age-related change in the gastrointestinal tract that can affect medication administration?

1. Decreased motility

2. Reduced intestinal transit time

3. Increased absorption of medications and nutrients

4. Increased gastric acid production

Correct Answer: 1

Rationale 1: Decreased motility of the GI tract is a common change seen with aging.

Rationale 2: Intestinal transit time increases with aging. It does not decrease.

Rationale 3: Absorption of medications and nutrients decreases with aging.

Rationale 4: Gastric acid production decreases with aging.

Global Rationale: Decreased motility of the GI tract is a common change seen with aging. Intestinal transit time increases with aging. It does not decrease. Absorption of medications and nutrients decreases with aging. Gastric acid production decreases with aging.

Cognitive Level: Remembering
Client Need: Health Promotion and Maintenance
Client Need Sub:
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Diagnosis
Learning Outcome: 10-2 Identify age-related physiological changes in the older adult.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.

Page Number:

Question 19
Type: MCSA

Which rationale explains why anticonvulsants and antidepressants have an exaggerated effect in older adult clients?

1. Increased binding to plasma proteins such as albumin

2. Increased rate of hepatic metabolism

3. Reduced intestinal transit time

4. Declining efficiency of the blood–brain barrier

Correct Answer: 4

Rationale 1: Binding to plasma proteins such as albumin is typically decreased, not increased, with age. Additionally, an increase in protein binding would result in diminished, not exaggerated, effects.

Rationale 2: Hepatic metabolism is typically decreased, not increased, with age. Additionally, an increase in metabolism would result in diminished, not exaggerated, effects.

Rationale 3: Intestinal transit time is increased due to the decrease seen in gastrointestinal motility. Additionally, the increase in intestinal transit time would diminish, not exaggerate, the effect of medications.

Rationale 4: Declining efficiency of the blood–brain barrier could explain an increase in the effects of drugs that work in the brain such as anticonvulsants or antidepressants.

Global Rationale: Declining efficiency of the blood–brain barrier could explain an increase in the effects of drugs that work in the brain such as anticonvulsants or antidepressants. Binding to plasma proteins such as albumin is typically decreased, not increased, with age. Additionally, an increase in protein binding would result in diminished, not exaggerated, effects. Hepatic metabolism is typically decreased, not increased, with age. Additionally, an increase in metabolism would result in diminished, not exaggerated, effects. Intestinal transit time is increased due to the decrease seen in gastrointestinal motility. Additionally, the increase in intestinal transit time would diminish, not exaggerate, the effect of medications.

Cognitive Level: Understanding
Client Need: Health Promotion and Maintenance
Client Need Sub:
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends

- transition and continuity

AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Diagnosis
Learning Outcome: 10-7 Differentiate medication responses that result from age-related alterations in specific body systems from those that occur in younger individuals.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 20
Type: MCSA

An older client asks the nurse how to avoid potential drug interactions. Which response by the nurse is the most appropriate?

1. "Take over-the-counter medications rather than prescription ones whenever possible."

2. "Obtain all medications from one pharmacy when possible."

3. "Ask for free drug samples rather than getting prescriptions filled at a pharmacy."

4. "Use memory aids such as pill reminders."

Correct Answer: 2

Rationale 1: Over-the-counter medications can interact with other medications. This will not lessen the likelihood of drug interactions.

Rationale 2: Obtaining all medications from one pharmacy ensures that that pharmacy has a record of all medications. This could make it easier to catch potential interactions.

Rationale 3: Using free drug samples can increase the risk of drug interactions unless the pharmacist filling the rest of a client's prescriptions is informed that the client is obtaining medications from other sources.

Rationale 4: Using memory aids such as pill reminders can make it less likely that a client will forget to take a medication, but will not reduce the risk of drug interactions.

Global Rationale: Obtaining all medications from one pharmacy ensures that that pharmacy has a record of all medications. This could make it easier to catch potential interactions. Over-the-counter medications can interact with other medications. This will not lessen the likelihood of drug interactions. Using free drug samples can increase the risk of drug interactions unless the pharmacist filling the rest of a client's prescriptions is informed that the client is obtaining medications from other sources. Using memory aids such as pill reminders can make it less likely that a client will forget to take a medication, but will not reduce the risk of drug interactions.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.3 Provide patient-centered care with sensitivity and respect for the diversity of human experience

AACN Essential Competencies: III.6. Integrate evidence, clinical judgment, interprofessional perspectives and patient preferences in planning, implementing, and evaluating outcomes of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-8 Develop nursing interventions that maximize pharmacotherapeutic outcomes in older adults.
MNL Learning Outcome: 1.2.1 Apply the five steps of the nursing process as it relates to pharmacotherapy.
Page Number:

Question 21
Type: MCSA

While providing medication education to an older adult client, which instruction by the nurse is the most appropriate?

1. Vary the time of day that each medication is taken so that the long-term effectiveness will be preserved.

2. Obtain information about every possible adverse effect that could possibly occur.

3. Changes in mental status, weight, or bowel function should be reported to the prescriber.

4. Avoid keeping a list of medication names and doses, and their purposes, because the list could be lost, resulting in a loss of privacy.

Correct Answer: 3

Rationale 1: Medications should be taken at the same time each day unless otherwise instructed. There is no rational basis for varying administration time.

Rationale 2: The nurse should not inform the client about every possible adverse effect. Only adverse effects that are common or serious should be reviewed.

Rationale 3: Changes in mental status, weight, or bowel function are common signs of an adverse drug reaction in older clients. These should be promptly reported so the possibility of an adverse reaction can be evaluated.

Rationale 4: Clients should be encouraged to keep a list of medications taken and doses, and the purpose of each. It should be safeguarded to minimize the chances of its being lost.

Global Rationale: Changes in mental status, weight, or bowel function are common signs of an adverse drug reaction in older clients. These should be promptly reported so the possibility of an adverse reaction can be evaluated. Medications should be taken at the same time each day unless otherwise instructed. There is no rational basis for varying administration time. The nurse should not inform the client about every possible adverse effect. Only adverse effects that are common or serious should be reviewed. Clients should be encouraged to keep a list of medications taken and doses, and the purpose of each. It should be safeguarded to minimize the chances of its being lost.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Identify personal, professional and environmental risks that impact personal and professional choices and behaviors

NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-9 Generate key points for family and patient education regarding drug pharmacotherapy for older adults.
MNL Learning Outcome: 1.2.1 Apply the five steps of the nursing process as it relates to pharmacotherapy.
Page Number:

Question 22
Type: MCMA

The nurse planning discharge teaching for an older client with multiple prescriptions for multiple chronic illnesses may discuss which strategies to avoid medication errors at home?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. When possible, take medications at the same time each day.

2. Keep a written record of medications taken, including the name, dose, date, and time.

3. Use a pill holder as a memory aid.

4. Plan to have a family member remind the client each day to take medication.

5. Request easy-to-open bottles so the client will not have difficulty opening the bottles.

Correct Answer: 1,2,3

Rationale 1: Setting a schedule whereby medications are taken at the same time each day may prevent clients from forgetting to take medications or forgetting if they did take their medication.

Rationale 2: Keeping a written record will help clients remember to take medications and to remember if medication has been taken.

Rationale 3: Pill holders have compartments for each day of the week and time of day.

Rationale 4: This may be helpful but is not a best strategy. Many older adults do not have family members living with them or nearby.

Rationale 5: This is not a strategy to prevent a medication error.

Global Rationale: Setting a schedule whereby medications are taken at the same time each day may prevent clients from forgetting to take medications or forgetting if they did take their medication. Keeping a written record will help clients remember to take medications and to remember if medication has been taken. Pill holders have compartments for each day of the week and time of day. Planning to have a family remember remind the client to take the medications each day may be helpful but is not a best strategy. Many older adults do not have family members living with them or nearby. Requesting easy-to-open bottles so the client will not have difficulty opening them is not a strategy to prevent a medication error.

Cognitive Level: Applying

Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Identify personal, professional and environmental risks that impact personal and professional choices and behaviors
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Planning
Learning Outcome: 10-9 Generate key points for family and patient education regarding drug pharmacotherapy for older adults.
MNL Learning Outcome: 1.2.1 Apply the five steps of the nursing process as it relates to pharmacotherapy.
Page Number:

Question 23
Type: MCMA

The nurse is not surprised when a health care provider orders a lower than normal dose of a drug excreted by the kidneys for an older adult client because certain effects of aging cause the body to retain drugs and other substances for longer periods. Which normal effects of the aging process decrease the ability to excrete drugs?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Decrease in renal blood flow.

2. Decrease in the number of functioning nephrons.

3. Decrease in the ability to excrete waste products effectively.

4. Decrease in gastric pH, causing delayed absorption.

5. Decrease of fat storage, causing delayed absorption.

Correct Answer: 1,2,3

Rationale 1: Older adults have a decrease in blood flow to kidneys. This may affect excretion of drugs.

Rationale 2: Older adults have a decreased number of nephrons resulting in a decreased number of functioning nephrons. This may affect excretion of drugs.

Rationale 3: Because of age-related changes to the kidneys, the older adult may have difficulty excreting waste products, which may affect excretion of drugs.

Rationale 4: Delayed absorption does not affect the excretion of drugs.

Rationale 5: The elderly have an increase in fat storage, but that does not affect the excretion of drugs.

Global Rationale: Older adults have a decrease in blood flow to kidneys, a decreased number of nephrons resulting in a decreased number of functioning nephrons, and may have difficulty excreting waste products. All of these factors may affect excretion of drugs. Delayed absorption does not affect the excretion of drugs. The elderly have an increase in fat storage, but that does not affect the excretion of drugs.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 24
Type: MCMA

An older adult client complains to the nurse that a medication is causing significant nausea and vomiting. Which responses by the nurse are appropriate?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "A normal consequence of aging is decreased blood flow to the stomach. This could result in the medication staying in your stomach longer, causing nausea and vomiting."

2. "A normal consequence of aging is slowed emptying of stomach contents. This can cause nausea and vomiting."

3. "A normal consequence of aging is slower absorption of medications, resulting in nausea and vomiting."

4. "A normal consequence of aging is an increase in liver size, which can result in nausea and vomiting."

5. "A normal consequence of aging is decreased carbohydrate metabolism, which can result in nausea and vomiting."

Correct Answer: 1,2,3

Rationale 1: Decreased blood flow to and from the stomach may delay absorption, resulting in nausea and vomiting.

Rationale 2: Slowed emptying of stomach contents may allow drugs to remain longer in the gastrointestinal tract, resulting in nausea and vomiting.

Rationale 3: When absorption time is decreased, drugs may remain longer in the stomach, resulting in nausea and vomiting.

Rationale 4: The size of the liver does not cause risk for nausea or vomiting.

Rationale 5: Carbohydrate metabolism does not cause risk for nausea or vomiting.

Global Rationale: Decreased blood flow to and from the stomach may delay absorption, resulting in nausea and vomiting. Slowed emptying of stomach contents may allow drugs to remain longer in the gastrointestinal tract, resulting in nausea and vomiting. When absorption time is decreased, drugs may remain longer in the stomach, resulting in nausea and vomiting. The size of the liver does not cause risk for nausea or vomiting. Carbohydrate metabolism does not cause risk for nausea or vomiting.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 25
Type: MCMA

Which interventions would the nurse perform before administering the next dose of gentamicin to an older adult client?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Monitor for peak and trough for toxicity.

2. Check the health care provider's orders for periodic lab draws.

3. Contact the health care provider if serum concentration is not within therapeutic range.

4. Check that this drug is prescribed with short intervals between doses.

5. Assess client for reduced cognitive function or confusion.

Correct Answer: 1,2,3

Rationale 1: Age-related changes result in a decrease in total body water in the older adult. Because gentamicin is water soluble, this could result in higher concentration of the drug, causing toxicity.

Rationale 2: To prevent toxicity of gentamicin, periodic lab work for peak and trough must be checked.

Rationale 3: If the serum concentration is not within therapeutic range, the dose may need to be adjusted.

Rationale 4: Drugs with a long half-life have the potential to accumulate in the tissues. These drugs should be prescribed with longer intervals between doses.

Rationale 5: Gentamicin toxicity symptoms include impaired hearing, not reduced cognitive function or confusion.

Global Rationale: Age-related changes result in a decrease in total body water in the older adult. Because gentamicin is water soluble, this could result in higher concentration of the drug, causing toxicity. To prevent toxicity of gentamicin, periodic lab work for peak and trough must be checked. If the serum concentration is not within therapeutic range, the dose may need to be adjusted. Drugs with a long half-life have the potential to accumulate in the tissues. These drugs should be prescribed with longer intervals between doses. Gentamicin toxicity symptoms include impaired hearing, not reduced cognitive function or confusion.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.

Page Number:

Question 26
Type: MCMA

An older adult client brought to the emergency department for bloody stools has been taking warfarin (Coumadin) post stroke. Initial diagnostic lab work reveals warfarin to be within therapeutic range. The daughter asks why the client has bloody stools if the lab work is normal. Which responses by the nurse are appropriate?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. "Liver function declines during the aging process."

2. "Decreased liver function results in decreased plasma proteins."

3. "Decreased plasma proteins result in more free drug circulating."

4. "Decreased plasma proteins lead to more binding sites, resulting in lower concentrations of drugs such as this one."

5. "Higher levels of this drug are able to enter the blood–brain barrier, resulting in the toxic effects of bleeding."

Correct Answer: 1,2,3

Rationale 1: Liver function declines during the aging process.

Rationale 2: As liver function declines, so does the production of plasma proteins.

Rationale 3: As the production of plasma proteins declines, an increase in highly protein-bound drugs results in higher concentrations of free drug.

Rationale 4: Decreased plasma proteins lead to fewer binding sites, resulting in higher, not lower, concentrations of free drug.

Rationale 5: The decrease in liver function and plasma proteins may cause the adverse effects of bleeding and bloody stools. It does not have anything to do with the blood–brain barrier.

Global Rationale: Liver function declines during the aging process. As liver function declines, so does the production of plasma proteins. As the production of plasma proteins declines, an increase in highly protein-bound drugs results in higher concentrations of free drug. Decreased plasma proteins lead to fewer binding sites, resulting in higher, not lower, concentrations of free drug. The decrease in liver function and plasma proteins may cause the adverse effects of bleeding and bloody stools. It does not have anything to do with the blood–brain barrier.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values

- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 27
Type: MCMA

Which clients would the nurse consider high risk for adverse drug effects related to inefficient blood–brain barrier?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Older adult taking benzodiazepines for anxiety

2. Older adult with a current history of seizures

3. Older adult with a history of difficulty sleeping

4. Older adult taking high doses of antibiotics for pneumonia

5. Older adult with a history of emphysema

Correct Answer: 1,2,3

Rationale 1: Drugs such as benzodiazepines, antipsychotic agents, antiseizure agents, and tranquilizers can cross the blood–brain barrier in higher concentrations, resulting in adverse effects.

Rationale 2: Drugs such as benzodiazepines, antipsychotic agents, antiseizure agents, and tranquilizers can cross the blood–brain barrier in higher concentrations, resulting in adverse effects.

Rationale 3: Drugs such as benzodiazepines, antipsychotic agents, antiseizure agents, and tranquilizers can cross the blood–brain barrier in higher concentrations, resulting in adverse effects.

Rationale 4: Antibiotics for pneumonia do not cross the blood–brain barrier.

Rationale 5: Drugs used for emphysema would not cross the blood–brain barrier.

Global Rationale: Drugs such as benzodiazepines, antipsychotic agents, antiseizure agents, and tranquilizers can cross the blood–brain barrier in higher concentrations, resulting in adverse effects. Antibiotics for pneumonia do not cross the blood–brain barrier. Drugs used for emphysema would not cross the blood–brain barrier.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 28
Type: MCMA

The nurse is caring for an older adult client prescribed acetaminophen (Tylenol), as needed, for frequent headaches. What can the nurse expect?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. The client may not ask for the medication as often as younger clients.

2. This drug may be prescribed with longer interval dosing.

3. The health care provider may order a lower than normal dose.

4. The health care provider will order diagnostic lab work to check creatinine clearance.

5. The health care provider will need to prescribe nausea medication.

Correct Answer: 1,2,3

Rationale 1: Reduced metabolism will result in extended duration of the drug.

Rationale 2: Acetaminophen (Tylenol) has a long half-life and remains in tissues longer, resulting in toxicity. The health care provider may prescribe longer dosing intervals.

Rationale 3: Acetaminophen (Tylenol) has a long half-life and remains in tissues longer resulting in toxicity. The health care provider may prescribe a lower dose.

Rationale 4: Creatinine clearance tests kidney function, not hepatic function.

Rationale 5: Acetaminophen (Tylenol) does not cause nausea.

Global Rationale: Reduced metabolism will result in extended duration of the drug; therefore, the client may ask for the medication less frequently. Acetaminophen (Tylenol) has a long half-life and remains in tissues longer, resulting in toxicity. The health care provider may prescribe longer dosing intervals and at lower dosages. Creatinine clearance tests kidney function, not hepatic function. Acetaminophen (Tylenol) does not cause nausea.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education
- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-3 Explain how age-related physiological changes alter pharmacokinetics and pharmacodynamics and affect drug response in older adults.
MNL Learning Outcome: 1.1.3 Relate processes of pharmacokinetics and pharmacodynamics to the therapeutic effect(s) of a drug.
Page Number:

Question 29
Type: MCMA

The nurse is discharging an older adult client with a new medication. Which statements should be included in discharge teaching?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. “You will be started on the lowest effective dose; it will gradually increase.”

2. “You will need to come back to the clinic in 3 to 5 days for follow-up.”

3. “Call if there are any changes in physical or emotional behavior.”

4. “It is very important that you do not get overhydrated, since that would increase the effects of the medication.”

5. “This would be a good time to commit to a low-protein diet in an effort to lose weight.”

Correct Answer: 1,2,3

Rationale 1: Starting the older adult on the lowest effective dose and titrating upward will decrease the risk for toxicity.

Rationale 2: Drug accumulation in older adults often occurs 3 to 5 days after the new drug has been initiated.

Rationale 3: Consider any change in physical or emotional behavior as a possible sign of toxicity.

Rationale 4: Dehydration causes drug toxicity.

Rationale 5: Low-protein diets can cause drug toxicity.

Global Rationale: Starting the older adult on the lowest effective dose and titrating upward will decrease the risk for toxicity. Drug accumulation in older adults often occurs 3 to 5 days after the new drug has been initiated. Consider any change in physical or emotional behavior as a possible sign of toxicity. Dehydration causes drug toxicity. Low-protein diets can cause drug toxicity.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.15 Communicate care provided and needed at each transition in care
AACN Essential Competencies: IX.7. Identify personal, professional and environmental risks that impact personal and professional choices and behaviors
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-9 Generate key points for family and patient education regarding drug pharmacotherapy for older adults.
MNL Learning Outcome: 1.2.1 Apply the five steps of the nursing process as it relates to pharmacotherapy.
Page Number:

Question 30
Type: MCMA

Which questions would the case manager ask the older adult client to assess for risk for nonadherence to a medication regimen?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. “How do you feel about the possible side effects your medication may cause?”

2. “If we set you up with a pill holder, do you think you will be able to remember to take the medication?”

3. “I have put large labels on the bottles; can you see the print?”

4. “Do you feel you can afford the cost of the medication after your insurance pays its part?”

5. “Can your daughter visit every day to give you the medication?”

Correct Answer: 1,2,3,4

Rationale 1: Unpleasant side effects increase risk for nonadherence.

Rationale 2: Forgetfulness is a cause for nonadherence.

Rationale 3: Physical impairment such as poor vision can lead to nonadherence.

Rationale 4: Inability to purchase is a risk for nonadherence.

Rationale 5: This question assumes that the client is unable to self-administer the medication, which is not the same as assessing the older client’s ability to adhere to the medication regimen.

Global Rationale: Unpleasant side effects, forgetfulness, physical impairment, and the inability to purchase all increase the risk for nonadherence. Asking the client if a daughter can visit every day to administer a medication assumes that the client is unable to self-administer the medication, which is not the same as assessing the older client’s ability to adhere to the medication regimen.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.3 Provide patient-centered care with sensitivity and respect for the diversity of human experience
AACN Essential Competencies: III.6. Integrate evidence, clinical judgment, interprofessional perspectives and patient preferences in planning, implementing, and evaluating outcomes of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-8 Develop nursing interventions that maximize pharmacotherapeutic outcomes in older adults.
MNL Learning Outcome: 1.2.1 Apply the five steps of the nursing process as it relates to pharmacotherapy.
Page Number:

Question 31
Type: MCMA

An urgent care nurse is triaging clients. Which client statements may indicate that medications are being misused?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. “I was feeling really great so I stopped taking my antibiotic and now I feel feverish.”

2. “My retirement check didn’t come in over the holiday weekend so I didn’t have the money to get my antihypertension medication refilled. I just took one every other day instead of every day.”

3. “I really thought I would get better quicker if I took the medication four times a day instead of two times a day. Now, I have diarrhea.”

4. “The schedule is pretty complicated but my daughter-in-law got me a pill dispenser and that helps to keep me on schedule.”

5. “I’ve had to borrow the money from my daughter to get my medication, but I always seem to find a way to get it.”

Correct Answer: 1,2,3

Rationale 1: Erratic use can be attributed to clients taking their medication when they feel sick and stopping the medication when feeling well.

Rationale 2: Uninsured or underinsured clients may try to make medications last longer by skipping doses or by splitting pills in half.

Rationale 3: Some clients believe taking extra doses of medication will speed recovery.

Rationale 4: This client appears to be taking medication as prescribed.

Rationale 5: This client appears to be taking medication as prescribed.

Global Rationale: Erratic use can be attributed to clients taking their medication when they feel sick and stopping the medication when feeling well. Uninsured or underinsured clients may try to make medications last longer by skipping doses or by splitting pills in half. Some clients believe taking extra doses of medication will speed recovery. The other statements do not indicate misuse of prescribed medications.

Cognitive Level: Analyzing
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.3 Provide patient-centered care with sensitivity and respect for the diversity of human experience
AACN Essential Competencies: III.6. Integrate evidence, clinical judgment, interprofessional perspectives and patient preferences in planning, implementing, and evaluating outcomes of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Assessment
Learning Outcome: 10-8 Develop nursing interventions that maximize pharmacotherapeutic outcomes in older adults.
MNL Learning Outcome: 1.2.1 Apply the five steps of the nursing process as it relates to pharmacotherapy.
Page Number:

Question 32
Type: MCMA

The nurse is educating an older adult client on ways to decrease the risk of adverse drug reactions. Which statements will the nurse include in the teaching session?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. When possible, decrease the number of prescriptions.

2. Take medication only when necessary.

3. Take medication as long as possible to ensure therapeutic response.

4. Follow up as requested by provider.

5. Adjust doses of medication in clients with renal or hepatic impairment.

Correct Answer: 1,2,4,5

Rationale 1: The risk of an adverse effect increases with the number of drugs taken.

Rationale 2: Take medications only when they are needed.

Rationale 3: To minimize adverse effects, clients should only take medication for the shortest length of time necessary.

Rationale 4: Following up as requested by provider will alert the provider to early symptoms of adverse effects.

Rationale 5: Doses of most drugs must be adjusted for clients with age-related renal or hepatic impairment.

Global Rationale: The risk of an adverse effect increases with the number of drugs taken. Take medications only when they are needed. Following up as requested by provider will alert the provider to early symptoms of adverse effects. Doses of most drugs must be adjusted for clients with age-related renal or hepatic impairment. To minimize adverse effects, clients should only take medication for the shortest length of time necessary.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.3 Provide patient-centered care with sensitivity and respect for the diversity of human experience
AACN Essential Competencies: III.6. Integrate evidence, clinical judgment, interprofessional perspectives and patient preferences in planning, implementing, and evaluating outcomes of care
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-8 Develop nursing interventions that maximize pharmacotherapeutic outcomes in older adults.
MNL Learning Outcome: 1.2.1 Apply the five steps of the nursing process as it relates to pharmacotherapy.
Page Number:

Question 33
Type: MCMA

An older adult client is being discharged with multiple new prescriptions. Which strategies could the home health nurse employ to encourage adherence?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Communicate the purpose the new medications serve toward treatment of the condition.

2. Ensure the medication is dispensed in containers that are easily opened.

3. Make sure all drugs are clearly labeled with instructions.

4. Place daily follow-up phone calls to high-risk older clients.

5. Simplify the regimen to twice-a-day dosing and reduce the number of medications the older client must take.

Correct Answer: 1,2,3

Rationale 1: It is important that older clients understand the purpose of medications and their importance to the treatment plan.

Rationale 2: It is important for older clients to be able to easily access the medication.

Rationale 3: Clearly labeled instructions may encourage the client to take the medication as directed.

Rationale 4: Follow-up phone calls to high-risk older clients are important, but the frequency will depend on the client.

Rationale 5: Reducing the number of medications and frequency of dosing will decrease risk for nonadherence, but twice-a-day dosing may not be possible.

Global Rationale: It is important older clients understand the purpose of medications and their importance to the treatment plan. It is important for older clients to be able to easily access the medication. Clearly labeled instructions may encourage the client to take the medication as directed. Follow-up phone calls to high-risk older clients are important, but the frequency will depend on the client. Reducing the number of medications and frequency of dosing will decrease risk for nonadherence, but twice-a-day dosing may not be possible.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.2 Describe how diverse cultural, ethnic and social backgrounds function as sources of patient, family, and community values
AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-4 Explain strategies that the nurse may implement to improve adherence with drug therapy in geriatric patients.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 34
Type: MCMA

A nurse who provides care to older adult clients must be aware that which factors may increase the risk for adverse drug reactions in this population?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Longevity results in increased risk for illnesses, which may require multiple medications.

2. Many older clients will use over-the-counter medications to treat common symptoms such as constipation or joint pain in addition to prescription drugs.

3. Older clients may see several health care specialists.

4. The rate of absorption in older clients is unpredictable.

5. Increased volume of total body water results in an increase in concentrations of drugs in the blood.

Correct Answer: 1,2,3

Rationale 1: Longevity inevitably leads to increased illnesses, which in turn necessitate the use of multiple medications, which may result in adverse reactions.

Rationale 2: When a client takes over-the-counter drugs in conjunction with prescribed medication, polypharmacy may occur, resulting in adverse reactions.

Rationale 3: Adverse reactions may occur when multiple health providers prescribe medications.

Rationale 4: The rate of absorption is predictable and would not cause an adverse reaction.

Rationale 5: The decreased volume of total body water may lead to higher concentrations of drugs in the serum.

Global Rationale: Longevity inevitably leads to increased illnesses, which in turn necessitate the use of multiple medications, which may result in adverse reactions. When a client takes over-the-counter drugs in conjunction with prescribed medication, polypharmacy may occur, resulting in adverse reactions. Adverse reactions may occur when multiple health providers prescribe medications. The rate of absorption is predictable and would not cause an adverse reaction. The decreased volume of total body water may lead to higher concentrations of drugs in the serum.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.B.1 Elicit patient values, preferences and expressed needs as part of clinical interview, implementation of care plan and evaluation of care
AACN Essential Competencies: III.1. Explain the interrelationships among theory, practice and research
NLN Competencies: Knowledge and Science: Relationships between knowledge/science and quality and safe patient care
Nursing/Integrated Concepts: Nursing Process: Implementation
Learning Outcome: 10-5 Explain why older adults are more likely to experience adverse drug reactions and interactions.
MNL Learning Outcome: 1.2.3 Compare pharmacologic implications across the life span and various community health settings.
Page Number:

Question 35
Type: MCMA

The nurse recognizes that which physiological changes may have what effects on medication responses?

Note: Credit will be given only if all correct choices and no incorrect choices are selected.

Standard Text: Select all that apply.

1. Decreased production of serum albumin may result in toxic levels of highly protein-bound drugs.

2. Declining efficiency of the blood–brain barrier may result in increased central nervous system symptoms.

3. Decreased contractility of the heart may result in decreased distribution of drugs.

4. Decreased gastric pH may result in decreased absorption.

5. Decreased body fat may result in decreased absorption of fat-soluble drugs.

Correct Answer: 1,2,3

Rationale 1: Decreased production of serum albumin in the older client may produce toxic levels of highly protein-bound drugs.

Rationale 2: Declining efficiency of the blood–brain barrier may result in more substances crossing the blood–brain barrier, resulting in increased central nervous system symptoms.

Rationale 3: Decreased contractility of the heart may decrease the distribution of drugs.

Rationale 4: Gastric pH is increased in the older client, resulting in medications that require high levels of acid to take longer to be absorbed.

Rationale 5: Body fat is increased in the older client, resulting in increased absorption of fat-soluble drugs.

Global Rationale: Decreased production of serum albumin in the older client may produce toxic levels of highly protein-bound drugs. Declining efficiency of the blood–brain barrier may result in more substances crossing the blood–brain barrier, resulting in increased central nervous system symptoms. Decreased contractility of the heart may decrease the distribution of drugs. Gastric pH is increased in the older client, resulting in medications that require high levels of acid to take longer to be absorbed. Body fat is increased in the older client, resulting in increased absorption of fat-soluble drugs.

Cognitive Level: Applying
Client Need: Physiological Integrity
Client Need Sub: Pharmacological and Parenteral Therapies
QSEN Competencies: I.A.1 Integrate understanding of multiple dimensions of patient centered care:

- patient/family/community preferences, values
- coordination and integration of care
- information, communication, and education

- physical comfort and emotional support
- involvement of family and friends
- transition and continuity

AACN Essential Competencies: IX.3. Implement holistic, patient-centered care that reflects an understanding of human growth and development, pathophysiology, pharmacology, medical management and nursing management across the health-illness continuum, across lifespan, and in all healthcare settings