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NCLEX®-RN Exam Prep

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Introduction

Since the first day of your nursing program, you have accumulated stacks of notes and materials that you were asked to learn. There is no way that you can study all of those materials. For this reason, we have developed a concise text that will help you organize your knowledge. This book will help you to prepare for the NCLEX RN using tried-and-true techniques used by the experts. This Introduction discusses the changes that have occurred in the NCLEX exam. You will learn about the future of the exam and how you can be a successful candidate. Whether you are taking the exam for the first time or have taken the exam several times, this book is designed for you.

The *Exam Prep* books help you to understand and appreciate the subject material that you need to know to pass nursing school and the exam. This book includes an in-depth discussion of all topics covered on the NCLEX. We take you on a self-guided tour of all of the areas covered on the NCLEX test plan and give you tips for passing. This book also contains practical tips for your nursing practice. You will find a user-friendly “Fast Facts” quick reference sheet containing lab values, normal fetal heart tones, and much more. Study tips, exam prep tips, case studies, math review, and test banks will help you practice those difficult pharmacology questions and help you manage the questions and alternative items that you will encounter on the exam. This book also includes chapters on the cultural aspects of nursing care and legalities. Each chapter concludes with a series of practice questions to help reinforce your understanding of the topics within the chapter and to help you prepare for the exam.

The nurse is a valued member of the healthcare team. The National Council of State Boards of Nursing (NCSBN) is responsible for allocating the number and type of questions that the nurse must take as well as the percentage of questions in each category. The differences between the test questions for a PN and RN are often subtle. Some examples of these differences are

- ▶ **Client care responsibility:** Because the RN is ultimately responsible for the coordination and management of client care as well as delegation of duties, RN candidates will get more questions on these topics whereas PN candidates will be tested on their knowledge and application of how to care for clients.
- ▶ **Intravenous therapy and medication:** The RN is responsible for initiating IVs and giving medication, but the PN is expected to be able to monitor IV lines and medication and know how to recognize problems and the steps to take to correct them.

- ▶ **Blood administration:** The RN is primarily responsible for initiating a blood transfusion, but the PN is expected to know the signs of a transfusion reaction and the action to be taken if such a reaction occurs.
- ▶ **Central line care:** The RN is primarily responsible for central line care, but the PN is expected to know how to care for the central line site and be aware of signs of an air emboli.

Each chapter in the *Exam Prep* is extremely useful to the nurse seeking licensure as a practical nurse or registered nurse.

Organization

This book is organized by body systems. This method uses a format that most students find helpful for learning material quickly and easily.

- ▶ Each chapter begins with an outline of topics—this is a list of subtopics covered in the chapter.
- ▶ Each chapter has helpful notes, tips, and cautions that will help you study for the exam.
- ▶ Each chapter includes an in-depth discussion of the topics in that unit.
- ▶ Each chapter includes pharmacological agents used in the care of the client.
- ▶ Each chapter includes diagnostic studies used to determine client needs.
- ▶ Each chapter ends with a case study. This allows the student to use critical-thinking skills in the treatment of the client.

Instructional Features

This book provides multiple ways to learn and reinforce the exam material. Following are some of the helpful methods:

- ▶ **Study strategies:** Study strategies are discussed in a chapter called “Study and Exam Preparation Tips.”
- ▶ **Key terms:** A list of key terms that the student must know appears as a glossary.
- ▶ **Notes, tips, and cautions:** Notes, tips, and cautions contain various kinds of useful or practical information such as tips on nursing practice.
- ▶ **Apply Your Knowledge:** Questions covering the material in that particular chapter are included at the end of each chapter. There are three test banks of 166 items and an additional test bank of management and pharmacology questions. You will also find a CD of test questions to help you practice the NCLEX format. These help you to determine what you need to study further and what you already know.

- ▶ **Suggested Readings and Resources:** At the end of each chapter, this section directs you to additional resources for study. This book is also designed to be a tool used by nursing students and nurses in practice.

Extensive Practice Test Options

This book provides you with many opportunities to assess your knowledge and practice for the exam. The test options are as follows:

- ▶ **Exam questions:** Each chapter ends with a series of questions relevant to the chapter material.
- ▶ **Case studies:** Each chapter includes a case study in which you can practice applying all the information to a real-life scenario.
- ▶ **Practice exams:** This book includes three complete practice exams that reflect the type of questions you will see on the NCLEX exam. Use them to practice and to help you determine your strengths and weaknesses so that you can return to your weakest areas for further study.
- ▶ **CD exam:** The exam engine included on the CD includes questions from the book as well as additional questions for your review. Be sure to use the study mode first and then try the exam mode. The CD allows you to repeat the exam as often as you need, so don't hesitate to try again and again if you need to.

Final Review

The final review section of the book provides you with two valuable tools for preparing for the exam:

- ▶ **Fast Facts:** This is a condensed version of the information contained in the book and is an extremely useful tool for last-minute review.
- ▶ **Exam questions:** Three complete practice exams are included in this book plus more on the CD-ROM. All questions are written in the style and format used on the actual exam. Use these exams to prepare for the real exam until you are comfortable with your level of knowledge.

Other Valuable Tools

This book also includes several other valuable tools for preparing for the NCLEX exam:

- ▶ Appendix A, "Things You Forgot," contains a list of information commonly used by nurses.
- ▶ Appendix B, "Need to Know More?" includes a list of websites and organizations that are helpful resources for the nurse in practice.

- ▶ Appendix C, “Calculations,” provides you with a quick-and-easy guide to medication administration.
- ▶ Appendix D, “Most-Prescribed Medications in the United States,” is a list of commonly prescribed drugs with the generic and brand names and common nursing implications for use.
- ▶ Appendix E, “Alphabetical Listing of Nursing Boards in the United States and Protectorates,” is a useful list for nurses.
- ▶ An index provides a complete source of the location of specific information.

About the NCLEX Exam

The Computer Adaptive Test (CAT) provides a means for individualized testing of each candidate seeking licensure as a professional nurse. Selecting from a large test bank, the computer chooses questions based on the candidate’s ability and competence as demonstrated on the prior question.

For the RN exam, the minimum number of questions is 75 with a maximum of 265. The average candidate’s exam comprises 160 items. You must answer the question that appears on the screen before another question is given, and you cannot skip questions or return to a previous question. It is imperative that you read each question carefully before you select a response. We suggest that you cover the answers with your nondominant hand and read the stem before looking at the answers. RN candidates are allowed six hours to take the exam.

The NCLEX consists of questions from the cognitive levels of knowledge, comprehension, application, and analysis. The majority of questions are written at the application and analysis levels. Questions incorporate the five stages of the nursing process:

- ▶ Assessment
- ▶ Analysis
- ▶ Planning
- ▶ Implementation
- ▶ Evaluation

There are also questions from the four categories of client needs (noted in bold in Table I.1). Client needs are divided into subcategories (noted in italics in Table I.1) that define the content within each of the four major categories tested on the NCLEX. Table I.1 outlines the categories and subcategories of client needs.

TABLE I.1 NCLEX RN Exam Categories and Subcategories

Client Needs	Percentage of Items from Each Category/Subcategory
Safe, Effective Care Environment	
<i>Management of Care</i>	16%–22%
Safety and Infection Control	8%–14%
Health Promotion and Maintenance	6%–12%
Psychosocial Integrity	6%–12%
Physiological Integrity	
<i>Basic Care and Comfort</i>	6%–12%
<i>Pharmacological and Parenteral Therapies</i>	13%–19%
<i>Reduction of Risk Potential</i>	10%–16%
<i>Physiological Adaptation</i>	11%–17%

The percentage of questions allotted to each category is determined by the National Council and depends on the results of a survey the council sends out every three years to new graduates. Based on the activity statements, the percentages change accordingly. It is safe to say that as the patient population changes, these categories will also change. This book reflects those changes particularly as they relate to the need for nurses in management roles, cultural diversity, and client criticality.

Computerized adaptive testing offers the candidate several advantages over the former paper-and-pencil exam. The test questions are stored in a large test bank and classified by test plan areas and level of difficulty. Depending on the answer given by the candidate, the computer presents another question that is either more difficult or less difficult. This allows the computer to determine the candidate's knowledge of the subject matter more precisely.

The pass/fail decision is not based on how many questions the candidate answers correctly, but on the difficulty of the questions answered correctly. Even though candidates might answer different questions and different numbers of questions, the test plan remains the same. All NCLEX examinations conform to this test plan. Each time you answer a question correctly, the next question gets harder until you miss a question; then an easier question is given until you answer correctly. This way the computer concludes whether a candidate has met the passing standard. If you are clearly above the passing standard at the minimum number of questions, the computer stops asking questions. If you are clearly below the passing standard, the computer stops asking questions. If your ability estimate is close to the passing standard, the computer continues to ask questions until either the maximum number of questions is asked or time expires. Should time expire, the last 60 questions are reviewed. To pass, the candidate must remain above the passing standard on the last 60 items.

The CAT exam offers another advantage. The candidate can schedule the exam at a time that is convenient and usually receives test results in 7 days or sooner. The candidate can retake the exam after 45 days in most states. We suggest that you review this text and others, and, if needed, take a review seminar prior to taking the NCLEX. Allow at least one week to study and prepare for the exam. Remember: You want to take the

exam only one time. You should visit the National Council's website at www.ncsbn.org for information regarding how to schedule your test. We suggest that you read the application process thoroughly to learn how you can register to take the exam.

Advice for Preparing for the Exam

Judicious use of this book, either alone or with a review seminar such as the one provided by Rinehart and Associates, will help you achieve your goal of becoming licensed to practice nursing. We suggest that you find a location where you can concentrate on the material each day. A minimum of two hours per day for at least two weeks is suggested. This book provides you with tips, notes, and sample questions. These questions will acquaint you with the types of questions you will see during the exam. The mock exam is formulated with those difficult management and delegation questions that you can score to determine your readiness to test. Pay particular attention to the notes, tips, and warnings throughout the book as well as the "Fast Facts" chapter. Using these elements will help you gain knowledge and reduce your stress as you prepare to take the test.

Advice for Test Day

From our years of experience in nursing and teaching, we have this advice for you:

- ▶ **Remember to know where you are going:** Be sure that you know the exact location of the exam. It is easy to get caught in traffic, and if you are late, you forfeit the exam time and your money. You will have to reschedule your exam and pay again.
- ▶ **Have your authorization number and forms of ID with you:** If you forget to take your identification, you will have to reschedule and will forfeit your testing time. Remember you will be photographed and fingerprinted prior to entering the testing site, so do not let this upset you.
- ▶ **Eat a high-protein meal prior to the exam:** You want good food for thought prior to taking the exam. Studies have shown that a meal high in vitamins such as B9 help us think more clearly during stressful times.
- ▶ **Take your time during the test:** Remember, you do not have to complete all the questions.
- ▶ **If you need to take a break, get up and walk around:** The clock will continue to tick, so don't take too much time.
- ▶ **Dress in layers:** The testing site might be cold or warm.

Hints for Using This Book

Each *Exam Prep* book follows a regular structure, along with cues about important or useful information. Here's the structure of a typical chapter:

- ▶ **Outline of topics:** Lists the topic headings within the chapter.
- ▶ **Headings and subheadings:** These are the main chapter topics and ancillary subtopics, designating the core content for study within the chapter.
- ▶ **Case studies:** This allows the student to use critical thinking skills in a specific client situation. The answers and complete explanations for the case study are included.
- ▶ **Key Concepts:** This section of the chapter includes the following three components for you to review and study to ensure your understanding of the chapter topics:
 - ▶ **Key Terms:** A list of the key terms from the chapter that you should be able to define.
 - ▶ **Diagnostics:** When appropriate, this section lists diagnostics used in the care of the client with a condition covered within the chapter.
 - ▶ **Pharmacological agents used in the care of the client with disorders found in the chapter:** This information is found in a table form and includes the generic name and brand name of the drug by category, the action of the drug, the potential side effects, and the nursing implications and care of the client taking that category of drugs.
- ▶ **Apply Your Knowledge:** Exam questions about the chapter content with answers and explanations are included in each chapter.
- ▶ **Suggested Reading and Resources:** Each chapter concludes with a supplementary resource list (including books, websites, and journals) relevant to the chapter content.

We suggest that you study from the front of the book and proceed in a logical sequence. When you have completed the case study and questions at the end of each chapter, you might feel the need to research using the resource list.

Contact the Author

We are interested in your study and success, and want you to pass on the first attempt. If after reviewing with this text, you would like to contact us, you can do so at Rinehart and Associates, PO Box 124, Booneville, MS 38829 or visit our website at www.nclexreview.net. You can contact us by phone at (662) 728-4622.

Remember, knowing the material is important, but being able to apply that knowledge is a must. When you understand the material, passing the NCLEX exam will be easy.

Good luck!

5

CHAPTER FIVE

Care of the Client with Respiratory Disorders

According to the American Lung Association (2006), lung disease is the fourth leading cause of death in the United States. More than 35 million Americans live with chronic lung disease. Some of these diseases, such as asbestosis, are the result of occupational exposure and carry associated risks of lung cancer. Respiratory infections, particularly nosocomial pneumonia, are responsible for 11% of all hospital-acquired infections. This chapter covers common noninfectious disorders that contribute to chronic lung disease, occupational lung disorders, infectious diseases of the lower respiratory tract, acute respiratory disorders that threaten the client's life, and emerging pulmonary infections.

Noninfectious Disorders of the Lower Respiratory Tract

Noninfectious disorders of the lower respiratory tract affect the exchange of oxygen and carbon dioxide. The chronic and progressive nature of many of these disorders, such as emphysema, result in major changes in the person's lifestyle. Others, such as asbestosis and berylliosis, result from occupational exposure and increase the risk of lung cancer and premature death.

Although many noninfectious disorders of the lower respiratory tract are preventable, other disorders—such as sarcoidosis—are not. This section reviews the chronic obstructive disorders, pulmonary hypertension, interstitial pulmonary disease, and occupational pulmonary disease.

Chronic Bronchitis

Chronic bronchitis refers to an inflammation of the bronchi and bronchioles. It is caused by a continuous exposure to infections or noninfectious irritants, such as tobacco smoke. Unlike emphysema, bronchitis is confined to the small and large airways rather than the alveoli. Thickening of the bronchial wall and the production of thick mucus blocks the smaller airways and narrows the larger ones. Chronic bronchitis can often be reversed with the removal of irritants; however, it is complicated by respiratory infections and can progress to right-sided heart failure, pulmonary hypertension, and in some instances to acute respiratory failure. Chronic bronchitis is most common in those age 40–55 years.

Symptoms associated with chronic bronchitis include the following:

- ▶ Shortness of breath
- ▶ Cough (which might be more common in the winter months)
- ▶ Increased sputum production
- ▶ Difficulty in eating (due to shortness of breath)
- ▶ Decreased weight
- ▶ Sleep difficulty (need to sleep sitting up to facilitate breathing)
- ▶ Auscultation of fine or coarse crackles and wheezes
- ▶ Prolonged expiration time

Treatment of chronic bronchitis includes the use of bronchodilators, steroids, antacids, and expectorants. Antibiotics are usually ordered if the client has an acute respiratory infection. Attention is given to correcting acid-base imbalances, meeting nutritional needs, providing frequent oral care, and providing oxygen at low settings (2–3 liters per minute).

Emphysema

Emphysema is a condition in which there is an irreversible overdistention of the alveoli that eventually results in destruction of the alveolar wall. Clients with emphysema are sometimes described using the terms *pink puffers* or *blue bloaters*. *Pink puffers* (those with involvement of the bronchiole, alveolar duct, alveoli) experience exertional dyspnea yet remain pink. *Blue bloaters* (those with involvement of the secondary lobule resulting in changes in O₂ perfusion) have problems with chronic hypoxia, cyanosis, pulmonary edema, and sometimes respiratory failure. The blue bloater, who is cyanotic even at rest, experiences increasing dyspnea and deepening cyanosis with exertion. Polycythemia predisposes the client with emphysema to the development of clots.

Physical assessment of the client with advanced emphysema reveals the following:

- ▶ Presence of a barrel chest
- ▶ Digital clubbing
- ▶ Rapid shallow respirations
- ▶ Prolonged expiratory phase with grunting respirations
- ▶ Muscle wasting
- ▶ Weight loss
- ▶ Peripheral cyanosis
- ▶ Violent coughing productive of thick sputum

Chest x-ray reveals flattening of the diaphragm. Arterial blood gases typically reveal increased CO₂ levels and decreased O₂ levels. Pulmonary studies reveal increased residual volume and decreased vital capacity. *Serum α₁-antitrypsin* levels are used to screen for deficiency of the enzyme, particularly in clients with a positive family history of obstructive airway disease, in those with early onset, women, and smokers who develop symptoms of COPD in their 40s. Normal adult *serum α₁AT* levels range from 80 to 260mg/dL.

Many of the symptoms for the client with chronic bronchitis and emphysema are the same; therefore, the treatment of both conditions includes the use of bronchodilators, steroids, antacids, and expectorants. Antibiotics are usually ordered if the client has an acute respiratory infection. Prophylactic antibiotics might be prescribed for clients who experience four or more respiratory infections per year. Immunization against pneumococcal pneumonia and yearly influenza vaccination are recommended to reduce the risk of respiratory infections. Attention is given to correcting acid-base imbalances, meeting nutritional needs, providing frequent oral care, and providing oxygen at low settings (2–3 liters per minute). *α₁-antitrypsin* replacement therapy can be administered weekly by intravenous infusion for clients with emphysema due to genetic deficiency of the enzyme. Although expensive, the medication has been shown to reduce mortality rates.

Asthma

Asthma is the most common respiratory condition of childhood. *Intrinsic* (nonallergenic) asthma is precipitated by exposure to cold temperatures or infection. *Extrinsic* (allergenic or atopic) asthma is often associated with childhood eczema. Both asthma and eczema are triggered by allergies to certain foods or food additives. Introducing new foods to the infant one at a time helps decrease the development of these allergic responses. Easily digested, hypoallergenic foods and juices should be introduced first. These include rice cereal and apple juice.

Although asthma is the most common chronic disease of childhood, it can occur at any age. Many adults with asthma report having the disease in childhood.

Symptoms of asthma include expiratory wheeze; shortness of breath; and a dry, hacking cough, which eventually produces thick, white, tenacious sputum. In some instances, an attack might progress to status asthmaticus, leading to respiratory collapse and death.

Management of the client with asthma includes maintenance therapy with mast cell stabilizers and leukotriene modifiers. Treatment of acute asthmatic attacks includes the administration of oral or inhaled short-term and long-term B₂ agonists and anti-inflammatories as well as supplemental oxygen. The nurse should instruct the client in the proper use of the inhaler (metered-dose and dry-powder) as detailed in the sidebar that follows. Methylxanthines, such as aminophylline, are rarely used for the treatment of asthma. These drugs, which can cause tachycardia and dysrhythmias, are administered as a last resort. Antibiotics are frequently ordered when a respiratory infection is present.

Client Teaching: Use of Metered-Dose and Dry-Powder**Inhaler:**

1. Insert the metered-dose inhaler canister into the mouthpiece or spacer.
2. Remove the mouthpiece cap and shake the canister 3–5 seconds.
3. Exhale slowly and deeply.
4. Hold the canister upside down two fingers away from the mouth or use a spacer.
5. Inhale deeply for 3–5 seconds while pressing down on the canister.
6. Hold breath for 10 seconds, release pressure on the canister, remove mouthpiece from the mouth, and then exhale slowly.
7. Wait 60 seconds before repeating the procedure.
8. Rinse the mouth with water; rinse the inhaler mouthpiece and spacer and store them in a clean area.

Dry-Powder Inhaler:

1. Store the inhaler and medication in a dry area.
2. Remove the cap and hold the inhaler upright.
3. Load the inhaler according to the directions for use.
4. Hold the inhaler level with the mouthpiece end facing down.
5. Tilt your head back slightly; then breathe deeply and slowly.
6. Place the mouthpiece into your mouth; with the teeth over the mouth piece form a seal with the lips. Do not block the inhaler with your tongue.
7. Inhale rapidly and deeply for 2–3 seconds.
8. Remove the inhaler from your mouth and hold your breath for 10 seconds.
9. Exhale slowly through pursed lips. Do not exhale into the inhaler mouthpiece.
10. Rinse mouth with water and brush teeth after using the inhaler.
11. Store the inhaler in a clean, sealed plastic bag. Do not wash the inhaler unless directed by the manufacturer.
12. Clean the mouthpiece weekly using a dry cloth.
13. Notify the physician of the presence of a sore throat or sore mouth.

NOTE

For more detailed information on asthma, see the “Childhood Asthma” section in Chapter 16, “Care of the Pediatric Client.”

CAUTION

When both antibiotics and aminophylline are administered intravenously, the nurse should check for compatibility. If only one IV site is used, the nurse should use the SAS procedure (saline, administer medication, saline) for administering medications. Administer IV doses using a controller.

Clients receiving aminophylline should be maintained on cardiorespiratory monitoring because aminophylline affects cardiac and respiratory rates as well as blood pressure. Because toxicity can occur rapidly, the nurse should monitor the client's aminophylline level. Symptoms of toxicity are nausea, vomiting, tachycardia, palpitations, hypotension. In extreme cases, the client could progress to shock, coma, and death.

The therapeutic range for aminophylline is 10–20 mcg/mL.

Refer to Table 5.1 at the end of the chapter for full details on the pharmacology agents administered for respiratory conditions.

Pleurisy

Pleurisy, (pleuritis) an inflammation of the pleural sac, can be associated with upper respiratory infection, pulmonary embolus, thoracotomy, chest trauma, or cancer.

Symptoms include

- ▶ Sharp pain on inspiration
- ▶ Chills
- ▶ Fever
- ▶ Cough
- ▶ Dyspnea

Chest x-ray reveals the presence of air or fluid in the pleural sac. Management of the client with pleurisy includes the administration of analgesics, antitussives, antibiotics, and oxygen therapy. A thoracentesis is often necessary if there is pleural effusion. It is the nurse's responsibility to prepare the client for the procedure including positioning. The client can be positioned in one of the following ways:

- ▶ Sitting on the edge of the bed with her feet supported and with her head and arms resting on a padded over the bed table (see Figure 5.1)
- ▶ Sitting astride a chair with her arms and head resting on the back of the chair
- ▶ Lying on her unaffected side with her head of the bed elevated 30°–45° (for clients unable to sit upright)

Following the thoracentesis, the nurse should assess the client for complications, including bleeding, hypotension, and pneumothorax.

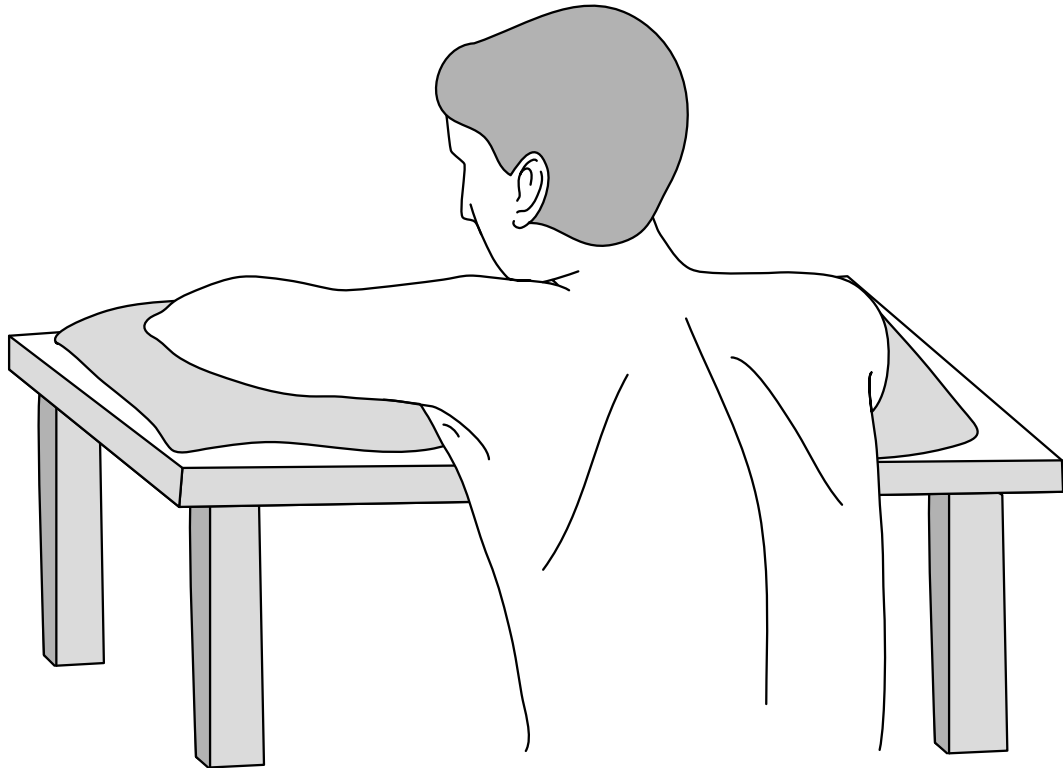


FIGURE 5.1 Client positioning for thoracentesis.

Pulmonary Hypertension

Pulmonary hypertension results when constriction of blood vessels increases vascular resistance in the lungs. Pulmonary hypertension is diagnosed by systolic pressures greater than 30 mm Hg in the pulmonary artery. In some instances, the condition occurs as a complication of other lung disorders. In the case of primary pulmonary hypertension (PPH), there is no lung disorder and the cause remains unknown. Pulmonary hypertension seems to occur in families and is more common in women 20–40 years of age.

The most common symptoms associated with pulmonary hypertension are chest pain, dyspnea and fatigue in an otherwise healthy adult. Eventually, the right side of the heart fails.

The diagnosis of pulmonary hypertension is made by a right-sided heart catheterization that reveals increased pressure in the pulmonary artery. Pulmonary function tests show decreased pulmonary volumes and decreased diffusion capacity. Abnormal ventilation perfusion scan and abnormal spiral CT help to confirm the diagnosis.

Medical treatment of pulmonary hypertension includes the use of anticoagulants, vasodilators, cardiotonics, calcium channel blockers, bronchodilators and diuretics. Daily doses of Coumadin (warfarin) are given to achieve an international normalized ratio

(INR) of 1.5–2.0. This elevated INR can prevent the common occurrence of thrombosis in situ. Cardizem (diltiazem) or other calcium channel blockers such as Procardia (nifedipine) are given to dilate blood vessels. Short-acting direct vasodilators can be used for clients who do not respond to calcium channel blockers. These short-acting direct vasodilators include intravenous Flolan (epoprostenol), intravenous Remodulin (treprostinol), and oral Tracleer (bosentan). The use of vasodilators is limited in the client with pulmonary hypertension because the medication can produce systemic hypotension. Instead, infusion of Adenocard (adenosine) into the pulmonary artery is recommended because it has a vasodilating effect that is specific to pulmonary circulation. Viagra (sildenafil) has been shown to cause preferential pulmonary vasodilation and is sometimes used to manage clients with primary and secondary pulmonary hypertension.

The cardiotoxic drug Lanoxin (digoxin) and diuretics are indicated for the client with cardiac hypertrophy and cardiac failure. Bronchodilators improve hypoxemia and reduce pulmonary vascular resistance. Surgical management of pulmonary hypertension relies on whole lung transplant.

Interstitial Pulmonary Disease

Interstitial pulmonary disease, sometimes referred to as *fibrotic lung disease*, encompasses several lung disorders that share common characteristics. These characteristics include the following:

- ▶ Pathologic changes in the alveoli, blood vessels, and surrounding support tissue of the lungs instead of the airway
- ▶ Restriction in expansion and recoil rather than obstructive disease
- ▶ Thickening of lung tissue so that the lung becomes “stiff” or noncompliant with respirations

Sarcoidosis and idiopathic pulmonary fibrosis are two examples of interstitial pulmonary disease.

Sarcoidosis

Sarcoidosis is a multisystem disorder that is capable of producing granulomatous lesions in almost any organ or tissue. The disorder is believed to be a hypersensitive response to one or more agents such as bacteria, fungi, viruses, or chemicals.

Sites most commonly affected are the lungs, lymph nodes, spleen, liver, central nervous system, skin, eyes, and parotid glands. According to the American Lung Association (2006) more than 90% of clients with sarcoidosis have pulmonary involvement. In the lungs, granulomatous infiltration and fibrosis results in low lung compliance, impaired diffusing capacity, and decrease lung volume.

The disease is not gender specific; however, African Americans are affected 10 times more often than Caucasians with the onset occurring in the third and fourth decades of life.

The symptoms of sarcoidosis vary according to the system involved. Pulmonary symptoms include dyspnea, cough, hemoptysis, and congestion. Other symptoms include anorexia, fatigue, weight loss, and fever.

The diagnosis of sarcoidosis is made by chest x-ray and CT scan, which reveal disseminated miliary and nodular lesions in the lungs. Mediastinoscopy or transbronchial biopsy are performed to confirm the diagnosis. The presence of noncaseating granulomas is consistent with a diagnosis of sarcoidosis.

Some clients with sarcoidosis undergo remission without specific treatment. Others are treated with cytotoxic or immunosuppressive drugs. Commonly used medications include corticosteroids (prednisone), Plaquenil (chloroquine), Indocin (indomethacin), Imuran (azathioprine), and Rheumatrex (methotrexate).

Pulmonary Fibrosis

Pulmonary fibrosis or restrictive lung disease is most common in the older adult with a history of cigarette smoking or chronic exposure to respiratory irritants such as metal particles, wood fires, or organic chemicals. When the lungs are injured, an inflammatory process continues beyond the time of normal healing. Extensive fibrosis and scarring occur, leaving the alveoli damaged. Most persons with pulmonary fibrosis have progressive symptoms with few remissions. Even with proper treatment, most clients die within five years of diagnosis.

Early symptoms of pulmonary fibrosis include mild exertional dyspnea. As the disease progresses dyspnea and hypoxemia become more severe. Eventually the client continues to have hypoxemia even when high levels of oxygen are administered. The goal of treatment is to slow the disease process and to manage the client's dyspnea.

Immunosuppressive drugs such as Cytoxan (cyclophosphamide) and Imuran (azathioprine) are used to reduce inflammation. Side effects of these drugs include immunosuppression, nausea, and hepatic damage. Lung transplantation is a curative therapy for pulmonary fibrosis.

Occupational Pulmonary Disease

Occupational pulmonary disease results when workers are exposed to organic and inorganic dusts or noxious fumes or aerosols. Factors affecting the development of occupational lung disease include the composition and concentration of the agent, the duration of exposure, and the individual's susceptibility to the irritant. Coexisting pulmonary irritants such as cigarette smoke increase the risk of certain types of lung cancer.

Occupational pulmonary diseases include silicosis, pneumoconiosis (black lung), asbestosis, talcosis, and berylliosis.

The prevention of occupational pulmonary disease includes proper ventilation of the work environment and the use of protective gear, including face masks, hoods, and industrial respirators. Educational programs for smoking cessation improve overall health and help decrease the risk of occupational pulmonary disease. Workers exposed to asbestos and toxic dusts should be educated regarding health hazards to others from clothing and shoes. A copy of “right to know laws” should be available to all workers exposed to hazardous or toxic materials. Workers should be educated about hazardous or toxic substances they work with, effects of these substances on their health, and measures to protect themselves.

Silicosis

Silicosis is caused by the inhalation of silica dust, which produces nodular lesions throughout the lungs. These nodules eventually enlarge and coalesce, causing dense masses in the upper portions of the lungs. The lungs become unable to fully expand and secondary emphysema produces obstructive lung disease.

Silicosis affects 1–3 million workers in the United States. Persons employed as foundry workers and those employed in glass manufacturing, stone-cutting, and manufacturing of abrasives and pottery are at risk for silicosis. Finely ground silica found in soaps and polishes is particularly dangerous.

The client with acute silicosis complains of dyspnea, fever, cough, and weight loss. Those with chronic silicosis have symptoms of hypoxemia, restricted air flow, and right-sided heart failure.

There is no specific treatment for silicosis. Management usually includes the provision of supplemental oxygen as needed, bronchodilators, and diuretics for symptoms of right-sided heart failure.

Pneumoconiosis

Pneumoconiosis (*black lung, coal miner’s lung*) results from inhalation of dusts that are a mixture of coal, kaolin, mica, and silica. When these particles are deposited in the alveoli and bronchioles, they are surrounded by macrophages that transport them to the terminal bronchioles. For a while, these deposits are removed by mucociliary action. However, in time, the clearance mechanism cannot remove the excessive dust load and macrophages and fibroblasts clog the bronchioles and alveoli, creating blackened dots on the lung. These blackened dots, known as *coal macules*, are the primary lesions of the disease. Enlarged and dilated bronchioles eventually produce localized emphysema.

Pneumoconiosis begins in the upper lobes of the lungs and with repeated exposure progresses to the lower lobes. Symptoms begin with a chronic productive cough similar to the cough of bronchitis. As the disease progresses, the client complains of shortness of breath and a cough productive of a black fluid. Later symptoms include those of right-sided heart failure.

Asbestosis

Asbestosis, the result of inhaling asbestos dust or fibers, produces diffuse pulmonary fibrosis that obliterates the alveoli. Federal laws restricting or eliminating the use of asbestos were passed when it was learned that asbestos posed a health hazard. Persons employed in asbestos mining and manufacturing, shipbuilding, and construction and demolition of buildings containing asbestos materials are at greatest risk. Examples of asbestos-containing materials include shingles, cement, vinyl asbestos tile, fireproof paints, filters, and brake linings.

Symptoms associated with asbestosis include progressive dyspnea, persistent dry cough, mild to moderate chest pain, anorexia, and weight loss. Pleural thickening and plaque formation reduce lung volume and oxygen and carbon dioxide exchange. The development of cor pulmonale and respiratory failure is common. Additional related diseases include asbestosis pleural effusion and malignant mesothelioma—a rare but fatal cancer of the pleura, peritoneum, or pericardium. The period of time between asbestos exposure and development of mesothelioma is long, ranging from 20 to 30 years. Depending on the person's health and time of diagnosis, the average survival time is 4–12 months.

Talcosis

Talcosis occurs after exposure to talc dust. Persons employed in the manufacture of paint, ceramics, cosmetics, roofing materials, and rubber goods are at greatest risk for the development of talcosis. The disease results in diffuse interstitial fibrosis that eventually results in restrictive lung disease. The symptoms are the same as those with other forms of restrictive lung disease.

Berylliosis

Berylliosis is more common in workers in industries in which metal is heated (steel mills or welding) or where metal is machined in such a way that a dust is created. There is a genetic component in some individuals that seems to increase susceptibility to the disease after exposure. Like talcosis, berylliosis produces interstitial fibrosis that results in restrictive lung disease.

Infectious Disorders of the Lower Respiratory Tract

Infectious disorders of the lower respiratory tract refers to diseases affecting the lungs.

Pneumonia and pulmonary tuberculosis represent two major infectious disorders of the lower respiratory tract.

Pneumonia

Pneumonia is an inflammation of the parenchyma of the lungs caused by any number of organisms that include bacteria, viruses, and fungi. Community-acquired pneumonias include streptococcal pneumonia, *Haemophilus influenza*, Legionnaires' disease,

Mycoplasma pneumoniae, viral pneumonia, and chlamydial pneumonia. Hospital-acquired pneumonias include *Pseudomonas* pneumonia, staphylococcal pneumonia, *Klebsiella* pneumonia, *Pneumocystis carinii* pneumonia (PCP), and fungal pneumonia.

Presenting symptoms depend on the causative organism. The client with viral pneumonia tends to have milder symptoms, whereas the client with bacterial pneumonia might have chills and fever as high as 103°. Clients with cytomegalovirus, *Pneumocystis carinii*, or aspergillus will be acutely ill. General symptoms of pneumonia include

- ▶ Hypoxia
- ▶ Tachypnea
- ▶ Tachycardia
- ▶ Chest pain
- ▶ Malaise
- ▶ Fever
- ▶ Confusion (particularly in the elderly)

Care of the client with pneumonia depends on the causative organism. The management of bacterial pneumonias includes antibiotics, antitussives, antipyretics, and oxygen. Antibiotics that might be ordered include penicillin G, tetracycline, gentamicin, and erythromycin. Viral pneumonias do not respond to antimicrobial therapy but are treated with antiviral therapy. Fungal pneumonias are treated with antifungal therapy. Tables 5.2 and 5.3 at the end of the chapter provide examples of community- and hospital-acquired pneumonias as well as drugs used to treat them.

CAUTION

Some medications used in the treatment of pneumonia require special attention:

- ▶ Tetracycline should not be given to women who are pregnant or to small children because of the damage it can cause to developing teeth and bones.
- ▶ Garamycin (gentamicin), an aminoglycoside, is both ototoxic and nephrotoxic. It is important to monitor the client for signs of toxicity. Serum peak and trough levels are obtained according to hospital protocol. Peak levels for Garamycin are drawn 30 minutes after the third or fourth IV or IM dose. Trough levels for Garamycin are drawn 30 minutes before the third or fourth IV or IM dose. The therapeutic range for Garamycin is 4–10 mcg/mL.

Additional therapies for the client with pneumonia include providing for fluid and nutritional needs, obtaining frequent vital signs, and providing oral hygiene. Supplemental oxygen and chest percussion and drainage should be performed as ordered by the physician.

Oxygen Therapy

The goal of oxygen therapy is to provide adequate levels of oxygen to blood while decreasing the workload of the heart and lungs. As with other medications, a physician's order is required when administering oxygen, except in emergency situations when failure to do so would result in injury or death of the client.

Oxygen delivery systems are classified as low flow or high flow. Low-flow systems provide supplemental oxygen while the client continues to breathe some room air. Examples of low-flow systems are nasal cannula, simple mask, and rebreather masks. Nasal cannulas are capable of providing 1–6 liters of oxygen per minute. Masks are capable of providing 6–12 liters of oxygen per minute. Venturi and aerosol masks are examples of high-flow systems, which are capable of delivering 4–10 liters of oxygen per minute. Oxygen flow rates are prescribed by the physician according to the client's condition and oxygen requirements. Figure 5.2 illustrates a Venturi mask as well as nasal cannula.

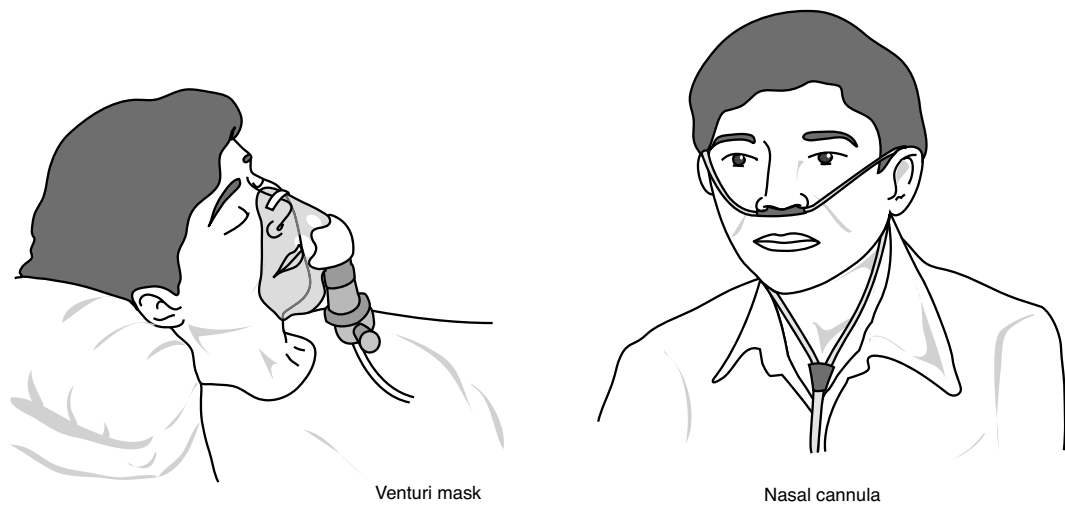


FIGURE 5.2 Examples of oxygen delivery systems.

The nurse should observe the client's response to oxygen therapy as well as watching for signs of oxygen toxicity. Signs of oxygen toxicity include substernal discomfort, paresthesias, dyspnea, restlessness, fatigue, malaise, and progressive respiratory difficulty.

Chest Physiotherapy

Chest physiotherapy that includes percussion, vibration, and postural drainage is used to remove bronchial secretions and improve oxygenation. The nurse should assess the client for any conditions, such as recent thoracic surgery, that would contraindicate the use of chest physiotherapy.

Auscultation of the chest before and after the procedure is carried out to determine the effectiveness of treatment. A towel placed over the client's chest will make the client more comfortable during percussion. Using cupped hands, the nurse strikes the client's chest in a rhythmical fashion for 3–5 minutes for each lung segment. As the client

exhales, manual vibration or tremor might be used to help loosen secretions. Figure 5.3 illustrates chest percussion and drainage.

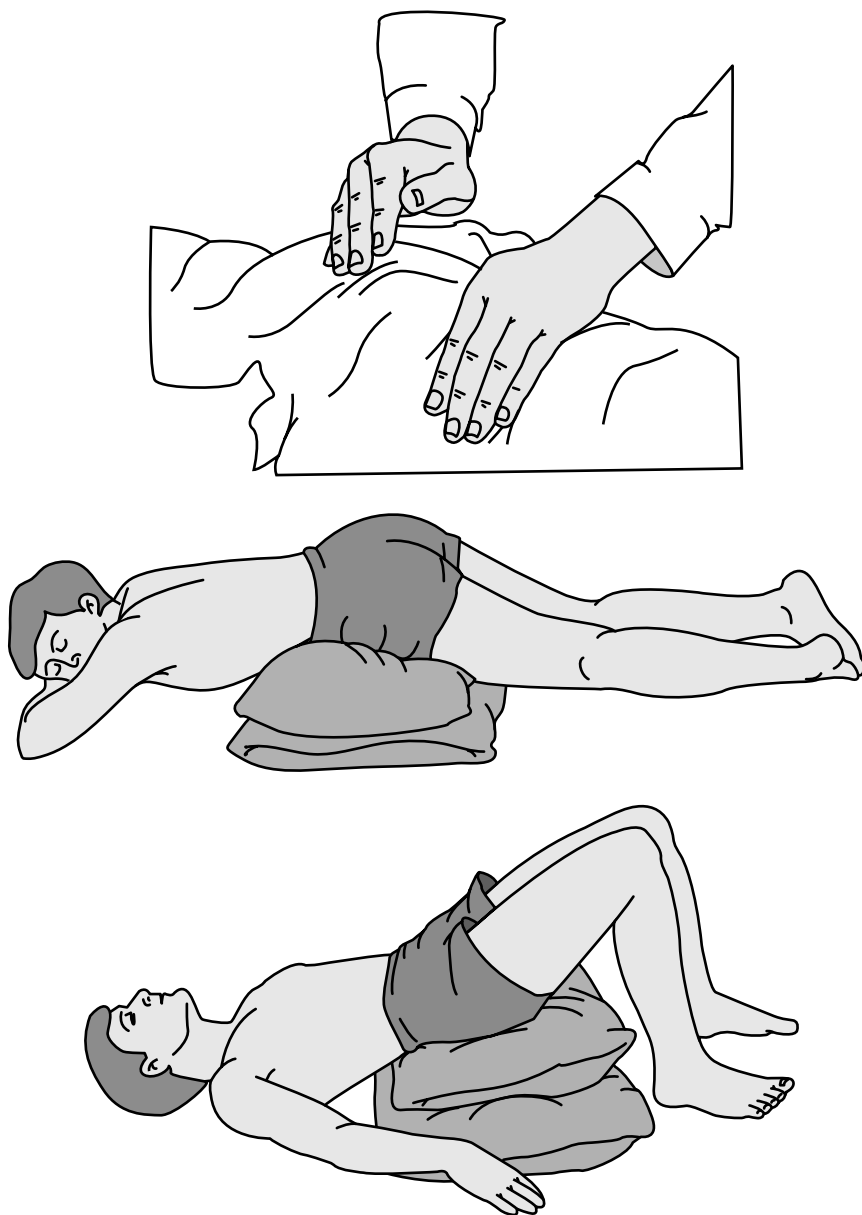


FIGURE 5.3
Chest percussion
and postural
drainage for sides
(lower lobes) and
back (upper
lobes).

Tuberculosis

Tuberculosis (TB) is a highly contagious respiratory infection caused by the *mycobacterium tuberculosis*. The organism is transmitted by droplets from the respiratory tract. The incidence of TB has been steadily increasing in the United States and world wide for the past twenty years. Risk factors include living in overcrowded conditions, being immune compromised, and age. Duration of exposure affects transmission.

Symptoms of TB are varied. Some clients might have no symptoms; others might complain of fever (particularly in the afternoon), weight loss, anorexia, indigestion, cough that becomes productive, night sweats, shortness of breath, and changes in lung sounds. Sites most commonly affected by TB include the lungs, cervical lymph nodes, kidney, and spine.

Methods used for tuberculosis testing include the intradermal PPD (Mantoux) test and the multiple puncture (tine) test. The multiple puncture test is less accurate than the PPD test; therefore, it is used less often. The PPD (Mantoux) is performed by injecting 0.1 mL of PPD intradermally in the inner aspect of the forearm. The test is read within 48–72 hours with notation of induration, not redness. Indurations of 0 mm–4 mm are generally considered negative, whereas indurations of 5 mm–9 mm indicate questionable exposure. Indurations of 5 mm–9 mm are considered positive for those in close contact with a client with TB, those with HIV or who are immunocompromised, and in those who have an abnormal chest x-ray. Indurations of 10 mm–15 mm are considered positive for those born in a country where TB is prevalent; those who are intravenous drug users; residents of long-term care facilities, homeless shelters, or correctional facilities; and those with medical conditions such as malnutrition and diabetes.

Indurations greater than 15 mm are considered to be positive for all. Positive test results indicate exposure and infection, but not necessarily active disease. An induration of 5 mm is the cut-off for organ transplant recipients and other immunosuppressed clients treated with prednisone or TNF antagonists. (CDC, 2005) Persons who have had a positive skin test will always have a positive skin test, therefore they should be screened with a chest x-ray as needed to detect clinically active TB.

Positive skin tests can be measured accurately for up to seven days. Negative reactions can be measured accurately for only 72 hours. Factors that can cause false positive TB skin test include nontuberculous mycobacterium and inoculation with BCG vaccine. Factors that can cause false negative TB skin test include anergy (weakened immune system), recent TB infection, age, vaccination with live viruses, overwhelming TB, and poor testing technique.

TB is confirmed by positive sputum test. Automated radiometric culture systems (Bactec) yield results in one to three weeks. Blood tests that measure and compare the amount of interferon-gamma released by blood cells in response to antigens include the Quantiferon TB test and Quantiferon Gold. Two-step testing is used to establish a baseline skin test and for adults tested periodically such as healthcare workers:

- ▶ If the first TB skin test is read as positive, the client is considered infected.
- ▶ If the first TB skin test is read as negative, give second TB skin test one to three weeks later. If the second TB skin test is read as positive, the client is considered infected.
- ▶ If the second TB skin test is read as negative, the client is considered uninfected at the baseline.

Care of the client with TB includes the use of antimycobacterial drugs INH (isoniazid), Myambutol (ethambutol), Rifadin (rifampin), and streptomycin. Multiple drug therapy destroys organisms quickly and decreases the chance of developing drug-resistant organisms. Clients newly diagnosed with TB are typically treated with a regimen of four anti-tuberculars: Rifadin (rifampin) and INH (isoniazid) are given throughout the course of treatment, and Tebrazid (pyrazinamide) and Myambutol (ethambutol) are added for the first 2 months. The combination of medications reduces the treatment time to 6 months for most clients; however, clients with HIV infection are typically treated for 9 months.

Airborne precautions, which are used in the hospital setting, are not used if the client is convalescing home, however all household members need to be checked for infection. Sputum specimens are collected every 2–4 weeks. The client can return to work when he/she has three negative sputum specimens. Household contacts are generally treated prophylactically with INH (isoniazid). Table 5.4, presented in the Key Concepts section later in the chapter, lists details about antitubercular drugs. Because of the length and intensity of treatment, the client should have the following lab studies performed before beginning therapy and on a regularly scheduled basis:

- ▶ Alanine transaminase (ALT)
- ▶ Aspartate transaminase (AST)
- ▶ Bilirubin
- ▶ Platelet count
- ▶ Serum creatinine

Adverse effects of ethambutol include changes in visual acuity and color vision; therefore, clients should have an eye exam before beginning therapy to detect any existing problems and should report visual changes to their physician. Adverse effects of streptomycin include ototoxicity, so audiometric testing should be performed before streptomycin therapy is begun to detect problems with hearing. Changes in hearing should also be reported to the physician.

Influenza

Influenza is an acute highly contagious viral infection that affects primarily the upper respiratory tract and is sometimes complicated by the development of pneumonia.

Influenza is caused by one of three types of *Myxovirus influenzae*. Infection with one strain produces immunity to only that strain; therefore, annual immunization is needed to protect against the strain projected to be prevalent that year.

Symptoms of influenza include chills, laryngitis, sore throat, runny nose, muscle aches, headache, and fever greater than 102°. Complications associated with influenza include pneumonia, exacerbations of COPD (chronic obstructive pulmonary disease), and myositis. More serious complications include pericarditis and encephalitis. The elderly, children, and those with chronic illness are more likely to develop severe complications; therefore, it is recommended that these clients receive annual influenza immunization.

The vaccine is given in the fall, prior to the onset of annual outbreaks that occur in the winter months. The vaccine is produced in eggs, so it should not be given to anyone who is allergic to egg protein.

Treatment of influenza is aimed at controlling symptoms and preventing complications. Bed rest and increased fluid intake are important interventions during the acute phase. Decongestant nasal sprays, antitussives with codeine, and antipyretics help make the client more comfortable. Antibiotics are indicated if the client develops bacterial pneumonia. Clients with influenza as well as nonimmunized persons who have been exposed to influenza might receive chemoprophylaxis if an outbreak occurs. Antiviral medication such as Relenza (zanamivir) and Tamiflu (oseltamivir) are used in both the prevention and treatment of influenza A and B and can be used to reduce the duration and severity of symptoms.

Symmetrel (amantadine) or Flumadine (rimantadine) are also used to prevent or decrease symptoms of the flu.

Life-Threatening Pulmonary Disorders

Acute and chronic respiratory conditions can rapidly deteriorate into situations that require immediate intervention to save the client's life. Some of these conditions, such as flail chest, are related to traumatic injury of the chest. Others, such as pulmonary embolus and acute respiratory distress syndrome, are related to a variety of causes including fractures. In this section, we will discuss the most common life-threatening pulmonary disorders and the nursing care related to those clients.

Acute Respiratory Distress Syndrome

Acute respiratory distress syndrome, commonly known as *ARDS* or *noncardiogenic pulmonary edema*, occurs mostly in otherwise healthy persons. ARDS can be the result of intrinsic factors (such as anaphylaxis, sepsis, or pulmonary emboli) or extrinsic factors (such as aspiration or inhalation injury). ARDS can also occur as a complication from abdominal or thoracic surgery. The client with ARDS develops increased extravascular lung fluid that contains a high concentration of protein although the interstitial tissue remains relatively dry. ARDS can be diagnosed by a chest x-ray that reveals emphysematous changes and infiltrates that give the lungs a characteristic appearance described as *ground glass*. Assessment of the client with ARDS reveals:

- ▶ Hypoxia (decreased tissue oxygenation)
- ▶ Suprasternal and intercostal retractions
- ▶ Presence of crackles (rales) or rhonchi
- ▶ Diminished breath sounds
- ▶ Refractory hypoxemia (low levels of oxygen in the blood despite supplemental oxygen delivered at high concentrations)

Nursing care of the client with ARDS involves the following:

- ▶ Maintaining endotracheal intubation and mechanical ventilation with positive end expiratory pressure (PEEP) or continuous positive airway pressure (CPAP). The goal of ventilation is to maintain a PaO₂ greater than 60 mm Hg or O₂ saturation level greater than 90% at the lowest possible FiO₂ setting.
- ▶ Monitoring of arterial blood gases.
- ▶ Providing for nutritional needs either by tube feeding or hyperalimentation (clients with ARDS require 35–45 kcal/kg per day).
- ▶ Maintaining fluid volume to maintain adequate cardiac output and tissue perfusion.
- ▶ Monitoring of pulmonary artery wedge pressure (assesses fluid status and monitors for the development of pulmonary hypertension).
- ▶ Frequent change in position: placement in high Fowler's position. or use of specialized beds to minimize consolidation of infiltrates in large airways. Research has indicated that some clients with ARDS benefit from being placed in a prone position, however the nurse should carefully assess the client's respiratory effort before putting the client flat or in a head-down position.
- ▶ Preventing sepsis, pneumonia, and multisystem organ dysfunction.
- ▶ Use of low-molecular-weight heparin to prevent thrombophlebitis and possible pulmonary embolus or disseminated intravascular coagulation.
- ▶ Investigational therapies include the use of mediators (vitamins C and E, aspirin, interleukin, prostacyclin), nitric oxide, and surfactant replacement.

Nursing Care of the Client Requiring Mechanical Ventilation

The client with ARDS has severe problems with maintaining adequate gas exchange, therefore mechanical ventilation is usually required. Nursing care of the client requiring mechanical ventilation includes a general understanding of the type of ventilator and modes of control being used as well as interventions to support the client's physical and psychological well-being. This section begins with a review of mechanical ventilation followed by nursing interventions for the client who is ventilator dependent.

Indications for mechanical ventilation are as follows:

- ▶ PaO₂ < 50 mm Hg with FiO₂ > 0.60
- ▶ PaO₂ > 50 mm Hg but a pH < 7.25
- ▶ Respiratory rate > 35 breaths per minute
- ▶ Vital capacity < 2 times tidal volume

There are two basic types of ventilators:

- ▶ **Negative-pressure ventilators:** Work by changing pressures in the chest cavity rather than by forcing air directly into the lungs. Negative pressure ventilators such as the poncho or body wrap are used for clients with neuromuscular disease and chronic obstructive pulmonary disease. An artificial airway is not needed.
- ▶ **Positive-pressure ventilators:** Inflate the lungs by exerting positive pressure on the airway, which forces the alveoli to expand during inspiration. In most instances an endotracheal tube or tracheostomy is needed. Positive-pressure ventilators are classified according to the mechanism that ends inspiration and begins expiration. Positive-pressure ventilators are classified as pressure-cycled, time-cycled, flow-cycled, or volume-cycled. Key features of these are as follows:
 - ▶ Pressure-cycled ventilators push air into the lungs until a preset airway pressure is obtained. Pressure-cycled ventilators are sometimes used for respiratory therapy or for the client just after surgery.
 - ▶ Volume-cycled ventilators push air into the lungs until a preset volume has been delivered. Tidal volume remains constant. Set pressure limits prevent excessive pressure from being exerted on the lungs.
 - ▶ Time-cycled ventilators push air into the lungs until a preset time has been reached. Tidal volume and pressure vary according to the client's needs.
 - ▶ Flow-cycled ventilators push air into the lungs until a preset flow rate is achieved during inspiration.

The controlling modes of ventilators are as follows:

- ▶ **Controlled:** The machine ventilates according to set tidal volume and respiratory rate. The client's spontaneous respiratory effort is blocked.
- ▶ **Assist controlled:** A preset volume of oxygen is delivered at a preset rate, but the client can trigger ventilations with negative inspiratory effort.
- ▶ **Synchronized intermittent mandatory:** A preset minimum number of respirations are delivered to the client, but the client can also take spontaneous breaths.

General guidelines for initial ventilator settings are as follows:

- ▶ Set the tidal volume required (10–15 mL/Kg).
- ▶ Adjust to the lowest concentration of O₂ to maintain a PaO₂ of 80–100 mm Hg.
- ▶ Set the mode according to doctor's order.
- ▶ For assist controlled mode, adjust sensitivity so that the client can trigger the ventilator with minimal effort.
- ▶ Record minute volume; measure PaO₂, PaCO₂, and pH every 20 minutes of continuous mechanical ventilation.

- ▶ Adjust settings according to the results of arterial blood gases to maintain normal levels or levels prescribed by doctor.
- ▶ If the client becomes confused or “fights” the ventilator unexpectedly, assess for hypoxemia and manually ventilate with resuscitation device and 100% oxygen.

Nursing Care of the Client Who Is Ventilator Dependent

Nursing interventions for the client who is ventilator dependent are as follows:

- ▶ Explain the purpose of the ventilator. Clients in ICU may become confused and need repeated explanations and reassurance.
- ▶ Assess vital signs and breath sounds every 30–60 minutes.
- ▶ Assess breathing pattern in relation to ventilation cycle to determine if the client is tolerating the ventilator.
- ▶ If an endotracheal tube is used, make sure that it is taped securely in place.
- ▶ Monitor pulse oximetry and arterial blood gases.
- ▶ Suction when needed, and observe the color and amount of respiratory secretions. Guidelines for performing endotracheal suctioning are given in the sidebar that follows.
- ▶ Provide the client with a means of communication such as Magic Slate or writing paper.
- ▶ Keep the call light within reach of the client.

Guidelines for Performing Endotracheal Suctioning:

1. Collect needed supplies (suction unit ; size 12–16 Fr sterile suction catheter; sterile normal saline; personal protective gear—goggles, mask, gown).
2. Explain procedure to client; provide a means of communication.
3. Set suction to setting of 80–120 mmHg.
4. Open sterile saline, leaving cap loosely in place.

In-Line Catheter:

1. Wearing exam glove, and attach the catheter to suction tubing.
2. Administer oxygen at 100% for three to four breaths.
3. Maintain sterility; insert the catheter through the plastic shield until resistance is met. Do not apply suction upon insertion of the catheter. Using a twirling motion, and apply suction while the catheter is being withdrawn.
4. Limit suctioning to no more than 10 seconds; provide supplemental oxygen and allow the client to rest 3–5 breaths; repeat the procedure if needed, but no more than 3 times.
5. Disconnect suction tubing from catheter; clear the tubing; turn off suction.
6. Remove and discard glove.

(continues)

(continued)

Catheter and Glove Kit:

1. Open kit containing suction catheter and glove. Remove saline cup and fill with sterile saline.
2. Don sterile gloves and attach the catheter to the suction tubing. Keeping the dominant hand sterile, and lubricate the catheter tip with the sterile saline.
3. With the nondominant hand, adjust the oxygen to 100% and administer 3 breaths.
4. With the nondominant hand, disconnect the ventilator tubing from the endotracheal tube. With the dominant hand (sterile), insert the suction catheter until resistance is felt. With the nondominant hand (nonsterile) applying suction, the dominant hand uses a twisting motion as catheter as the catheter is being withdrawn.
5. Limit suctioning to no more than 10 seconds; reconnect the ventilator and allow the client to rest 3–5 breaths; clear the suction catheter with sterile saline.
6. Repeat the procedure if needed, but no more than 3 times.
7. Reconnect the ventilator tubing to the endotracheal tube.
8. Clear the suction tubing; turn off suction; disconnect the catheter and discard with glove.
9. Observe the color, quantity, and consistency of sputum.
10. Assess the lung sounds and the client's tolerance of procedure.
11. Wash hands.

Pulmonary Embolus

Pulmonary embolus (PE) refers to the obstruction of the pulmonary artery or one of its branches by a clot, fat, or gaseous substance. Clots can originate anywhere in the body, but are most likely to migrate from a vein deep in the legs, pelvis, kidney, or arms. Fat embolus is associated with fractures of the long bones, particularly the femur. Air embolus, which is less common, can occur during the insertion or use of central lines. Amniotic embolus can be a complication of amniocentesis or abortion and is associated with a very high mortality rate. Septic embolus can result from pelvic abscesses, damaged heart valves, osteomyelitis, infected intravenous catheters, or nonsterile injections of illegal drugs.

Pulmonary embolus affects approximately 500,000 people in the United States annually; therefore, prevention of PE should be a major concern for nurses. The following steps can significantly reduce the incidence of pulmonary embolus:

- ▶ Ambulate postoperative clients as soon as possible.
- ▶ Apply antiembolism and pneumatic compression stockings.
- ▶ Avoid pressure beneath the popliteal space.
- ▶ Check the status of peripheral circulation (do not perform Homans' sign because doing so might dislodge any clots that are present).
- ▶ Change the client's position every two hours.

- ▶ Check IV sites for signs of heat, redness, and swelling as well as blood return.
- ▶ Avoid massaging or compressing leg muscles.
- ▶ Teach client not to cross the legs.
- ▶ Encourage smoking cessation.

Common risk factors for the development of pulmonary embolus include immobilization, fractures, trauma, and history of clot formation. Situations, such as air travel that require prolonged sitting can also contribute to clot formation, particularly in those who are elderly or debilitated. Conditions associated with identified risk factors are smoking, pregnancy, estrogen therapy, use of oral contraceptives, cancer of the lung or prostate, obesity, thrombocytopenia, advanced age, atrial fibrillation, presence of artificial heart valves, sepsis, and congestive heart failure.

TIP

Remember the three Fs of fat emboli:

- ▶ Fat
- ▶ Femur
- ▶ Football player

Most fat emboli come from fractured femurs; most fractured femurs occur in young men 18–25, the age of most football players.

Symptoms of a pulmonary embolus depend on the size and location of the clot or undissolved matter. Symptoms generally include the following:

- ▶ Pleuritic chest pain
- ▶ Low-grade fever
- ▶ Tachypnea
- ▶ Dyspnea
- ▶ Hypoxemia
- ▶ Syncope
- ▶ Hemoptysis (due to pulmonary infarction)
- ▶ Tachycardia
- ▶ Transient changes in T wave and S-T segments
- ▶ Hypotension
- ▶ Sense of apprehension
- ▶ Petechiae over the chest and axilla (associated with development of DIC [disseminated intravascular coagulation])
- ▶ Distended neck veins (indicates right ventricular failure)

Diagnostic tests to confirm the presence of pulmonary embolus include chest x-ray, pulmonary angiography, ventilation-perfusion lung scan, and ECG to rule out myocardial infarction. Chest x-ray findings are often normal or can reveal pulmonary infiltration at the site of the embolus. Negative lung scan rules out the presence of pulmonary embolus. Pulmonary angiography, the most specific diagnostic test for ruling out pulmonary embolus, is used when results of the lung scan are inconclusive.

Management of the client with a pulmonary embolus includes

- ▶ Placing the client in an upright sitting position (high Fowler's position)
- ▶ Administering oxygen via mask
- ▶ Giving medication for chest pain
- ▶ Using thrombolytics (streptokinase, urokinase, tPA /anticoagulants [heparin, warfarin sodium])

Antibiotics are indicated for those with septic emboli. Surgical management using umbrella-type filters is indicated for those who cannot take anticoagulants as well as for client who have recurrent emboli while taking anticoagulants. Clients receiving anticoagulant therapy should be observed for signs of bleeding. The protime (PT), International normalized ratio (INR), and partial thromboplastin time (PTT) are three tests used to track the client's clotting time.

CAUTION

Streptokinase is made from beta strep; therefore, clients with a history of strep infections might respond poorly to anticoagulant therapy with streptokinase because they might have formed antibodies.

Streptokinase is not clot specific; therefore, the client might develop a tendency to bleed from incision or injection sites.

Pneumothorax

Pneumothorax occurs when the pleural space is exposed to positive atmospheric pressure. Normally the pressure in the pleural cavity is negative or subatmospheric. It is this negative pressure that keeps the lungs inflated. When either the parietal or visceral pleura is breached, air enters the pleural cavity and increases the intrathoracic pressure. This results in a collapse of a portion of the lung.

There are three classifications of pneumothorax:

- ▶ **Spontaneous pneumothorax:** A non-life-threatening condition that can result from the rupture of a bleb, or blister, on the surface of the visceral pleura or from chronic obstructive pulmonary disease. Blunt chest trauma and penetrating chest wounds are the main causes of traumatic and tension pneumothorax.
- ▶ **Traumatic pneumothorax:** Usually results from blunt trauma to the chest and is classified as either an *open* pneumothorax (outside air enters the pleural space) or a *closed* pneumothorax (air from the lung enters the pleural space). Both closed trau-

matic pneumothorax and tension pneumothorax are life-threatening emergencies that require early detection and treatment.

- ▶ **Tension pneumothorax:** Results from an air leak in the lung or chest wall that leads to collapse of the lung. Air enters the pleural space with each inspiration and does not exit during expiration. Air accumulation in the pleural space compresses blood vessels and decreases venous return. The result is reduced cardiac filling and decreased cardiac output. In addition to blunt chest trauma, tension pneumothorax can result from complications of mechanical ventilation with positive end expiratory pressure (PEEP) and insertion of central venous catheters.

Assessment of the client with a pneumothorax can reveal

- ▶ Reduced breath sounds on the affected side
- ▶ Hyperresonance on percussion of the chest
- ▶ Prominence of the affected side of the chest
- ▶ Tracheal deviation away from (closed pneumothorax) or toward (open pneumothorax) the affected side
- ▶ Tachypnea, respiratory distress, or cyanosis
- ▶ Pleuritic pain
- ▶ Subcutaneous emphysema in some cases
- ▶ Distended neck veins in some cases

Chest tubes are inserted after confirming the condition by chest x-ray. The initial treatment of tension pneumothorax is the insertion of a large bore needle at the second intercostal space, mid-clavicular line on the affected side followed by insertion of chest tubes connected to a water-sealed chest drainage system.

Hemothorax

Hemothorax, an accumulation of blood in the pleural space, can be caused by a number of conditions including blunt trauma, penetrating injury, thoracic surgery, and dissecting thoracic aneurysms. In the case of blunt trauma or penetrating injury pneumothorax may accompany hemothorax. The accumulation of blood in the pleural space exerts pressure on pulmonary structures. This causes the alveoli to collapse and decreases the surface area for gas exchange. Hypovolemia occurs as bleeding decreases the vascular volume. The severity of a hemothorax depends on the amount of blood loss. Massive hemothorax—blood loss greater than 1500 mL—can occur from trauma to the heart, great vessels, or intercostal arteries.

Assessment findings are dependent on the amount of blood loss. The client with a small hemothorax can be asymptomatic. Findings associated with a large hemothorax include

- ▶ Respiratory distress
- ▶ Diminished breath sounds
- ▶ Dull sound when the affected side is percussed
- ▶ Blood in the pleural space

Anterior and posterior chest tubes are inserted to remove blood. The physician may perform an open thoracotomy when the blood loss is excessive (from 1500 mL to 2000 mL) or persistent (200 mL per hour over a three hour period).

A key role of the nurse in caring for the client with a pneumothorax or hemothorax is assessing the chest drainage system and intervening appropriately if problems arise. Chest tubes are inserted for one of two reasons: to drain the chest cavity or to reinflate the lung. Chest drainage systems can be one-bottle, two-bottle, or three-bottle setups. Chest drainage systems using glass bottles have largely been replaced by lightweight disposable systems that use chambers rather than bottles as illustrated in Figure 5.4.

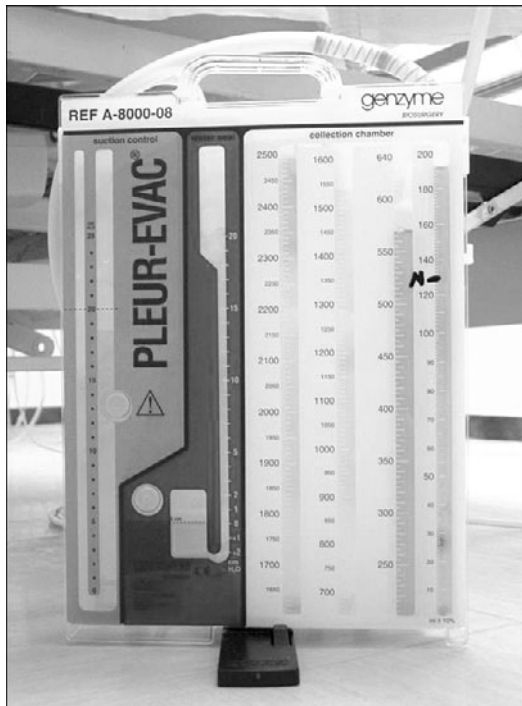


FIGURE 5.4 Chamber chest drainage system.

One-chamber set-ups do not allow for suction control and cannot handle large amounts of drainage. Two-chamber setups allow for suction and are capable of collecting large amounts of drainage. In the two-chamber setup, the first chamber collects the drainage, and the second chamber controls the amount of suction. In the traditional water seal or three-chamber setup, the first chamber collects the drainage, the second chamber acts as

a water seal, and the third chamber controls the amount of suction. Refer to Figure 4.5 and the Points to Remember list that follows to help you review the management of a three-chamber water seal chest drainage system.

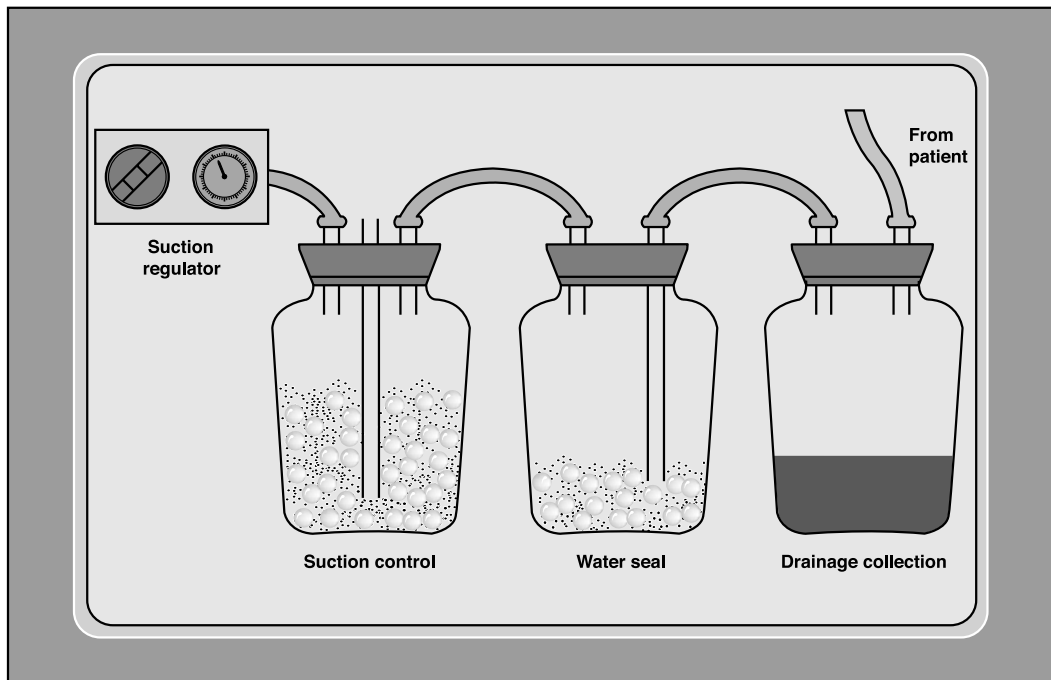


FIGURE 5.5 Three-Chamber chest drainage system.

The collection chamber acts as a reservoir for fluid that drains from the chest tube. A one-way valve in the water seal chamber prevents air from moving back into the chest when the client inhales. *Tidaling*, or an increase in water level, occurs with inspiration and returns to baseline with expiration. The suction control chamber regulates the amount of negative pressure applied to the chest cavity. The amount of suction applied is determined by the amount of water in the suction chamber. The amount of suction is generally set at 20 cm of water.

Points to remember for management of a three-chamber water seal chest drainage system include

- ▶ Monitor the color, amount, and consistency of the drainage.
- ▶ Note fluctuations in the water seal chamber. Fluctuations stop when the tubing is obstructed, when there is a dependent loop, or when the suction is not working properly.
- ▶ Assess the suction control chamber for bubbling. Constant bubbling in the water seal chamber can indicate an air leak. Assess the chest tube system for external air leaks. The physician should be notified at once if there is constant bubbling in the water seal chamber that is not related to an external air leak.

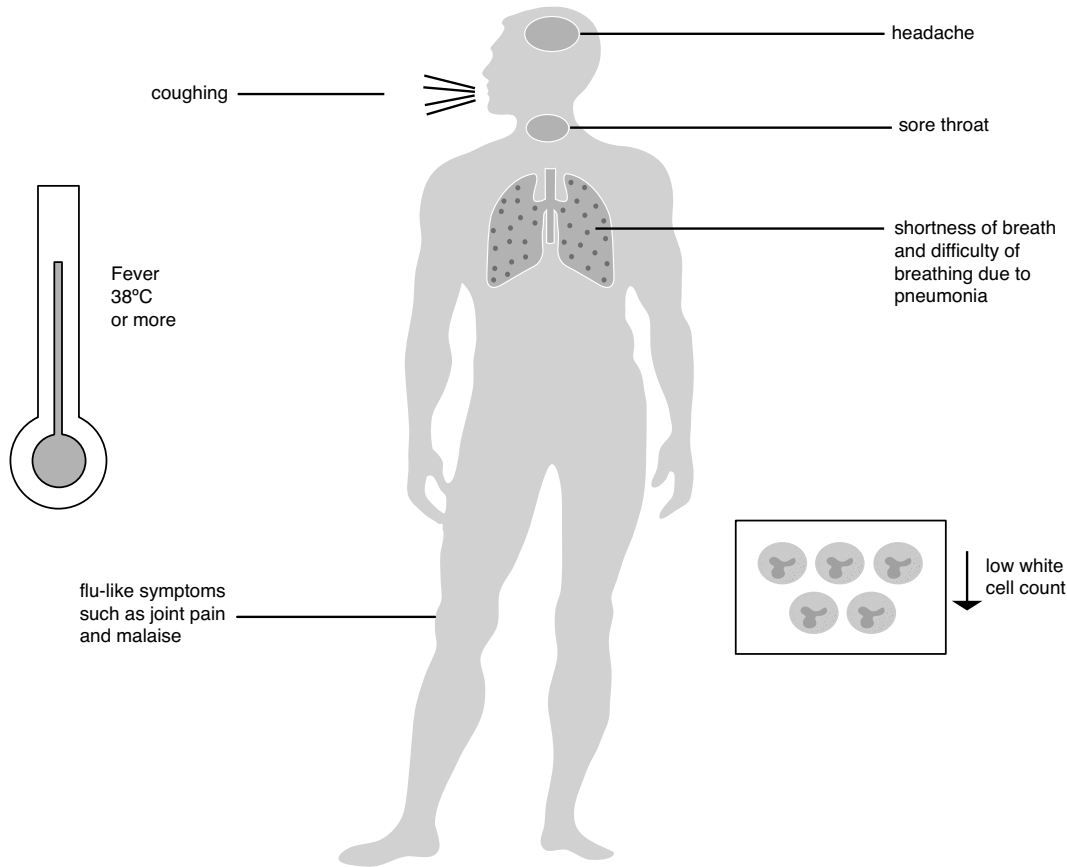
- ▶ Ensure that the drainage tube does not interfere with the client's movement. If the chest tube should become disconnected from the client, the nurse should cover the insertion site immediately with a petroleum gauze. (Petroleum gauze, sterile dressings, and tape should be kept at the client's bedside.) The client should be monitored for developing pneumothorax. The physician should be notified and equipment gathered in anticipation of reinsertion of the chest tube.
- ▶ When transporting the client, the chest drainage system should remain below chest level. If the tubing becomes disconnected from the collection device, cut off the contaminated tips of the tubing, insert a sterile connector, and reattach the tube to the chest drainage system. Do not clamp the chest tube during transport.
- ▶ When assisting with chest tube removal, instruct the client to perform a Valsalva maneuver. The tube is clamped and quickly removed by the physician. The nurse should simultaneously apply a small petroleum gauze covered by a 4"×4" gauze pad that is completely covered and sealed with nonporous tape. Following the removal of the chest tube the nurse should monitor the client for signs of recurring pneumothorax.

Emerging Infections

Emerging infections includes identified diseases that have increased in incidence within the past 20 years as well as diseases that are expected to increase in prevalence in the near future. Examples of emerging infections are West Nile virus, Legionnaires' disease, Lyme disease, hantavirus pulmonary syndrome, Ebola and Marburg viruses, and severe acute respiratory syndrome (SARS). Two emerging infections—SARS and Legionnaires' disease—will be covered in this section.

SARS

Severe acute respiratory syndrome is a pneumonia caused by a newly recognized coronavirus (CoV). The first human coronavirus, isolated in 1965, is responsible for about one-third of all colds. The virus is spread by droplets as well as contact with surface objects contaminated by droplets. Most cases of SARS have been in China, Taiwan, Singapore, Hong Kong, and Vietnam; however, limited cases have been identified in other areas. Symptoms include cough, shortness of breath or increased shortness of breath, and fever. Chest x-ray reveals the presence of pneumonia, which can develop into acute respiratory distress. Lab studies include immunofluorescent antibody testing (IgM and IgG), and reverse transcriptase polymerase chain reaction to detect RNA on the SARS CoV. Care of the client with SARS includes isolation and quarantine. The client should be placed in a negative-pressure isolation room and caregivers should use airborne and contact precautions, including N95 masks and eye shields. Antibiotics and antiviral medications are ordered. The client is closely monitored for signs of acute respiratory distress. Figure 5.6 illustrates the symptoms indicative of SARS.



Symptoms appear 3-7 days after exposure

FIGURE 5.6 Severe acute respiratory syndrome (SARS) symptoms.

Legionnaires' Disease

Legionnaires' disease is caused by *Legionella pneumophila*, a gram negative bacteria found in both natural and man-made water sources. The organism grows best in water temperatures between 77° F and 107° F and is enhanced by water storage. Risk factors include immunosuppression, advanced age, alcoholism, and pulmonary disease. Legionnaires' primarily affects the lungs and other organs and produces symptoms that include malaise, myalgia, headache, dry cough, chest pain, fever, diarrhea, and gastrointestinal complaints. Legionnaires' is diagnosed by routine culture, antibody titer, and urinary antigen for *Legionella pneumophila* serotype I. Management of the client with Legionnaires' disease is the same as those used for clients with pneumonia. No special isolation technique is used because there is no evidence of transmission between humans. Antibiotic therapy includes the use of Zithromax (azithromycin), Biaxin (clarithromycin), Ilotycin (erythromycin), and Levaquin (levofloxacin). Zithromax (azithromycin) is considered to be the drug of choice for the client with Legionnaires' disease.

Case Study

Mr. Adams, a 65-year-old male, is admitted with a diagnosis of emphysema. The physician's orders include the following: oxygen 3 liters/min.; dextrose 5% in normal saline 1000 mL to infuse over eight hours; chest x-ray, routine CBC, and urinalysis; Claforan (cefotaxime) 750 mg IV every eight hours; Tussin (chlorpheniramine, hydrocodone, pseudoephedrine) 400 mg every four hours; aspirin grains ten every four hours as needed for temperature over 101°.

1. Which type of oxygen delivery system should be used to supply Mr. Adams's oxygen needs?
2. What physical changes would the nurse expect to find in the client with emphysema?
3. Discuss nutritional interventions needed for the client with chronic obstructive pulmonary disease.
4. Nursing care of Mr. Adams includes prevention of oxygen toxicity. List symptoms associated with oxygen toxicity.
5. The physician's order reads dextrose 5% in normal saline 1000 mL to infuse over eight hours. The IV setup delivers 12 drops per mL. The nurse should set the IV infusion rate at how many drops per minute?

Answers to Case Study

1. The oxygen delivery system best suited to the needs of the client with emphysema is the nasal cannula.
2. Physical changes in the client with emphysema include barrel chest, digital clubbing, prolonged respiratory phase and respiratory grunt, muscle wasting, weight loss, peripheral cyanosis, violent productive cough.
3. The client with chronic obstructive pulmonary disease should be provided with small, more frequent meals. The diet should be increased in calories with a greater percentage of the diet coming from fat calories because metabolism of fat produces less carbon dioxide than carbohydrates. Dry foods should be avoided because they increase coughing. Milk products should be avoided because they increase the thickness of secretions.
4. Symptoms of oxygen toxicity include substernal discomfort, paresthesias, dyspnea, restlessness, fatigue, malaise, and progressive respiratory distress.
5. The infusion should be set at 25 drops per minute.

Key Concepts

This chapter includes much needed information to help the nurse apply a knowledge of respiratory disorders to the NCLEX exam. The nurse preparing for the licensure exam should review normal laboratory values, common treatment modalities and pharmacological agents used in the care of the client with respiratory disorders.

Key Terms

- ▶ Acute respiratory failure
- ▶ Apnea
- ▶ Asthma
- ▶ Bronchitis
- ▶ Continuous positive airway pressure (CPAP)
- ▶ Cor pulmonale
- ▶ Cyanosis
- ▶ Dyspnea
- ▶ Emphysema
- ▶ Hemoptysis
- ▶ Hypoxemia
- ▶ Hypoxia
- ▶ Pleural effusion
- ▶ Pleurisy
- ▶ Pneumonia
- ▶ Pulmonary embolus
- ▶ Tachypnea

Diagnostic Tests

Many diagnostic exams are used to assess respiratory disorders. These clients would receive the usual routine exams: CBC, urinalysis, chest x-ray. The exam reviewer should be knowledgeable of the preparation and care of clients receiving pulmonary exams. While reviewing these diagnostic exams, the exam reviewer should be alert for information that would be an important part of nursing care for these clients:

- ▶ CBC
- ▶ Chest x-ray

- ▶ Pulmonary function tests
- ▶ Lung scan
- ▶ Bronchoscopy

Pharmacological Agents Used in the Care of the Client with Disorders of the Respiratory System

An integral part of care to clients with respiratory disorders is pharmacological intervention. These medications provide an improvement or cure of the client's respiratory problems. The nursing exam reviewer needs to focus on the drugs in Table 5.1 through Table 5.4. Included in these tables is information about the most common side and adverse effects as well as pertinent nursing care associated with these medications. These medications are not inclusive of all the agents used to treat respiratory disorders; therefore, you will want to keep a current pharmacology text handy for reference.

TABLE 5.1 Pharmacological Agents for Respiratory Conditions

Type	Name	Action	Side Effects	Nursing Care
Bronchodilators				
Methylxanthine	Theo-Dur (theophylline) Truphylline (aminophylline)	Relaxes bronchial smooth muscles	Palpitations; agitation; tachycardia; nausea; vomiting	Monitor for signs of toxicity. Therapeutic range 10–20 mcg/mL.
Cholinergic antagonists	Atrovent (ipratropium)	Relieve bronchospasm	Headache; nausea; dry mouth	Contraindicated in clients with soybean or peanut allergies.
Adrenergics	Epinephrine (adrenalin)	Stimulate alpha and beta receptors	Tremulousness; headache; tachycardia; vomiting	Teach client to read label of OTC meds.
Beta 2 agonists	Proventil (albuterol) Serevent (salmeterol)	Stimulate beta receptors in the lung, reduces airway resistance	Tremor; tachycardia; palpitations	Concurrent use with digoxin or beta blockers can affect drug level.
Corticosteroids				
Inhaled	Flovent (fluticasone) Vanceril (beclomethasone) Azmacort (triamcinolone)	Decreases inflammation and suppresses immune response	Hyperglycemia; Cushing's syndrome; increased BP; osteoporosis; muscle wasting; gastric upset	Give with meals. Monitor for signs of infection. Taper off medication.
Injectable/Oral	Decadron (dexamethasone) Solu-Cortef (hydrocortisone) Medrol (methylprednisolone)	Same as above	Same as above	Same as above.

TABLE 5.1 *Continued*

Type	Name	Action	Side Effects	Nursing Care
Mast cell stabilizers	Intal (cromolyn)	Inhibit release of histamine	Irritation of oral or mucous membranes	Monitor for drug interactions.
Leukotriene modifiers	Singulair (montelukast) Zyflo (zileuton) Accolate (zafirlukast)	Block inflammatory action	Headache; infection; elevated liver enzymes	Monitor for drug interactions. Client should avoid ASA and NSAIDs.
Antitussives	Codeine, dextromethorphan	Suppress cough reflex by direct effect on respiratory center	Nausea; vomiting; sedation	Take only as directed.
Expectorants	Ammonium chloride Guaifenesin K+ iodide	Loosen bronchial secretions	Nausea; drowsiness	Increase fluid intake.

TABLE 5.2 **Pharmacological Agents Used in the Treatment of Community Acquired Pneumonia**

Organism Responsible	Recommended Treatment	Action	Side Effects (Adverse Effects)	Nursing Care
Streptococcus pneumoniae	Penicillin, Claforan (cefotaxime), Rocephin (ceftriaxone), Levaquin (levofloxacin)	Bacteriacidal, effective against gram positive and gram negative organisms	Nausea; diarrhea; urticaria (pseudomembranous colitis; superimposed infections)	Assess for fluid imbalances. Diarrheal stools should be checked for the presence of blood, mucus, and white blood cells, which can indicate pseudomembranous colitis.
Haemophilus influenza	Omnipen (ampicillin), Zithromax (azithromycin), Biaxin (clarithromycin)	Bacteriostatic, effective against gram positive and gram negative organisms	Dizziness; headache; nausea; diarrhea; abdominal pain (superimposed infections)	Assess for signs of “ampicillin rash”—dull red nonallergic maculopapular rash and pruritis. Assess for signs laryngeal edema, which indicates anaphylactic reaction.
Legionella pneumophila	Erythrocin (erythromycin), Levaquin (levofloxacin)	Bacteriacidal, effective against gram positive and gram negative organisms	Abdominal cramps; diarrhea; nausea; (pseudomembranous colitis; superimposed infections)	Assess for fluid imbalances. Diarrheal stools should be checked for the presence of blood, mucus, and white blood cells, which can indicate pseudomembranous colitis.
Mycoplasma pneumoniae	Erythrocin (erythromycin), Acromycin (tetracycline) may be used with Rifadin (rifampin)	Bacteriacidal, effective against gram negative organisms	Abdominal cramps; diarrhea; nausea; (pseudomembranous colitis; superimposed infections)	Same as above.

(continues)

TABLE 5.2 *Continued*

Type	Name	Action	Side Effects	Nursing Care
Viruses (influenza A&B, CMV, and coronavirus)	Symmetrel (amantadine), Virazole (ribavirin aerosol)	Antivirals inhibit viral replication	Ataxia; drowsiness; blurred vision; dry mouth	Protect from falls. Offer fluids to prevent dry mouth.
<i>C. pneumoniae</i> (TWAR agent)	Acromycin (tetracycline), Erythrocin (erythromycin), Levaquin (levofloxacin)	Bacteriicidal, effective against gram positive and gram negative organisms	Abdominal cramps; diarrhea; nausea; (pseudomembranous colitis; superimposed infection)	Assess for fluid imbalances. Diarrheal stools should be checked for the presence of blood, mucus, and white blood cells which, can indicate pseudomembranous colitis.

TABLE 5.3 Pharmacological Agents Used in the Treatment of Hospital-Acquired Pneumonia

Organism Responsible	Recommended Treatment	Action	Side Effects (Adverse Effects)	Nursing Care
<i>Pseudomonas aeruginosa</i>	Amikin (amikacin), Kantrex (kanamycin), Garamycin (gentamicin), Geopen (carbenicillin)	Bacteriicidal; effective against gram-positive and gram-negative organisms	Abdominal cramps; diarrhea; nausea; (pseudomembranous colitis; superimposed infection; tinnitus; changes in urinary output)	Assess for fluid imbalances. Diarrheal stools should be checked for the presence of blood, mucus, and white blood cells; assess for signs of ototoxicity and nephrotoxicity.
<i>Staphylococcus aureus</i>	Unipen (nafcillin), Garamycin (gentamicin)	Same as above	Same as above	Same as above.
<i>Klebsiella pneumoniae</i>	Claforan (cefotaxime), Rocephin (ceftriaxone), Garamycin (gentamicin), Geopen (carbenicillin)	Same as above	Same as above	Same as above.
<i>Pneumocystis carinii</i>	Bactrim (trimethoprim/sulfa methoxazole), Pentam (pentamidine)	Bacteriicidal; effective against gram-positive and gram-negative organisms	Fatigue; headache; insomnia; vomiting; diarrhea; (anemia; nephrotoxicity; thrombocytopenia)	Pentamidine should be infused over 1–2 hours to decrease hypotension. Client should be observed for signs of renal impairment and hypoglycemia.
<i>Aspergillus fumigatus</i>	Fungizone (amphotericin B), Fungizone Nizoral (ketoconazole)	Kill or stop the growth of susceptible fungi by affecting cell membrane or interfere with protein synthesis within the cell	Headache; dizziness; nausea; diarrhea; myalgia; peripheral neuropathy (hepatotoxicity; nephrotoxicity)	Drug-to-drug interactions. Use caution when administering. Check vital signs frequently.

TABLE 5.4 Pharmacological Agents Used in the Treatment of Tuberculosis

Name	Action	Side Effects	Nursing Care
Isoniazid (INH) (first-line drug)	Interferes with cell wall	Deficiency of B6; peripheral neuritis; liver dysfunction	Observe for jaundice. Frequent hearing tests.
Ethambutol HCl (myambutol) (first-line drug)	Suppresses growth of mycobacterium	Optic neuritis; decreased acuity and color vision	Frequent visual tests.
Rifampin (first-line drug)	Same as above	N & V; HA; hepatitis; red discolorations of body fluids	Teach client to avoid alcohol. Teratogenic.
Fluoroquinolones (levofloxacin, moxifloxacin, gatifloxacin)	For strains resistant to RIF, INH, and EMB	N & V; drowsiness; photosensitivity; tendonitis; and tendon rupture	Teach client to avoid prolonged sun exposure, to increase fluid intake, and to report unexplained muscle tenderness
Streptomycin (second-line drug)	Inhibits protein synthesis and suppresses growth of mycobacterium	VIII cranial nerve damage; paresis of face, tongue, and hands; renal damage	Ask client to sit quietly 15–30 minutes after injection.
Kanamycin (second-line drug)	Same as above	Same as above	Observe for hematuria. Frequent hearing tests.
Pyrazinamide (first-line drug)	Unknown	Liver damage; gout	Teach client to increase fluid intake. Observe for jaundice.

NOTE

New drugs used in the treatment of tuberculosis are

- ▶ **Rifabutin:** Used for clients with HIV/AIDS
- ▶ **Rifapentin:** Used once weekly for HIV-negative adults with drug-susceptible noncavitary TB

Apply Your Knowledge

The study of respiratory disorders can often be difficult for the nurse to understand because of the complexity of many of the conditions. This chapter provided a review of common infections that affect the upper and lower respiratory tract as well as information on life-threatening conditions such as ARDS. Information was also provided regarding occupational lung disease. The following questions test your knowledge regarding the safe, effective care and management of the client with various respiratory disorders.

Exam Questions

1. The nurse is assessing a client admitted with injuries sustained in a motor vehicle accident. Which of the following injuries poses the greatest risk to the client?
 - A. Fractures of the ribs
 - B. Contusions of the lower legs
 - C. Fractures of the humerus
 - D. Lacerations of the face
2. Which one of the following findings is characteristic of a tension pneumothorax?
 - A. Tracheal deviation toward the affected side
 - B. Symmetry of the thorax and equal breath sounds
 - C. Tracheal deviation toward the unaffected side
 - D. Decreased heart rate and decreased respirations
3. The nurse is caring for a client with a closed chest drainage system. If the tubing becomes disconnected from the system, the nurse should:
 - A. Instruct the client to perform the Valsalva maneuver
 - B. Elevate the tubing above the client's chest level
 - C. Decrease the amount of suction being applied
 - D. Form a water seal and obtain a new connector
4. The physician has ordered Theo-Dur (theophylline) for a client with emphysema. An expected side effect associated with the medication is:
 - A. Dry mouth
 - B. Palpitations
 - C. Hyperglycemia
 - D. Anemia
5. Which condition would contraindicate the use of chest physiotherapy for a client with pneumonia?
 - A. Recent abdominal cholecystectomy
 - B. Diabetes mellitus
 - C. Rheumatoid arthritis
 - D. Emphysema

6. The nurse is interpreting the result of a client's TB skin test. Which one of the following factors is responsible for a false positive TB skin test?
 - A. Vaccination with a live virus
 - B. Weakened immune system
 - C. Inoculation with BCG vaccine
 - D. Poor testing technique

7. The physician has ordered Cytoxan (cyclophosphamide) for a client with pulmonary fibrosis. The nurse should instruct the client to:
 - A. Walk 20 minutes a day to maintain muscle strength
 - B. Expect a reddish discoloration of her urine
 - C. Notify the doctor of a sore throat or fever
 - D. Eat smaller, more frequent meals

8. The physician has received a limited supply of influenza vaccine. Which one of the following clients should receive priority in receiving the influenza immunization?
 - A. An elementary school teacher
 - B. A resident in a nursing home
 - C. An office worker
 - D. A local firefighter

9. The physician has ordered pyrazinamide for a client with tuberculosis. The nurse should tell the client to:
 - A. Schedule frequent eye exams
 - B. Expect red discoloration of his urine
 - C. Increase his fluid intake
 - D. Expect dizziness and ringing in his ears

10. The nurse is caring for a client with Legionnaires' disease. Which one of the following types of isolation should the nurse use when caring for the client?
 - A. Droplet precautions
 - B. Airborne precautions
 - C. Contact precautions
 - D. No isolation precautions are needed

Answers to Exam Questions

1. Answer A is correct. Fractures of the ribs can result in a closed pneumothorax, a life-threatening emergency, that requires early detection and treatment. Answers B, C, and D are incorrect because they do not pose a risk to the life of the client.
2. Answer C is correct. Assessment of the client with a tension pneumothorax reveals tracheal deviations towards the unaffected side. Answer A is incorrect because the deviation is toward the unaffected, not the affected side. Answer B is incorrect because the thorax is asymmetrical and breath sounds are absent on the affected side. Answer D is incorrect because the heart rate and respiratory rate are not decreased.
3. Answer D is correct. The nurse should form a water seal, remove the contaminated end, and insert a new sterile connector. The Valsalva maneuver is used when the chest tube is being removed therefore Answer A is incorrect. Answer B is incorrect because the chest drainage system is maintained below the client's chest level. Answer C is incorrect because the nurse cannot alter the amount of suction being applied without a doctor's order.
4. Answer B is correct. Side effects from bronchodilators such as theophylline include tremulousness, palpitations, and restlessness. Answers A, C, and D are incorrect because they are not expected side effects of bronchodilators.
5. Answer A is correct. Recent abdominal or thoracic surgery are contraindications for chest physiotherapy. Chest physiotherapy is not contraindicated for the client with diabetes mellitus, rheumatoid arthritis, or emphysema therefore answers B, C, and D are incorrect.
6. Answer C is correct. Inoculation with BCG vaccine will produce a false positive TB skin test. Vaccination with a live virus, weakened immune system, and poor testing technique are factors that can produce a false negative TB skin test, therefore Answers A, B, and D are incorrect.
7. Answer C is correct. Cytoxan is an immunosuppressive drug; therefore, the client should notify the doctor of symptoms associated with infection. Answers A and D are not associated with the use of Cytoxan; therefore, they are incorrect. The client taking Cytoxan can experience hemorrhagic cystitis due to inadequate fluid intake, but it is not an expected finding; therefore, answer B is incorrect.
8. Answer B is correct. Clients over age 65 and those with chronic conditions should receive priority in receiving influenza vaccine when supplies are limited. Answers A, C, and D are incorrect because they do not receive priority in receiving the immunization.
9. Answer C is correct. The use of pyrazinamide can result in gout-like symptoms; therefore, the client should increase his fluid intake. Answer A, B, and D are incorrect because they are associated with other antitubercular medications.
10. Answer D is correct. No isolation precautions are needed because there is no evidence of human to human transmission. Answers A, B, and C are incorrect because they are not indicated in the care of the client with Legionnaires' disease.

Suggested Reading and Resources

- ▶ Brunner, L., and D. Suddarth. *Textbook of Medical Surgical Nursing*. 12th ed. Philadelphia: Lippincott Williams & Wilkins, 2009.
- ▶ Ignatavicius, D., and S. Workman. *Medical Surgical Nursing: Critical Thinking for Collaborative Care*. 6th ed. Philadelphia: Elsevier, 2008.
- ▶ Lehne, R. *Pharmacology for Nursing Care*. 7th ed., Philadelphia: Elsevier, 2009.
- ▶ LeMone, P., and K. Burke. *Medical Surgical Nursing: Critical Thinking in Client Care*. 4th ed. Upper Saddle River, NJ: Pearson Prentice Hall, 2008.
- ▶ Lewis, S., M. Heitkemper, S. Dirksen, P. O'Brien, and L. Bucher. *Medical Surgical Nursing: Assessment and Management of Clinical Problems*. 7th ed. Philadelphia: Elsevier, 2007.
- ▶ American Lung Association: www.lungusa.org.
- ▶ Centers for Disease Control and Prevention: www.cdc.gov.
- ▶ Health24: www.health24.com.
- ▶ The Pathology Guy: www.pathguy.com.

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