Essentials of Pharmacology for Health Professions 9th edition Colbert Solutions Manual

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Solution and Answer Guide

Colbert, Essentials of Pharmacology, 9e, © 2023, 9780357618301; Chapter 2: Drug Names and References

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Chapter Review Quiz Answers

Match the definition with the term.

Definition	Term Answer
1. List of conditions for which a drug is meant to be used	c. Indications
2. Subcategories of drugs based on their effects on the body	f. Classifications
3. Description of the cellular changes that occur as a result of a drug	e. Actions
4. Conditions for which a drug should not be given	a. Contraindications

Refer to the following drug description to answer questions 5–8.

AZO Standard®

(phenazopyridine HCl tablets, USP)

Product of i-Health, a Division of DSM

Description: AZO Standard (phenazopyridine HCl) is a urinary tract analgesic agent, chemically designated 2,6-pyridinediamine, 3-(phenylazo), monohydrochloride.

5. The generic name of the drug is

_____

Answer: phenazopyridine HCl

Feedback: The generic name of a drug is a common or general name assigned to the drug by the United States Adopted Name (USAN) council. It is different from the trade name by initial lowercase letter and never capitalized.

6. The chemical name of the drug is

_____

Answer: 2,6-pyridinediamine, 3-(phenylazo), monohydrochloride

Feedback: The chemical name of a drug describes the exact molecular formula of the drug and usually comprises of long, very difficult name to pronounce.

7. The trade name of the drug is

_____

Answer: AZO Standard

Feedback: The trade name of a drug is the name by which a pharmaceutical company identifies its product. It is copyrighted and used exclusively by that company and is different from the generic name by capitalized first letter. It is often shown on labels and references with the symbol ® (for "registered" trademark) after the name.

8. What is indicated by the® symbol after the drug name?

   _____

   Answer: A symbol associated with copyright or patent and refers to a name used exclusively by the drug company possessing that copyright or patent.

   Feedback: The symbol ® means "registered" trademark, which is often associated with the trade name of a drug (also see feedback to question 7 above)

9. Explain when Tall Man Lettering should be used._____

   Answer: It is used to highlight the differences between look-alike and sound-alike drug.

   Feedback: Tall Man Lettering is often used to highlight the differences between the two drugs. For example, Celexa would be written CeleXA, whereas Celebrex would be written CeleBREX. This ensures that the health care professional reads and recognizes the correct medication.

10. Explain the difference between these two medication orders:
    a. Give two Tylenol, PO.
    b. Give one Tylenol No. 2 PO.

    Answer: Although both medications are to be taken orally, the first order is for two Tylenol (acetaminophen) whereas the second order is a prescription for a controlled substance because it is for a single dose of a combination product consisting of acetaminophen and codeine.

    Feedback: Tylenol is not the same as Tylenol in combination with different amount of codeine, and one such example is Tylenol No. 2.

11. An older adult male was found unconscious in his bedroom with several pink and blue pills beside his bed, but no labeled pill bottle can be found. He is rushed to the emergency department for treatment. What drug reference source will be most helpful in this situation?

    Answer: Any of the following references are correct:

    - AHFS Drug Information (American Health-System Formulary Service)
    - Physicians' Desk Reference (PDR)
    - U.S. Pharmacopeia/Dispensing Information (USP/DI)
    - Reliable professional websites such as

    http://www.fda.gov

    http://www.pharmacist.com

    http://www.nlm.nih.gov/medlineplus

http://www.safemedication.com

http://www.cdc.gov/vaccines/

http://www.usp.org

Feedback: Although there are multiple choices of references available today, some examples of useful drug references as well as creditable websites are indicated above.

12. Place the following terms in the correct blank: OTC, controlled substance, legend drug, off-label
    a. a prescription is not needed

    Answer: OTC

    Feedback: OTC means over the counter and hence no prescription is required.

    b. term that means a prescription is required

    Answer: Legend drug

    Feedback: A legend drug is one that is determined unsafe for OTC purchase because of possible harmful side effects if taken indiscriminately. As a result, a prescription from a health care provider is necessary.

    c. potential for abuse

    Answer: Controlled substance

    Feedback: Controlled substances are abused and addicting drugs with different medical value, harmfulness, and potential for abuse or addiction.

    d. drug given for an unapproved use

    Answer: Off-label

    Feedback: Drugs approved by the Food and Drug Administration (FDA) have one or more official indications. On the other hands, a drug can be used off-label by some clinicians based on their own experience, and the use of such drugs for use unapproved by the FDA is known as off-label use.

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Solution and Answer Guide

Colbert, Essentials of Pharmacology, 9e, © 2023, 9780357618301; Chapter 1: Consumer Safety and Drug Regulations

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Chapter Review Quiz Answers

1. The first major U.S. drug law was passed in the year _____ and was called the _____

   Answer: 1906, Pure Food and Drug Act

   Feedback: The Pure Food and Drug Act is the first drug law passed in 1906 to ensure consumer safety.

2. USP stands for _____

   Answer: United States Pharmacopeia

   Feedback: The United States Pharmacopeia is a reference that specifies the official U.S. standards for making individual drugs.

3. NF stands for _____

   Answer: National Formulary

   Feedback: The National Formulary (NF) is another reference that specifies the official U.S. standards for making individual drugs. It has been combined with the United States Pharmacopeia (USP) into one reference book, the USP/NF

4. Which drug law established the USP and NF (which are now one)?

   Answer: The Pure Food and Drug Act

   Feedback: The 1906 Pure Food and Drug Act established two references of officially approved drugs: the USP and NP, which were subsequently combined into one single reference source.

5. The agency that requires you to keep a record of each controlled substance transaction is the _____

   Answer: Drug Enforcement Agency

   Feedback: The Drug Enforcement Administration enforces security and accountability related to controlled substances. Anyone who dispenses, receives, sells, or destroys controlled substances must keep on hand special DEA forms, indicating the exact current inventory and a two-year inventory of every controlled substance transaction.

6. Schedule C-_____ has the lowest potential for abuse.

   Answer: Schedule C-V has the lowest potential for abuse

   Feedback: The 1970 Controlled Substances Act classified abused and addicting drugs into five levels, or schedules, according to their medical value, harmfulness,

and potential for abuse or addiction: C-I, C-II, C-III, C-IV, and C-V, with class C-1 being the highest potential for abuse, and C-V with the lowest potential for abuse.

7. How long must you keep an inventory record of each controlled substance transaction at your office? ___

   Answer: Two years

   Feedback: The Drug Enforcement Administration enforces security and accountability related to controlled substances, including a two-year inventory of every controlled substance transaction (also see feedback to question 5).

8. Three responsibilities of the FDA include:
   _____

   Answer: Three responsibilities of the FDA may include <u>any of the following</u>:

   - Oversee testing of all proposed new drugs before they are approved for marketing
   - Investigate and remove unsafe drugs from the market
   - Ensure proper labeling of drugs, foods, and cosmetics
   - Review new drug applications and petitions for food additives
   - Inspect plants where foods, drugs, medical devices, or cosmetics are made

   Feedback: The increase in the number of drugs produced for marketing brought dangers to the public. The federal FDA was established to ensure that some basic standards would be followed. Its responsibilities include the five listed in the answers above.

9. What types of drugs are listed in the C-V schedule?
   _____

   Answer: Drugs that have the lowest abuse potential among the five classes or schedules of controlled substance, and primarily consist of cough suppressants containing codeine and antidiarrheal preparations such as diphenoxylate

   Feedback: The 1970 Controlled Substances Act classified abused and addicting drugs into five levels, or schedules, according to their medical value, harmfulness, and potential for abuse or addiction: C-I, C-II, C-III, C-IV, and C-V, and drugs with the C-V classification have the lowest potential for abuse.

10. What method is recommended for securing the controlled substances at your office? _____.

    Answer: The drugs should be kept inside a locked safety box, which is then placed within in a cupboard that is also locked.

    Feedback: The Drug Enforcement Administration enforces security and accountability related to controlled substances, including that all controlled

substances must be kept inside a locked safety box, which is then placed within in a cupboard that is also locked.

11. If a patient calls to request a refill of a Percocet (C-II) prescription, how would you reply? _____

    Answer: A refill for a C-II substance cannot be called into a pharmacy as a new prescription is required by law.

    Feedback: The 1970 Controlled Substances Act set regulations as to which schedules prescriptions may be phoned in to the pharmacy. A refill for a C-II substance cannot be called into a pharmacy as a new prescription is required.

12. Dawn Vasquez has a rare disease that requires medication for only a small population of patients. Which act has allowed her drug to be produced even though it is not profitable to the pharmaceutical industry?

    Answer: The Orphan Drug Act of 1983

    Feedback: The 1983 Orphan Drug Act provides pharmaceutical companies financial incentives to develop medications for diseases that affect only a small number of people, so that orphan drugs that would otherwise be of low profitability would be available to patients with rare diseases.

13. A patient calls into the office asking for a new prescription for a narcotic medication that he has been taking for six months. You bring up his chart and notice that he has been requesting new prescriptions every 23 days, whereas the medication should last 30 days. Additionally, the patient also mentions that he feels that he is in need of a higher dose and gets agitated and irritable when you tell him that he will need an appointment. What do you think of this? What should you do?

    Answer: The medication taking behavior suggests a potential pattern of drug abuse. Nevertheless, the most appropriate action should be to notify the patient's physician so that s(he) can assess the real need of an increase in the dose and/or frequency of administration.

    Feedback: The prescription fill record indicated that the patient is getting the narcotic more frequently that what is allowed by his physician for his medical condition. Given the high potential of narcotic abuse, such request needs to be addressed by the physician.

14. Each drug is given a _____ number to identify the manufacturer, the drug, and the package size.
    a. FDA
    b. USP
    c. DEA
    d. NDC

Answer: d

Feedback: The National Drug Code (NDC) is a directory of numerical code that allows identification of a drug, as well as the package size and the manufacturer. This directory provides a list of all drugs manufactured for commercial distribution. The NDC is comprised of three parts: the first part is five numbers and identifies the manufacturer., the second part is four numbers and identifies the drug, and the third part is two digits that identifies the package size.

15. Drug standards insure consistency in all the areas EXCEPT
    a. strength
    b. purity
    c. quality
    d. size

Answer: d

Feedback: Drug standards assure consumers that the drug they take are of uniform strength, purity, and quality

16. The Federal Food, Drug, and Cosmetic Act of 1938 established which agency?
    a. NDC
    b. DEA
    c. FDA
    d. USP

Answer: c

Feedback: The Federal Food, Drug, and Cosmetic Act of 1938 established the Food and Drug Administration (FDA).

17. The earliest recorded use of drugs occurred during which civilization?
    a. Egyptian
    b. Roman
    c. Greek
    d. Aztec

Answer: a

Feedback: The first documented use of drug was in ancient Egypt.

18. Answer the questions concerning the following three drug labels:
    a. Which drug(s) requires a prescription?

Answer: Morphine Sulfate and Procardia (nifedipine)

Feedback: Both Morphine and Procardia (nifedipine) require a prescription and cannot be purchased over the counter.

b. Which drug(s) can be bought without a prescription?

Answer: Acetaminophen

Feedback: Acetaminophen can be obtained over the counter from any pharmacy without a prescription.

c. Which drug(s) requires a DEA number?

Answer: Morphine Sulfate

Feedback: Morphine is a controlled substance that requires not only a prescription but also that the ordering and dispensing, respectively, needs to be by a physician and a pharmacist that have a DEA number indicating their proper registration with the agency.

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Worksheets for Textbook Part II

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Worksheets for Textbook Part II

Worksheet 1 for Chapter 11

Fat-Soluble Vitamins (see Table 11-1)

Vitamins	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
A	Animal Oily saltwater fish Dairy products Eggs Plants Dark-green leafy vegetables Deep yellow or orange fruit and vegetables	Malabsorption of fats or diarrhea Obstruction of bile Presence of mineral oil in the intestines Overcooking of vegetables in an open container (heat and air cause oxidation) Prolonged infection or fever	Retarded growth Faulty bone and tooth development Night blindness Dry skin Xerophthalmia (dry eyes)	Irritability, lethargy, headache Joint pain, myalgia Stunted growth, fetal malformations Jaundice, nausea, diarrhea Dry skin and hair	*Cautions:* Caution should be used in patients with kidney or liver problems or diabetes *Interactions:* Long-term use of large doses of vitamin A is contraindicated for women who are, or may become, pregnant. Fetal malformations have been reported following maternal ingestion of large doses of vitamin A, either before or during pregnancy

Vitamins	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
D	Animal Fish oils Fortified milk Plants Fortified cereals		Softening bones: Rickets (in children) Osteomalacia (in adults) Poorly developed teeth Muscle spasms	Convulsions Kidney stones, kidney damage Muscle/bone pain Nausea, anorexia Fetal disorders	*Cautions:* Not to exceed the RDA of vitamin D especially in patients with cardiovascular diseases, kidney diseases, pregnancy, breast feeding *Interactions:* Digitalis, thiazide diuretics; mineral oil may interfere with intestinal absorption of vitamin D
E	Plants Vegetable oils Seeds, nuts Wheat germ, cereals	Alcohol abuse Malabsorption syndromes Pathologic conditions of liver and pancreas Premature infants or low-birth-weight neonates	Destruction of RBCs, muscle weakness	Prolonged bleeding time	*Interactions:* Vitamin E supplements should be taken at the lowest dosage necessary while on anticoagulant therapy because of increased risk of bleeding Excessive use of mineral oil may decrease absorption

Vitamins	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
K	Animal Egg yolk, cheese Liver Plants Vegetable oil Green leafy vegetables Cabbage, broccoli	Reduced prothrombin in the blood due to insufficient clotting factors in the newborn Malabsorption syndromes Coumarin overdose Prolonged use of salicylates, quinine, long-term parenteral nutrition, or broad-spectrum antibiotics	Prolonged blood clotting time Blood in urine and stool	Jaundice in infants	*Cautions:* Patients receiving anticoagulant therapy should be consistent in the amount of vitamin K–rich foods they eat daily in order to keep prothrombin and other vitamin K–dependent clotting factor levels stable

Worksheet 2 for Chapter 11

Water-Soluble Vitamins (see Table 11-1)

Vitamin	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
B_1 (thiamine)	Animal Pork, beef, liver Oysters Plants Yeast Whole and enriched grains, wheat germ Beans, peas, collard greens, nuts, asparagus Oranges	Chronic alcoholism Malabsorption	GI upset, constipation Neuritis, mental disturbance Cardiovascular problems Muscle weakness, fatigue	None known	
B_2 (riboflavin)	Animal Milk Meat, liver Plants Green vegetables Cereals Enriched bread Yeast	Chronic alcoholism Poor diet	Glossitis Cheilosis Dermatitis Photophobia Vision problems, itching eyes, rough skin	None	

Vitamin	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
B_6 (pyridoxine)	Animal Pork, beef, chicken, tuna, salmon Plants Whole-grain cereals, wheat germ Legumes, peanuts, soybeans Bananas	Chronic alcoholism Cirrhosis Malabsorption syndromes	Anorexia, nausea, vomiting Dermatitis Neuritis, depression	Seizures in newborns	*Cautions:* Overdose in pregnant women may result in newborns with seizures who have developed a need for greater-than-normal amounts of pyridoxine
B_{12} (cobalamin, cyanocobalamin)	Animal Seafood/shellfish Meat, poultry, liver Eggs Milk, cheese Plants	Vegetarian diets without meats, eggs, or milk products Gastrectomy or intestinal resections Malabsorption syndromes Pernicious anemia	Nerve, muscle, and mental problems Pernicious anemia	None	*Interactions:* *Neomycin* Colchicine

Vitamin	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
B_9 (folic acid)	Animal Organ meats Plants Green leafy vegetables Avocado, beets Broccoli, kidney beans Orange juice	Improper diet Chronic alcoholism Liver pathology Intestinal obstruction Malabsorption syndromes Malnutrition Renal dialysis or prolonged use of some medications	Increased risk of neural tube defects Macrocytic anemia Irritability, behavior disorders	None	*Cautions:* Never give to someone with undiagnosed anemia *Interactions:* Phenytoin, barbiturates
B_3 (niacin)	Animal Milk Eggs Fish Poultry Plants Legumes, nuts Green vegetables		Pellagra	Headache, flushing Increased blood glucose and uric acid	*Cautions:* Patients with liver disease, gallbladder disease, gout, diabetes

Worksheet 3 for Chapter 11

Water-Soluble Vitamins and Minerals (see Tables 11-1, & 11-3)

Vitamin/Mineral	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
C (ascorbic acid)	Fruits All citrus, cantaloupe Plants Broccoli Tomatoes Brussels sprouts Cabbage Green peppers	Diet lacking fresh fruit and vegetables Alcoholism Infections Smoking	Scurvy Poor healing Muscle cramps/weakness Ulcerated gums/mouth, loose teeth Capillary fragility (bruising)	Raised uric acid level, gout GI distress Kidney stones Rebound scurvy in neonates	*Interactions:* Aspirin, barbiturates, tetracyclines, estrogens, oral contraceptives, alcohol, and smoking

Vitamin/Mineral	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
Potassium (K)	Oranges, bananas Dried fruits Tomatoes	Insufficient oral intake due to surgery, anorexia, or weight-reduction diets Diarrhea or vomiting Diabetic ketoacidosis Diaphoresis (excessive perspiration) Diuretic use, especially thiazides and furosemide loop diuretics Digoxin toxicity Long-term use of corticosteroids or long-term use of laxatives Kidney disease	Muscular weakness Cardiac arrhythmias Lethargy Mental apathy and confusion	Confusion Weakness Cardiac arrhythmias	*Cautions:* Cardiac disease, renal impairment, gastric or intestinal ulcers, mental confusion

Vitamin/Mineral	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
Calcium (Ca)	Milk, cheese, yogurt Sardines Salmon Green vegetables except spinach	Pregnancy and breast feeding Hypoparathyroidism Long-term use of corticosteroids, some diuretics, or anticonvulsants Chronic diarrhea Pancreatitis Renal failure Lack of weight-bearing exercise	Osteoporosis Osteomalacia Rickets in children Cardiac myopathy Tetany and leg cramps	Constipation Cardiac arrhythmias if IV calcium not injected slowly	*Cautions:* Cardiac disease, renal disease, respiratory conditions *Interactions:* Digitalis (resulting in potentiation), tetracycline (resulting in antagonism)
Iron (Fe)	Meat Liver Eggs Poultry Spinach Dried fruits Dried beans Prune juice	Hemorrhage and excessive menstrual flow Internal bleeding, ulcers, and GI tumors Pregnancy Infancy Puberty at time of growth spurt Hemodialysi	Paleness of the skin and/or mucous membranes Lethargy and weakness Vertigo Air hunger Decline in mental skills Irregular heartbeat and cardiac function Cravings for	Shock Vomiting Diarrhea or constipation Black stools	*Interactions:* Vitamin C or orange juice taken at the same time enhances iron absorption Coffee or tea within 2 h of iron reduces iron absorption by as much as 50% Tetracycline

Vitamin/Mineral	Sources	Causes of Deficiencies	Signs of Deficiencies	Symptoms of Overdose	Interactions and Cautions
		s	nonfood items, such as ice, clay, or starch		absorption is inhibited by oral iron preparations when taken within 2 h Antacids decrease iron absorption (should not be given at same time)

Worksheet 1 for Chapter 12

Drugs for the Skin

Classifications and Drugs	Purpose	Side Effects	Contraindications or Cautions	Patient Education
Antipruritics *Local anesthetics* 1. Benzocaine (Lanacane, Americaine, Orajel) 2. Dibucaine (Nupercainal) *Antihistamines* 1. Diphenhydramine (Benadryl) *Corticosteroids* 1. Various (Diprolene, Temovate)	Relieve itching from allergic reactions, poison ivy, hives, and insect bites	Skin irritation Rash Stinging and a burning sensation Allergic reactions (-caines) Sedation from antihistamines	Open wounds or prolonged use (for corticosteroids) Hypersensitivity (severe allergic) reaction to the active drug or any component of the formulation	Clean area before application Rub gently until medication vanishes Use caution if patient has allergies Avoid contact with eyes or mucous membranes Avoid covering with dressings unless ordered by a health care provider Avoid prolonged use (not longer than one week) Discontinue if condition worsens or irritation develops Trim children's fingernails to reduce possibility of infection from scratching

Emollients and Protectants 1. Ammonium lactate (AmLactin, Lac-Hydrin) 2. Vitamins A and D (A & D, Desitin—with zinc oxide) 3. Zinc oxide (Balmex)	Soothe, soften, protect (via creation of a lipid barrier), and seal out wetness in minor dermatological conditions, such as diaper rash, irritation, abrasions, and minor burns			
Keratolytics 1. Coal tar (Balnetar, Polytar, Neutrogena T/Gel) 2. Salicylic acid 3. Sulfur (Clearasil, Salex, Fostex, Compound W)	Control conditions of abnormal scaling of the skin, such as dandruff, seborrhea, and psoriasis Promote peeling of the skin in conditions such as acne, hard corns, calluses, and warts	Severe skin irritation, pruritis, or stinging Irritation of eyes or mucous membranes Photosensitivity Systemic effects in allergic individuals or with multiple applications and prolonged use (e.g., headache and GI symptoms)	Open areas of skin Hypersensitivity (severe allergic) reaction to the active drug or any component of the formulation	Use only as directed, for entire treatment period, even if improved Avoid contact with eyes and mucous membranes Avoid prolonged use Discontinue and seek medical aid if irritation occurs Avoid contact with surrounding tissues when applied as a caustic to corns or calluses
Enzyme Preparations	Remove dead or damaged		For use on necrotic skin	If a topical antibiotic is to

1. Collagenase (Santyl)	tissue		tissue only	be applied to an infected site, the antibiotic is applied before collagenase Avoid using detergents, povidone-iodine, and heavy metal (e.g., mercury, silver) containing agents that will inhibit the enzymatic activity of collagenase
Scabicides and Pediculicides 1. Permethrin (Elimite, Nix, RID) 2. Lindane (Kwell) 3. Pyrethrins (RID) 4. Ivermectin (Stomectol, Sklice)	Treatment of scabies or lice	Slight local irritation, rash, or conjunctivitis Dermatitis with frequent application	Acutely inflamed, raw, or weeping surfaces Lindane should be avoided during pregnancy, during breast feeding, and with infants, small children, and older adults and those who weigh less than 110 lb or those with known uncontrolled seizure disorders	Follow directions carefully Thoroughly launder (130°F) clothing and bedding and dry using the hot cycle of a dryer for at least 20 min Large items (e.g., pillows, comforters) may be bagged in plastic for two weeks Use caution to prevent accidental oral ingestion

				Use caution with infants who might suck thumbs Inform sexual partner if condition is present in pubic area Alert school to head lice infestation
Antifungals 1. Clotrimazole (Mycelex, Lotrimin, Gyne-Lotrimin) 2. Ketoconazole (Nizoral, Nizoral A-D) 3. Miconazole (Monistat, Lotrimin AF) 4. Nystatin (Mycostatin) 5. Terbinafine (Lamisil AT, Lamisil) 6. Tolnaftate (Tinactin)	Treatment of monilial infections such as thrush, diaper rash, vaginitis, athlete's foot, body ringworm, jock itch	Contact dermatitis Itching, burning, and irritation	Vaginal preparations should not be used during pregnancy except under medical supervision	Carefully wash and dry affected areas Expose to air whenever possible With genital fungus, avoid tight undergarments, pantyhose, and wet bathing suits With athlete's foot, use open sandals instead of sneakers *Follow application instructions carefully*. Use for entire time, even if asymptomatic Remove any stains with soap and warm

				water Continue prescribed vaginal treatment even during menstruation, or if symptomatic relief occurs, until entire regimen is completed Consult a health care provider before vaginal preparations are used during pregnancy For oral suspensions or lozenges, apply after meals and after thorough rinsing of mouth. No food or liquids for at least 1 h after treatment For vaginal infections, refrain from intercourse until treatment is complete Consider treating partner if reinfection occurs

Antivirals 1. Acyclovir (Zovirax) 2. Docosanol (Abreva)	Decrease duration of viral shedding, duration of pain and itching and the time required for crusting and healing of lesions			
Antibacterials 1. Mupirocin (Bactroban)	Treat impetigo caused by *Staphylococcus aureus* and certain species of Streptococci Treat secondarily infected traumatic skin lesions Reduce the risk of infection in patients with high risk during institutional outbreaks of MRSA	Local, hypersensitivity and systemic reactions		Read and follow carefully all directions on the package Check all ingredients carefully for possible allergies If there is no improvement, the condition worsens, or there are other untoward reactions (e.g., inflammation, itching, rash, or swelling), stop the medication and consult a health care provider
Antiseptics 1. Chlorhexidine (Hibiclens, Peridex)	Inhibit the growth of bacteria	*Chlorhexidine:* Dermatitis and irritation Photosensitivit	*Chlorhexidine:* Pregnancy Not for frequent use for total body	Rinse chlorhexidine *thoroughly* Avoid use of chlorhexidine

Instructor Manual

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Purpose and Perspective of the Chapter

The purpose of this chapter is to explain how drug regulations and standards have evolved for the safety of consumers.

What's New in This Chapter

The following elements are improvements in this chapter from the previous edition:

- Updated Controlled Substances Schedule.
- Added new Section on Drug History along with a Pharmacology Timeline and table
- Added new questions on drug history material
- Added to facts and fallacies table.

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Cengage Supplements

The following product-level supplements provide additional information that may help you in preparing your course. They are available in the Cengage Instructor Center.

- Transition Guide (provides information about the changes from edition to edition)
- Test Bank (contains assessment questions)
- Solution and Answer Guide (offers answers and feedback)
- PowerPoint (provides text-based lectures and presentations)
- Educator's Guide (provides an overview of MindTap assets)

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Chapter Objectives

Upon completion of the chapter, the learner should be able to:

1. Explain what is meant by drug standards.
2. Discuss the historical development of pharmacology.
3. Name the first drug law passed in the United States for consumer safety and give the year it was passed.
4. Summarize the provisions of the Federal Food, Drug, and Cosmetic Act of 1938 and its amendments.
5. Interpret what is meant by USP/NF.
6. Summarize the provisions of the Controlled Substances Act of 1970.
7. Contrast the responsibilities of the FDA and DEA.
8. Define orphan drug.
9. Define schedules of controlled substances and differentiate between C-I through C-V schedules.
10. State several responsibilities you have in administering medications as a direct result of the three major drug laws described in this chapter.

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Complete List of Chapter Activities and Assessments

Refer to the Learning Objectives Mapping document, posted on the online resources, for a comprehensive guide to how this chapter's learning activities and assessments support the learning objectives.

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Key Terms

Controlled substances. Drugs controlled by additional prescription requirements because of the danger of addiction or abuse.

Drug Enforcement Administration (DEA). A bureau of the Department of Justice that enforces the Controlled Substances Act.

Drug standards. Federally approved requirements for the specified strength, quality, and purity of drugs.

Food and Drug Administration (FDA). An agency within the Department of Health and Human Services that enforces the provisions of the Federal Food, Drug, and Cosmetic Act and amendments of 1951 and 1962.

National Drug Code (NDC) Directory. Provides the FDA with a list of all drugs manufactured for commercial distribution.

Orphan drugs. Drugs or biological products used for the diagnosis, treatment, or prevention of a rare disease or condition, that is, one affecting fewer than 200,000 persons in the United States, or greater than 200,000 persons where the cost of developing the drug is probably not recoverable in the United States.

Over-the-counter (OTC) medication. Medication available without a prescription.

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Discussion Questions

You can assign these questions several ways: in a discussion forum in your LMS; as whole-class discussions in person; or as a partner or group activity in class.

1. Discussion: Drug Safety. Duration 60 minutes.
    a. In the United States, the use of marijuana has gained social acceptance, with some states legalizing the drug for recreational use or medicinal purposes. At the federal level, marijuana remains a Schedule 1 controlled substance by the United States Drug Enforcement Administration (DEA) and has not gained approval from the Food and Drug Administration (FDA) for medicinal use.
        1. What are the benefits to the consumer if this substance were to gain FDA approval?

i. Answer: The discussion response answers need to include assurance of consumer safety because manufactures going through FDA approval will have demonstrated effectiveness and safety of their product.

2. What are the risks of not having FDA approval for marijuana medicinal use?
   i. Answer: The answer needs to include unwanted deaths or harm as seen with sulfanilamide and thalidomide.
3. What are the implications to the DEA schedule classification of marijuana if this substance obtains FDA approval?
   i. Answer: Because of the dynamic nature in medication use the DEA classifications have been revised or changed to incorporate those changes.

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Additional Activities and Assignments

1. **Game**: The five schedules of controlled substances
   a. Using flip charts, whiteboards, or chalkboards, create two charts. Each chart should have five lists. Title the lists on each chart according to the five schedules of controlled substances. Using 4 × 6-in. index cards, make 104 flash cards that include two flash cards for each "Schedule Number," "Abuse Potential and Legal Limitations," and "Examples of Substances" found in Table 1-1, for a total of two sets of flash cards. Briefly introduce the learners to the schedules of controlled substances. Next, divide the learners into two teams. Provide each team with one set of the flash cards. Instruct each team to choose a leader. Each leader is to guide the team in a review of their flash cards, determination of the schedule that each flash card belongs to, and then tape each flash card in the appropriate column on its assigned chart. The teams have 7 minutes to complete this assignment. Review the answers with the learners, being inclusive of the information in Chapter 1. The team with the highest number of correct items wins. Provide the members of the winning team with a small prize.
2. **Presentation**: Legislative Acts
   b. Divide the learners into teams. Assign each team one of the legislative acts discussed in Chapter 1. Distribute pencils, erasers, markers, and poster boards to each team. Instruct each team to read the appropriate section in Chapter 1, create a poster, and prepare a short presentation. Each team will have 10 minutes to complete the task. Each team will then present their poster and information to the class. Briefly summarize the information presented to the learners, being inclusive of the information in Chapter 1.

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Cengage Video Resources

- MindTap Videos Available for This Chapter:
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Appendix

Generic Rubrics

Providing students with rubrics helps them understand expectations and components of assignments. Rubrics help students become more aware of their learning process and progress, and they improve students' work through timely and detailed feedback.

Customize these rubric templates as you wish. The writing rubric indicates 40 points and the discussion rubric indicates 30 points.

Standard Writing Rubric

Criteria	Meets Requirements	Needs Improvement	Incomplete
Content	The assignment clearly and comprehensively addresses all questions in the assignment. 15 points	The assignment partially addresses some or all questions in the assignment. 8 points	The assignment does not address the questions in the assignment. 0 points
Organization and Clarity	The assignment presents ideas in a clear manner and with strong organizational structure. The assignment includes an appropriate introduction, content, and conclusion. Coverage of facts, arguments, and conclusions are logically related and consistent. 10 points	The assignment presents ideas in a mostly clear manner and with a mostly strong organizational structure. The assignment includes an appropriate introduction, content, and conclusion. Coverage of facts, arguments, and conclusions are mostly logically related and consistent. 7 points	The assignment does not present ideas in a clear manner and with strong organizational structure. The assignment includes an introduction, content, and conclusion, but coverage of facts, arguments, and conclusions are not logically related and consistent. 0 points
Research	The assignment is based upon appropriate and adequate academic literature, including peer reviewed journals and other scholarly work. 5 points	The assignment is based upon adequate academic literature but does not include peer reviewed journals and other scholarly work. 3 points	The assignment is not based upon appropriate and adequate academic literature and does not include peer reviewed journals and other scholarly work. 0 points
Research	The assignment follows the required citation guidelines. 5 points	The assignment follows some of the required citation guidelines. 3 points	The assignment does not follow the required citation guidelines. 0 points
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Standard Discussion Rubric

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Participation	Submits or participates in discussion by the posted deadlines. Follows all assignment. instructions for initial post and responses. 5 points	Does not participate or submit discussion by the posted deadlines. Does not follow instructions for initial post and responses. 3 points	Does not participate in discussion. 0 points
Contribution Quality	Comments stay on task. Comments add value to discussion topic. Comments motivate other students to respond. 20 points	Comments may not stay on task. Comments may not add value to discussion topic. Comments may not motivate other students to respond. 10 points	Does not participate in discussion. 0 points
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Instructor Manual

Colbert, Essentials of Pharmacology, 9e, © 2023, 9780357618301; Chapter 1: Introduction to Pharmacologic Principles

Table of Contents

Purpose and Perspective of the Chapter

The purpose of this chapter is to explain how drug regulations and standards have evolved for the safety of consumers.

What's New in This Chapter

The following elements are improvements in this chapter from the previous edition:

- Updated Controlled Substances Schedule.
- Added new Section on Drug History along with a Pharmacology Timeline and table
- Added new questions on drug history material
- Added to facts and fallacies table.

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Cengage Supplements

The following product-level supplements provide additional information that may help you in preparing your course. They are available in the Cengage Instructor Center.

- Transition Guide (provides information about the changes from edition to edition)
- Test Bank (contains assessment questions)
- Solution and Answer Guide (offers answers and feedback)
- PowerPoint (provides text-based lectures and presentations)
- Educator's Guide (provides an overview of MindTap assets)

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Chapter Objectives

Upon completion of the chapter, the learner should be able to:

1. Explain what is meant by drug standards.
2. Discuss the historical development of pharmacology.
3. Name the first drug law passed in the United States for consumer safety and give the year it was passed.
4. Summarize the provisions of the Federal Food, Drug, and Cosmetic Act of 1938 and its amendments.
5. Interpret what is meant by USP/NF.
6. Summarize the provisions of the Controlled Substances Act of 1970.
7. Contrast the responsibilities of the FDA and DEA.
8. Define orphan drug.
9. Define schedules of controlled substances and differentiate between C-I through C-V schedules.
10. State several responsibilities you have in administering medications as a direct result of the three major drug laws described in this chapter.

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Complete List of Chapter Activities and Assessments

Refer to the Learning Objectives Mapping document, posted on the online resources, for a comprehensive guide to how this chapter's learning activities and assessments support the learning objectives.

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Key Terms

Controlled substances. Drugs controlled by additional prescription requirements because of the danger of addiction or abuse.

Drug Enforcement Administration (DEA). A bureau of the Department of Justice that enforces the Controlled Substances Act.

Drug standards. Federally approved requirements for the specified strength, quality, and purity of drugs.

Food and Drug Administration (FDA). An agency within the Department of Health and Human Services that enforces the provisions of the Federal Food, Drug, and Cosmetic Act and amendments of 1951 and 1962.

National Drug Code (NDC) Directory. Provides the FDA with a list of all drugs manufactured for commercial distribution.

Orphan drugs. Drugs or biological products used for the diagnosis, treatment, or prevention of a rare disease or condition, that is, one affecting fewer than 200,000 persons in the United States, or greater than 200,000 persons where the cost of developing the drug is probably not recoverable in the United States.

Over-the-counter (OTC) medication. Medication available without a prescription.

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Discussion Questions

You can assign these questions several ways: in a discussion forum in your LMS; as whole-class discussions in person; or as a partner or group activity in class.

1. Discussion: Drug Safety. Duration 60 minutes.
    a. In the United States, the use of marijuana has gained social acceptance, with some states legalizing the drug for recreational use or medicinal purposes. At the federal level, marijuana remains a Schedule 1 controlled substance by the United States Drug Enforcement Administration (DEA) and has not gained approval from the Food and Drug Administration (FDA) for medicinal use.
        1. What are the benefits to the consumer if this substance were to gain FDA approval?

i. Answer: The discussion response answers need to include assurance of consumer safety because manufactures going through FDA approval will have demonstrated effectiveness and safety of their product.

2. What are the risks of not having FDA approval for marijuana medicinal use?
   i. Answer: The answer needs to include unwanted deaths or harm as seen with sulfanilamide and thalidomide.
3. What are the implications to the DEA schedule classification of marijuana if this substance obtains FDA approval?
   i. Answer: Because of the dynamic nature in medication use the DEA classifications have been revised or changed to incorporate those changes.

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