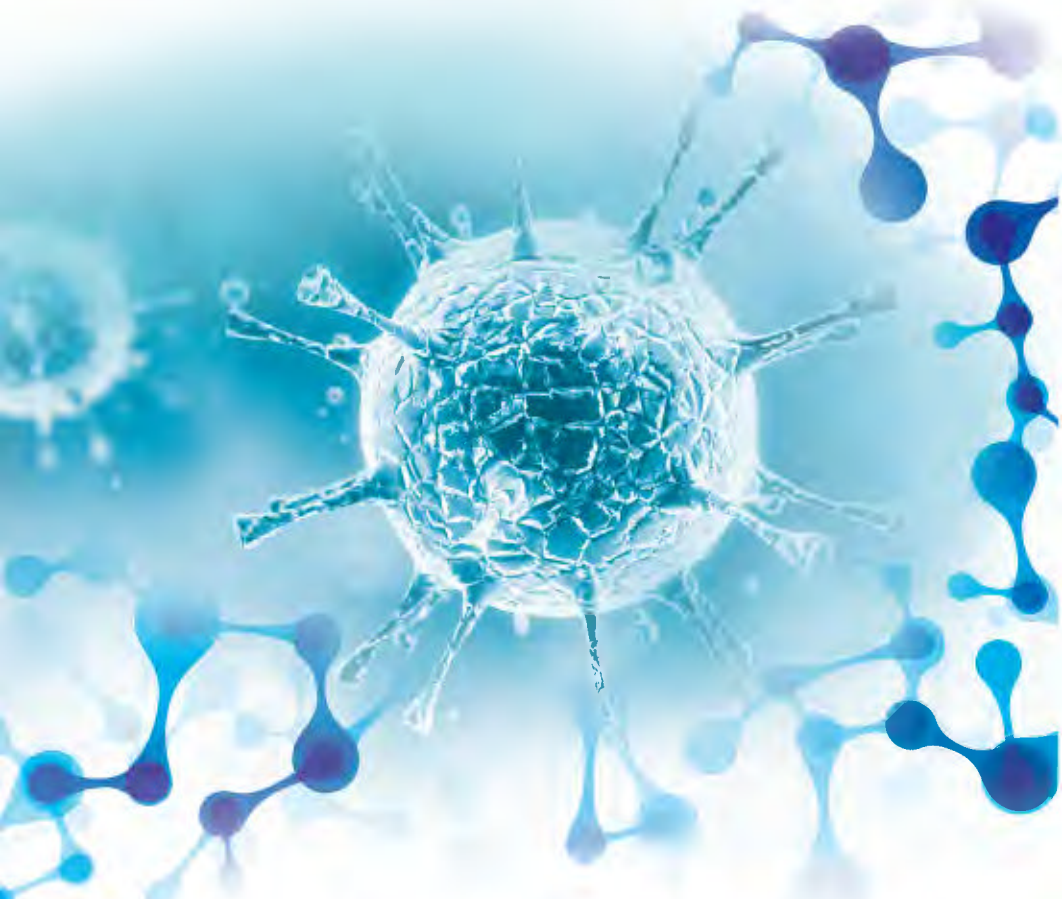


5th Edition

Diseases and Disorders

A Nursing Therapeutics Manual



Marilyn S. Sommers and Ehriel F. Fannin

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A Nursing Therapeutics Manual

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Dedication

*For Joanne P. DaCunha: Dear friend, loyal colleague, supportive publisher, and thought leader
for Diseases and Disorders.*

MSS

Preface

The first four editions of this book were conceived to provide distilled, up-to-date information to nursing students and staff nurses about the many conditions and diagnoses encountered in nursing practice. It was my intent that the book would respond to the ever-increasing need for nurses to understand the scientific basis of their practice by emphasizing the pathophysiology and genetic bases of diseases and disorders as well as the scientific advances that guide disease and symptom management. Evidence-based practice is a value that underlies the goal of all entries in this book. In addition, throughout the first four editions, I held true to the initial purpose: to provide a ready source of information for nurses in a time of short staffing, brief lengths of stay, and increasing patient acuity in the hospital, in nursing homes, in rehabilitation centers, and in the home.

With the fifth edition, I have tried to respond to the changing global healthcare environment as well as to the recommendations of our readers that more information is needed to guide evidence-based care. I have expanded the section titled **Global Health Considerations**. In the past five years, concerns over flu epidemics and natural disasters have reminded us that no city or country exists in isolation with respect to health. In a global society where many families migrate to, travel to, and live on multiple continents, the health of world populations becomes as important as the health in a neighborhood. Cardiovascular disease, poor nutrition, and injury cause death and disability around the world. Infectious diseases such as tuberculosis, HIV infection, measles, malaria, and pneumococcal diseases threaten multiple populations. Human papillomavirus and *Trichomonas vaginalis* infections are threatening the health of a generation of young women. By cultivating a global perspective, students and practicing nurses can prepare themselves for the next decade of healthcare. In the section, **Evidence-Based Practice and Health Policy**, my co-author, Ehriel Fannin, has chosen specific research studies or policy briefs that relate to the entry and provide current information to guide nursing practice.

Each entry begins with the Diagnosis Related Group (DRG) category. DRGs were initiated by the Health Care Financing Administration to serve as an organizing framework to group related conditions and to stabilize reimbursements. Because they provide a convenient standard to evaluate hospital care, DRGs are used by institutions and disciplines to measure utilization and to allocate resources. I have included DRGs to indicate the expected norms in average length of hospital stay for each entry (Mean LOS). In addition, entries begin with the background information on epidemiology and physiology, causation, and considerations including genetics, gender, race/ethnicity, life span, and global health. I recognize that race, ethnicity, and gender are social and political constructs. Just as there are many races, there are also many genders and categorizing people into groups, including a gender binary of male and female, does not represent the individuals for whom we provide care. I have tried to consider issues of race, ethnicity, and gender without stereotyping, but rather to inform nursing care. I will continue to work toward a goal of health equity in coming editions. Each entry follows the nursing process, with assessment information incorporated in the **History** and **Physical Assessment** sections, the **Psychosocial Assessment**, and **Diagnostic Highlights**. Based on requests from our readers and reviewers, I have supplemented information on diagnostic testing to provide normal and abnormal values for the most important diagnostic tests. I have also added a section to explain the rationale for the test. These detailed, specific sections provide the foundation needed to perform a comprehensive assessment of the patient's condition so that a **Primary Nursing Diagnosis** can be formulated that is appropriate to the patient's specific needs. The **Planning and Implementation** section is divided into **Collaborative** and **Independent** interventions. The intent of the Collaborative section is to detail the goals of a multidisciplinary plan of care to manage the condition or disease. As in the first four editions, there is an expanded section

on **Pharmacologic Highlights** that explores commonly used drugs, along with their doses, mechanisms of action, and rationales for use. The **Independent** section focuses on independent nursing interventions that demonstrate the core of the art and science of nursing. Each entry then finishes with **Evidence-Based Practice and Health Policy, Documentation Guidelines** and **Discharge and Home Healthcare Guidelines** to help nurses evaluate the outcomes of care and to prepare hospitalized patients for discharge.

As with the first four editions, the idea for the book originated with Joanne Patzek-DaCunha, publisher at F. A. Davis. I salute her creativity, perseverance, enthusiasm, and vision and dedicate this edition to her. More importantly, her gracious friendship and support enabled me to accomplish this revision with a minimum of difficulty. I also owe a debt of gratitude to Zach Sommers for his assistance with manuscript editing and proofreading in the previous editions. Finally I acknowledge with gratitude the hard work that a host of contributors, reviewers, and editors have made to previous editions, and the contributions of my co-author, Ehriel Fannin, for her work on this edition.

The entire reason to revise this book is to provide practicing nurses a concise and yet scientifically sound text to guide the professional practice of nursing. The provision of nursing care in the 21st century presents us with overwhelming challenges, and yet nursing is the discipline of choice for millions of practitioners. I hope this book honors the science of nursing and makes it easier to practice the art of nursing.

Marilyn (Lynn) S. Sommers

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Nursing Diagnoses Accepted for Use and Research

- Activity Intolerance
- Activity Intolerance, risk for
- Airway Clearance, ineffective
- Allergy Response, latex
- Allergy Response, risk for latex
- Anxiety [mild, moderate, severe, panic]
- Anxiety, death
- Aspiration, risk for
- Attachment, risk for impaired parent/child
- Autonomic Dysreflexia
- Autonomic Dysreflexia, risk for

- Behavior, risk-prone health
- Body Image, disturbed
- Body Temperature, risk for imbalanced
- Bowel Incontinence
- Breastfeeding, effective
- Breastfeeding, ineffective
- Breastfeeding, interrupted
- Breathing Pattern, ineffective

- Cardiac Output, decreased
- Caregiver Role Strain
- Caregiver Role Strain, risk for
- Comfort, readiness for enhanced
- Communication, impaired verbal
- Communication, readiness for enhanced
- Conflict, decisional (specify)
- Conflict, parental role
- Confusion, acute
- Confusion, chronic
- Constipation
- Constipation, perceived
- Constipation, risk for
- Contamination
- Contamination, risk for
- Coping, compromised family
- Coping, defensive
- Coping, disabled family

- Coping, ineffective
- Coping, ineffective community
- Coping, readiness for enhanced
- Coping, readiness for enhanced community
- Coping, readiness for enhanced family

- Death Syndrome, risk for sudden infant
- Decision Making, readiness for enhanced
- Denial, ineffective
- Dentition, impaired
- Development, risk for delayed
- Diarrhea
- Disuse Syndrome, risk for
- Diversional Activity, deficient

- Energy Field, disturbed
- Environmental Interpretation Syndrome, impaired

- Failure to Thrive, adult
- Falls, risk for
- Family Processes: alcoholism, dysfunctional
- Family Processes, interrupted
- Family Processes, readiness for enhanced
- Fear [specify focus]
- Fluid Balance, readiness for enhanced
- Fluid Volume, deficient (hyper/hypotonic)
- Fluid Volume, deficient (isotonic)
- Fluid Volume, excess
- Fluid Volume, risk for deficient
- Fluid Volume, risk for imbalanced

- Gas Exchange, impaired
- Glucose, risk for unstable blood
- Grieving
- Grieving, complicated
- Grieving, risk for complicated

Growth, risk for disproportionate
Growth and Development, delayed

Health Maintenance, ineffective
Health-Seeking Behaviors (specify)
Home Maintenance, impaired
Hope, readiness for enhanced
Hopelessness
Hyperthermia
Hypothermia

Identity, disturbed personal
Immunization Status, readiness for
enhanced
Infant Behavior, disorganized
Infant Behavior, readiness for enhanced
organized
Infant Behavior, risk for disorganized
Infant Feeding Pattern, ineffective
Infection, risk for
Injury, risk for
Injury, risk for perioperative positioning
Insomnia
Intracranial Adaptive Capacity, decreased

Knowledge (specify), readiness for
enhanced

Lifestyle, sedentary
Liver Function, risk for impaired
Loneliness, risk for

Memory, impaired
Mobility, impaired bed
Mobility, impaired physical [specify level]
Moral Distress

Neglect, unilateral
Noncompliance [Adherence, ineffective]
(specify)
Nutrition: less than body requirements,
imbalanced
Nutrition: more than body requirements,
imbalanced

Nutrition, readiness for enhanced
Nutrition: risk for more than body
requirements, imbalanced

Oral Mucous Membrane, impaired

Pain, acute
Pain, chronic
Parenting, readiness for enhanced
Parenting, impaired
Parenting, risk for impaired
Peripheral Neurovascular Dysfunction,
risk for
Poisoning, risk for
Post-Trauma Syndrome [specify stage]
Post-Trauma Syndrome, risk for
Power, readiness for enhanced
Powerlessness [specify level]
Powerlessness, risk for
Protection, ineffective

Rape-Trauma Syndrome
Rape-Trauma Syndrome: compound
reaction
Rape-Trauma Syndrome: silent reaction
Religiosity, impaired
Religiosity, readiness for enhanced
Religiosity, risk for impaired
Relocation Stress Syndrome, risk for
Role Performance, ineffective

Self-Care, readiness for enhanced
Self-Care Deficit [specify level]: feeding,
bathing/hygiene, dressing/grooming,
toileting
Self-Concept, readiness for enhanced
Self-Esteem, chronic low
Self-Esteem, situational low
Self-Esteem, risk for situational low
Self-Mutilation
Self-Mutilation, risk for
Sensory Perception, disturbed (specify:
visual, auditory, kinesthetic, gustatory,
tactile, olfactory)

Sexuality Dysfunction	Transfer Ability, impaired
Sexuality Patterns, ineffective	Trauma, risk for
Skin Integrity, impaired	
Skin Integrity, risk for impaired	Urinary Elimination, impaired
Sleep, readiness for enhanced	Urinary Elimination, readiness for enhanced
Social Interaction, impaired	Urinary Incontinence, functional
Social Isolation	Urinary Incontinence, overflow
Sorrow, chronic	Urinary Incontinence, reflex
Spiritual Distress	Urinary Incontinence, stress
Spiritual Distress, risk for	Urinary Incontinence, total
Spiritual Well-Being, readiness for enhanced	Urinary Incontinence, urge
Stress Overload	Urinary Incontinence, risk for urge
Suffocation, risk for	Urinary Retention [acute/chronic]
Suicide, risk for	
Surgical Recovery, delayed	
Swallowing, impaired	
	Ventilation, impaired spontaneous
Therapeutic Regimen Management, effective	Ventilatory Weaning Response, dysfunctional
Therapeutic Regimen Management, ineffective	Violence, [actual]/risk for other-directed
Therapeutic Regimen Management, ineffective community	Violence, [actual]/risk for self-directed
Therapeutic Regimen Management, ineffective family	
Therapeutic Regimen Management, readiness for enhanced	Walking, impaired
Thermoregulation, ineffective	Wandering [specify sporadic or continual]
Thought Processes, disturbed	
Tissue Integrity, impaired	Used with permission from NANDA International: Definitions and Classification, 2012–2014. NANDA I, Philadelphia, 2012.
Tissue Perfusion, ineffective (specify): renal, cerebral, cardiopulmonary, gastrointestinal, peripheral	Information that appears in brackets has been added by the authors to clarify and enhance the use of these nursing diagnoses.

Abdominal Aortic Aneurysm

DRG Category:	237
Mean LOS:	10 days
Description:	SURGICAL: Major Cardiovascular Procedures with Major CC
DRG Category:	300
Mean LOS:	4.6 days
Description:	MEDICAL: Peripheral Vascular Disorder with CC

An abdominal aortic aneurysm (AAA) is a localized outpouching or dilation of the arterial wall in the latter portion of the descending segment of the aorta (infrarenal aorta). Aneurysms of the abdominal aorta occur more frequently than those of the thoracic aorta. AAAs are the most common type of arterial aneurysms, occurring in 3% to 10% of people older than 50 years of age in the United States. AAA may be fusiform (spindle-shaped) or saccular (pouchlike) in shape. A fusiform aneurysm in which the dilated area encircles the entire aorta is most common. A saccular aneurysm has a dilated area on only one side of the vessel.

The outpouching of the wall of the aorta occurs when the musculoelastic middle layer or media of the artery becomes weak (often caused by plaque and cholesterol deposits) and degenerative changes occur. The inner and outer layers of the arterial wall are stretched, and as the pulsatile force of the blood rushes through the aorta, the vessel wall becomes increasingly weak and the aneurysm enlarges. Abdominal aneurysms can be fatal. More than half of people with untreated aneurysms die of aneurysm rupture within 2 years.

CAUSES

Most authorities believe that the most common cause of AAA is atherosclerosis, which is one of several degenerative processes that can lead to the condition. The atherosclerotic process causes the buildup of plaque, which alters the integrity of the aortic wall. Ninety percent of AAAs are believed to be degenerative in origin; 5% are inflammatory. Other causes include high blood pressure, heredity, connective tissue disorders, trauma, and infections (syphilis, tuberculosis, and endocarditis). Smoking is also a contributing cause.

GENETIC CONSIDERATIONS

It is highly likely that there are genetic factors that make one susceptible to AAA, with observations of both autosomal dominant and recessive inheritance patterns. Recent work has provided evidence for genetic heterogeneity and the presence of susceptibility loci for AAA on chromosomes 19q13, 9p21, and 4q31. Family clustering of AAAs has been noted in 15% to 25% of patients undergoing surgery for AAA. In addition, AAAs are seen in rare genetic diseases such as Ehlers-Danlos syndrome or Marfan's syndrome.

GENDER, ANCESTRY, AND LIFE SPAN CONSIDERATIONS

Abdominal aneurysms are far more common in hypertensive men than women; from three to eight times as many men as women develop AAA. Estimates are that they are found in 2% of all men over age 55 and that they are 3.5 times more common in white men than people of other ancestries. The incidence of AAA increases with age. The occurrence is rare before age 50 and is common between the ages of 60 and 80, when the atherosclerotic

2 Abdominal Aortic Aneurysm

process tends to become more pronounced. Ethnicity and race have no known effects on the risk for AAAs.

GLOBAL HEALTH CONSIDERATIONS

The incidence of AAAs is 4% to 8% in men and 1% in women who live in Asia and Europe.

ASSESSMENT

HISTORY. Seventy-five percent of AAAs are **asymptomatic** and are found incidentally. When the aorta enlarges and compresses the surrounding structures, patients may describe flank and back **pain**, epigastric discomfort, or altered bowel elimination. The pain may be deep and steady with no change if the patient shifts position. If the patient reports severe back and abdominal pain, rupture of the AAA may be imminent.

PHYSICAL EXAMINATION. Inspect the patient's abdomen for a pulsating abdominal mass in the periumbilical area, slightly to the left of midline. Auscultate over the pulsating area for an audible bruit. Gently palpate the area to determine the size of the mass and whether tenderness is present.

Watch for signs that may indicate impending aneurysm rupture, such as **syncope** (transient loss of consciousness and postural tone). Note subtle changes, such as a change in the characteristics and quality of peripheral pulses, changes in neurological status, and changes in vital signs such as a drop in blood pressure, increased pulse, and increased respirations. An abdominal aneurysm can impair flow to the lower extremities and cause what are known as the five Ps of ischemia: pain, pallor, pulselessness, paresthesias, and paralysis.

Because emergency surgery is indicated for both a rupture and a threatened rupture, serial and thorough assessments are important. When the aneurysm ruptures into the retroperitoneal space, hemorrhage is confined by surrounding structures, preventing immediate death by loss of blood. Examine the patient for signs of shock, including decreased capillary refill, increased pulse and respirations, a drop in urine output, weak peripheral pulses, and cool and clammy skin. When the rupture occurs anteriorly into the peritoneal cavity, rapid hemorrhage generally occurs. The patient's vital signs and vital functions diminish rapidly. Death is usually imminent because of the rapidity of events.

PSYCHOSOCIAL. In most cases, the patient with an AAA faces hospitalization, a serious surgical procedure, a stay in an intensive care unit, and a substantial recovery period. Therefore, assess the patient's coping mechanisms and existing support systems. Assess the patient's and significant others' anxiety levels regarding surgery and the recovery process.

Diagnostic Highlights

General Comments: Because this condition causes no symptoms, it is often diagnosed through routine physical examinations or abdominal x-rays.

Test	Normal Result	Abnormality With Condition	Explanation
Standard test: abdominal ultrasonography for initial diagnosis	Normal aortic diameter (2 cm diameter)	Widened aorta > 3 cm in diameter	Determines presence of dilation of the infrarenal aorta

Diagnostic Highlights (continued)

Test	Normal Result	Abnormality With Condition	Explanation
Computed tomography (CT) scan	Normal aortic diameter (2 cm diameter)	Locates outpouching within the aortic wall; widened aorta > 3 cm	Reliable assessment of size and location of aneurysm; aortic diameter exceeds 3 cm but usually will not rupture until > 5 cm; contrast-enhanced CT shows arterial anatomy; intra-aortic computed tomography angiography (IA-CTA) allows for visualization of the Adamkiewicz artery, which is important for spinal cord perfusion
Abdominal x-ray	Negative study	May show location of aneurysm with an "egg-shell" appearance; AAA is evident by curvilinear calcification in the anterior wall of the aorta, displaced significantly anterior from the vertebrae	Assesses size and location of aneurysm; aortic wall calcification is only seen 50% of the time (low sensitivity)

Other Tests: Magnetic resonance, aortography

PRIMARY NURSING DIAGNOSIS

DIAGNOSIS. Risk for fluid volume deficit related to hemorrhage

OUTCOMES. Fluid balance; Circulation status; Cardiac pump effectiveness; Hydration

INTERVENTIONS. Bleeding reduction; Fluid resuscitation; Blood product administration; Intravenous therapy; Circulatory care; Shock management

PLANNING AND IMPLEMENTATION**Collaborative**

PREOPERATIVE. The treatment of choice for AAA 5.5 cm or greater in size is surgical repair. When aneurysms are smaller, some controversy exists regarding treatment. Some authorities suggest the smaller aneurysm should just be evaluated frequently by ultrasound examination or a CT scan, with surgical intervention only if the aneurysm expands. There is increasing evidence suggesting that a beta blockade, particularly propranolol, may decrease the rate of AAA expansion, and blood pressure control and smoking cessation are important. Other experts suggest elective surgical repair regardless of aneurysm size. If the aneurysm is leaking or about to rupture, immediate surgical intervention is required to improve survival rates. Approximately 50% of people with an aortic rupture do not survive.

SURGICAL. The type and extent of surgery depend on the location of the aneurysm. Typically, an abdominal incision is made, the aneurysm is opened, clots and debris are removed, and a synthetic graft is inserted within the natural arterial wall and then sutured. During this procedure, the aorta is cross-clamped proximally and distally to the aneurysm to allow the graft to take

4 Abdominal Aortic Aneurysm

hold. The patient is treated with heparin during the procedure to decrease the clotting of pooled blood in the lower extremities.

POSTOPERATIVE. Patients will typically spend 2 to 3 days in the intensive care setting until their condition stabilizes. Monitor their cardiac and circulatory status closely and pay particular attention to the presence or absence of peripheral pulses and the temperature and color of the feet. Immediately report to the physician any absent or diminished pulse or cool, pale, mottled, or painful extremity. These signs could indicate an obstructed graft. Ventricular dysrhythmias are common in the postoperative period because of hypoxemia (deficient oxygen in the blood), hypothermia (temperature drop), and electrolyte imbalances. An endotracheal tube may be inserted to support ventilation. An arterial line, central venous pressure line, and peripheral intravenous lines are all typically ordered to maintain and monitor fluid balance. Adequate blood volume is supported to ensure patency of the graft and to prevent clotting of the graft as a result of low blood flow. Foley catheters are also used to assist with urinary drainage as well as with accurate intake and output measurements. Monitor for signs of infection; watch for temperature and white blood cell count elevations. Observe the abdominal wound closely, noting poor wound approximation, redness, swelling, drainage, or odor. Also report pain, tenderness, and redness in the calf of the patient's leg. These symptoms may indicate thrombophlebitis from clot formation. If the patient develops severe postoperative back pain, notify the surgeon immediately; pain may indicate that a graft is tearing. Myocardial infarction is the most common complication.

EXPERIMENTAL THERAPY. Some medical centers are using an experimental graft that is inserted through a groin artery into the area of the aneurysm. Intravascular stents covered with prosthetic graft material such as Dacron are expandable and carry blood past the weakened portion of the aneurysm. The procedure can be performed without extensive surgery, and although it is in limited use, patients have had positive short-term results.

Pharmacologic Highlights

Medication or Drug Class	Dosage	Description	Rationale
Morphine	1–10 mg IV	Opioid analgesic	Relieves surgical pain
Fentanyl	50–100 mcg IV	Opioid analgesic	Relieves surgical pain
Antihypertensives and/or diuretics	Varies by drug	Varies by drug	Rising blood pressure may stress graft suture lines

If surgical treatment is contraindicated or not required, evidence exists that the following drugs may decrease the risk of AAA expansion or reduce the potential for complications: statins, antiplatelet therapy, angiotensin-converting enzyme inhibitors, roxithromycin, and doxycycline.

Independent

PREOPERATIVE. Teach the patient about the disease process, breathing and leg exercises, the surgical procedure, and postoperative routines. Support the patient by encouraging him or her to share fears, questions, and concerns. When appropriate, include support persons in the discussions. Note that the surgical procedure may be performed on an emergency basis, which limits the time available for preoperative instruction. If the patient is admitted in shock, support airway, breathing, and circulation, and expedite the surgical procedure.

POSTOPERATIVE. Keep the incision clean and dry. Inspect the dressing every hour to check for bleeding. Use sterile techniques for all dressing changes. To ensure adequate respiratory function and to prevent complications, assist the patient with coughing and deep breathing after

extubation. Splint the incision with pillows, provide adequate pain relief prior to coughing sessions, and position the patient with the head of the bed elevated to facilitate coughing. Turn the patient side to side every 2 hours to promote good ventilation and to limit skin breakdown.

Remember that emergency surgery is a time of extreme anxiety for both the patient and the significant others. Answer all questions, provide emotional support, and explain all procedures carefully. If the patient or family is not able to cope effectively, you may need to refer them for counseling.

Evidence-Based Practice and Health Policy

Greenblatt, D.Y., Greenberg, C.C., Kind, A.J., Havlena, J.A., Mell, M.W., Nelson, M.T., . . . Kent, K.C. (2012). Causes and implications of readmission after abdominal aortic aneurysm repair. *Annals of Surgery*, 256(4), 595–605.

- Among a sample of 2,481 patients who underwent AAA repair, 30-day readmission rates were 13.3% for endovascular repairs and 12.8% for open repairs. Wound complication was the most frequent reason for readmission following both types of repairs. Additionally, readmission for graft complication was common following endovascular repair, and readmission for bowel obstruction was common following open repair.
- Postoperative events and prolonged lengths of stay after surgical repair of more than 7 days (75th percentile) were predictive of readmission post AAA repair and associated with increased mortality.
- Improved coordination of care across inpatient, transitional care, and outpatient settings with active surveillance for procedure-specific postoperative complications may assist in preventing early readmissions, enhance long-term survival, and reduce healthcare costs.

DOCUMENTATION GUIDELINES

- Location, intensity, and frequency of pain and the factors that relieve pain
- Appearance of abdominal wound (color, temperature, intactness, drainage)
- Evidence of stability of vital signs, hydration status, bowel sounds, electrolytes
- Presence of complications: Hypotension, graft occlusion, hypertension, cardiac dysrhythmias, infection, low urine output, thrombophlebitis, changes in consciousness, aneurysm rupture, excessive anxiety, poor wound healing

DISCHARGE AND HOME HEALTHCARE GUIDELINES

WOUND CARE. Explain the need to keep the surgical wound clean and dry. Teach the patient to observe the wound and report to the physician/practitioner any increased swelling, redness, drainage, odor, or separation of the wound edges. Also instruct the patient to notify the physician if a fever develops.

ACTIVITY RESTRICTIONS. Instruct the patient to lift nothing heavier than 5 pounds for about 6 to 12 weeks and to avoid driving until her or his physician/practitioner permits. Braking while driving may increase intra-abdominal pressure and disrupt the suture line. Most surgeons temporarily discourage activities that require pulling, pushing, or stretching, such as vacuuming, changing sheets, playing tennis and golf, mowing grass, and chopping wood.

SMOKING CESSATION. Encourage the patient to stop smoking and to attend smoking-cessation classes. Smoking-cessation materials are available through the Agency for Healthcare Research and Quality (<http://www.ahrq.gov/>) or the National Institute on Drug Abuse (<http://www.nida.nih.gov/>).

COMPLICATIONS FOLLOWING SURGERY. Discuss with the patient the possibility of clot formation or graft blockage. Symptoms of a clot may include pain or tenderness in the calf, and these symptoms may be accompanied by redness and warmth in the calf. Signs of graft