Suggested Answers

to Accompany

Gerontology Nursing Case Studies: 100 Narratives for Learning

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Case 1.1  Advanced Directives: Answers

1. The Patient Self Determination Act (PSDA).

2. Reasons for avoiding having an AD may include lack of awareness, misconceptions, belief that the process is complicated, too expensive, fear or anxiety in planning for end-of-life, and other reasonable thoughts students provide.

3. One type of AD is known as the Durable Power of Attorney for Health Care (DPAHC). This document lets an individual appoint someone of their choosing (family member, friend, or trusted other) to make health care decisions in the event capacity for decision making or communication is lost. The individual chosen may be referred to as a proxy, agent, attorney-in-fact, or surrogate. The other type of AD is the Living Will used for adults without someone to appoint as a proxy.

4. In addition to CPR, interventions could include artificial hydration and nutrition, dialysis, invasive diagnostic tests, administration of antibiotics, and blood products.

5. According to the American Hospital Association (2005), the majority of states have reciprocity conditions. Common law and constitutional rights can be implemented to accept or refuse treatment. With a health care proxy likely present in Mr. Barker's situation (his daughter), she would serve as his voice to express desires at end-of-life. An AD serves as an expression of intent regarding health care and should have a strong influence regardless where hospitalized.

6. No, an AD can be revoked at any time and a different document created based on the client's current situation. Patients are entitled to complete information about their illness and how it may affect their lives, and they have the right to revoke an AD at any time.

7. Taken directly from the Aging with Dignity (2005) Web site at http://www.agingwithdignity.org/five-wishes.php, the five issues include the following:
   - Whom you want to make health care decisions for you when you can't make them?
   - The kind of medical treatment you want or don't want.
   - How comfortable you want to be.
   - How you want people to treat you.
   - What you want your loved ones to know.

8. Yes, he would be appropriate.
9. Patients are entitled to complete information about their illness and how it may affect their lives, and they have the right to share or withhold that information from others. The nurse should respect, not challenge, Ms. Ruiz's choice. Offering help through Hospice for further consultation with her family members is an option, which could be provided.

10. Students' responses will vary; the intent of the question is to increase cultural awareness in regard to end-of-life and AD.

Case 1.2  Health Care Decision Making: Answers

1. Students' answers will vary. Respect for autonomy will likely include a client being supported in the self-determination process. Beneficence examples should demonstrate the understanding of the need to promote the client's best interest, well-being, and protect from harm. Avoiding events that could likely result in patient harm represents nonmaleficence. Distributive justice should involve the fair allocation of benefits and burdens in a health care environment (Mitty & Post, 2008b).

2. Every individual has the right to refuse; death may be the ultimate consequence of his choice. It is likely that he is experiencing severe grief over losing his wife; more stress through coercion is not promoting beneficence in this situation.

3. The physician providing the care (treatment or procedure) is required to reveal the patient's diagnosis, a description, and purpose of the treatment along with the known risks and benefits, as well as alternatives to the treatment and the risks and benefits associated. Lastly, the client needs to know if a decision is made to not receive the treatment, what risks and benefits exist (American Medical Association [AMA], n.d.).

4. Of the choices listed, only D is appropriate for the RN to provide in relation to obtaining informed consent.

5. Mitty and Post (2008a), share that both terms are part of common language used with decision making. However, competence reflects a legal presumption that an adult has the mental ability to negotiate various legal tasks, while capacity is determined from a clinical evaluation.

6. The five elements include the ability to understand and process information; assess the relative benefits, burdens, and risks of each option; incorporate personal values to the analysis; arrive at a consistent decision; and be able to communicate the decision (Mitty & Post, 2008a).

7. The instruments used are the Royall’s CLOX (clock drawing), Controlled Oral Word Association Test, and Trail Making Test (oral version).

8. According to the authors, both patient situations can still result in safe, effective decision making (Mitty & Post, 2008a).

9. Students' answers will vary. The author presented numerous patient-focused, therapeutic suggestions for assisting an individual with dementia to receive the information necessary for a quality experience with decision making.
Case 1.3  ▪ Physical Restraints: Answers

1. Bedrails are considered to be a form of physical restraint when used with the intention of preventing the individual from getting out of the bed. Following occurrences of serious injuries and deaths associated with bedrails, in 1995 the FDA issued a warning about the improper use. “They can be especially hazardous for demented or agitated individuals, who may be harmed by sliding between the rails or attempting to climb over them” (Safety Without Restraints, 2009).

2. Students' answers will vary but likely include fear, anxiety, anger, and helplessness. In addition, the literature cites the following (Physical Restraints, 2007):
   - Feelings of isolation and dehumanization
   - Withdrawal, agitation, and depression
   - Resignation to loss of freedom and dignity
   - Feeling of entrapment

3. Students' answers will vary; the intent of the question was to read and think about the definition.

4. New onset or increased agitation or confusion: related to fighting the restraints, lack of environmental stimulus, unable to understand the need for protection against falling, and so forth.
   - Delirium: related to the agitation and restlessness of being confined.
   - New onset pressure ulcers: related to immobility and reduced circulation.
   - New onset urinary incontinence: related to not toileting as often as needed or quick access to bathroom/urinal.
   - Constipation, fecal impaction: related to immobility and possibly not choosing to use a bedpan.
   - Bruising, skin tears, or changes in skin integrity: related to fighting restraints or trying to move around.
   - Pneumonia: related to immobility; atelectasis is present due to lying in one position.
   - Nerve injury: related to restraints that are too tight.
   - Musculoskeletal injury: strains, fractures, contractures, decreased range of motion: related to immobility, and possibly climbing over bedrails and falling.
   - Physical deconditioning and functional decline: related to immobility with deterioration of heart and skeletal muscle.
   - Strangulation/asphyxiation resulting in encephalopathy or death: related to “scooting” out of a vest restraint, which ends up around the neck, unable to change positions as desired.

5. Mental Status Assessment of Older Adults: The Mini-Cog is used for the early identification of cognitive impairment (Doerflinger, 2007).
   The Confusion Assessment Method (CAM) is used to quickly identify delirium (Waszynski, 2007).

Pain Assessment for Older Adults is used to screen and assess older adults for pain which can be the underlying cause of agitation (Flaherty, 2007).
Assessing Pain in Older Adults with Dementia is used for older adults with cognitive impairment that cannot be assessed for pain using standardized pain assessment (Horgas, 2007). Fall risk assessment for older adults: The Hendrich II Fall Risk Model (Gray-Miceli, 2007).

6. A, B, and E. Patients should be reassessed and restraints released every 2 hours.

7. Students’ answers will vary; the intent is to read and think about the lengthy list of care strategies associated with physical restraints.

8. The principle of beneficence calls for doing only good on the behalf of the patient; this guides the practice and profession of nursing. However, the principle of autonomy, also a core philosophy of nursing, promotes the right of the individual to choose his or her own course of action. Therefore, the ethical dilemma arises when a nurse provides a restraint-free environment, and a patient may fall or injure themselves anyway. Or, physical restraints are used, and it is very evident the patient disagrees with this action, thus losing their autonomy.

Case 1.4 Patient’s Bill of Rights: Answers

1. A patient’s bill of rights are federal and state statutes with the intent of protecting a resident’s civil, religious, and human rights, while a patient resides in a skilled nursing or assisted living facility.


3. Patient rights are factors of care that the resident can expect to receive. Under federal law and state laws, residents are guaranteed these rights.

4. The Long-Term Care Bill of Rights or OBRA 1987 states the resident has the right to (Tabloski, 2010; Devine, 2008):
   • choose their physician, treatment, and care and decide whether to participate in research
   • receive individualized care that accommodates resident needs and choice regarding activities, schedules, and health care
   • gain information on medical benefits, medical records, survey results, and deficiencies of the facility and advocacy groups
   • receive care and live in an environment free from abuse, neglect, and chemical or physical restraints
   • privacy and confidentiality of their personal and clinical records
   • voice grievances or make complaints without fear of retaliation or discrimination
   • organize and take part in family/resident groups and in a social, religious, and community activities
   • vote
   • control their personal funds and use personal possessions
   • file lawsuits, make a will, dispose of property, or enter into contracts
   • unlimited access to immediate family members or relatives
   • marry
• share a room with his or her spouse if both are residents
• remain in the facility or choose to leave, and not be transferred or discharged except for medical reasons, the welfare of the residents or others, failure to pay or if the facility cannot meet the resident's needs or ceases to operate (Tabloski, 2010; Devine, 2008).

5. The National Long-Term Care Ombudsman program was established to ensure advocacy for nursing home residents and assisted living facilities.

6. Ombudsmen are volunteer representatives who receive and investigate complaints made by or in the behalf of long-term care residents and work to resolve these complaints. These state representatives check on resident care and violations of rights. Ombudsmen are advocates and not a regulatory agency.

7. Ombudsman contact information should list the name and telephone number of the ombudsman, so the resident knows whom to contact if they feel their rights have been violated.

Response will be state dependent. For example, North Carolina: http://www.dhhs.state.nc.us/aging/ombud.htm, go to http://www.ncdhhs.gov/aging/ombud/ombstaff.htm for a specific listing by county.

8. Answer D. Failing to adhere to and enforce a patient’s right can lead to job loss, lawsuits, and resulting fines and imprisonment.

9. OBRA 1987 mandates that the use of restraints should be limited to 2 hours or less, and only with physician orders in emergencies.

Case 1.5  The Unsafe Driver: Answers

1. Use of alcohol or illicit drugs, known vision and/or hearing problems, possession of a current driver's license, and when renewal is due, along with the amount and quality of sleep.

2. Road markings that are difficult to see or read, complex and confusing intersections, older vehicles that lack automatic safety features, and newer dashboard instrument panels with multiple displays. Unclean windshields, mirrors, and headlights.


4. Respect for the patient and for his decision to choose driving as a method of transportation and as a means of independence are important, as is patient confidentiality. Maintaining his autonomy while protecting his welfare with unsafe driving is challenging. He may become a “recluse” if unable to drive and with lack of social stimulation experience depression. It has been shown that people who relinquish their driving privileges suffer a sense of loss. It threatens self-esteem and personal dignity, and it implies social disability and dependency on others.

5. A church member, friend, or neighbor drives him to the appointment.

6. Students should provide a name of a local service.
7. Objects will look blurry, things are more difficult to see in a bright light, colors look faded, night vision is worse, and double vision may be present.

8. Depending on the state, answers will vary.

9. Use Web site provided to validate students’ answers.

Case 1.6  Iatrogenesis and the Elderly: Answers

1. The literature is replete with information related to the potential adverse drug–drug reaction with warfarin (Coumadin) and levofloxacin (Levaquin) resulting in elevations of the prothrombin time. Anticoagulation tests such as an INR should be monitored closely if the two drugs are given together, in addition to assessing patients for evidence of bleeding.

2. To avoid clogging, medications should be given one at a time with flushing of water in between each.

3. Iatrogenesis refers to any unintended and untoward consequence of well-intended health care interventions. Yes, all problems in the case meet the requirements as stated in the definition.

4. Answer D; although inadequate staffing in a hospital has the potential for affecting patient care, it is not considered a contributing factor.

5. Polypharmacy—three statements on the Hartford Institute for Geriatric Nursing Web site support this. They include “The potential for ADEs is highest among older adults who are the greatest consumers of medications. Polypharmacy increases the risk of drug–drug interactions whose effect on older people is more dramatic. As the number of medications increase, an exponentially greater risk of ADEs occurs” (Francis, 2005).

6. “Over administration of IV fluids in an older patient with age-related reduced cardiac reserve can cause congestive heart failure” (Francis, 2005). Multiple plasma transfusions affect the heart's pumping capacity, thus the patient experienced hypotension and labored breathing.

7. A nosocomial complication.

8. In a study, patients aged 65–91 were asked to bring all of their medications in a brown paper bag to a health care site. There was more accuracy than what was found in records from the pharmacy, or self-report. Therefore, this action might improve safety with drug administration (Hale & Fong, 2004).

9. (1) Object left in a patient during surgery, (2) air embolism, (3) blood incompatibility, (4) catheter-associated urinary tract infection, (5) pressure ulcer, (6) vascular catheter-associated infection, (7) mediastinitis after coronary artery bypass grafting, and (8) fall from bed (Rosenthal, 2007).

10. Students’ answers will vary. It is difficult to predict; with more attention and conscientious care strategies, hopefully a decrease will occur. Keeping in mind the aging of America and increased predictions for an elderly population, this may add to the challenge to decrease prevalence of iatrogenesis.

11. Students’ answers will vary; the intent of the question was to promote reflection on the case topic.
Case 2.1  ▪ Death of a Spouse: Answers


2. Because of psychosocial mechanisms, including emotional stress and grief; loss of social, instrumental and material support (Nihtila & Martikainen, 2008, p. 1228).

3. By lowering immunity to infections or aggravating stress-related diseases (e.g., cardiac disease) (Nihtila & Martikainen, 2008, p. 1232).

4. Continuing Bonds in Coping (CB Coping); Self-Regard Questionnaire (SRQ); 10-Mile Mourning Bridge (10 MMB).

5. CB Coping is derived from the literature on ways of maintaining a connection with the deceased. Expressions of continuing bonds are calculated in six categories: having an imaginary conversation with the spouse; trying to do things that would have made the spouse happy; thinking of positive memories of the spouse; imagining a reunion with the spouse; using photos of the spouse to feel close; and imagining or feeling that the spouse is providing guidance/comfort.

The SRQ assesses an individual's experience of self after the period following a loss. The client reads and responds to phrases regarding self-appearance, physical and mental health, and identity during the previous week.

The 10 MMB measures progress through the bereavement process on a scale of 0–10.

1 = when an individual first learns of the loved one's death; the 10th “mile” is the point when the bereaved identifies recovery of emotional energy and reinvests the energy in the rest of his/her life (Minton & Barron, 2008).

6. Increased cognitive function, decreased depressive symptoms, and increased self-efficacy (Winningham & Pike, 2007).

7. The table on p. 720 in Winningham and Pike (2007) lists the following answers:
   • Use standardized questions that each resident can answer and other residents can learn in a group setting. Pair residents with similar interests and cognitive functioning.
   • Family days can bring together residents and facilitate new connections.
   • Name tags can help people remember names.
• Resident Ambassador Program: Willing and high functioning residents can be
given part-time jobs or volunteer positions to greet visitors, help residents, and
help facilitate social activities.
• Resident Council Program: A resident council program can serve in an advisory
capacity for the facility.
• Working on word puzzles together.
• Book club.
• Offer trips to senior centers.
• Make a display of all residents with recent pictures and names.
• Memory game with residents old photographs.

8. Invite individuals who have not participated in activities to sit and observe/listen
to activities on the periphery prior to inviting them to actively participate in activi-

9. Use the following Web sites to verify student answers: www.griefnet.org, www
.centerofthebed.com (Weinstein, 2009), and www.americanhospice.org.

Case 2.2  Prolonged Grief: Answers

1. Bougere (2008) states, “Studies have also shown that many Hispanics expect their
health care providers to be warm and caring and to interact with them in such
a manner. They are more likely to put their trust in their individual practitioner
rather than the hospital or other health care facility. In many cases, the family of a
deceased Hispanic patient may depend on the primary care provider to be present,
provide information, offer condolences, and find out what will be helpful to them.”

2. Grief is considered a normal reaction to a loss, be it a physical, symbolic, or social
loss. Grief may manifest itself through physical problems, constant thoughts of the
person who died, guilt, hostility, and a change in the way one normally acts.
Bereavement is the period after a loss during which grief is experienced and
mourning occurs.
Mourning is the process by which people adapt to a loss. Mourning is also influ-
enced by cultural customs, rituals, and society’s rules for coping with loss.

3. All of the statements represent common myths in our society (Smith, Jaffee, &
Segal, 2009).
A. Trying to ignore pain or keep it from surfacing will only make it worse in the
long run. For real healing, it is necessary to face grief and actively deal with it.
B. Feeling sad, frightened, or lonely is a normal reaction to loss. Crying doesn’t
mean you are weak. There is no need to “protect” your family or friends by
putting on a brave front. Showing true feelings can help them and you.
C. Crying is a normal response to sadness, but it’s not the only one. Those who
don’t cry may feel the pain just as deeply as others. They may simply have
other ways of showing it.
D. There is no right or wrong time frame for grieving. How long it takes can differ from person to person.

4. There are numerous life losses that can provoke grieving, which are highly variable. Examples include death of a pet, losing a job, one’s health, physical strength, financial stability, a friendship, a home, a long-held dream, or loss of safety (following a trauma).

5. Phase 3 known as “Disorganization and despair.” Family members feel depressed and find it difficult to plan for the future. They are easily distracted and have difficulty concentrating and focusing (Bereavement, Mourning, and Grief [PDQ]). (n.d.)

6. Yes, Carlos is likely going through complicated grief. Due to the time period since his wife’s death, admitting to depression, increase of alcohol intake, sleeplessness, in addition to the other symptoms, and their interference in his daily life.

7. 1. Develop the ability to experience, express, and adjust to painful grief-related changes.
   2. Find effective ways to cope with painful changes.
   3. Establish a continuing relationship with the person who died.
   4. Stay healthy and keep functioning.
   5. Reestablish relationships and understand that others may have difficulty empathizing with the grief they experience.
   6. Develop a healthy image of oneself and the world.

8. Students’ answers will vary but likely include talking with a trusting person, exercise, prayer or spiritual ritual, support group, read/learn about the topic, and possibly socialize. The intent of the question is to focus on healthy coping measures following loss.

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Case 2.3  
Death With Dignity: Answers

1. By assessing her understanding and retention of the implications of her breast cancer diagnosis and assessing her understanding of her options for treatment and the risks and benefits of those options (Foster & Turner, 2007).

2. Two types of advance directives: durable power of attorney for health care (DPAHC) (also called a health care proxy) and a Living Will.

3. By assessing for and providing measures to promote her psychosocial and spiritual comfort, as well as her physical comfort (Coenen, Doorenbos, & Wilson, 2007; Touhy, Brown, & Smith, 2005).

4. Deciding whether she wanted to die at home or in the hospice, making funeral arrangements, taking a trip or fulfilling other last wishes, scheduling doctor visits, coping with unexpected challenges, and emotions that no one has had to deal with before.

5. The Nurse care coordinator evaluates the client’s condition and makes recommendations for care. The Physician(s) oversees treatment provided by the team. The Home Health Aid assists with personal care and ADLs. The Spiritual care provider
helps to address questions about meaning in life and making connections with a higher power. The Social Worker helps clients and families deal with emotional and psychosocial issues related to dying. Volunteers provide companionship, run errands, help with physical needs, and allow caregivers time to do things on their own out of the house.

6. Writing a letter, e-mail, or making a home video to communicate; having family members maintain a Web site about how an individual is doing; and writing in a journal that can be shared with loved ones after the individual dies.

7. Examples include the following: Do you want to die at home? Whom do you want to see before you die? What religious or family traditions do you want performed when you die? Refer to the Web site to validate other student answers.

8. Pain management, vigilant treatment of behavioral indications of discomfort, avoidance of aggressive forms of treatment to prolong life, meeting spiritual needs, providing a rich environment in which everyone experiences the six senses; giving a sense of security, belonging, achievement, continuity, purpose, and significance.

Case 3.1  Physical Abuse: Answers

1. Yes. Both patients are older and have no children, so they may have a more limited social network. Mrs. Sable is dependent on her husband for transportation, and Mr. Sable has some recent cognitive decline.

2. Signs displayed by Mrs. Sable that might indicate possible physical abuse or neglect include cowering, lack of direct eye contact, decreased weight, elevated pulse, and hesitancy to undress.

3. The nurse should inquire how Mrs. Sable acquired the bruising. She should also check to see whether she is on any aspirin or anticoagulant and whether or not there is any recent lab work on the chart. Bruises of different colors in various stages of healing and on the back and arms are suggestive of physical abuse.

4. The nurse should ask Mrs. Sable whether she feels safe. Does she have enough to eat? Who prepares her meals? Does she have everything she needs? Does she need additional help at home, and who could provide this?

5. The student should go to the Web site and review the documentation on elder mistreatment.

6. Depending on the severity of the problem, the staff may need to call security or the police. If able to calm him down, they might try to have a friend or neighbor pick him up to take him home. Also, Mr. Sable may need an evaluation for himself. Social services are an additional resource to call.

7. Students should search the Internet or the phone book in their area to find the requirements for reporting abuse. They may also call the local number for APS and ask about the reporting mechanism.

8. Mr. Sable's reaction will probably involve anger and acting out. Generally, elder abuse is grossly underreported. It is likely that Mrs. Sable had experienced repeated incidences of mistreatment before she finally confessed to the health professionals about the abuse. It is possible that her fall down the stairs, in which she fractured her hip, was due to abuse as well. This couple will need social services, counseling, and behavior modification before Mrs. Sable can safely even consider returning home to her husband. Also, Mr. Sable should have a thorough history and physical examination taken with a comprehensive cognitive screening to rule out physical causes of his recent behavior and address his cognitive changes.
Case 3.2  ▶ Physical Neglect: Answers

1. Complete physical assessment with focusing on possible indicators of neglect including contractures, decubiti, dehydration, diarrhea, depression, impaction, malnutrition, poor hygiene, failure to respond to warning of obvious complications, and medication compliance.

2. The main perpetrators of elder neglect are family members and caregivers (in-home or institutional). The most common causes of elder neglect are caregiver stress/burden, infirm and dependent elderly, lack of support and resources, and substance abuse problems.

3. Risk factors include age and infirmities (bedridden, immobile, dysphasic, and aphasic).

4. General warning signs of physical neglect include usual weight loss, malnutrition, dehydration, untreated medical problems, unsanitary living conditions, being left dirty or unbathed, unsuitable clothing or covering for the weather, unsafe living conditions, and/or desertion/abandonment of the elder.

5. Possible psychosocial nursing diagnoses could be fear, anxiety, hopelessness, powerlessness, impaired verbal communication, dysfunctional family processes, social isolation, chronic sorrow, and ineffective coping (Ackley & Ladwig, 2006).

6. Priority for physiological issues would be the following: airway/risk for aspiration, malnutrition/less than body requirements, safety/being left alone a lot, no assistance with feeding, and psychosocial issues.

7. “A majority of states now mandate reporting of elder abuse. Currently, only 16 states require all citizens to report elder abuse. Many states mandate reporting of elder abuse by health and human services professionals, long-term care facilities employees, and law enforcement personnel. A few states require financial professionals such as bankers to report elder abuse, while even fewer require the clergy to report elder abuse. States also have different punishment schemes for failure to report. The majority of states now makes the failure to report elder abuse a misdemeanor and may punish that failure with a fine and/or jail time. Those charged with the responsibility of reporting elder abuse are generally required to have a "reasonable belief" that an elderly person has been the victim of elder abuse. A few states provide that the failure to report is a ground for civil liability. Institutional caregivers and their employers are also subject to penalties and sanctions for failing to report elder abuse. However, various levels of immunity from civil liability and retaliation for failure to report are afforded. If immunity is recognized, it generally does not extend to a reporter who is also the abuser. Typically, a reporter is afforded protection if he or she notifies the appropriate authorities of suspected elder abuse in 'good faith'” (Lawyers.com, 2010). Reprinted from Lawyers.com with permission. Copyright © 2010 LexisNexis, a division of Reed Elsevier, Inc. All rights reserved.

8. The nurse should attempt to communicate her concerns to the daughter so that she understands the seriousness of the situation, ask for a number so that she can call and speak to the husband/primary caregiver personally, review medical records for trends, notify MD of concerns in order to get an order to increase the frequency of skilled nurse visits for the next week, and report to Adult Protective Services (APS) if no significant changes are noted in patient's care within the next week (Fulmer, 2008).
Case 3.3  Consumer Fraud and the Elderly: Answers

1. Consumer fraud includes many fraudulent and misleading practices such as advertising, marketing, selling, or procuring goods or services. Consumer fraud occurs when a product or service does not perform as advertised. Another example of consumer fraud is overcharging for something or concealing a fee. Consumer fraud may also occur when a company compels one to agree to unfair terms and conditions in order to complete a transaction. Another example is purchasing an item represented as safe when the seller had reason to believe otherwise. The primary two words to define consumer fraud are “intentional misrepresentation.”

2. Activities such as lottery and prize scams, fake investment schemes involving property and stock, home renovation fraud, internet fraud, bank inspector schemes, public utility imposter scam, along with many others.

3. Always ask for and wait until you receive written material about any offer or charity.
   - Always check out unfamiliar companies with your local consumer protection agency.
   - Obtain and verify the accuracy of a salesperson’s name, business identity, telephone number, street address, mailing address, and business license number before you transact business.
   - Before you send money, ask yourself a simple question. “What guarantee do I really have that this solicitor will use my money in the manner we agreed upon?”
   - You should not be asked to pay in advance for services. Pay services only after they are delivered.
   - Always take your time making a decision. Legitimate companies won’t pressure you to make snap decision.
   - Don’t pay for a “free prize.” If a caller tells you the payment is for taxes, he or she is violating federal law.
   - Be sure to talk over big investments offered by telephone salespeople with a trusted friend, family member, or financial advisor.
   - Never respond to an offer you don’t understand thoroughly.
   - Never send money or give out personal information such as credit card numbers and expiration dates, bank account numbers, dates of birth, or social security numbers to unfamiliar companies or unknown persons.
   - Your personal information is often brokered to telemarketers through third parties.
   - If you have information about a fraud, report it to state, local, or federal law enforcement agencies.

4. In the current age of technology, most students will likely have made a purchase online. The purpose of the question is increasing the student’s knowledge about safety with Internet shopping, so it may be shared with others. The Web site LooksTooGoodToBeTrue.com offered the following tips:
CASE 3.2: PHYSICAL NEGLECT: ANSWERS

- Try to obtain a physical address rather than merely a post office box and a phone number.
- Call the seller to see if the number is correct and working.
- E-mail the company to see if they have an active e-mail address. Be wary of sellers who use free e-mail services where a credit card wasn’t required to open the account.
- If a vendor will not provide you with this type of information, consider not doing business with them.
- Check with the Better Business Bureau from the seller's area.
- Check out other Web sites regarding this person/company.
- Don’t judge a person/company by their Web site.
- Be cautious when responding to special offers (especially through unsolicited e-mail).
- Be cautious when dealing with persons/companies from outside your own country.
- Know what you are buying—read product description and fine print for indications of off-brand or less-than-perfect condition items.
- Inquire about returns and warranties.
- Consider shipping and handling costs to ensure they are within your budget.
- Make sure the transaction is secure when you electronically send your credit card number.
- The safest way to purchase items via the Internet is by credit card because you can often dispute the charges if something is wrong or consider utilizing an escrow or alternate.
- Maintain records of all online transactions.

5. There are numerous actions to take to prevent problems with home repairs. Student answers may include any of the following:

- Check references of contractor and inspect actual work performed for others.
- Acquire several estimates for the project.
- Do not pay a large amount upfront prior to work beginning (25% maximum is typical).
- Have a full address for the contractor (not just a post office box) or cell phone number.
- Read loan contract details closely; get assistance if unsure of details.
- Have a written contract for the work with an itemized listing of cost of materials, labor, clean-up, and approximate date of completion.

6. Living alone with limited family contact. Women of this generation may not be as familiar with money management and used to turn such matters over to men whenever possible. They may be more reluctant to seek advice on financial matters. Many individuals of this generation have significant financial resources and are very trusting of others. On the contrary, living with a limited income makes a monetary prize enticing. Their experiences during the Great Depression make them particularly vulnerable, as this was a time when one assisted strangers in
need. Seniors are also very generous in their donations to legitimate charities. Feelings of loneliness may keep someone on the phone. The physical inability to shop makes the Internet a valuable option. Home repairs are too challenging to complete. Possible mental health issues such as dementia can affect judgment.

7. Embarrassment over being taken advantage of and amount of money loss. Lack of knowledge that consumer fraud is a reportable crime. Fear of retaliation, especially if living alone. Unaware of who to report this crime to other than local law enforcement.


Case 3.4  Financial Mistreatment: Answers

1. The risk factors for financial mistreatment include Ms. Jones living alone, being a widow, having large financial assets, and having a teenage relative living with her who has moved out of his parent's home.

2. The nurse would want to know what motive Joe would have for stealing from his grandmother. A substance abuse problem, gambling, or debts would be some of the reasons to explore.

3. This type of mistreatment is called financial abuse or mistreatment.

4. Students should state which statistics they found most surprising.

5. The women will be asked to describe how they discovered items were missing or money was stolen. They will have to tell why they suspect Joe and should reveal the drug problem, as this provides a motive. The women will need to report the missing jewelry to the insurance company if there is coverage and will have to make an itemized list along with descriptions and any pertinent identifying information in order to have the claim processed.

6. Changing the locks on their doors is essential for safety's sake. If Joe indeed does have a drug problem, then he may also have friends or suppliers who know that his grandmother has money. She could be the target of future thefts or harm as well. The police could be asked to drive by more frequently, and a Ms. Jones might wish to consider a security system for her house if she does not already have one.

7. For the future, Ms. Jones may want to more carefully consider who she allows to live in her home. She should have talked to her daughter prior to letting Joe move in, and there could have been better communication between the family members to avoid this situation.

8. Older adults who remain as independent as possible for as long as they can and handle their own affairs, or at least remain involved in their own financial dealings, are less likely to be victims of financial mistreatment than those who leave this to others or allow themselves to become dependent on others for financial management. In addition, home security systems and safes within the home can provide additional protection from theft.
Case 4.1  Alcoholism: Answers

1. Hallmark signs and symptoms of liver disease are as follows:
   - Loss of appetite
   - Weakness and fatigue
   - Nausea and vomiting
   - Abdominal swelling and/or pain
   - Jaundice
   - Dark colored urine
   - Light colored stool
   - Pruritus

2. The nurse estimates John’s alcohol consumption to be closer to eight drinks and notes he is significantly higher than the 0.08 legal intoxication limits.

3. Screening for alcohol use is also an opportunity to provide education and information about risks and interventions to reduce adverse consequences of chronic alcohol abuse/dependence (Moore, Seeman, Morgenstern, Beck, & Reuben, 2002).

4. Answer C. Questions would focus on the following:
   1. Perceptions of drinking behaviors
   2. Consequences of drinking
   The other answers would be accusatory and nontherapeutic in helping John explore his alcohol use.

5. One drink is defined as 12 oz of beer, 5 oz of wine, or 1.5 oz of 80-proof liquor.

6. The excessive or regular use of alcohol puts the patient at risk for the following:
   - Falls
   - Anxiety
   - A decrease in gastric absorption leading to a failure to absorb essential vitamins and minerals, resulting in malnutrition
   - Cirrhosis of the liver
   - Gastric varices and a risk of bleeding
   - Headaches (early morning or night)
   - Osteomalacia (thinning of the bones)
   - Decline in cognitive function
• Potential interaction with medication to potentiate effects (increases risk of fall and fracture)
• Social isolation

7. Additional signs and symptoms are as follows:
• Lack of interest in usual activities
• Chronic pain
• Smell of alcohol or frequent use of mouthwash to mask odor of alcohol use
• Avoiding family and friends and increased desire to be alone
• Increasing memory problems after drinking
• Ataxia or loss of muscle coordination
• Bruising and frequent injuries related to falls
• Changes in sleep or eating patterns
• Irritability, sadness, or depression
• Difficulty concentrating or finishing tasks
• Keeping bottles of prescriptions close by to take them for minor reason throughout the day

8. To diagnose as alcohol dependent, the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) states that three or more of the following criteria should be observed in the same 12-month period:
• Tolerance requiring increasing intake of alcohol to get an effect
• Withdrawal or drinking to self-medicate withdrawal symptoms
• Drinking in increasing quantities or for longer periods of time than expected
• Constant desire to drink with unsuccessful attempts to stop, or control drinking
• Increasing time spent on seeking alcohol or recovering from effects
• Giving up participating in regular social activities or recreational activities to drink
• Continuing alcohol consumption despite the persistent or recurrent repercussions to physical and psychological state caused by the alcohol consumption

9. Answer A.
John would have a lowered success rate for the successful and safe cessation of alcohol use. He is at the high risk for having signs and symptoms of withdrawal. This puts him in danger of having an uncontrolled elevated blood pressure, tachycardia, seizure, delirium tremors, nystagmus, nausea and vomiting, and injury related to falls, or aspiration. Alcohol withdrawal is a medical emergency and should be completed on a detox protocol with the assistance of medical professionals. Continued alcohol use would mask the signs and symptoms of withdrawal. John’s continued use of alcohol has already put him at risk for Nutritional Impairment, and his drinking patterns have increased his isolation and delayed the grieving process from the loss of his wife.
Case 4.2  Prescription Pain Medication Misuse: Answers

1. Increases the risk of polypharmacy, drug interactions, accidental overdose, increased tolerance, and dependency.

2. Multiple steps can be taken to reduce multiple prescriptions for the same controlled substances. For example:
   - Educate the patient on the risks of tolerance and medication misuse.
   - Involve the patient in their treatment plan.
   - Acknowledge and empathize in the fact that if the patient has an existing condition causing pain, they will need to have some type of pain medication; educate on the effectiveness of non-narcotic analgesic use.
   - Involve family in care planning, as they can serve as support to reduce medication abuse, and gain more accurate reporting on controlled substance use.
   - Coordinate care/require a medication card for every care visit between providers/specialties.
   - Establish electronic health records (EHR).
   - Develop a shared, controlled substance registry between pharmacies.
   - Verification by the pharmacist when the provider suspects the patient has multiple prescriptions.

3. What kind of pain medications do you take? What dose? What form? On average, how many times of day do you take this medication and how many? How long have you been taking this amount in this pattern? How often? Have you ever attempted to stop taking this medication? How did you feel? Do you have a history of alcohol or drug abuse or dependence?

4. Answer D.

5. Signs and symptoms of opioid withdrawal are (Townsend, 2005) as follows:
   - Dysphoric mood
   - Muscle aches
   - Tachycardia
   - Arrhythmias
   - Nausea/vomiting
   - Lacrimation or rhinorrhea
   - Pupillary dilation
   - Piloerection
   - Diaphoresis
   - Abdominal cramping
   - Diarrhea
   - Yawning
   - Fever
   - Insomnia
   - Mental status change
6. Withdrawal from alcohol or benzodiazepines can be life threatening, but opioid withdrawal is not considered life threatening. In the elderly, however, special consideration should be made for coexisting health conditions and risk for aspiration or falls. The emergence of withdrawal symptoms is dependent upon the half-life of the opioid taken. Symptoms generally occur 6–12 hours after the last dose and peak within 1–3 days. The duration and intensity of withdrawal symptoms are dependent upon the clearance of the drug. Withdrawal symptoms last from 5 to 7 days.

7. Answer D.

8. Establish a behavioral contract. Have the patient sign. Require accountability for actions. Identify support systems in the community and/or within their family to reinforce healthy behavioral patterns. Involve and refer existing family members for substance use evaluation/intervention. Refer for outpatient therapy. Give information into support groups and activities in the area. Provide continued support and follow-up with regularly scheduled primary care visits, home care assessments, and reinforce positive behaviors and actions toward adhering to the care plan.

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**Case 4.3  Depression: Answers**

1. The Geriatric Depression Scale (GDS) is available in a Long Form, which is comprised of a 30-item questionnaire in which yes/no responses are used by participants in reference to how they felt over the past week. A Short Form GDS consisting of 15 questions was developed in 1986 using questions from the Long Form GDS, which had the highest correlation with depressive symptoms in validation studies selected for the short version. Of the 15 items, 10 indicated the presence of depression when answered positively, whereas the rest (question numbers 1, 5, 7, 11, and 13) indicated depression when answered negatively. Scores of 0–4 are considered normal, depending on age, education, and complaints; 5–8 indicate mild depression; 9–11 indicate moderate depression; and 12–15 indicate severe depression. The Short Form is more easily used by physically ill and mildly to moderately demented patients with short attention spans and/or experiencing fatigue easily. It takes about 5–7 minutes to complete, which makes the questionnaire user-friendly. The GDS may be used with healthy, medically ill and mild to moderately cognitively impaired older adults. It has been extensively used in a variety of health care settings. The GDS was found to have 92% sensitivity and an 89% specificity when evaluated against diagnostic criteria (Kurlowicz & Greenberg, 2007).

2. Higher mortality rates; treatment for comorbid conditions may take longer and yield less success; increased risk of suicidal thoughts, especially for disabled persons and those living in nursing home settings; altered eating patterns resulting in obesity or anorexia; insomnia; memory loss; decreased reaction times that could result in problems with driving, administering medications to self, or any other task that requires one’s full attention.

3. Suggest that the family consult with their father’s health practitioner before making changes in diet or other activities to help assess and formulate a plan for helping
4. Four of the following—sad or anxious feelings that last for weeks, anhedonia (loss of interest in things once found pleasurable for a person), problems with concentration, thinking about suicide, feeling guilty or worthless—even helpless, over or under eating (could lead to weight gain or weight loss), ongoing physical ailments like headaches or digestion problems that don’t resolve even with treatment, loss of energy, feeling hopeless, irritability, insomnia, or excessive sleep.

5. The family asks the nurse, “how common is depression in older adults?” The best response is C: Depression estimates range from <1% (among community dwelling older adults) to 13.5% (among those receiving home-based health care).

6. Older adults often have chronic health problems. Depression is more common among persons suffering from another illness or with functional impairment. Older persons often cannot recognize their own depression because they do not think they could ever feel better. Even health care providers mistake depression for other problems or see it as a natural part of aging and don’t prescribe treatments that could help to improve the person’s symptoms of depression.

7. SAMHSA Older Adults and Mental Health at http://mentalhealth.samhsa.gov/cmhs/CommunitySupport/olderadults/default.asp
   Geriatric Mental Health Foundation at http://www.gmhfonline.org/gmhf/consumer/depression.html

Other reputable Web sites the students may find and document.

8. There are very effective treatments for depression in older adults. These treatments include those that are pharmacological and others that are behavioral-based. Symptoms of depression in older adults can vastly improve with treatment.

9. It can take 4–12 weeks of antidepressant medication treatment before symptoms may start to improve.

10. St. John’s Wort, SAMe, and Omega-3 fatty acids represent some of the herbal and supplemental measures. Acupuncture, yoga, meditation, guided imagery, and massage therapy are based on bringing the mind and body into harmony for depression treatment (Mayo Clinic Staff, 2010).

Case 4.4 Gambling Addiction: Answers

1. Perhaps, a counselor, a psychologist, or social worker experienced with addictive behavior. A representative from the casino, the state gaming association, and/or local government may be helpful. Several concerned adult family members and elderly individuals attending the casino on a regular basis, as well as an older person recovering from gambling to offer first-hand accounts.
2. The accessibility of the casino, boredom, loneliness, an escape from a mundane lifestyle, social interaction, a safe place for elderly individuals, and perhaps, a way to supplement a fixed income.

3. Diabetes control (poor nutrition choices, inactivity, and failure to monitor glucose). Hypertension control based on winning, or losing at the casino.

4. A. South Oaks Gambling Screen (SOGS) is a lifetime measure of problem gambling that has been found to be reliable and valid. This 16-item screening tool places individuals in one of three categories: nonproblem, problem gambler, and probable pathological gambling.

   B. The Lie-Bet questionnaire is a 2-item tool that has been deemed valid and reliable for ruling out pathological gambling behaviors. If an individual answers yes to one or both of the questions on the Lie-Bet questionnaire, further assessment is indicated.

   C. The National Opinion Research Center (NORC) Diagnostic Screen for Gambling Problems is based on the DSM-IV criteria for pathological gambling and assesses for both lifetime and past-year problem gambling. This instrument includes 34 items and was designed as an interview tool.

   D. Gamblers Anonymous 20 Questions is a self-screening tool; most compulsive gamblers will answer “yes” to at least seven of these questions.

5. The following information is taken directly from the Mayo Clinic Web site: Compulsive gambling: Risk factors. (2009). Other sources on the Internet should contain similar data.

   A. Other behavior or mood disorders. People who gamble often have substance abuse problems as well as mood and personality disorders. Many compulsive gamblers abuse alcohol, and close to three-fourths of compulsive gamblers experience major depression. (b) Age: One may be more likely to develop an addiction to gambling if beginning at a young age. Depression, role loss, social isolation, and loneliness experienced by some older individuals may be risk factors as well.

   B. Gender: Compulsive gambling generally occurs in men of ages 21–55, although the incidence is increasing among teenage boys. Far fewer women than men are compulsive gamblers, but women who do gamble may become addicted more quickly. Men tend to play blackjack and cards and bet on sporting events and horse races. Women are more likely to play the slot machines and bingo.

   C. Location: People who live close to a casino or betting facility are more likely to develop a gambling problem. Even more problematic is access to video lotteries, sometimes called the “crack cocaine” of gambling because of their highly addictive nature.

   D. Family influence: If there is a history of one parent having a gambling problem, the chances are greater for the offspring.

   E. Medications used to treat Parkinson's disease: Dopamine agonists, and in particular pramipexole (Mirapex), have a rare side effect that results in compulsive behavior in some people.

   F. Certain personality characteristics: Being highly competitive, a workaholic, restless, or easily bored may increase the risk.
6. The original treatment for problem gamblers was Gamblers Anonymous (GA). The organization was established in 1957 and until the 1970s, it was the only treatment program in the United States for problem gamblers. The group offers fellowship of men and women who share their experience, strength, and hope with each other that they may solve their common problem and help others to recover from a gambling problem. The only requirement for membership is a desire to stop gambling. Similar to Alcoholics Anonymous, it is based on a 12-step program.

7. This question poses an ethical conflict; there is no single correct answer. Students may address such issues as the client's right to spend her money how she chooses, and/or believe the daughter has an obligation to monitor her mother's spending out of concern, love, or possibly greed.

8. A. Depression over financial losses may become so severe to result in suicide.
   B. Financial losses and debt may result in homelessness, theft, or other criminal acts.
   C. Substance abuse may develop or worsen due to financial worries.
   D. Compulsive gambling may lead to neglect of physical needs and health resulting in comorbid conditions, hospitalization, or the need for long-term care.

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Case 4.5  ▶ Risk for Suicide: Answers

1. Patient-centered medical homes and other types of care-coordinated models promote the treatment of more holistic perspectives in the provision of care for the elderly. Safety and quality are essential in the care planning process of this model, integrating the use of performance measures, decision-support tools, information technology, interdisciplinary care planning, evidence-based care, and active participation by the patient to improve care outcomes. http://www.commonwealthfund.org/Content/From-the-President/2009/Can-Patient-Centered-Medical-Homes-Transform-Health-Care-Delivery.aspx

2. The nurse should assess for suicide risk. Over 33,000 suicides occur annually in the United States (CDC, 2007). The rate of suicide among the elderly is high. Suicide rates are higher in those who are widowed or divorced. Rates are the highest in males aged 75 and older (35.7 per 100,000, CDC, 2007). Increased social isolation is a strong factor for suicide risk, along with a history of mental illness, or sudden recent traumatic or life changing event. Increased depression is contributed to functional disability, physical illness, cognitive impairment, or loss of a spouse.

3. Common symptoms of depression are changes in sleep patterns (hypersomnia or insomnia), changes in appetite (increase or decrease resulting in weight loss or gain), anhedonia, hopelessness, helplessness, anxiety, irritability, thoughts of suicide, isolating behaviors, reduced energy, feeling that life is not worth living, unexplained aches and pains, and/or constant negative thoughts.

4. When assessing a person for suicide risk, detailed information should be collected about the person's age, gender, ethnicity, marital status, socioeconomic status, occupation, history of prior attempts, current risk/plan, religion, and family history.
This information aids in determining patient risk. All reports of suicidal thoughts should be taken seriously, whether passive or active.

5. Protective factors lessening suicide risk are having a support system, ease of access to and utilizing mental health services, adherence to medication recommendations to stabilize mood, a safe environment minimizing hazardous materials (i.e., large supplies of medicine and fire arms), teaching to encourage coping skills to deal with depressive symptoms and anxiety, and cultural and religious beliefs that discourage suicide and promote self-preserving behaviors.

6. Assess for recent precipitating stressors, relevant history pertaining to previous suicide attempts, life stage issues, and coping strategies. Factors precipitating suicidal thoughts could be loneliness, financial problems, physical illness, loss, and/or depression.

7. Direct questioning. Being direct and taking all reports of suicide seriously is critical. The nurse should ask the following questions:
   - Are you currently having any thoughts of hurting yourself?
   - Have you had thoughts that life is not worth living?
   - Do you have a plan of how you would hurt yourself?
   - Have you ever attempted suicide in the past?

8. The nurse should assess, observe, plan, teach, and document the following:
   1. First, reassure the patient that they are there to help and assist her with care.
   2. Ask the patient to enter into a verbal contract not to harm herself.
   3. Make sure the home environment is safe and free of harms; if there are firearms or other weapons, call the local police or a family member to store and lock away any harmful weapons.
   4. Develop a check-in plan to reduce feelings of isolation. Establish a case management team to call and check her status.
   5. Refer for outpatient therapy and/or a support group.
   6. Discuss a plan to develop better coping skills and a social network for support.
   7. If suicidal thoughts are reported with intent to harm one’s self, then 911 should be called, or the patient should be taken to the nearest ED.

9. All choices are appropriate.

Calcium channel blockers and lithium are synergic. Extreme caution should be used in the combination of lithium and calcium channel blockers due to the risk of toxicity and bradycardia. Sudden onset of weakness, tremor, ataxia, delirium, dysarthria, choreoathetosis, and nausea are symptoms of toxicity. Symptoms of anxiety and depression often accompany each other. The use of sedatives (Xanax) and sleep aids (Ambien) greatly contribute to the risk of falls in the elderly and should not be used over a long term. Prozac can contribute to the risk of rapid cycling in patients who are bipolar.
Case 5.1  Caregiver Burden: Answers

1. Culture and the needs of family members as well as family structure shape patterns of caregiving (Chesla & Rungreangkulkij, 2001). There is a decade of extensive literature that supports examples of the influence of ethnic diversity. For African American informal caregivers, there is a strong sense of duty and respect to family members. It may be that generations have learned self-reliance in the face of covert and overt racial discrimination, leading them to provide home care for family members. However, poverty and economic disparity and lower educational levels may also be reasons these caregivers do not use formal community services for care (Cox, 1999; Edmonds, 1999; Williams, Dilworth-Anderson, & Goodwin, 2003).

2. The correct answer is D. Hunger is discomfort or pain caused by prolonged lack of food (The Free Dictionary, 2010) and is not directly related to caregiver burden. Weight loss, headache, fatigue, and irritability are all signs of caregiver burden (USDHHS, 2008).

3. Examples of survey tools to numerically calculate the burden experienced by caregivers who are caring for a loved one include the following: (1) Caregiver Burden Assessment (Montgomery, Borgatta, & Borgatta, 2000), (2) Zarit Caregiver Burden Scale (Zarit, Reever, & Bach-Peterson, 1980), and (3) Caregiver Reaction Assessment (Given et al., 1992).

4. Costs for any caregiver may include physical, emotional, and financial factors (AgingCare, 2009). Tom’s physical workload places him at risk for another stroke or extension of his herniated disc. Emotional issues related to seeing his wife’s health decline and knowing that family members cannot help with caring may cause him feelings of burden, strain, and mental anguish. Financial problems are apparent for Tom and his wife, as there are few monetary resources for their costs of daily living or future perceived family and medical care obligations.

5. Caregivers need to express their needs and be very specific about what they require (Clark, 2009). Tom needs to not be afraid to ask for help in taking care of Asa. The best way to do this is to recruit those who can help. There are many organizations and networks that may be able to provide advice, support or access to more information or resources. Refer Tom to his medical care providers, as they should be able to suggest resources available in his area. Suggest that Tom check the phone book or Internet for services too. His clergy and/or church friends may have resources available, as there are likely to be several members in any organization going through the same situation that he is in. While it is important to seek out friends and even neighbors to help with physical care, telephone, written
letters, and/or e-mail communication from family may provide needed emotional support. An Internet caregiver support group or in person support through organized local groups may be another way to gain needed emotional support. Not only will it lessen some of the burden on Tom, it will also keep Asa's personal community updated, informed, and involved in the caregiving. Keeping in touch with these individuals with updates to keep them aware of changes, medical or personal developments, and just as important to let them know when you need help is important.

6. Caregivers need to first take care of self (Family Caregiver Alliance, 2003; Schmall & Stieh, 2003). Tom needs to place his health first! He needs to take time for self to renew, refresh, and reclaim some part of his life. Strategies may include: asking church friends to stay with Asa, so that he could get medical or therapy treatment for his medical needs or just to have time for relaxation. If he is able to exercise, Tom could be encouraged to take a short walk a few times a week to become energized. Another approach would be for him to sit quietly and meditate or read a book if that is of interest while his wife sleeps. Use of positive self-talk and a positive attitude may also help. For example, he could say to himself: “I may be worried, but I am a good person; I am strong.” He could plan 5 minutes in the bathroom alone, or take a cup of tea/coffee/soda by himself to a quiet room with some music. Tom may enjoy herbal tea made with Passiflora, a Brazilian herb that has a calming effect that may aid the transition into a restful sleep (Miyasaka, Atallah, & Soares, 2009). His continued well-being is an integral part of his wife’s long-term care plan.

7. Caregivers frequently ignore their own needs in caring for members of the family. They need to find ways to master perceived burdens associated with caring for their own benefit and for that of those for whom they care (Schmall & Stieh, 2003). Here are general ways that caregivers can surround themselves with positive influences to help survive when feeling down:

• Set realistic goals. For example, “Today I will get out of the house ____________________ (go to church, go shopping, join a small group, or visit friends or neighbors, and/or enjoy nature)” or “I will keep my loved one’s spirit up by having friends come to visit.” If the caregiver cannot get out, try books on tape, start a jigsaw puzzle or do crossword puzzles and word search puzzles.

• Try something new or become involved in an old hobby or interest by joining a book club or small group at church, organize and add to an existing collection.

• Accept encouragement and praise from family and friends. A simple thank you or word of appreciation is a positive way to interact with family or friends.

• If the person has a spiritual nature, pray for inner peace and look for joy. Study scripture and read daily devotional books.

• Try meditation. Visit the following Web site http://www.learningmeditation.com/index.htm and link to topics to learn how to relax and seek a calm space in life through meditation.

• Set limits on what is reasonable to accomplish and communicate those limits to the one cared for and others. It is okay to say “no.” It may be necessary to go beyond those set limits but perceived overload of care responsibilities effects physical, emotional health, and/or relationships with others and does not benefit anyone.

• Remain hopeful about the future and celebrate accomplishments.

9. Currently, public financing for long-term care in home settings that would be useful is minimal at best (Pierce & Lutz, 2009). Alternatives for families to consider are respite, home health or hospice care provided by for-profit or nonprofit community agencies. Payment for some of these services may be covered by medical or long-term care insurances or Medicare; but other services may not be covered and may need to be paid by the family. Many times, there are waiting lists for these services and sometimes people never receive the services for which they are qualified. Respite care consists of temporary outside help for the caregivers to provide them relief from the caring responsibilities. Home health care provides longer, continued care over time. Many health departments and private agencies provide unlicensed assistive personnel on a daily or weekly basis to help caregivers with daily care or living activities, such as bathing, dressing, feeding, grooming, and so on, as well as help with cleaning, cooking, grocery shopping, and so on. Hospice care is another alternative for people who cannot be cured to maintain them comfortably in their home setting. Hospice provides help in relieving the care burden for their family members. This care and services are provided by a highly specialized team of physicians, nurses, pharmacists, therapists, social workers, unlicensed aides, clergy, and volunteers. In addition, hospice offers bereavement support for family members following the death of their loved ones (Krieger-Blake, 2010; Mauk & Lehman, 2007; Pierce & Lutz, 2009).

Case 5.2  Frailty: Answers

1. Definitions vary in the literature but have similar components. According to Fried, Ferrucci, Darer, Williamson, and Anderson (2004), frailty is the manifestation of changes in the physiological state of a person and the inability to maintain homeostasis. Comorbidity refers to the occurrence of two or more distinguishably different disease processes in a person. Disability relates to the inability to carry out activities of daily living.

2. A syndrome involves a set of symptoms occurring together. In the case of frailty, the syndrome entails reduced functional reserve, impairment in multiple physiological systems, and reduced ability to regain physiological homeostasis (Bartali et al., 2006).

3. Mrs. Gibson’s score on the frailty assessment tool is a “3” as she has experienced a weight loss of 14 lbs, has the presence of fatigue, low physical activity and no longer can ambulate.

4. Primary frailty has no underlying, pathological causative factors, whereas secondary frailty originates from underlying, pathological causative factors (Fried et al., 2004).

5. Activated inflammation, immune system dysfunction, anemia, endocrine system alteration, and over or underweight.
6. Sociodemographic and psychological risk factors include female gender, race/ethnicity (nonwhite), socioeconomic status reflected by low annual income and education, and depression.

7. Gender, race, age, and socioeconomic status.

8. A, B, D, and E.

9. Tai chi might be beneficial for weakness, slow walking speed, and low physical activity for individuals with frailty syndrome. By improving strength and balance, it provides potential benefit for those with reduced ambulatory capacity or a tendency to fall (Cheniak, Forez, & Troen, 2007).

10. Installing standard electrical receptacles higher than usual above the floor, so they are in easy reach of everyone;
   - Selecting wider doors, along with wider hallways;
   - Making flat entrances;
   - Installing handles for doors and drawers that require no gripping or twisting to operate—such as louver or loop handles;
   - Provide storage spaces within reach of both short and tall people;
   - Minimize the need for staircases;
   - Any and all procedures, equipment, and strategies promoting safety to avoid falls or injuries.

**Case 5.3  Ineffective Family Coping: Answers**

1. Assessing her physical condition, cognitive abilities, memory, medications, falls risk, family structure and dynamics.

2. All of the following apply to Ellen’s situation:
   - Competency 7. Analyze the effectiveness of community resources in assisting older adults and their families to retain personal goals, maximize function, maintain independence, and live in the least restrictive environment.
   - Competency 8. Assess family knowledge of skills necessary to deliver care to older adults.
   - Competency 11. Prevent or reduce common risk factors that contribute to functional decline, impaired quality of life, and excess disability in older adults.
   - Competency 18. Assist older adults, families, and caregivers to understand and balance “everyday” autonomy and safety decisions.
   - Competency 24. Contrast the opportunities and constraints of supportive living arrangements for the function and independence of older adults and on their families.
   - Competency 27. Facilitate older adults’ active participation in all aspects of their own health care.
   - Competency 28. Involve, educate, and when appropriate, supervise family, friends, and assistive personnel in implementing best practices for older adults.
3. This Web site has books and other resources for younger children and teens. Books for teens include *AFA Teens; Brain Basics: Know Your Brain; Just for Kids & Teens*. The award winning short film, “My name is Lisa,” portrays a 13-year-old whose mother is demented.

4. Make a scrapbook, write down recipes, go through picture books from when Melissa was younger, or picture books when Ellen was younger, watch movies together, work together on a collection (stamps, coins). Spirituality continues to grow with aging.

5. More than 70% of individuals age 65 and older in the U.S. state that religion is very important to them.

6. Active listening; use of presence, touch, meaning, reminiscence; facilitating forgiveness, hope, and prayer.

7. Come get her for activities, introduce her to other residents and encourage her to eat meals with them, take her to church at the facility, call her Catholic church to see if someone will come get her, and take her to church and other social activities at the church.

8. Use humor, suggest that the family go to one or two counseling sessions, bring in pictures, bring Jackie to visit, and other activities that provide positive family experiences.

9. Healthier relationships
   - Greater spiritual and psychological well-being
   - Less stress and hostility
   - Lower blood pressure
   - Fewer symptoms of depression, anxiety, and chronic pain
   - Lower risk of alcohol and substance abuse

   Forgiveness improves the health of individuals. It has been associated with decreased physical illness symptoms, use of medications, fatigue, stress, negative affect, and depression. Forgiveness has also been associated with increased appetite, sleep, and life satisfaction.

**Case 5.4  Hoarding Behavior: Answers**

1. Note: there is no one correct answer. Students should think about utilizing possible community resources and/or methods for acquiring help. Some options include contacting the local Council on Aging, Retired Senior Volunteer Program (RSVP), Meals on Wheels, any local church, and/or acquiring an emergency medical alert system to be worn or used in the home environment.

2. The following common misconceptions were taken directly from Understanding hoarding (2003) at http://understanding_ocd.tripod.com/hoarding1_why.html
   a. Sentimental value: “The moment I discard this item, I discard a part of myself.”
   b. Decision making: “The moment I decide to throw something away, I may be making the wrong choice.”

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c. Organizing: “The moment I am unable to know how to categorize an item, I will place it in sight so I will know where it is.”

d. Responsibility: “The moment my object has a use, I have to keep/use it so it doesn’t get wasted.”

e. Control/perfection: “The moment you decide to throw something away, you no longer are the person in control and what happens to this item will be in the hands of others.”

f. Scared of forgetting/perfection: “The moment you throw something away, you may forget its content or the way it looked and it will be gone forever.”

g. Letting go of things: “The moment you throw something away, you let go of that specific part of your life, however insignificant it may be.”

3. A collector will often have pride associated with their items; a hoarder may be embarrassed by what is accumulated. A collector will organize and care for their collections while a hoarder's home is cluttered to perhaps an unsafe level. A collector enjoys showing their items; a hoarder will go to extremes to avoid letting people see inside their homes. A collector finds pleasure in acquiring new items while depression and anxiety accompany hoarding. Choosing and/or purchasing items of value or interest to others is common for collectors; a hoarder keeps things no one else would be interested in such as lists, junk mail, and worn-out clothing or household goods.

4. Safety issues include falling and or being buried/crushed under piles, fire hazards (both increased risk for igniting and inability to escape quickly), accumulated dust and mold can lead to illness, floors can buckle from the weight, and insects or rodents attracted to rotting food.

5. Obsessive-compulsive disorder

6. Note: there is no one correct answer; the question presents an ethical dilemma for many families and acquaintances of hoarders. Although removing truckloads and dumpsters full of articles from a hoarder's home may be initiated in the spirit of helpful assistance or safety, it can result in overwhelming anxiety, depression, and total loss of trust. The hoarder finds comfort, identity, and a sense of control from their mass of possessions. Family relationships are often strained or severed from the hoarder due to the condition of the home; or when action is taken to remove “trash” without the hoarder's awareness and approval.

7. Anxiety, ineffective coping, risk for injury, ineffective health maintenance, risk for compromised human dignity, powerlessness, self-care deficit(s), risk for falls, impaired mobility, social isolation, and others . . .

8. Animal hoarding can pose a health risk due to severe odors, which may pose a nuisance to neighbors. Animal waste poses serious health risks in both the spread of parasites and the presence of noxious ammonia levels. Insect and rodent infestation can both follow and worsen hoarding conditions, and it can potentially spread to the surrounding environment including nearby buildings. Another human health issue caused by animal hoarding is the risk of zoonotic diseases, which includes rabies, salmonellosis, cat scratch fever, hookworm, and ringworm. One zoonosis of special concern is toxoplasmosis, which can be transmitted to humans through cat feces or badly prepared meat, and is known to cause severe birth defects or stillbirth in the case of infected pregnant women.
Piles of trash, broken appliances, old cars, and items thrown about a yard can lead to rat and insect infestation. In addition, the “junk yard” may be tempting for children to explore, leading to cuts, entrapment or crushing injuries. (Animal hoarding, 2009). In addition, “Communities are left to cover the cost of rescuing, treating, housing, feeding, and in some cases euthanizing the animals. Additional financial costs for incarceration and public defenders add to the burden” (Inside Animal Hoarding, 2009).

Case 5.5  Emergency Preparedness for the Elderly and Their Families: Answers

1. Sensory, physiological, and cognitive changes.
   - Chronic conditions
   - Risk of trauma
   - Loss of pets
   - Transportation
   - Limited resources
   - Reluctance to seek assistance
   - Nutrition
   - Fraud and abuse

2. Congress passed the Pet Evacuation Transportation Standards Act, which requires state and local governments to include household pets in emergency evacuation plans.

3. Students’ answers will vary; the intent is to increase awareness. Suggestions for older people include (as applicable): 3-day supply of prescriptive medicine, list of medications, batteries for hearing aids, a backup pair of glasses, incontinent products, assistive devices, small portable oxygen tank, Medicare card, and so forth.

4. One side of the wheel provides advice on how to get prepared, including:
   - doing an assessment
   - forming a personal support network
   - ready kit and go bag
   - emergency list
   - emergency information
   - evacuation
   - shelter
   - service providers

The other side provides advice on how to respond when a disaster occurs, including the following:

Tips for responding to hurricanes, earthquakes, hazardous material incidents, fire, flooding, terrorism, tornadoes/downbursts, and extreme hot/cold
weather. It also provides space to write important emergency contact numbers and information including fire, police, doctor, personal support network, pharmacy, service providers, medical conditions, physical/mental limitations, and other important information necessary during emergencies.

5. Electronic direct deposit of Social Security or retirement funds. The Direct Express prepaid debit card is an alternative to paper checks or for people who don’t have a bank account.

6. If you anticipate needing assistance during a disaster, talk to family, friends, and others who will be part of your personal support network.
   - Write down and share each aspect of your emergency plan with everyone in your support network.
   - Make sure everyone knows how you plan to evacuate your home or workplace and where you will go in case of a disaster.
   - Make sure that someone in your local network has an extra key to your home and knows where you keep your emergency supplies.
   - Teach those who will help you how to use any lifesaving equipment and administer medicine in case of an emergency.
   - Practice your plan with those who have agreed to be part of your network (Ready America, 2009).

7. As described in the brochure How Will I Know Mom and Dad Are Okay? (n.d.), the acronym used is IN-TOUCH, which represents:
   - Identify potential emergency situations
   - Note community resources
   - Talk about individual circumstances
   - Outline your plan in writing
   - Update as situations change
   - Communicate regularly and test
   - Have peace of mind

8. Students’ answers will vary; the purpose of the question is to promote awareness. Questions for a long-term care facility regarding staffing, transportation, coordination with other resources, and the resident and family’s role during a disaster are recommended.

Case 5.6 Leaving the Homestead: Challenges and Solutions: Answers

1. Independent Living for seniors refers to a residence which is in a private apartment or house within a community of seniors and that is easy to maintain. Any housing arrangement designed exclusively for seniors (generally those aged 55 and older; in some cases the age requirement is 62 and older) may be classified as an Independent Living community. As the name implies, Independent Living is
just that: the ability to maintain one's residence and lifestyle without custodial or medical assistance. If custodial or medical care becomes necessary, residents in Independent Living for seniors are permitted to bring in outside services of their choice.

2. Independent Living is ideal for seniors who
   • are healthy and able to care for themselves;
   • want to live independently;
   • desire the security to be found in a seniors-only community;
   • no longer want to maintain a house;
   • prefer to live among their peers;
   • can communicate with doctors and caregivers by themselves, or with the help of family or friends, but without the help of trained, onsite staff;
   • have enough money to pay for the kind of home they are looking for, or else can be satisfied with subsidized housing (Rose, de Benedictis, & Russell, 2010).

3. The term “Silent Generation” was coined due to the time period of individuals’ births (1925–1945) being a quiet period of American history. This group received much less attention than their predecessors, the Greatest Generation (World War II) and the Baby Boomers which followed. Lillian’s background establishes a hard-working individual, who is connected to her family and community.

4. “Using 2007 American Community Survey ACS data, it is estimated that a person in the United States can expect to move 11.7 times in their lifetime based upon the current age structure and average rates and allowing for no more than one move per single year. At age 18, a person can expect to move another 9.1 times in their remaining lifetime, but by age 45, the expected number of moves is only 2.7” (U.S. Census Bureau, 2009).

5. Students’ responses will vary. The learning outcome is to increase awareness of how common dividing personal property (usually upon death) results in family turmoil. Open communication, trust, and perhaps an outside party are suggested to keep family dynamics intact through this often emotional, stressful event.

6. This website, eDivvyUp, describes a service for estate distribution, which serves as an online auction (similar to eBay). A registration fee is paid, the family lists all objects, then with a designated amount of points, bid for items which they desire. The website emphasizes how this process decreases family in-fighting, promotes equitability, and states the process can actually be fun.

7. Encouraging reminiscing is usually beneficial for older adults. It involves the recall of pleasant memories or circumstances. It can provide comfort and reassurance to patients to share positive times in their life. It also provides an opportunity for the nurse to view the individual holistically (Tabloski, 2010).

8. Outcomes for reminiscence may include the following (The Benevolent Society, 2005):
   Increase the ability to communicate and practice self expression.
   Increase social interaction through the sharing of experiences.
   Increase feelings of belonging and togetherness.
   Emphasize the individual identity and unique experiences of each person.

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Allow the older people to take on a teaching role through the sharing of their experiences.

Help people to come to terms with growing older.

Encourage older people to regain interest in past hobbies and past times.

Encourage creativity.

Increase self-worth and provide a sense of achievement.

Reduce apathy and confusion, especially in confused or disorientated people.

Alleviate depression.

Increasing life satisfaction.

Improving self-care.

Helping older people deal with crisis, losses, and life transitions.

Meeting psychological and emotional needs.

Involvement in a meaningful and pleasurable activity and positive interaction.

**Case 5.7  Long-Distance Caregiving: Answers**

1. The term “sandwich generation” refers usually to a middle-aged individual who is caring for their own children while needing to assist elderly parents as well. The metaphor represents being sandwiched (squeezed) between two roles requiring responsibility.

2. A professional geriatric care manager is a person with specialized training to assist families with issues associated with an aging adult. Their background may be in nursing, social work, gerontology, or psychology.

3. Students’ responses will vary; the intent of the question is to increase awareness of resources. The Web site allows for finding a geriatric care manager within 10, 25, 50, or 100 miles from the location of the interested party (National Association of Professional Geriatric Care Managers, n.d.).

4. According to Schuster (2007), approximately seven million adults experience long-distance caregiving. Changes in demographics include the increase in the number of males representing close to 40% of all caregivers.

5. Looking at safety issues for the aging including ability to navigate staircases or the need for a ramp, objects which can be tripped over or causing potential for a fall, adequate food, cleanliness of the home, and the individual’s capability for driving. In addition, are bills being paid, can a walker or wheelchair be used in the space, are medications being taken correctly, and what is the mood of the patient?

6. It is best for an adult child to base their promises and decision making from a realistic assessment of the current situation. Promising to attempt to arrange for the best care possible, based on realistic needs, is encouraged.

7. Make appointments with the individual’s doctor, attorney, and person helping with financial matters in order to participate in any decision making. Meet the individual’s neighbors, friends, and other social contacts to obtain feedback about their impression of how they think the person is doing, including behavior changes.
Spend “quality” time with your loved one by talking to each other and becoming involved in activities you both enjoy.

8. Does the individual actually want to move? Is your home physically adapted for their needs? How do other family members feel about the change? How will the move affect other aspects of your life such as career and financial resources? In Marion’s situation with her husband living in long-term care who she visits daily, coupled with caring for a Down syndrome child, a priority consideration is: are there respite services in the community for the caregiver?
Case 6.1  Erectile Dysfunction: Answers

1. Ginkgo may interact with several medications. Because of the potential risk of increased bleeding or hemorrhage, use of Ginkgo should be avoided with antiplatelet (e.g., aspirin) or anticoagulant (e.g., warfarin) agents.

2. **PLISSIT** Model is described as follows:
   - **P**: obtaining Permission from the client to initiate sexual discussion
   - **LI**: providing the Limited Information needed to function sexually
   - **SS**: giving Specific Suggestions for the individual to proceed with sexual relations
   - **IT**: providing Intensive Therapy surrounding the issues of sexuality for that client

3. Testicular tissue mass decreases, and the level of testosterone may decrease slightly. There may be problems with erectile function. The seminal vesicles may become less elastic. Sperm production slows. Benign prostatic hyperplasia may affect ejaculation.

   The volume of ejaculate remains the same; however, there may be fewer living sperm in the fluid. Decreases in libido may occur for some men. Sexual responses may become slower and less intense.

4. B, C, D, and F.

5. A, B, C, D, and E.

6. ED is present in approximately 70% of men over 70.


8. (Note to instructors: This is a comprehensive list; students may focus on the priority or most common.) Take drug with or without food, from 30 minutes to 12 hours before sexual activity. Don’t take drug with grapefruit juice as it may increase the level of tadalafil in the bloodstream. Never take this drug with a nitrate, such as amyl nitrate or nitroglycerin. Stop sexual activity and contact prescriber right away if chest pain, dizziness, or nausea occurs. Seek immediate medical attention if an erection that lasts more than 4 hours.

   Avoid driving and other hazardous activities until it is known how the drug affects concentration and alertness. Don’t stop taking drug without consulting the prescriber.

**Side Effects**

This drug may cause headache, fatigue, dizziness, increased sensitivity to touch, increased sleepiness, difficulty sleeping, numbness, tingling, burning sensations,
VERTIGO, CHEST PAIN, LOW OR HIGH BLOOD PRESSURE, HEART ATTACK, SUDDEN DROP IN BLOOD PRESSURE WHEN STANDING, PALPITATIONS, FAINTING, FAST PULSE RATE, BLURRED VISION, NOSEBLEED, STUFFY NOSE, CHANGES IN COLOR VISION, CONJUNCTIVITIS, EYE PAIN, WATERY EYES, SWOLLEN EYELIDS, INDIGESTION, DIARRHEA, DRY MOUTH, DIFFICULTY SWALLOWING, INFLAMMATION OF THE ESOPHAGUS, GERD, STOMACH INFLAMMATION, LOOSE STOOLS, NAUSEA, VOMITING, UPPER ABDOMINAL PAIN, INCREASED OR SPONTANEOUS PENILE ERECTION, ABNORMAL LIVER FUNCTION TEST RESULTS, HIGH CHOLESTEROL AND URIC ACID LEVELS, BONE OR MUSCLE PAIN, BACK PAIN, NECK PAIN, LIMB PAIN, DIFFICULTY BREATHING, THROAT INFLAMMATION, FACIAL SWELLING, PAIN, SWEATING, AND ALLERGIC REACTIONS (INCLUDING ITCHING AND RASH).

**Interactions**

Tadalafil may interact with many drugs, including carbamazepine, enalapril, erythromycin, itraconazole, ketoconazole, metoprolol, phenobarbital, phenytoin, rifampin, ritonavir, theophylline, and alpha-blockers used to treat prostate problems or high blood pressure (except tamsulosin).

Don't drink alcohol excessively while taking this drug.

9. The NANDA definition of Sexual Dysfunction is as follows: The state in which an individual experiences a change in sexual function during the sexual response phases of desire, excitation, and/or orgasm, which is viewed as unsatisfying, unrewarding, or inadequate.

The defining characteristics applicable in this case include (a) alterations in achieving sexual satisfaction, (b) inability to achieve desired satisfaction, and (c) verbalization of problem.

**Case 6.2 Vaginal Dryness and Dyspareunia: Answers**

1. The stages of the *PLISSIT* model include the following:
   - **P:** obtaining Permission from the client to initiate sexual discussion;
   - **LI:** providing the Limited Information needed to function sexually;
   - **SS:** giving Specific Suggestions for the individual to proceed with sexual relations; and
   - **IT:** providing Intensive Therapy surrounding the issues of sexuality for that client.

2. When she has frequent vaginal infections or cystitis.


4. Avoid using douches, chemicals, strong soaps, or perfumes in the vaginal area.

5. Estrogen products (Estrogen creams: Estrace, Ogen, or Premarin); Vaginal rings such as Femring or Estring, and possibly mentoring.

7. Estrogen therapy to assist with vaginal dryness, warm baths before intercourse, Kegel exercises, topical lidocaine, biofeedback, and physical stimulation prior to intercourse to increase lubrication.

8. Choices A, B, and C are correct.

Case 6.3  Sexual Problems Due to Physical Limitations: Answers

1. Plan for sex at a time of the day when the pain and fatigue are the lowest, take pain-relief medicine to have its peak effect during sex, use a vibrator or manual stimulation before sex to increase arousal, and take a warm bath or shower with your partner as a part of sexual expression.

2. Figures 1, 4, 5, and 6. Alternative positions include the man sitting in a chair with the woman facing him; and the man standing with the woman lying on the bed, in a supine or prone position.


4. Accept any Web site, blog, support group, or self-help site that provides this information.

   Examples: http://arthritis.about.com/cs/sex/a/lovesexarth.htm
   http://arthritis.about.com/u/ua/sex/sex_and_intimacy.htm
   http://seniorjournal.com/NEWS/Health/03-30-01SexArthritis.htm
   http://www.health.com/health/condition-article/0,,20327341,00.html

5. a. Do not order, purchase, or take any medications or supplements recommended on a Web site without first checking with her physician.
   b. Do not try any sexual activity that will cause her pain.
   c. Do not try any sexual activity that makes her feel uncomfortable.
   d. Do not give her name or address to any Web site, without checking to be sure it is a legitimate sex education Web site.
   e. Accept any other reasonable answers.

6. a. Encourage Libby and Warren to read the information on the Web site together, talk when free of distractions,
   b. plan sex at the time of day or evening when both partners feel best,
   d. talk about what provides them pleasure,
   e. talk about what causes them discomfort,
   f. Warren can talk about what makes his breathing worse, and
   g. Libby can talk about what positions are more comfortable for her and which causes her pain.

7. a. If doctor agrees, use the inhaler before sex and
   b. plan for sex when long-acting medicines are at their peak.
8.   a. Plan for sex when feeling good and rested,
    b. pace yourself,
    c. relax during sex,
    d. wear oxygen during sex,
    e. ask his doctor about increasing the oxygen flow during sex,
    f. wait several hours after a meal,
    g. keep the room cool,
    h. remove heavy blankets from the bed,
    i. use pursed-lip breathing during sex,
    j. turn a fan on during sex, and
    k. plan for sex when lungs are clear of mucous.

9.   a. Warren will be able to breathe better with his head and chest elevated,
    b. Libby should not lie on Warren's chest or stomach,
    c. Libby should do most of the moving during sex, and
    d. side lying allows for free breathing for both partners.

10. Many couples say they feel closer when they plan for sex around their health
    conditions, including COPD and arthritis. Some say they communicate more and
    feel increased warmth and security. Hugging, touching, and caressing can improve
    intimacy, and may be more meaningful than the act of sexual intercourse.

Case 6.4  Sexual Expression for Institutionalized Older Adults: Answers

1. In the elderly, the need to experience touch may stem from a loss of tactile sen-
   sation, loss of companionship, and/or a sense of deprivation. For the cognitively
   impaired elderly adult, touching facilitates contact that may help to restore feelings
   of security and control over one’s environment.

2. Personal appearance (clothing, hairstyle, use of cosmetics, etc.); holding hands,
   kissing, touching; friendship and companionship; walking together; intimate con-
   versation; mutual or solitary erotic/sexual activity; and masculine and feminine
   demeanor.

3.   1. Resident’s awareness of the relationship,
    2. Resident’s ability to avoid exploitation, and
    3. Resident’s awareness of potential risks associated with the relationship.

4.   1. Religious and ethical—nursing staff may not condone sex between unmarried
    or gay partners.
    2. Clinical—nursing staff may request medications to either enhance or reduce
    sexual behaviors.
3. Advocacy—nursing staff advocate for the rights of residents to be sexually active (other reasonable implications of each approach are also acceptable answers).

5. Mostly those related to physical mobility. Also, being vulnerable due to chronic mental illness, potential for violence, or inability to tolerate the stress of sexual activity.

6. Draw pictures, use hand signs, write a message, point, and come up with words or gestures to indicate love or desire for intimacy.

7. A case study approach that includes a definition of the particular incident, an examination of the staff members’ personal and professional beliefs, policies for resident-to-resident sexual activity, awareness to cues by residents, allowing and encouraging conjugal visits, and making beauty salons and cosmetic services available.

8. Personal Hygiene: Facilities are already responsible for ensuring their resident’s basic rights with regard to standard hygiene practices. Facilities could also provide beauticians to meet resident’s cosmetic needs in addition to routine hygiene practices. Personal Privacy: Provide “do not disturb” signs for residents, respecting client needs for conjugal visits from their partners, and possibly considering the redesign of room structures to meet privacy standards to promote intimacy. Maintaining Relationships: Activities that promote closeness, dancing, and exercising. Health Promotion: Educational sessions for residents to raise awareness of HIV/AIDS and other STD’s, other health care conditions, and safe sex practices.

9. Staff attitude, the physical environment, the client’s personal beliefs, the client’s health status, lack of privacy, family member attitudes, feelings of being unattractive, erectile dysfunction in men, and dyspareunia in women.

10. Policies from the American Medical Directors Association (AMDA), resources from the Hebrew Home, and articles published in medical and nursing journals.
Case 7.1  –  Gustatory and Olfactory Disturbance: Answers

1. Patients who suffer from impairment of smell are at risk for exposure to toxins as they may not be able to detect odors, such as gas leaks, before they become harmful. Most gustatory disturbances are directly related to olfactory disturbances, so they are also at greater risk for food poisoning because of the inability to detect foul odors that might be associated with spoiled food and subsequently might not be able to detect a spoiled taste in the food. Patients may also be at risk for weight loss due to poor caloric intake as the pleasurable experience of eating is diminished. Some patients will gain weight from overeating with the hope that some taste sensation will occur. Loss of smell and taste is also associated with anxiety and depression.

2. Medications from several different categories can impair the sense of smell and taste or cause abnormalities in taste detection. These categories include antibiotics, anti-inflammatory, cardiovascular and antirheumatic drugs with loss of taste, and altered taste being noted. If a patient who complains of olfactory and/or gustatory disturbances is taking a medication for which there is an alternative, a switch in medication could be helpful.

3. Patients who suffer from smell and taste deficiencies may suffer from inflammation of the nasal cavity caused by allergies or recent infections. They may also have observable nasal polyps. Those who exhibit inflammation might respond to steroids. Given the role of saliva and mucus in taste and smell sensation, noticeable dryness of the nasal passages or oral cavity can affect the sensation of taste and smell.

4. Several neurological disorders have loss of smell noted as an early symptom of the disorder including, Alzheimer's disease and Parkinson's disease.

5. The weight loss is of concern. It should be confirmed that she is not avoiding food intake because of any dental issues.

6. Patients with smell and taste disorders of this nature need assurance that the symptoms are not a sign of some underlying problem. The MRI confirms the absence of tumors or other masses. Even if her nasal passages and oral cavities do not appear to be dry, Dorothy could benefit from use of a humidifier and keeping her mouth moist. If Dorothy cooks her own food, she could be advised to increase the level of seasoning used in her food with caution that she should not overuse salt. Some patients have benefitted from the use of flavor enhancers such as monosodium glutamate. It should be cautioned that monosodium glutamate, like salt intake, has also been linked to blood pressure issues. Flavor involves taste,
smell, texture, and temperature. Trying new foods with different textures can also be helpful.

7. Patients who suffer from smell and taste deficiencies should be advised to have gas detectors installed in their living spaces and have electric stoves or stoves which have a light indicating when the gas is turned on. They should be advised to pay close attention to expiration dates on food items. They could also benefit from being looked in on occasionally by family members who might help them look through their refrigerated storage or offer to shop for fresh foods.

Case 7.2  Hearing Loss: Answers

1. Becoming withdrawn, not participating in conversations, responding inappropriately when spoken to, complaining that others are “mumbling,” and reading lips (Wallhagen, Pettengill, & Whiteside, 2006).

2. Presbycusis, conductive hearing loss, and sensorineural hearing loss.

3. Conductive hearing loss.

4. Loss of high frequency sounds such as s, z, sh, and ch. Background noise adds to the problem.

5. Thirty percent of individuals aged 65 to 74 years of age have hearing impairment, and 40% to 66% of elders over age 75 have some hearing loss (Demers, 2007).

6. Normal aging, advancing age, male gender, lower educational status, exposure to regular, excessive noise, cerumen impaction, ototoxic medications, tumors, and diseases that affect sensorineural hearing.

7. Face the patient and make sure you have his attention. Speak clearly in a normal volume.

   Do not cover your mouth with your hand. Rephrase sentences instead of repeating them.

   Have him use his hearing aids and be sure they are charged and working properly.

   Make sure glasses are worn when needed.

8. Reduce background noise, ensure optimal lighting to allow faces to be clearly seen, arrange furniture for resident-to-resident conversation, use a private room to talk with him or conduct teaching, and consider the use of devices such as pocket talkers, telephone amplifiers, telecommunication devices, closed-caption TV decoders, visual alarm systems, and vibrating alarm clocks.

Case 7.3  Somatosensory Disturbances: Answers

1. Opioids have a number of side effects, among which are cognitive symptoms.

2. Change in her pain medication, lowering her pain medication dose, treating her hallucinations, or changing the route by which her morphine is administered.
3. Sleep disturbances, dementia, delirium, and migraines.
4. May take several weeks to be effective. Avoid drinking grapefruit juice. Side effects that should be reported to the doctor include dizziness, fainting, drowsiness, and constipation. (Accept other reasonable answers.)
5. Quetapine (and clozapine) have a low affinity for dopamine receptors, and thus do not exacerbate Parkinsonian symptoms.
6. Either the lack of sleep or the pain medications or the time she was under anesthesia may have caused her brain to be “irritated.” She is most likely to experience these hallucinations when she is drowsy.
7. Carol can say, “Grandma, I don’t see the bugs. I’m glad you are awake. Let’s go have some hot cocoa to help you wake up.” (Accept other respectful, calm, and supportive answers.)
8. Because the source of the hallucinations has resolved, it is unlikely she will have the hallucinations again. (Accept other reasonable answers—one could argue that there may be some permanent brain damage, and they might reoccur.)
9. Make sure she gets adequate rest, balanced with activity. Involve her in family activities. Avoid opioid pain medications.

Case 7.4  Macular Degeneration: Answers

1. Gender (female), Caucasian, fair-haired, blue/green eye color, family history, smoking, low levels of nutrients such as zinc, and of antioxidant vitamins (A, C, and E), along with cardiovascular diseases.
2. Dry (atrophic) AMD is the most common type accounting for 90% of cases. Wet (neovascular) AMD is more destructive resulting in potential severe sight loss within a few months. This type of AMD is attributed to an abnormal growth of blood vessels in the macula, which leaves the surface of the retina uneven. The patient will see wavy lines on the Amsler grid.
3. Age-related macular degeneration (AMD) is the most common cause of visual loss in people older than 60 years of age in developed countries. In the United States alone, the number of cases is expected to reach almost 3 million by the year 2020.
4. Reading glasses should be worn when using the Amsler grid. The grid should be at about the same distance from the eyes that any other reading material would be. Cover one eye and then focus on the dot in the center. Note whether any of the lines look wavy, blurred, or distorted (all lines should be straight, all intersections should form right angles, and all the squares should be the same size). Note whether there are any missing areas or dark areas in the grid. Look to see whether all corners and sides of the grid are clearly present. Test both eyes.
5. Most fresh fruits and vegetables, including guava (has more antioxidants than blueberries) along with papaya, mango, pineapple, tamarind, passion fruit, and sour apple (guanabana). Jalapeños (offer more vitamin C than oranges) and other vegetables include cooked nopales, yucca, pumpkin, squash, sweet potatoes, and carrots. Zinc sources include lean meats, poultry, fish, beans, eggs, and nuts.
6. Magnifying glass, technology aides (voice recognition software, etc.), talking clock, large print books, games, and desk supplies, and so forth.

7. a. Disturbed sensory perception related to visual impairment
   b. Anxiety related to possible vision loss
   c. Ineffective health maintenance related to knowledge deficit
   d. Risk for injury related to impaired vision and others

8. a. International Macular Degeneration Support Group
   b. Macular Disease Society
   c. Macular Degeneration Foundation
   d. The Macular Degeneration Partnership
   e. Macular Degeneration Awareness Education Support Group Against All Odds, Inc.

Case 7.5 Visual Alterations: Answers

1. The history or physical examination findings of the greatest concern to the admissions nurse include the following:
   • Loss of peripheral vision
   • Development of increasing number of “blind spots” in the visual field
   • Loss of visual acuity; “halos” around lights
   • Recent falls and driving accidents
   • Absence of the red reflex in the right eye
   • Abnormal Snellen chart reading showing decline in visual acuity

   At line “20/40,” a person with normal acuity could be expected to read these letters at a distance of 40 ft. If this is the smallest line a person can read, the person’s acuity is “20/40,” meaning that this person needs to approach to a distance of 20 ft to read letters that a person with normal acuity could read at 40 ft. Mrs. Cooper has approximately half of normal visual acuity.
   • Collides with the door frame

2. The Hendrich II Fall Risk Model shows the following:
   Any administered Benzodiazepines = 1 point
   Multiple attempts to rise, but successful = 3 points
   A score of 5 or greater = high risk total score

3. Alcon Cares, Inc. http://www.alcon.com/en/corporate-responsibility/patient-clinic-inst-assistance.asp is a foundation offering a voluntary public service program that provides medication to qualified individuals at no charge. Each request is subject to approval and fulfillment is based upon current available resources.
The program is open to any private patient of a U.S. licensed health care provider who cannot afford their medication and does not have prescription insurance coverage or qualify for local, state, or federal prescription programs, unless such programs are documented to cause a financial hardship for the patient. Patients should qualify for the income test at 200% (two times) the current year's poverty level under the number of persons living in a household.

Medicare (http://www.medicare.gov/Health/glaucoma.asp) will cover an eye exam by a state-authorized eye doctor once in every 12 months if one is at high risk for glaucoma. High risk considerations include the presence of

- diabetes
- a family history of glaucoma
- African American and aged 50 or older; or
- Hispanic and aged 65 or older.

4. **Open-angle glaucoma** is the most common form of glaucoma, affecting about three million Americans. It occurs when the patient has an open angle within the eye, but inner eye pressure (also called intraocular pressure or IOP) rises. This may be because of an increase in aqueous fluid production or a decrease in aqueous drainage due to trabecular meshwork obstruction (Elfervig, 2010). Most people have no symptoms and no early warning signs. If open angle glaucoma is not diagnosed and treated, it can cause a gradual loss of vision. This type of glaucoma develops slowly, without noticeable sight loss for many years. The gradual loss of vision is painless and may affect the peripheral vision first; later changes include halos around lights.

**Angle Closure Glaucoma (acute)** is less common; there is a narrowed angle between the iris and cornea, which displaces the iris. This causes an obstruction to the outflow of aqueous humor and may happen abruptly and without warning. This is an emergency, as vision may be lost within hours to days. Signs and symptoms may include acute eye pain, redness and congestion of eye, visual loss, and frontal headache (intraocular pressure rise rapidly, up to four times normal) (Elfervig, 2010).

5. Mrs. Cooper is African American, which puts her at high risk. Glaucoma is the leading cause of blindness among African Americans. It is six to eight times more common in African Americans than in Caucasians. In addition, she is over 60 years old, and glaucoma is much more common among older people. Patients are six times more likely to get glaucoma if they are over 60 years old.

Other possible risk factors include the following (Are you at risk for glaucoma? n.d.):

- high myopia (nearsightedness)
- diabetes
- hypertension
- Hispanics in older age groups
- history of eye injury
- history of steroid use
6. Medications, including classifications, drug interactions, and side effects include the following:

**Beta-Blockers: Decreases production of intraocular fluid**

<table>
<thead>
<tr>
<th>Akorn Ophthalmics</th>
<th>Timolol Maleate 0.5%</th>
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<tbody>
<tr>
<td>Alcon, Inc.</td>
<td>Betoptic S</td>
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<td>Allergan Inc.</td>
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<td>Bausch &amp; Lomb Inc.</td>
<td>OptiPranolol</td>
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<td>ISTA Pharmaceuticals</td>
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<td>Johnson &amp; Johnson</td>
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**Miotics: Increases drainage of intraocular fluid**

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<th>Alcon, Inc.</th>
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<td>Alcon, Inc.</td>
<td>Isopto Carbachol</td>
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<tr>
<td>Alcon, Inc.</td>
<td>Pilopine HS Gel</td>
</tr>
<tr>
<td>Bausch &amp; Lomb Inc.</td>
<td>Pilocarpine HCl Ophthalmic Solution USP</td>
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<th>Alcon, Inc.</th>
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<td>Trusopt</td>
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<tr>
<td>Duramed Inc.</td>
<td>Diamox Sequels</td>
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**Carbonic Anhydrase Inhibitor: Decreases production of intraocular fluid**

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7. Corticosteroids are used to treat inflammations. If used for prolonged periods, they may raise eye pressure in people who suffer from any form of glaucoma. Mrs. Cooper should be instructed to avoid the use of corticosteroids, if possible.

In general, people with glaucoma should avoid drugs that dilate the pupil (anticholinergics such as atropine) and sympathomimetics (like epinephrine).

Mrs. Cooper does not have angle-closure glaucoma; therefore, she can continue to take her OTC allergy remedy. She can also continue her temazepam (Restoril), although her fall history may indicate that another sleep aid (a non-benzodiazepine) may be a safer choice.

8. Mrs. Cooper's daughter should be taught to have an annual eye exam.

The most common type of glaucoma, primary open angle glaucoma, is hereditary. If members of a person's immediate family have glaucoma, they are at a much higher risk than the rest of the population. Family history increases risk of glaucoma four to nine times.
Case 8.1  ■  Venous Insufficiency in a Home-Bound Elder: Answers

1. Risk factors for chronic venous insufficiency include obesity, varicose veins, trauma, and deep vein thrombosis, lack of exercise, prolonged sitting, or prolonged standing (Gates, 2005). Chronic venous insufficiency extends from the development of vein and venous valve abnormalities. Weiss and Feied (2009) identifies superficial venous insufficiency as the most common type of chronic venous insufficiency. In this condition, deep veins are unaffected while superficial veins show damaged valves that allow backflow of blood into veins, resulting in the appearance of dilated veins, edema, and tissue discoloration.

Mr. Stein's personal risk factors for chronic venous insufficiency include: his sedentary lifestyle, obesity, history of congestive heart failure and edema, environmental factors—occupational history of truck driver (i.e., requiring periods of prolonged sitting).

2. Complications of chronic venous insufficiency include: deep vein thrombosis (risk of pulmonary embolism and death), thrombophlebitis, varicose veins, bleeding from varicose veins, venous stasis dermatitis, venous stasis ulcers (acute, recurrent, chronic), and cellulitis (acute, recurrent).

3. Mr. Stein has recently experienced two complications of venous insufficiency; a venous stasis wound and cellulitis. He also has a history of recurrent venous stasis wounds. He remains at risk for deep vein thrombosis, venous stasis dermatitis, recurrent venous stasis ulcers, cellulitis, and traumatic wounds.

4. Common symptoms experienced in chronic insufficiency are complaints of leg burning, aching, heaviness, and swelling. Measures that relieve chronic venous insufficiency pain include: elevation, use of compression stockings, walking/exercise (i.e., bicycling, swimming). Factors that can aggravate symptoms include exposure to or application of heat, prolonged sitting or standing. In contrast to venous insufficiency, arterial insufficiency pain is made worse by cold, compression stockings, walking, and elevation (Ignatavicius, & Walicek, 2010).

5. Mr. Stein’s physical assessment findings that are consistent with chronic venous insufficiency include: 1+ edema, distended varicose veins, discoloration of skin, and evidence of scarring from old venous stasis ulcers.

6. The Trendelenburg is a physical examination test that can be performed to assess for venous insufficiency when varicose veins are present. The test is performed by having the patient lay supine and elevating the patient's leg. Direct pressure is
then applied (i.e., by inflated BP cuff or tourniquet) at mid-thigh. The patient is
then instructed to stand. While standing, the nurse observes the varicose veins for
filling. In normal filling, the veins will fill from below within 35 seconds. Rapid
filling of the veins with the tourniquet in place indicates valve incompetence. This
test was not indicated in Mr. Stein since the nurse already knows that he has the
diagnosis of venous insufficiency.

7. Ultrasonography (Duplex ultrasonography), also referred to as Doppler testing is
the test of choice for diagnosing deep vein thrombosis. It is performed by applying
a wand device to the patient's skin over a gel-like medium placed on the area to be
tested; the wand passes sound waves through the tissue and transmits an image.
In color-flow duplex imaging, a red image show arterial flow and a blue image
shows venous flow, a dark image is transmitted if a solid is present. This test al-
 lows examination of vessel size, flow volume, and flow velocity and demonstrates
if obstruction or stenosis is present.
The duplex test also aids in the treatment of chronic venous insufficiency by iden-
tifying patients who may have arterial insufficiency as well as venous insufficiency.
 Patients with significant arterial insufficiency are not appropriate for use of com-
pression therapy to treat venous insufficiency.

8. Graduated compression stockings are key to the treatment of chronic venous insuf-
ficiency and avoidance of venous stasis ulcer development. Compression stockings
must be properly fitted and provide 30–40 mm Hg of compression at the ankle. The
stocking pressure gradually reduces proximally. To correctly fit a patient for compres-
sion stockings, the patient must have extremity and foot measurements taken. For
knee high graduated compression stockings, three measurements are taken, (1) the
ankle circumference at the narrowest point, (2) the calf circumference at the widest
point, and (3) the foot measurement (length from heel to the top of the longest toe).
Traditional knee-high stockings provided in the hospital do not have a high enough
pressure gradient to provide the compression necessary to treat chronic venous in-
sufficiency. Additionally, ace wraps applied to the legs can become too tight and com-
promise circulation. (Robson, Cooper, Aslam, Gould, Harding, Margolis, et al. 2006).

9. Graduated compression stockings compress incompetent venous vessels to pre-
vent venous reflux and venous stasis, thereby aiding restoration of normal venous
flow. Compression also aids in the healing of venous stasis ulcers through the
restoration of normal flow and avoidance of venous congestion.

10. Additional interventions that aid in the treatment of chronic venous insufficiency
include the following:
   a. Teaching the patient to avoid prolonged sitting or standing.
   b. Encouraging a regular exercise program, walking, bicycling, or swimming.
   c. Encouraging elevation of extremities for management of pain or swelling.
   d. Instructing patient to wear compression stockings throughout the day.
   e. Instructing the patient to seek early treatment with the primary care provider
      when edema increases, weeping, or signs of redness or warmth occur.
   f. Possible referrals: wound care clinic for wound treatment, if wound develops.
      Podiatry for foot care.

11. The home care nurse can assist Mr. Stein to remain independent by assessing the
home environment using a home safety checklist to identify and correct home
environment hazards that may place him at risk for injury or falls. The nurse can also develop a fall/injury prevention plan to further reduce fall risk.

For more information, explore this helpful Web site: http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html

Case 8.2 Pressure Ulcer in an Acute-Care Setting: Answers

1. Patient history, laboratory results, and physical examination findings should include the following:
   - Obesity
   - History of a below-the-knee amputation (BKA)
   - Frequent urination/blurry vision
   - Weight loss of 12 lbs
   - Impaired circulation left foot
   - Hypertension
   - Elevated serum glucose
   - Elevated BUN and creatinine
   - Elevated urine micro albumin
   - Elevated A1C
   - Abnormal lipid panel

2. Problems to include in creating a plan of care are as follows:
   1. Uncontrolled Type II diabetes (A1C >7%)
   2. Obesity (BMI 35.1 kg/m2)
   3. Hyperlipidemia
   4. Peripheral circulation deficits
   5. Hypertension
   6. Elevated urine micro albumin level
   7. Self-care management/lifestyle deficits (limited exercise, inconsistent SMBG)
   8. Poor understanding of diabetes
   9. Smoking history

3. Risk factors include the following:
   - History of circulation problems and amputation of the right foot
   - Inactivity/amount of time spent in bed versus a chair
   - Malnutrition
   - Low hemoglobin levels
   - Age
   - Diagnosis
4. The six categories for assessment include sensory perception, moisture, activity, mobility, nutrition, and friction/shear. Using the Braden Scale, Mr. Montoya is a moderate risk (13–14) (Green, 2010).

5. Keeping his skin clean and dry at all times. Avoiding friction and shear through use of a lift sheet or placement of an overhead trapeze bar. Changing his position at least every 2 hours. Most hospitals have specialty mattresses (flotation or air) to facilitate even distribution of weight. If incontinent of bowel or bladder, using skin barriers, absorbent products next to skin, and applying a collection device for urine or bowel movements. Promotion of adequate nutrition and correction of deficiencies through diet and/or supplements is needed.

6. Student response should reflect the 2007 National Pressure Ulcer Advisory Panel (NPUAP) Pressure Ulcer Staging, which defines a stage II ulcer as “partial thickness of dermis presenting as a shallow open ulcer with a red-pink wound bed without slough. May also present as an intact or open/ruptured serum-filled blister.” (http://www.npuap.org/pr2.htm)

7. Plain gauze, impregnated gauze pads, transparent films, hydrogels, hydrocolloids, alginates, foams, wound fillers, and composite dressings (Barclay, 2008).

8. There are numerous hydrocolloid products available on the market; therefore, student answers will vary. In general, the dressing is prepared by cutting to size (if applicable) approximately 1/2 to 1 in. beyond the wound's margin. Many dressings will have an adhesive backing, which is peeled off prior to application over the wound. If necessary, the edges may be taped for the dressing to stay in place. How long the product is left on varies, but every 72 hours is typical.

Case 8.3  Burns and the Elderly: Answers

1. Possible risk factors for burns in the elderly include reduced reaction time, poorer dexterity, decreased mobility, inaccurate assessment of risk, impaired senses. In addition, higher incidence of premorbid conditions such as chronic disease, alcoholism, effects of medications, senility, and neurological and psychiatric disorders could increase risk (Redlick, Cooke, Gomez, Banfield, Carotto & Fish, 2002).

2. The case describes the posterior of each leg was involved; this represents 18% of TBSA (9% for each extremity).

3. Source: (Fenicle, 2010)

<table>
<thead>
<tr>
<th>Depth of burn</th>
<th>Skin Involvement</th>
<th>Symptoms</th>
<th>Wound Appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superficial Partial-thickness</td>
<td>Epidermis, possibly portion of dermis</td>
<td>Tingling, hyperesthesia, pain soothed by cooling</td>
<td>Red, blanches with pressure, dry no edema, possible blisters</td>
</tr>
<tr>
<td>Deep partial-thickness</td>
<td>Epidermis, upper dermis, portion of deeper dermis</td>
<td>Pain, hyperesthesia, Sensitive to cold air</td>
<td>Blistered, mottled, broken epidermis, weeping, edema</td>
</tr>
<tr>
<td>Depth of burn</td>
<td>Skin Involvement</td>
<td>Symptoms</td>
<td>Wound Appearance</td>
</tr>
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</tr>
<tr>
<td>Full-thickness</td>
<td>Epidermis, entire dermis, some subcutaneous, connective, muscle, and bone</td>
<td>Pain free, shock, hematuria, possible entrance and exit wounds (electrical)</td>
<td>Dry, pale white, leathery, charred. Broken skin with fat exposed, edema</td>
</tr>
</tbody>
</table>

4. There is loss of elasticity, slower regeneration of cells, reduced blood supply, and diminished gland secretion affecting healing. Since the skin is the first line of immune defense, risk for infection is increased.

5. Fluid replacement generally requires crystalloid solutions such as 0.9% Sodium Chloride or Lactated Ringer’s solution. Potassium (K+) excess occurs in the emergent phase due to release of the electrolyte into the extracellular fluid compartment; versus the intracellular, where most of it usually stays. A sodium (Na+) deficit can be contributed to a large amount of the electrolyte is lost in trapped edema fluid and exudate, along with the change of K+.

6. Choice C; assessing Grace’s understanding and reinforcing teaching would be the priority. Some patients have difficulty estimating when 6 minutes have passed to administer another dose of the narcotic, so they repeatedly push the control button. Her pain level should be assessed regularly along with sedation level and respiratory rate while using the PCA mechanism.

7. Grace’s burns extended to her gluteal folds; having a bowel movement through the rectum would put her at risk for contamination of the surrounding open skin, or dressings. Infection following a burn is a high priority nursing problem.

8. The student is presented with an ethical situation involving patient safety. Although there is no one correct answer, the student should take a proactive stance (vs. doing nothing). This might entail tactfully telling the nurse providing the dressing change to stop, offering to get new sterile supplies, or reporting the incident to the supervisor.

9. A Curling’s ulcer is a stress ulcer associated with superficial or severe burns. Formation occurs as a result of losing plasma volume, which leads to the sloughing off of gastric mucosa. Gastrointestinal hemorrhage is the extreme consequence which can be lethal.

   Compartment syndrome, which refers to the compression of nerves, blood vessels, and muscle inside a closed space (compartment) within the body. With burns, this occurs most often in a circumferential body part such as the forearm or lower leg. Tissue death due to lack of oxygenation as the blood vessels are compressed by the raised pressure within the compartment, is of greatest concern.

10. a, b, d, and e are true. Diet is generally low fat, high carbohydrate.

11. Maintaining mobility, self-care with activities of daily living, infection prevention, scar and/or contracture management, coping strategies and psychological support, home safety in regard to fire prevention; others, student may identify.
Case 8.4  Dermatologic Drug Reaction: Answers

1. Ask about the exact drug that was taken and the condition that generated the prescription. Get details about the quality and severity of the reaction. What route of administration for the drug was used and what was the timing of the reaction relative to beginning the drug and to the last dose of the medication taken. How was the allergic reaction treated? Have you taken any medications in that class of drugs since the reaction and what was the response? Drug reactions to penicillin that are over 10-years-old are less likely to cause problems with repeat drug administration because sensitivity is lost with increasing time without reexposure.

2. The response to sulfonamides is most consistent with an IgE-mediated reaction. Type I hypersensitivity reactions generally present with itching, flushing, hives, wheezing, swelling in the mouth and throat, gastrointestinal discomfort, vomiting or diarrhea, and hypotension. These symptoms can develop days into the treatment course. Once sensitized, the patient will develop these symptoms almost immediately after taking a dose of the offending drug.

3. Up to 90% of patients who take ampicillin when they have an infection caused by the Epstein-Barr virus (like mononucleosis) will develop a non-pruritic maculo-papular rash. These patients can take penicillin in the future because this is not a type I hypersensitivity reaction.

4. Yes, the sulfonamide rash met the diagnostic criteria for an anaphylactic reaction (Managing Allergic Emergencies (Anaphylaxis), 2006).

   One of the following three criteria should be met when diagnosing anaphylaxis:

   1. Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (e.g., generalized hives, pruritus or flushing, swollen lips-tongue-uvula) and, at least one of the following:
      A. Respiratory compromise (e.g., dyspnea, wheeze-bronchospasm, stridor, reduced PEF in older children and adults, hypoxemia)
      B. Reduced BP or associated symptoms of end-organ dysfunction (e.g., hypotonia, collapse, syncope, incontinence)

   2. Two or more of the following that occur rapidly after exposure to a likely allergen for that patient (minutes to several hours):
      A. Involvement of the skin-mucosal tissue (e.g., generalized hives, itch-flush, swollen lips-tongue-uvula)
      B. Respiratory compromise (e.g., dyspnea, wheeze-bronchospasm, stridor, reduced PEF in older children and adults, hypoxemia)
      C. Reduced BP or associated symptoms (e.g., hypotonia, collapse, syncope, incontinence)
      D. Persistent gastrointestinal symptoms (e.g., crampy abdominal pain, vomiting)

5. These reactions are actually quite uncommon, occurring in only 1–4 of 10,000 administrations of the drug (Napoli & Neeno, 2000).
6. 1. Since Helen has COPD and has developed community acquired pneumonia multiple times, she has required frequent courses of antibiotics. Frequent exposures to the drug may increase risk for development of hypersensitivity.

2. A HLA-DRB genotype, which is prevalent in the Chinese population, has been found to be associated with type I hypersensitivity reactions to penicillin.

3. Since only one of Helen’s allergies looks to be a true IgE-mediated reaction, she does not appear to have multiple drug allergy syndromes. There is some evidence to support that patients who have an allergy to one medication are more prone than nonallergic people to develop an allergy to a second medication.

4. Helen’s family history of drug allergy puts her at risk.

5. Helen’s age and gender put her at risk for reporting a drug allergy. Reported allergy to antibiotics increases with age. In a large study of self-reported allergy, over 20% of females over the age of 80 reported allergy to penicillin and sulfa. This is over double the rate of expected true allergy. Older people are more likely to have been exposed to antibiotics multiple times, and so have a greater opportunity to report allergy symptoms associated with these medications. They have a greater chance of having a true allergy and a false report of allergy in the medical record compared to younger adults (Macy & Poon, 2009; Solensky, 2009).

7. Cross reactivity between sulfonamide antibiotics and nonantibiotics is extremely rare; however, reactions to sulfonamides can be life-threatening and need to be approached very cautiously. These drugs are the most common pharmacologic cause of Steven’s Johnson Syndrome and toxic epidermal necrolysis. For this reason, referral or consultation with an allergy specialist is recommended if you are considering reintroducing a sulfonamide nonantibiotic or sulfone. Sulfites, used as food preservatives, can cause respiratory symptoms in patients with asthma, but this reaction is totally unrelated to sulfonamide allergy. Helen does not likely need to avoid these preservatives unless she develops sulfite sensitivity, an unrelated problem. (Montanaro, 2009)

8. Helen is likely similar to most other patients who, though they report a history of penicillin allergy, did not have a true IgE hypersensitivity reaction. Skin testing would help to determine if she did, in fact, have an IgE-mediated reaction. Only 10%–15% of patients who report allergy to penicillin will test positive for allergy with skin testing. Two percent of patients with a positive skin test will react to a cephalosporin and about 1% will cross react with carbapenems. Prior to 1980, cephalosporins were often contaminated with penicillin, so cross reactivity was more common. Cephalosporins and carbapenems should be avoided in patients who are skin test positive for penicillin allergy. Helen may also be tested for allergy to ampicillin and amoxicillin in the event that she tests negative for penicillin allergy. There is a different side chain on ampicillin and amoxicillin compared with that of penicillin, which can explain these selective allergies. Certain cephalosporins share this side chain and should be avoided. Aztreonam is a monobactam with a beta-lactam ring. It has not shown cross reactivity to penicillin and may be administered to penicillin-allergic patients.

Since skin testing is not yet readily available in the United States, the clinical history is very important in deciding the likelihood of a true allergy. If the reaction
occurred more than 10 years ago and did not present with the tell-tale signs of a type I hypersensitivity reaction, the patient can be given a cephalosporin with a different side chain than the offending medication. If the reaction was within the past 10 years and/or presented as an IgE-mediated reaction, the patient can either avoid the cephalosporin or carbapenem, or be given a graded challenge in which he/she is given a small fraction of the normal dose of the drug and exposed to increasing amounts every 30 to 60 minutes until the therapeutic dose is reached. Obviously, the office performing this procedure would need to be prepared to manage an anaphylactic reaction if it occurred.

9. Skin testing is the most accurate diagnostic technique to determine whether a drug reaction is true type I hypersensitivity. The technology exists for penicillin skin testing, but it is not readily available in the United States. It is likely that this testing will soon become commonplace. Sulfonamide skin testing is more difficult because these drugs are metabolized to a variety of different metabolites which are responsible for the allergy. No skin testing is currently available to test for sulfonamide allergy. Graded challenges can be performed for both classes of antimicrobial drugs.

Case 8.5  Postoperative Infection (Clostridium difficile): Answers

1. Information provided about Mr. Barnett would support the following causes, potentially contributing to his acute postoperative confusion (Aging in the Know, 2005).

**Drugs, including any new medications, increased dosages, drug interactions, over-the-counter drugs, alcohol, and so forth.** Mr. Barnett has received anesthesia, Morphine, Vicodin, and Toradol.

**Electrolyte disturbances, especially dehydration, sodium imbalance, and thyroid problems.** The family state Mr. Barnett has a low thirst mechanism. He may have difficulty accessing fluids (e.g., water pitcher) due to limitations in movement postoperatively.

**Infection, especially urinary or respiratory tract infection.** Mr. Barnett may be at risk for infection related to presence of an indwelling catheter, incision, intravenous access, atelectasis, and/or pneumonia.

**Urinary or fecal problems, such as not being able to urinate or have a bowel movement.** Mr. Barnett is positive for inability to urinate several days postop.

2. The infection is usually preceded by receiving antibiotics that disrupt normal intestinal flora, thus allowing the *C. difficile* spores to multiply in the intestine. The antibiotics most often indicated include fluoroquinolones, Clindamycin, penicillins, and cephalosporins; the IV Rocephin used in the hospital is a cephalosporin. Nosocomial (hospital-acquired infection) is also a possibility.

3. Like many infectious illnesses, people older than 65 years of age seem to be more at risk for *C. difficile*. The risk is greater in these age groups due to a decline in immunity associated with normal aging along with chronic illness and/or comorbid diseases affecting normal defenses.
4. As *C. difficile* multiplies, it releases toxins A and B and enzymes, which damage the cells in the mucosal lining of the colon, especially in the lower part of the colon and the rectum. The inside of the colon becomes irritated and swollen (colitis) and begins to erode away as ulcerations form, causing cramping and diarrhea. With sepsis, the body produces an inflammatory response to the *C. difficile* in the blood, causing the heart rate to increase. The white blood cell count continues to rise and the oxygen level in the blood decreases, making the person short of breath and sometimes confused. If bacteria overwhelm the body, the blood pressure begins to fall so low that the organs don’t receive enough blood and oxygen, and organs such as the lungs and kidneys, begin to fail. The colon may begin to enlarge and may perforate, spilling fecal material and bacteria throughout the abdomen and spreading the infection.

5. Contact precautions are used, which requires wearing a gown and gloves. Washing hands before entering and leaving the patient’s room is required.

6. Clear liquids only for severe cases would be appropriate. Avoidance of fiber, roughage, spicy, dairy, and high fat foods until the diarrhea subsides. Therefore, the cashews would not be recommended.

7. The spores of *C. difficile* are relatively disinfectant-resistant and can be spread on the hands of health care providers after contact with equipment previously contaminated. Because the spores are resistant to alcohol, waterless hand products are not as effective as hand washing with soap and water. Bleach-based solutions and cleaning products are preferred over other hospital disinfectants. Equipment which is frequently touched in a patient’s room such as the siderails, overbed table, and IV poles/pumps, should be cleaned daily and whenever visibly soiled.

8. According to the World Health Organization, probiotics are “live microorganisms, which, when administered in adequate amounts, confer a health benefit on the host.” Probiotics help restore a healthy balance to the intestinal tract. A natural yeast called *Saccharomyces boulardii*, in conjunction with antibiotics, has proved effective in helping prevent recurrent *C. difficile* infections.

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**Case 8.6 ➡️ Herpes Zoster (Shingles): Answers**

1. Shingles is caused by the *Varicella zoster* virus, which is also responsible for chickenpox. People who contract chickenpox are at risk of developing shingles later in life, since the virus lies dormant in the body in one or more dorsal root ganglia. The rash caused by shingles usually takes the shape of a “belt” or band around or across the body. The rash forms its characteristic pattern because the virus works down the nerves that branch out from the spinal cord and encircle the body. The chest and stomach are most commonly affected. Tender, painful skin signals the beginning of an attack.

2. Herpes zoster develops in about 10% of adults during their lifetimes, usually after 50 years of age. However, the infection develops in as many as 50% of people by age 85 (Woodward, 2010).
3. In addition to having chickenpox and age being risk factors, lowered immune function also plays a role. Decline in immunity is a normal age-related change. Some sources state Shingles can follow an injury or major stress, which is applicable in Diane’s case. The drug Prednisone lowers the body’s resistance to infection.

4. Answer B: Carrie. Pregnant women should avoid direct contact with Shingles.

5. The clinical course varies from 1 to 3 weeks usually. The healing time from the skin blisters can vary from a week to a month (Woodward, 2010).

6. The nurse should first listen to the patient’s worry and then reassure her and explain again the relation of herpes zoster to the varicella virus. Suggesting she refer to her infection as Shingles might deter gossip.

7. Acyclovir is converted to a more active form inside cells of the body that are infected with herpes. The activated acyclovir then works by blocking the action of a viral enzyme called DNA polymerase. The herpes virus needs the DNA polymerase enzyme to copy its genetic material from RNA to DNA. This process is necessary for the virus to multiply and continue to survive. By blocking the action of DNA polymerase, acyclovir prevents the herpes virus from multiplying. This controls the infection and helps the immune system to deal with it. The sooner the drug is started, the less chance for developing complications such as postherpetic neuralgia exists.

8. The Center for Disease Control recommends Zostavax for use in people 60 years old and older, to prevent shingles. This is a one-time vaccination. Zostavax does not treat shingles or postherpetic neuralgia once it develops. In a clinical trial involving thousands of adults aging 60 years old or older, Zostavax reduced the risk of shingles by about half (51%) and the risk of postherpetic neuralgia by 67%. While the vaccine was most effective in people aging between 60 and 69 years old, it also provided some protection for older groups (Center for Disease Control and Prevention, 2009).
Case 9.1  Osteoarthritis: Answers

1. OA results from a breakdown of the articular cartilage in joints due to inflammatory processes. Inflammation is usually induced by mechanical stressors. Chondrocytes (cartilage cells) respond to this mechanical stress by releasing proteolytic enzymes. Eventually, the articular cartilage is degraded enough to cause bone to rub on bone in the joint. The number of chondrocytes in the articular cartilage on bone ends dramatically decreases with age, which is part of the likely mechanism by which OA becomes prevalent with aging. (Stacy & Auveek, 2009).

2. Age. OA generally presents in patients over 40 y/o and is present in over 80% in people over age 55.
   The fact that she is female as women have over twice the risk for developing OA compared to men.
   Obesity—obese females are 6 to 8 times more likely to develop OA of the knee, compared to nonobese females.
   Previous injury—her skiing injury likely resulted in damage to the ligaments or menisci, which increase the chance of developing OA.
   Muscle weakness in the quadriceps places burden on the knee joint, increasing the chances for development of OA.
   Genetics—there is an increased risk of arthritis of the knee among women with arthritis of the hands, suggesting a genetic component.

3. OA affects joints asymmetrically and unilateral joint involvement is common. The fingers, knees, hips, and spine are most frequently affected and the shoulder, elbow, wrist, and ankles are less commonly involved.

4. Joint findings in OA commonly include crepitus, bony enlargement, decreased range of motion, tenderness to palpation, and ulnar deviation in the hands. Chronic arthritis does not generally present with warmth or effusion around the joint unless there is an acute inflammation in the arthritic joint. Cynthia will expect to find bony enlargement of several joints in the hand and will closely examine the distal interphalangeal joints (DIPs) and proximal interphalangeal joints (PIPs) for Heberden and Bouchard’s nodes, respectively.

5. Her GFR is 57.4, which is Stage 3, or moderate renal insufficiency. Renal function may improve after stopping the ibuprofen and disease progression will be limited. Risk factors for NSAID-induced intrinsic renal failure include older age, hypertension, and concomitant use of diuretics and angiotensin-converting enzyme inhibitors. (American College of Rheumatology Subcommittee on Osteoarthritis Guidelines, 2000).
6. Twenty to thirty percent of all hospitalizations and deaths due to peptic ulcer disease in patients over 65 years of age are a result of therapy with NSAIDs. (American College of Rheumatology Subcommittee on Osteoarthritis Guidelines, 2000).

7. Exercise program for quadriceps strengthening and aerobics, weight loss, physical therapy, braces (Valgus bracing of the knee, thermoplastic splints for the fingers), moist heat, taping of the knee, Self-Help program with the Arthritis Foundation.

8. This course will require Ms. McConnell to attend a 2 hour, weekly session for 6 weeks. The course covers stress management techniques, medications used in OA treatment, exercise programs, and coping techniques, as well as information about OA itself. Information about this program can be found at http://www.arthritis.org/self-help-program.php

9. When combined with the nonpharmacologic therapies described above, acetaminophen (Tylenol) may effectively alleviate Ms. McConnell's pain. Cynthia needs to be sure to caution Ms. McConnell to not exceed 3250 mg/day or 650 mg/dose of Tylenol (based on a recent FDA advisory committee recommendation to lower the recommended maximum dose from the previous 4 g). Capsaicin cream applied to the knee 4 times daily may help but Ms. McConnell will need to be sure to wear gloves and not touch her eyes with this cream that is derived from chili peppers. A steroid injection into the knee joint to alleviate pain that doesn't respond to Tylenol or capsaicin can be discussed with Ms. McConnell's primary care physician. Opioids and tramadol (Ultram) are also used for unresponsive pain.

10. The Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT) through the National Institute of Health's (NIH) National Center for Complementary and Alternative Medicine was designed to answer Ms. McConnell's question. The study involved over 1,500 participants with mild to severe pain and divided them into several treatment groups. The glucosamine/chondroitin group received 1,500 mg glucosamine and 1,200 mg chondroitin daily, divided into 3 times daily doses. The study found that glucosamine/chondroitin was helpful in relieving pain in patients with moderate to severe arthritis pain, but not for those with mild pain. The group with moderate to severe pain was a fairly small subsample of the entire study group, so researchers recommend further study of this research question. Side effects from glucosamine/chondroitin are rare and involve some stomach upset. You can read about this study at http://nccam.nih.gov/research/results/gait/qa.htm#a1

Case 9.2  Hip Fracture: Answers

1. (A) KCL in her IV fluids is appropriate for the low serum value, (B) Cefazolin (Kefzol) IV is regularly administered prophylactically with fractured hip requiring surgical repair, (C) Morphine Sulfate IV is necessary for severe pain, and (D) Regular insulin subcutaneous would lower the increased serum glucose. Coumadin (warfarin) would not be wise due to the decreased red blood count, hemoglobin, and hematocrit, indicating potential blood loss from the injury or continued bleeding.

2. Incidence of hip fractures in the elderly is common; more than 340,000 hospitalizations occur annually in persons 65 years or older (Altizer, 2010).
3. The preponderance of hip fractures is due to falls. Visual changes contributing to falls (e.g., missing the last step) includes presbyopia and presence of cataract(s). Other age-related changes include impaired ability to react to a loss of balance, maintain an upright stance when stumbling, and gait weakness. For women in particular, osteoporosis contributes to the ease of bone fracture along with comorbidities such as postural hypotension, dizziness/vertigo, and confusion (Miceli, 2008).

4. According to Davenport, (2010) risk factors affecting the elderly would include the following:
   - Osteoporosis (leading cause of hip fracture)
   - Neurological impairment
   - Caucasian race
   - Cigarette smoking
   - Institutional living
   - Maternal history of hip fracture
   - Previous hip fracture
   - Physical inactivity
   - Tall stature
   - Alcohol abuse
   - Previous Colles or vertebral fracture attributed to osteoporosis
   - Low body weight
   - Impaired vision
   - Prolonged corticosteroid use
   - Use of medications that decrease bone mass, including furosemide, thyroid hormone, phenobarbital, and phenytoin

5. In the past, patients often had Buck’s traction applied to the affected leg while awaiting surgery. Following are two direct quotes (from many) found in the literature regarding a change for best practice.

   “From the evidence available, the routine use of traction (either skin or skeletal) prior to surgery for a hip fracture does not appear to have any benefit.” (Parker & Handoll, 2006, Cochrane Reviews)

   “Routine preoperative traction was not associated with any benefits and should be abandoned.” (Beaupre, Jones, Saunders, Johnston, Buckingham, & Majumdar, 2005)

   It should be noted, several recent editions of medical–surgical nursing texts do discuss this as a potential treatment preoperatively.

6. For avoidance of atelectasis, assessing breath sounds every 4 hours, use of incentive spirometry every hour while awake, coughing and change of position every 2 hours. Skin breakdown can be prevented by keeping the patient clean and dry, change of position using a trapeze as tolerated, special mattress on the bed, and inspecting skin every 4 hours, especially the heels. To decrease the occurrence of DVT, use of elastic hose, sequential compression device, getting out of bed as tolerated, low molecular weight Heparin such as Lovenox (enoxaparin) and Coumadin (warfarin).
7. Use of an abductor pillow while in bed, teaching the patient not to cross their legs or bend over.

8. The nurse is aware the patient is hallucinating and is assessing for the possibility of alcohol withdrawal as the cause versus acute delirium.

9. Home planning is coordinated among the nursing staff, discharge planner, physical, and occupational therapy. To promote safety, the following would be suggested, and/or provided:
   - Securely fastened safety bars or handrails in your shower or bath
   - Secure handrails along all stairways
   - A stable chair for with a firm seat cushion (that allows the knees to remain lower than the hips), a firm back, and two arms
   - A raised toilet seat
   - A stable shower bench or chair for bathing
   - A long-handled sponge and shower hose
   - A dressing stick, a sock aid, and a long-handled shoe horn for putting on and taking off shoes and socks without excessively bending the affected hip
   - A “reacher” that allows grabbing objects without excessive bending of the hips
   - Removal of all loose carpets and electrical cords from the areas where walking in the home

10. Hip fractures are associated with substantial morbidity and mortality; approximately 15%–20% of patients die within 1 year of fracture (Davenport, 2010).

**Case 9.3  Falls: Home Environment: Answers**

1. Costs of falls may include: injuries that rank high in common insurance claims and result in acute care medical costs associated with fractures; increased physical and emotional stress and decreased quality of life; and just the fear of falling (without actual fall) affects physical, emotional, and social functioning (Diebold et al., 2010).

2. Contact a service-provider in the community for a falls prevention home assessment (Diebold et al., 2010; Krieger-Blake, 2010; Pugh, Yetzer, & Naden-Blucher, 2007; Radwanski, 2008) or search the Internet for a home safety checklist and use it to evaluate the home setting. Two Checklist examples to prevent falls in the home can be found at the following Web sites: American College of Emergency Physicians at http://www.acep.org/workarea/downloadasset.aspx?id=8716 and the North Carolina Cooperative Extension Service at http://www.ces.ncsu.edu/depts/fcs/pdfs/FCS-461.pdf.

3. Medication management for older adults is critical. Basic knowledge about the medication, correct dosages, correct administration route, anticipated side effects, potential adverse drug reactions, and contraindications are a must (Charles & Lehman, 2010). The following Web sites were chosen and explored for medication and associated side effects: http://www.webmd.com/ or http://www.drugs.com/.
Lopressor may cause low blood pressure and Amaryl may cause low blood sugar (WebMD, 2010a), both of which have the potential to lead to Mary's falling.

4. Family caregivers need to recognize when they need help, including (1) what kind of help, (2) how to ask for help, (3) and whom to ask (Pierce & Lutz, 2009). Alternative transportation such as bus or train might be considered. Neighbors or friends or church members and /or family members who live nearby could help to provide transportation.

5. Support systems to keep caregivers connected for unexpected occurrences need to be in place (Pierce & Lutz, 2009). Church member, friends, local relatives, and/or neighbors could take turns to check on older adults every day by telephoning or stopping by the home. Affordable wireless systems that are worn as a pendant, necklace, or wrist band connecting the person with the push of a button to fire and health care services provide a level of comfort in knowing that help is available (Pierce & Steiner, 2010).

6. Remedies to make the environment safe and potential prevent falls include the following: (1) clutter—remove materials like cords, paper, boxes, and so forth from walkways and rearrange furniture to clear pathways; (2) loose carpet and slippery floors—remove or tack carpet tight and use nonskid floor wax and wipe up spills immediately, especially on ceramic tile floors; (3) inadequate lighting—use good lighting in halls, stairway, and doorways. Place a night light in the bedroom and bathroom. Keep a flashlight handy. Add extra light switches or use remote switches, such as switches that go on or off when you clap your hands; (4) unsafe handrails and stairs—make certain railings and carpets are secure. Install sturdy handrails as needed. Remove runners and repair broken or worn steps. Never place items on steps (Diebold et al., 2010; Pugh et al., 2007; WebMD, 2010b).

7. Other examples of environmental factors that cause falls and how they might be modified in order to prevent falls include the following: (1) Hazardous bathrooms—install grab bars in bathtub or shower and by toilet, use rubber mats in tub or shower and take up when not in use, install raised toilet seat; (2) Unsteady furniture—repair chairs and sofas that are not sturdy and secure. Furniture needs to be not too low or too deep to get in and out of easily, and it needs to have full arms to aid in sitting or rising. Make sure that furniture, which might be used for support when walking or rising, does not tilt. Be sure that there is enough space to walk through the room leaving clear passageways for traffic; (3) Rambunctious pets—in order to prevent tripping over a cat, small dog, or other pet keep them in one place at night or use night—lights so you can see where they are. Train your pets not to jump or get underfoot; (4) Unsafe footwear—suggest that people wear low-heeled shoes that fit well and give the feet good support. Use footwear with nonskid soles. Check the heels and soles of the shoes for wear and repair or replace worn heels or soles (Diebold et al., 2010; WebMD, 2010b).

8. a. Regular exercise improves strength, muscle tone, and balance, helping to prevent falling (WebMD, 2010b). Examples of exercise programs are: Begin by discussing these options with Mary and have her pick the one program that she is most interested in participating:

   1. An exercise program might include tai chi (Gargiulo, 2008) or yoga (Hibma, 2010), based on her abilities. Tai chi is exercise movements that consist of fluid, gentle, graceful, and circular movements that are relaxed and slow
in motion, making it appropriate for any age group (Gargiulo, 2008). Yoga is designed to increase flexibility and balance, stretching, elongating, and relaxing muscles and also makes the mind calmer (Hibma, 2010).

2. A low-intensity exercise program daily for 30 minutes or 10 minutes three times a day that may include walking, cycling, or swimming (Krieger-Blake, 2010) might also be appropriate.

b. If a fall does happen without any perceived injuries, learning how to come to a standing position is a helpful skill for the older adult to learn. An exemplar of how to get up from a fall is: From the floor or lower surface, turn from supine position (back) to prone (stomach) position (face down), get on all fours (hands and knees), crawl to a strong support surface like a chair or bench, and then pull up (Heaner, 2010). A demonstration and then a return demonstration is a good technique in teaching this procedure. These steps would be a valuable strategy for Mary to learn.

Case 9.4  ▶ Fall Prevention in a Hospital Setting: Answers

1. According to Morris (2002), accidental falls occur when patients fall unintentionally. For example, they may trip, slip, or fall because of a failure of equipment or by environmental factors such as spilled water or urine on the floor. This type represents 14% of hospital falls.

Unanticipated physiologic falls occur when the physical cause of the falls is not reflected in the patient's risk factor for falls. A fall in one of these patients is caused by physical conditions that cannot be predicted until the patient falls. For example, the fall may be due to fainting, a seizure, or a pathological fracture of the hip. This type represents 8% of hospital falls.

Lastly, anticipated physiologic falls occur in patients whose score on risk assessment scales indicates that they are at risk of falling. These patients likely have some of the following characteristics: a prior fall, weak or impaired gait, use of a walking aid, intravenous access, or impaired mental status. This type represents 78% of hospital falls.

2. A, B, C, and E. Intrinsic risk factors are central to a patient's body system and are often due to age-related changes. Medications are considered an extrinsic risk factor.

3. For 2010, NPSG.09.02.01 (Goal 9) reads as: The [organization] implements a fall reduction program that includes an evaluation of the effectiveness of the program. Rationale for the goal includes:

Falls account for a significant portion of injuries in hospitalized patients, long-term care residents, and home care recipients. In the context of the population it serves, the services it provides, and its environment of care, the [organization] should evaluate the [patient's] risk for falls and take action to reduce the risk of falling as well as the risk of injury, should a fall occur. The evaluation could include a [patient]'s fall history; review of medications and alcohol consumption; gait and balance screening; assessment of walking aids, assistive...

4. All of the assessment tools are currently utilized.

5. Students answers may vary; the Hartford Institute for Geriatric nursing recommends the following evidence-based parameters: (Gray-Micelli, 2008).
   1. Advancing age, especially if older than 75
   2. History of a recent fall
   3. Specific comorbidities: dementia, hip fracture, Type II diabetes, Parkinson’s disease, arthritis, and depression
   4. Functional disability: use of assistive device
   5. Alteration in level of consciousness or cognitive impairment
   6. Gait, balance, or visual impairment
   7. Use of high-risk medications
   8. Urge urinary incontinence
   9. Physical restraint use
   10. Bare feet or inappropriate footwear
   11. Identify risks for significant injury due to current use of anticoagulants such as Coumadin, Plavix, or aspirin and/or those with osteoporosis or risks for osteoporosis

6. The Get Up and Go Test (Posiadlo & Richardson,1991) technique requires the patient to do the following; Rise from sitting position, walk 10 ft, turn around and return to the chair, and sit down. The purpose is to measure mobility.

   The Tinetti Assessment Tool (Tinetti, 1986) measures a patient’s gait and balance. The test is scored on the patient’s ability to perform specific tasks such as sitting, arising from a chair, and rates various elements of gait.

   The Berg Balance Measure (Berg, Wood-Dauphinee, Williams, & Gayton, 1989) is a task performance exam designed to test elderly patients’ level of balance. The test consists of 14 balance items, which have been deemed safe for elderly patients to perform.

7. Students answers will vary. The intent of the question was to not only review a list of standard interventions, but to promote critical thought as well.

8. According to Brown (2010), a post-fall huddle is an informal staff meeting to analyze factors that contributed to a fall with the outcome of improving nurses’ critical thinking, increasing effectiveness of interventions, and build the unit’s knowledge of fall and injury prevention. Some facilities use an SBAR method for recording the meeting, or a special form such as the one found at http://www.agingservicesmn.org/inc/data/PostFallHuddleInvestigationWorksheet.pdf

9. According to Deutsches Aerzteblatt International (2010), “A vicious circle often arises in which fear of falling leads to avoidance of movement, and in turn to reduced fitness, lower confidence in one’s own balance, increased fear, and increased danger of a fall. Depression and a markedly impaired quality of life can result.” Students may speculate outcomes such as embarrassment, loss of confidence, self-esteem, and so forth.
Case 9.5  Immobility: Answers

1. Muscle atrophy and generalized weakness occurs as the body utilizes muscle to obtain energy. This leads to a decreased level of endurance and lack of activity. Mary is unable to follow commands that will allow her to complete physical therapy, but it is essential that she maintain whatever level of activity she is able to perform so that she does not suffer contractures or a decreased tolerance to activity, which may lead to other health-related complications.

2. The heart needs to work harder when a patient is immobile as there is pooling of blood in the lower extremities, which results in an increased amount of venous blood returning to the heart. Cardiac workload is thus increased and the heart rate may be increased. In addition, orthostatic hypotension occurs when blood pools in the extremities. Orthostatic hypotension can lead to falls. A potentially fatal complication of decreased mobility is thrombus formation, which may lead to a pulmonary embolism. Formation of a deep vein thrombosis (DVT) occurs when platelets and fibrin attach to the wall of a vein (which most commonly occurs in the large veins of the legs). There is then a potential for the clot to break away from the vessel wall and become lodged in the pulmonary vasculature (pulmonary embolism), which can result in respiratory and cardiac symptoms which may lead to death.

3. A major complication that you want to prevent is skin breakdown as Mary is incontinent of urine and has decreased mobility. Skin breakdown can lead to pain for Mary, as well as increased cost of care and time needed to provide care. The goal is to PREVENT skin breakdown before it occur. Five nursing interventions that you can implement in an independent manner include the following:
   - Assess for skin breakdown using the Braden Scale—View this assessment tool on the Hartford Institute for Geriatric Nursing Web site, ConsultGeriRN.org, which contains an excellent list of assessment tools that can be utilized for the older adult.
   - Assess skin over bony prominences as the most common site of skin breakdown is the sacrum, heels, elbows, trochanters, and scapulae.
   - Change her position at least every 2 hours while maintaining body alignment. Make sure that Mary is out of bed as tolerated and changes her position while in the wheelchair. Utilize pressure relieving devices while in bed as well as when she is in her wheelchair.
   - Assist Mary to toilet every 2 hours, or on a schedule; an example would be immediately when she gets out of bed in the morning, before and after meals, and at bedtime. It is also necessary to assist Mary to the toilet after she receives her daily lasix related to the diuretic effects of this medication. It is essential to remember that Mary was continent prior to her fall and she may very possibly be able to regain continence. Nurses must not assume that incontinence is a normal part of aging and that every effort must be made to prevent unnecessary incontinence. In addition, people with a moderate level of dementia are able to maintain continence when nurses utilize a toileting schedule. As Mary is in a long-term care setting, it is your responsibility as a nurse to delegate the toileting routine to the nursing aids that are caring for her, and continue to assess Mary’s level of ability to remain continent.
4. Age-related changes that predispose to dehydration:
   - Decreased thirst—Older adults do not experience thirst like younger individuals
   - Decreased total body water—As people age, total body water decreases from 50%-70% to 40%-50% of total body weight.
   - Kidney function declines with age, which has the effect of a decreased ability to conserve body water during times of illness or stress.

   Causes for dehydration in a long-term care setting for older adults as well as patients with dementia include the following:
   - The risk of dehydration increasing with increasing age
   - Decreased functional status
   - Decreased cognitive function
   - Lack of ability to reach fluids when thirsty
   - Inability to find fluids when desired
   - Staff difficulty in monitoring fluid intake of all patients in a long-term care setting
   - Potential for inattention of staff to the needs of patients related to fluid intake related to limited opportunities to obtain fluids

   Assessment for dehydration:
   - Nurses can assess for the potential for dehydration using the Dehydration Risk Appraisal Checklist, which can be accessed through the ConsultGerRN.org Web site under hydration management.

   Interventions to promote hydration: (Mentes, 2008).
   - Calculate a daily fluid goal.
   - Compare current intake to fluid goal.
   - Provide fluids consistently throughout the day—Fluid rounds.
   - Provide two 8-oz glasses of fluid, one in the morning and the other in the evening.
   - “Happy Hours” to promote increased intake.
   - “Tea time” to increase fluid intake.
   - Offer a variety of fluids throughout the day.

5. Age-related changes that may predispose to pneumonia: Increased stiffness of the chest wall leading to an inability to take deep breaths. Elastic recoil of the lungs is diminished and air becomes trapped in the lungs decreasing oxygenation status. Older adults have an increased susceptibility to infection (including pneumonia) related to normal age-related changes in the immune system. The thymus gland decreases in size and function while T cells also decrease in number and function.

   Nursing interventions to prevent pneumonia in the older adult with decreased mobility:
   - Encourage Mary to cough and deep breath as often as possible. Teach her family how to perform coughing and deep breathing exercises and encourage them to do them with her when they visit. Utilize an incentive spirometer if Mary is able to understand and use it properly. Ensure that all members of
the health care team caring for Mary encourage her to take deep breaths on a regular basis—such as when she is toileting, changing positions, or being moved from one place to another in the facility; essentially, whenever anyone can remind her to take deep breaths!

- Frequent position changes that will allow Mary to aerate all lobes of her lungs, which may not be possible if she remains in the same position for any extended length of time.
- Encourage Mary to receive a yearly influenza vaccination as well as the Pneumococcal vaccination based on current recommendations.
- As much as possible, ensure that Mary limits her exposure to people with respiratory infections.

6. The goal is to assist Mary to maintain as much functional ability as possible while preventing complications of immobility.

- Promotion of self-care is essential. It cannot be assumed that Mary is unable to perform self-care. Nurses need to be cognizant of the fact that Mary just had surgery, has moderate level dementia, and is in a new environment that will require time for adjustment to new routines. It is essential to orient Mary to the environment and maintain a daily schedule.
- Bathing, Dressing, and Grooming: Encourage Mary to wash as much of her body as possible when bathing. Hand her the washcloth and allow her to wash her face and upper body if she is able to perform this type of activity. Also allow Mary choices related to the clothing she is going to wear and encourage her to dress herself as much as possible. In addition, assisting Mary to comb her hair and brush her teeth while not doing it for her will allow her to maintain a greater level of independence.
- Always remember that self-care is possible with direction and patience. The goal is to maintain as much independence as possible within her level of ability.

Case 9.6  Osteoporosis: Answers

1. Working on a farm required walking and being very physically active, which represents weight-bearing exercise. Using products from a dairy farm such as milk, cream, and possibly cheese provided regular calcium intake. Taking care of a garden resulted in sunshine exposure, which promoted vitamin D in a natural form. Abstinence from tobacco and alcohol was protective as use of either is a risk factor for osteoporosis.

2. “Osteoporosis is more common in women than men. Eighty percent, or four out of five, of the 10 million Americans who have it are women” (National Osteoporosis Foundation, 2008). In addition, women and men with small bones or body frames are more at risk. Lastly, while osteoporosis affects all races and ethnicities, people in the United States who are Caucasian or of Asian or Latino descent, are more likely to develop osteoporosis than those of African heritage.

3. “Dual energy X-ray absorptiometry, or DEXA, is the most common method to measure a patient’s bone mass density (BMD). DEXA is relatively easy to perform
and the amount of radiation exposure is low. A DEXA scanner is a machine that produces two X-ray beams, each with different energy levels. One beam is high energy while the other is low energy. The amount of X-rays that pass through the bone is measured for each beam. This will vary depending on the thickness of the bone. Based on the difference between the two beams, the bone density can be measured. The radiation exposure from a DEXA scan is actually much less than that from a traditional chest X-ray. At present, DEXA scanning focuses on two main areas, the hip and spine. Although osteoporosis involves the whole body, measurements of BMD at one site can be predictive of fractures at other sites. Scanning generally takes 10 to 20 minutes to complete and is painless. The patient needs to be able to lie still on the table during the testing. There is no IV or other injection needed for this test. On the day of the test, you may eat a normal meal, but you should not take any calcium supplements for 24 hours prior to the test” (Eck, p. 4. 2009).

4. Hysterectomy with removal of the ovaries is known as “surgical menopause.” As a result, there is a sudden decrease in estrogen, which can result in rapid bone loss. In this situation, early screening is a necessity.

5. Os-cal increases calcium intake and is taken orally in divided doses. Vitamin D is taken orally daily to increase calcium absorption in the intestines. Zoledronic acid (Reclast) prevents bone loss through binding with crystal elements in bone, especially trabecular bone tissue. It is administered intravenously over 15 minutes annually. Raloxifene (Evista) is a selective estrogen receptor modulator (SERM), which means it mimics estrogen in some parts of the body while blocking the effects elsewhere. It increases bone density and prevents bone loss. It is taken orally daily (Murray, 2010).

6. Further teaching is necessary as bisphosphonates should be taken when the client can maintain an upright position for up to an hour to prevent the adverse affect of esophageal erosion. The other statements are correct; requiring no follow-up by the nurse.

7. According to the National Osteoporosis Foundation (2008), the following are advised:

* **Floors.** Remove all loose wires, cords, and throw rugs. Minimize clutter. Make sure rugs are anchored and smooth. Keep furniture in its accustomed place.

* **Bathrooms.** Install grab bars and nonskid tape in the tub or shower.

* **Lighting.** Make sure halls, stairways, and entrances are well lit. Install a night light in your bathroom. Turn lights on if you get up in the middle of the night.

* **Kitchen.** Install nonskid rubber mats near sink and stove. Clean spills immediately.

* **Stairs.** Make sure treads, rails, and rugs are secure.

* **Other precautions.** Wear sturdy, rubber-soled shoes. Keep intake of alcoholic beverages to a minimum. Ask an MD whether any of your medications might cause you to fall.

8. With the millions of Americans already diagnosed with osteoporosis and millions at risk, it is a common disease in our society, coupled with the aging trends predicted for the future. The physical and emotional outcomes from fractures (including death) along with the economic impact, certainly qualifies osteoporosis to be a public health priority.
Case 9.7  Foot Problems in the Elderly: Answers

1. Student answers will vary depending on the source. A number of Web sites pertaining to foot problems in the elderly use the following statement: “a study found that 87% of older adults have at least one foot problem.” This was traced to a study by Drs. Menz and Lord in 2001.
   Eight of 10 people responding to a 2009 survey from the American Podiatric Medical Association reported having at least one foot ailment in the past year according to Doheny (2010).

2. A, B, and C are expected age-related changes of the feet; size of the feet actually increases, there are estimates that some people over the age of 40 can gain half a shoe size every 10 years (SeniorJournal.com, 2007). Over time, tissues weaken and muscle mass declines, looser tendons and ligaments in the feet result in the need for larger shoes.

3. Risk factors for foot problems in the elderly include gender (women), being overweight, medical conditions such as diabetes, arthritis, osteoporosis, gout, inherited abnormalities, and smoking.

4. A study from the Institute for Aging Research of Hebrew SeniorLife (2010) found that “nearly 52 percent of the participants who reported a fall were either barefoot, wearing socks without shoes, or wearing slippers at the time of their fall. These people also reported more serious injuries, including fractures, sprains, dislocations, and pulled or torn muscles, ligaments or tendons, as a result of their fall.”

5. All individuals should be taught and demonstrated how to cut the nail straight across to allow the corners to protrude, so that they do not penetrate the skin. This may be difficult for an older person to properly reach or visualize; in that case, assistance from a professional trained in podiatry should be sought.

6. Fungal infections can be treated topically with an antifungal lacquer such as ciclopirox (Penlac). It is painted it on the infected nails and surrounding skin once a day. After 7 days, wiped clean with alcohol and fresh applications restarted. Daily use of the lacquer for about 1 year has been shown to help clear some nail fungal infections. Examples of oral antifungals include terbinafine (Lamisil) or itraconazole (Sporanox), which may be required for a year to yield positive results; patients must be monitored regularly for hepatic function involvement.

7. There are a variety of braces, splints, and orthotic devices; sometimes, padding the area is effective. Corticosteroid injections can also be utilized to decrease inflammation.

8. Morton’s neuroma affects the third branch of the medial nerve; ischemia results from digital artery involvement. There is swelling, throbbing, and burning pain which improves with rest.
   Treatment can be conservative with use of pads or innersoles for the shoes. Corticosteroid injections may be used, and if necessary, surgical excision of the neuroma. Plantar fasciitis, or inflammation of the foot-supporting fascia, is also common within the elderly population. The pain associated is usually localized to the heel and most noticeable upon walking after rest periods or sleep. Treatment includes stretching exercises, wearing shoes with built-in support, or a variety of orthotic appliances.
9. As reported directly from the Web site:
   - Don't ignore foot pain—it's not normal.
   - Inspect feet regularly.
   - Wash feet regularly, especially between the toes, and dry them completely.
   - Trim toenails straight across, but not too short.
   - Make sure shoes fit properly.
   - Wear the right shoe for specific activities (such as running shoes for running).
   - Don't wear the same pair of shoes every day.
   - Avoid walking barefoot, which increases the risk for injury and infection.
   - It is critical that people with diabetes see a podiatric physician at least once a year for a checkup.
Case 10.1 Cerebrovascular Accident (Acute Phase): Answers

1. Since Mr. Green was presenting with stroke like symptoms, the CT scan was indicated to determine if in fact a stroke had occurred and then if the stroke was ischemic or hemorrhagic. The treatment for an ischemic stroke, fibrinolytics, would worsen a hemorrhagic stroke. Therefore, the type of stroke needs to be determined before initiation of treatment.

2. a. The left anterior cerebral artery that supplies the medial aspect of the frontal and parietal lobes. Since Mr. Green's speech was not affected, the site of the hemorrhage was most likely not the middle cerebral artery, and since his vision was not affected, the site of the hemorrhage was most likely not the posterior cerebral artery.
   b. 5-Motor Arm, 7-Limb Ataxia, and 8-Sensor

3. According to the American Heart Association's risk factors:
   - Unchangeable risk factors: Age (older than 55), Race (African American), Gender (male)
   - Modifiable risk factors: High blood pressure (3-year history or primary HTN), Overweight (approximately 50 lbs overweight for height)

   Family history (parent, grandparent, siblings) is a stroke risk factor that cannot be determined since Mr. Green was adopted.

4. Stroke: African Americans have almost twice the stroke risk of Caucasians. The stroke death rate is 1.5 times greater for African American males when compared to the overall death rate.
   HTN: African Americans in the United States have some of the highest prevalence of HTN in the world and it is increasing. The HTN death rate is almost 3 times greater for African American males when compared to the overall death rate.

5. The FAST stroke screening is a quick method to recognize stroke symptoms and initiate the Emergency Medical System. FAST stands for:
   - Face—Ask the person to smile. Does one side of the face droop?
   - Arms—Ask the person to raise both arms. Does one arm drift downward?
   - Speech—Ask the person to repeat a simple sentence. Are the words slurred? Can she/he correctly repeat the sentence?
   - Time—If the person shows any of these symptoms, time is important. Call 911.

6. A side effect of Cardura (doxazosin) is edema.
7. The hemorrhage into the cerebral tissue can irritate the neurons and precipitate a seizure. The Dilantin (phenytoin) is administered prophylactically to prevent seizures, which would further compromise cerebral function.

8. Polycythemia Vera is an abnormal increase in blood cells (primary red blood cells) that increases blood viscosity and thereby ischemic stroke.

9. In considering the use of Zestril (lisinopril), it should be noted that in controlled clinical trials, ACE inhibitors have an effect on blood pressure that is less in African American patients than in non-African Americans. In addition, ACE inhibitors have been associated with a higher rate of angioedema in African American than in non-African American patients.

10. Both Tenormin (atenolol) and Zestril (lisinopril) can impact renal function, so Mr. Green's creatinine clearance will need to be monitored on a regular basis.

11. Two specific medication assessment strategies for Mr. Green are the Cockcroft-Gault formula for assessing renal function and the Beers criteria for potentially inappropriate medications. (Zwicker & Fulmer, 2008).

12. Several complementary and alternative strategies to help reduce BP include herbal therapy (garlic), reflexology, music therapy, and yoga. Complementary and alternative strategies can be introduced by stating something like “There are things we know that work with your medications to help lower your blood pressure. These are called complementary and alternative strategies. Some of these strategies are herbal therapy, reflexology, music therapy, and yoga. Since the strategies help to lower your blood pressure, you need to learn the correct and safe way to use them. Which strategy would you like to hear more about to help lower your blood pressure?”

**Case 10.2  CVA Rehabilitation Phase: Answers**

1. Terry's risk factors for stroke include hypertension, a sedentary lifestyle, overweight, and history of smoking.

2. The nurse should focus her teaching on the modifiable risk factors that include controlling high blood pressure, increasing activity, smoking cessation, proper nutrition, and weight reduction.

3. Acute rehabilitation requires that the person be able to tolerate at least 3 hours of therapy per day.

4. Terry needs to realize that the G-tube is necessary to provide nutrition while he is regaining control of his speech and swallowing muscles. Drinking thin liquids could cause aspiration and lead to pneumonia and an increased length of stay due to complications. The barium swallow shows the efficiency of the swallow and helps determine what consistencies are safe for Terry or unsafe.

5. To help retrain the bladder after a stroke, Terry may be asked to try to void every 2 hours even if he does not have the urge. If he remains continent during that time, the interval between voidings is gradually lengthened until a more normal voiding habit is regained while still maintaining continence.
6. Colace if only effective when there is adequate fluid intake to soften the stool. The nurse should teach Terry to drink at least 1,000 cc of fluid per day for Colace to be effective.

7. Terry needs to follow the regimen set forth by the speech therapist because this is what he needs to protect his airway and perform a safe swallow. Not following this protocol could result in aspiration pneumonia, increased length of stay, and even death as a complication.

8. A discharge plan should include transportation arrangements, prescriptions to take home, discharge instructions written, doctors visits to schedule, home care evaluation if needed, equipment needed for the home and ambulation, arrangement for meals if needed, evaluation of the home environment for safety, and assuring that a plan for assistance is set up for the immediate time after discharge. Discussion of attending a stroke support group should also be included. Referrals to other team members such as the unit psychologist or chaplain may also be helpful.

Case 10.3  Parkinson’s Disease: Answers

1. Classic symptoms associated with Parkinson’s disease (PD) are unilateral resting tremor, bradykinesia, and rigidity. Brandi did not examine Mary for rigidity but she noticed the left-sided pill-rolling resting tremor that is generally associated with PD. Mary describes generalized weakness, tiredness, and difficulty with fine motor tasks, which are descriptions of bradykinesia, the major cause of disability in PD.

2. PD is diagnosed based on clinical findings of two of the three classic symptoms (above). There are no imaging or lab studies available to help with the diagnosis. Physicians often rely on pharmacologic response to dopaminergic therapy to help confirm their clinical suspicion of PD.

3. This is an important question in this case, since Mary is seeking care for dementia. Lewy body dementia presents with Parkinsonism, fluctuating cognitive status and dementia and is the second leading cause of dementia. Generally, the dementia precedes the onset of physical symptoms in Lewy body dementia, whereas patients with PD generally experience the physical symptoms before the dementia. Dementia is present in about 40% of patients with PD.

4. Mary screens negative for depression, according to this test, since the cut point is 5 to 8 for mild depression; 9 to 11 for moderate depression; and 12 to 15 for severe depression.

5. A fall risk and nutrition assessment would be helpful. Susan is fixing meals when she is home but it is unclear what Mary is doing for meals during the day based on the information given. Although it is reassuring that her weight has been stable, the combination of Parkinsonism and dementia put her at risk for nutritional compromise. Her urinary incontinence can be further evaluated using the “Urinary Incontinence Assessment in Older Adults: Part II-Persistent Urinary Incontinence” tool. The “Modified Caregiver Strain Index” would be very helpful to help assess the burden that caregiving is placing on Susan.
6. The Parkinson’s Disease Foundation http://www.pdf.org/en/caregiving_fam_issues, has a variety of literature, Web-based support groups, and face to face support groups for caregivers. Additionally, Susan may want to learn more about PD. The “We Move Foundation” http://www.wemove.org/par/ has a lot of good information about the disease on their Web site.

7. Stretching and strengthening exercises can help offset some of the rigidity and postural instability associated with PD. There is some evidence that Wii games can be entertaining and provide physical training to improve balance in patients with PD. Mary might benefit from a physical therapy evaluation for balance and strengthening. Additionally, home adaptations, including grab bars, lighting, locks for cars and home, fire prevention strategies, and other measures, as described in Unwin, Andrews, Andrews, and Hanson (2009) http://www.aafp.org/afp/2009/1101/p963.html for patients with dementia, would be helpful.

8. Adequate fluid and fiber intake can help with constipation, often seen with PD. The Parkinson’s Foundation has a handout by K. Holden, nutritionist, on “Ten Nutrition Tips for Living Well with Parkinson’s Disease”, available at http://www.parkinson.org/NationalParkinsonFoundation/files/04/046ed4e9-8d20-4770-9028-fbe5180d63d0.pdf

Case 10.4  Alzheimer’s Disease: Answers

1. Marguerite has many of these warning signs. 1. Memory loss that affects job skills: Although Marguerite is not working; her “job” involves maintaining her home and paying her bills. There is evidence that she is not able to do these tasks without assistance. 2. Problems with language as evidenced by her word finding difficulties in stressful times. 3. Disorientation to time and place. 4. Problems with abstract thinking are suspected based on her difficulties with managing her finances. 5. Misplacing things. 6. Changes in personality. 7. Loss of initiative

2. Instrumental activities of daily living, including shopping, laundry, managing finances, meal preparation, maintaining appointments and social activities, managing medications, and driving are compromised before the basic activities of daily living. ADLs include eating and drinking, ambulating, transferring, toileting, grooming, and dressing (Cummings, Frank, Cherry, Kohatsu, Kemp, Hewett, & Mittman, 2002).

3. Using the age and education adjusted MMSE scores; Marguerite is at 12/30, which is indicative of mild dementia.

4. Depression, which can present like dementia in the elderly. B12 or folate deficiency, tertiary syphilis, hypothyroidism, and metabolic disturbances can pose as dementia and are reversible. A focal neurologic exam will help to determine if symptoms are a result of a stroke. Alcohol abuse can contribute to cognitive changes.

5. One of the ingredients in Tylenol PM is diphenhydramine (Benadryl). It has anticholinergic side effects, which can worsen dementia. If Marguerite is not taking, or is taking the wrong dose of her levothyroxine (Synthroid), she may have hypothyroidism which can cause confusion. The omeprazole (Prilosec) may interfere with the absorption of vitamins, causing a B12 or folate deficiency, which can cause dementia. Finally, the hydrocodone in Vicodin can be sedating and cause psychomotor impairment and contribute to Marguerite’s problems.
6. In addition to a thorough physical exam, screening tests to diagnose Alzheimer's disease include The Geriatric Depression scale, nutrition and alcohol assessments, lab testing including TSH, B12, Folate, RPR, CMP, and CBC. Sometimes, an MRI is done to rule out hydrocephalus, CVA, tumors or other nervous system disorders.

7. Dementia is a symptom of a disease which includes forgetfulness, confusion, decreased problem-solving ability, and behavioral changes. These changes occur insidiously, not acutely, and progressively worsen over time. Alzheimer's disease is the leading cause of dementia but there are many other causes, as well. Multiple brain infarcts, alcohol abuse, cerebral vascular accidents, Parkinson's disease, Lewy Body dementia, Huntington's disease, and normal pressure hydrocephalus are just a few of the other potential causes of dementia.

8. Cholinesterase inhibitors are recommended to slow progression of the disease and potentially enhance function in patients with Alzheimer's disease. This class of drugs includes donepezil (Aricept), galantamine (Razadyne), and rivastigmine (Exelon).

9. Alzheimer's disease involves the destruction of acetylcholine producing neurons in the cortex and limbic systems in the brain. These drugs improve cholinergic neurotransmission in these affected brain areas.

10. Conservatorship and guardianship are costly, time-consuming legal procedures in which authority is granted by the court for decision making on behalf of someone who is unable to act on his/her own behalf. Power of attorney (medical or durable) can be assigned to a trusted friend or relative, by a competent individual, without court involvement.

11. Yes, she has clearly indicated that she understands the potential long-term consequences of Alzheimer's disease and has made her wishes known.

12. Marguerite needs help with IADLs. She can get nonskilled homemaking and personal assistance through private homecare agencies in her own home. She may be interested in assigning power of attorney to her daughter who can manage her finances. She can get help with cooking, shopping and other IADLs in an assisted living facility. She should be advised to stop driving. Marguerite would likely demonstrate deficiencies on the trail-making test, and clock drawing test, recommended as driving screens by the AMA. The Alzheimer's Association (www.alz.org) publishes a book, The Caregiver's Notebook, which can help Annie with all of this planning.

Case 10.5 Dizziness/Vertigo: Answers

1. Safety concerns are present when the older adult experiences mobility challenges such as those that occur with dizziness. Dizziness places the older adult at risk for fall and injury, disruption in activities of daily living, and fear of losing independence if driving must be discontinued. Since Mrs. Santo has a history of osteoporosis, she is also at increased risk for fracture should she fall. In addition to feeling ill during these dizzy episodes, she is experiencing a disruption in her quality of life
since she is having episodes of dizziness leading her to not engage in her normal social activities.

2. Medication evaluation is an important first step in evaluation of the patient presenting with dizziness. Mrs. Santo is taking a combination antihypertensive mediation, which contains a diuretic, hydrochlorothiazide. Diuretics can produce volume depletion/dehydration in the elderly resulting in lower blood pressure, orthostatic hypotension, and dizziness.

3. The nurse should help the patient to a supine position with her head at 45°. She should provide reassurance and perform a physical assessment to identify any other possible causes of dizziness.

4. The assessment should include vital signs, cardiac and respiratory examinations, and a brief neurological examination.

5. The Dix-Hallpike maneuver is a test that places the patient into a position that will evoke dizziness and the signs and symptoms of BPPV. This test is positive when placing the patient into the position in which they report dizziness, increases dizziness and after a few seconds, results in rotary nystagmus. This test helps to distinguish peripheral from central vertigo (Mauk & Hanson, 2010, Nanda & Slaone, 2007).

6. Rotary nystagmus is a jerking or beating of the eyes in a characteristic oscillating motion (Seller, 2007).

7. Epley’s maneuver is performed by:
   a. Placing the patient in a sitting position on the examination table (or bed). Turning the head to 45° then:
   b. Quickly placing the patient in a flat position with the head held, affected side ear pointing to the floor (i.e., right). Hold in place for 30 seconds.
   c. Next, turning the head to 90° to the opposite side (i.e., left). Hold in place 30 seconds.
   d. Roll the body onto the left side, holding the head to 90°. Hold in place 30 seconds. Now turn the head to 45°. Hold in place 30 seconds.
   e. Lastly, sit the patient up slowly.
   f. For more information, explore these Web sites that contain webcasts demonstrating Epley’s maneuver: http://www.dizziness-and-balance.com http://www.neurology.org (Fife, et. al., 2008; Radtke, von Brevern, Tiel-Wilck, Mainz-Perchalla, Neuhauser, & Lempert, 2004).

8. This patient can benefit from physical therapy through BPPV exercises performed by a physical therapist and instructing the patient how to perform the exercises safely at home. Additionally, the patient can be evaluated for gait and balance; exercises can be prescribed to improve any gait or balance problems. The patient can be assisted to develop a plan for fall precautions and fall management.

9. Health teaching and instruction regarding no driving until the patient is seen for follow-up examination. Home safety instruction should be provided as well as information about emergency alert devices (i.e., life alert) in case of fall or a health emergency.
Case 11.1  ▶ Coronary Artery Disease-Living With Chronic Stable Angina: Answers

1. Marilyn has a family history of heart disease, with a parent who had a major cardiac event and a brother who had signs of coronary artery disease at a relatively young age. She is overweight, diabetic, and has increased blood pressure. She also has high triglyceride levels. Her patient history also indicates that while she is able to take care of day-to-day needs, she does not engage in exercise activity.

2. Coronary artery disease develops over a number of years with deposition of excess cholesterol into the endothelial cells, which line the arteries. This in turn leads to an inflammatory response which causes localized vasoconstriction and build up of more cholesterol, calcium, and other substances in the walls of the arteries into what is commonly called a plaque (Wenger, Tarek, & Stamatios, 2005).

3. Marilyn's blood work indicates that her cholesterol is not under control despite the fact that she is using statins to control her cholesterol levels. The negative results for troponin, creatine kinase, myoglobin levels, and B-type natriuretic peptide all indicate that the chest pain that Marilyn experienced was not associated with any heart damage as these are all factors that indicate damage of heart muscle tissue.

4. C-reactive protein is present in increased levels in patients who have the risk factors of coronary artery disease (What is coronary artery disease? 2010) High levels of C-reactive protein are considered evidence or proof of inflammation in the body (What is coronary artery disease? 2010). While escalating levels of C-reactive protein have been correlated with escalation of disease symptoms, that is, acute chest pain, acute myocardial infarction, the connection is unclear whether it is causative in nature (King, Arch, & Taylor, 2004). Use of statin drugs, associated with decrease in cardiovascular risk, have been shown to decrease levels of C-reactive protein (King et al., 2004). Ongoing research will seek to determine whether lowering C-reactive protein levels will lead to reduction of incidence of coronary artery disease and heart attack (What is coronary artery disease? 2010).

5. Coronary artery disease does have a direct correlation with age since cholesterol takes time to accumulate and cause formation of cholesterol plaques and subsequent narrowing of the arteries. In men, the risk for coronary artery disease escalates after the age of 45 and for women increases are noted after the age of 55.

6. Marilyn's EKG at rest is normal. This confirms the troponin, creatine kinase, myoglobin levels, and B-type natriuretic peptide test which indicate that she did not suffer a heart attack. Her stress test indicates that when she exercises, she is unable to deliver adequate quantities of oxygen to her cardiac tissue to maintain normal
electrical conductivity through the heart. This is known as ischemia (Myocardial ischemia, injury and infarction, 2008).

7. It is clear from Marilyn's blood cholesterol levels that the current dosage, 40 mg, was not adequate to control her cholesterol levels.

8. Statins, such as atorvastatin calcium (Lipitor) serve to lower blood cholesterol levels decreasing the amount available to form plaques in the arteries. Beta blockers such as metoprolol tartrate (Lopressor), lower overall blood pressure by slowing heart rhythm. This decreased rate of contraction lowers the demand of the heart for oxygen and can lessen symptoms of stable chronic angina caused by ischemia. Nitroglycerin (Nitrostat) can help relieve immediate pain by vasodilating narrowed vessels and improving flow of blood to the heart muscle. Use of low-dose aspirin is recommended because aspirin acts as an antiplatelet factor decreasing the formation of clots on the surfaces overlying areas of plaques, and thus decreases incidence of heart attack and stroke (Coronary artery disease, 2008).

9. Check student answers—an appropriate reference is listed (Healthy lifestyle, 2010).

Case 11.2 Congestive Heart Failure: Answers

1. Many of Madeline's symptoms point to an exacerbation of her congestive heart failure but we cannot rule out a pneumonia or cardiac ischemia without further testing.

2. a. Cough, orthopnea, rales, decreased exercise tolerance point to pulmonary congestion due to left sided failure. The blood in the weakened left ventricle is not completely ejected during ventricular contraction and backs up into the pulmonary circulation.

b. Tachycardia results from decreased stroke volume due to a boggy, ineffective ventricle. To maintain cardiac output, heart rate must increase, according to the formula $CO = HR \times SV$. The S3 gallop is additional evidence of fluid overload.

c. Peripheral edema and + hepatojugular reflex are signs of fluid overload in the peripheral circulation.

3. Increased salt in the diet (from broth) and the use of ibuprofen are likely precipitators of CHF exacerbation. NSAIDs inhibit prostaglandins which contribute to sodium retention.

4. Both. She has pulmonary symptoms (dyspneic on exertion, short of breath, orthopnea, cough) suggestive of left sided ventricular failure and peripheral edema and hepatojugular reflex which are signs of right sided failure.

5. She states that she can normally participate in physical therapy without symptoms, suggesting that she is in the NYHA Functional Class I. She has known structural heart disease due to her previous MI and is symptomatic currently, so she is in ACA-AHA Stage C.

6. In addition to a physical exam and functional assessment, diagnosis of heart failure involves performance of an EKG, chest X-ray, echocardiogram, and laboratory analysis including CBC, TSH, comprehensive metabolic profile, and urinalysis.
7. Madeline has been prescribed a loop diuretic, a beta-blocker, and ACE-inhibitor, consistent with the guidelines. She should not be taking ibuprofen. She has received a seasonal flu shot and should also be given pneumovax if she has not had one since turning 65. She should be taught to restrict her dietary sodium intake and monitor her daily weight and call to report any weight gain greater than 2# in a day or 5# in a week.

8. Call her PCP to report symptoms and physical findings. With her permission, you should also consider calling one of her adult children to alert her of her condition. You should also consult with the assisted living nurse and ask that she check on Madeline daily to assess worsening of condition. She should be instructed to monitor weights, assess for confusion or orthostatic symptoms and increased shortness of breath or increased edema and to call the PCP immediately if these develop.

9. Brain-type natriuretic peptide (BNP) is released when left ventricle is overly stretched and stimulates diuresis and sodium excretion. Levels of BNP increase with age and are higher in women than men. BNP levels are used to confirm heart failure exacerbation: a value of less than 450 pg/ml essentially rules out heart failure in a patient less than 50 years of age, 900 pg/ml is the upper BNP limit in patients 50–75, and levels less than 1,800 pg/ml can rule out CHF exacerbation in patients over 75 (Januzzi et al., 2006). Optimal, discriminatory levels of BNP with various age categories have not been definitively determined. Chest X-ray and EKG are used to rule out pneumonia and ischemic disease and can also be used to see an enlarged heart size and pleural effusions, consistent with heart failure.

Echocardiography is used to assess the ejection fraction from the ventricles, ventricular wall thickness, and valvular function.

10. The Web site http://www.improvingchroniccare.org/ has a downloadable document that can help in teaching Madeline to self-manage her disease. It is divided into green, yellow, and red zones with action steps correlating to each level of disease risk. You can access this document by going to the Web site and searching, under “Resource library” using the search term “Self-management and CHF.”

Case 11.3  Chronic Atrial Fibrillation: Answers

1. Students may use a variety of sources; the intent of the question is to focus on the correlation of the prevalence of atrial fibrillation (AF) with aging. AF is the most common arrhythmia found in clinical practice. AF is already the most commonly occurring dysrhythmia, currently affecting an estimated 2.2 million Americans. The lifetime risk for AF for men and women over age 40 is approximately 25%, indicating that 1 in 4 older individuals will experience AF before he or she dies (Lloyd-Jones, 2004).

2. The nurse should immediately assess for hemodynamic stability of the patient and evidence of life-threatening arrhythmias. A patient with bradycardia or tachycardia complaining of palpitations warrants immediate evaluation and emergent intervention. Symptoms associated with AF can range from none to mild such as (palpitations, light-headedness, or fatigue), to distress (chest pain, dyspnea, or syncope). Assessment should include evaluation for acute coronary syndrome, heart failure,
and thromboembolic event. Patients with AF can develop cardiac thrombi, which can embolize to the pulmonary vasculature, when arising from the right atrium (causing shortness of breath and/or chest pain) or systemically (brain) when arising from the left atrium (causing stroke symptoms).

3. Some common precipitating/aggravating causes of rapid heart rate response in AF include anxiety, medications, stimulants, alcohol, hypoxia, hypoglycemia, fluid, and electrolyte disturbances, cardiac disease (i.e., acute coronary syndrome, heart failure), and hyperthyroidism.

4. Symptoms associated with AF are typically due to the following pathophysiological changes: (1) loss of atrial kick (synchronized atrial mechanical activity), (2) irregularity of ventricular response, and (3) inappropriately rapid heart rate.

5. The patient's complaint of palpitations and elevated heart rate are symptoms that the nurse should attend to and explore completely. The role of the nurse for patients with chronic atrial fibrillation is (1) monitoring symptoms and vital signs (2) providing medication as prescribed, and monitoring for therapeutic and adverse effects of medication. Studies have shown that patients may experience palpitations with no documented abnormality on ECG; in addition, patients may experience arrhythmia (recorded on holter monitoring) and have no complaint of palpitations. Therefore, the symptom of palpitation must be correlated with appropriate clinical and diagnostic assessment findings. Another critical assessment finding is that Mrs. Smith reports taking a higher dose of Amiodarone at home than is currently prescribed for her at the rehabilitation center. Medication reconciliation is key to effectively continuing a patient's therapeutic regime across care settings. This change in dosage may be contributing to a change in Mrs. Smith's rhythm and rate control.

6. The goals of care for patients with chronic atrial fibrillation are (1) heart rate control and (2) anticoagulation for thromboembolism/stroke prevention Coumadin (warfarin) dosing and anticoagulation monitoring by PT/INR, with an INR target range of 2.0–3.0).

7. The nurse expects that the physician/primary care provider may order additional monitoring, diagnostic tests, and medication.

8. Amiodarone (Cordarone) and Coumadin (warfarin) can interact, and the INR can increase by one-third. The PT/INR should be monitored frequently when dosage changes are made to avoid increasing the likelihood of developing Coumadin co-agulopathy and increased risk of bleeding.

9. The burden of health care costs associated with caring for patients with AF is reaching astronomical proportions. AF can be considered a disease of aging, and with the projected increase in the elderly population in America over the upcoming decades, the prevalence will continue to increase. In addition to the direct costs associated with AF hospitalizations, the post-discharge costs, including medications, physician visits, procedures (including echocardiograms and cardioversions), transportation, and follow-up monitoring (e.g., Prothrombin measurements for Coumadin regulation) represent billions of dollars annually. AF is coined the "burden of the future" for the American Society through Medicare high-cost billing (Lloyd-Jones, 2004).
Case 11.4  Peripheral Vascular Disease: Answers

1. Known side-effects for cholesterol lowering medications such as simvastatin include muscle pain, myopathy, accompanied by weakness, and a feeling of fatigue. The side-effects are rare, less than 0.02% when used at the dose that Gordon is using, and are usually accompanied by an increase in serum levels of creatine kinase. At larger doses, 80 mg, the side effect is noted more frequently, about 2%. The symptom is worth noting in regard to the medication history and a blood test for creatine kinase (Peck, 2010).

2. “Intermittent claudication” is the term used to describe the symptoms of peripheral artery disease that patients frequently describe, especially when engaging in activity. These symptoms include pain, numbness, and a feeling of heaviness. The symptoms are due to insufficient blood delivery to accommodate the increased demand for oxygen during times of activity (What is Peripheral Arterial Disease?, 2010).

3. The most common risk factor for peripheral arterial disease is smoking. Peripheral arterial disease is also common in diabetics and those with a history of hypertension or family history of cardiovascular disease. It is common among patients with dyslipidemia and hyperhomocysteinemia. Risk of peripheral arterial disease also increases with age and is more prevalent in African American males. (Vascular Disease Foundation, 2009).

4. Peripheral vascular disease develops over a number years and is strongly linked to atherosclerosis. Most often, it begins with inflammation and subsequent deposition of excess cholesterol into the endothelial cells, which line the arteries. This in turn leads to more inflammatory response causing localized vasoconstriction and build up of more cholesterol, calcium, and other substances in the walls of the arteries into what is commonly called a plaque. This plaque narrows the blood vessel and depletes that level of oxygen rich blood that can be delivered to tissues. The plaques can also fracture and cause localized attraction of platelets and formation of clots (Atherosclerosis, 2010).

5. A bruit is an anomalous swooshing sound, observed by placing a stethoscope over the low extremity arteries (What is Peripheral Arterial Disease?, 2010).

6. An ankle-brachial index is taken using a blood pressure cuff and Doppler stethoscope and assessing blood pressures in both the brachial arteries, right and left. Then blood pressure is assessed in the posterior tibial and dorsalis pedis arteries. The higher of the two systolic pressures in each leg is divided by the higher of the two arm pulses to obtain a ratio of ABI = ankle systolic/brachial systolic. Normal is considered 1.0–1.1, borderline is 0.91–0.99, and abnormal is <0.9 or >1.3 (Aronow, 2007; Coke, 2010).

   The prevalence of peripheral arterial disease is quite high in elderly patients, as high as 32% in men and 26% in women. Yet, some may go asymptomatic because of underlying issues such as arthritis or pulmonary disease. Lack of mobility, due to these issues, may not push the extremities to the level of work needed to cause symptoms of claudication (Aronow, 2007).

7. The primary recommendation would be for Gordon to quit smoking as this is the primary risk factor for development of peripheral arterial disease (Aronow, 2007). Gordon could also benefit from a supervised exercise program of at least 30 minutes.
session three times per week. Greatest success is achieved if patients are encouraged to exercise just until the onset of symptoms (Gey, Lesho, & Manngold, 2004). Other suggestions for a healthy lifestyle, like those listed at a Web site such as the American Heart Association, might be in order (Healthy Lifestyle, 2010).

8. Gordon could benefit from a blood pressure lowering medication. It is also important to control the risk of blood clots. Gordon could benefit from daily low-dose aspirin (81 mg) or a prescription anticoagulant.

9. Gordon should be vigilant about foot care. Any wounds or infections should receive immediate care as he is at risk for severe infections, such as gangrene (Aronow, 2007).

Case 11.5  Hyperlipidemia: Answers

1. Although his total cholesterol is normal at 172 mg/dl Mr. Nightwolf’s has the following abnormalities in his lipid panel, which increase his risk of cardiovascular disease:
   • LDL-cholesterol is above normal at 130 mg/dl,
   • Triglycerides are elevated at 330 mg/dl,
   • HDL-cholesterol is low at 38 mg/dl

Mr. Nightwolf’s lab tests show that his diabetes is not well controlled:
   • Serum glucose level is elevated at 180 mg/dl
   • Hemoglobin A1c is 7.3%

In addition, his blood urea nitrogen is elevated at 23 mg/dl, and his creatinine is elevated at 1.3, which is a sign of decline in renal function.
   • Mr. Nightwolf has hypertension not controlled by current treatment and his BMI is in the obese range.

2. Age-Associated Cardiovascular Changes

Isolated systolic hypertension: systolic BP >140 mmHg and diastolic BP <90 mmHg.
   1. Arterial wall thickening and stiffening, decreased compliance.
   2. Left ventricular and atrial hypertrophy.
   3. Sclerosis of atrial and mitral valves.

Implications
   1. Decreased cardiac reserve.
      a. At rest: No change in heart rate, cardiac output.
      b. Under physiological stress and exercise: Decreased maximal heart rate and cardiac output, resulting in fatigue, SOB, slow recovery from tachycardia.
   2. Risk of isolated systolic hypertension; inflamed varicosities.
      Risk of arrhythmias, postural, and diuretic-induced hypotension. May cause syncope.
      Strong arterial pulses, diminished peripheral pulses, cool extremities.
3. Cardiac assessment: ECG; heart rate, rhythm, murmurs, heart sounds. Assess BP (lying, sitting, and standing) and pulse pressure. Palpate carotid artery and all peripheral pulses for symmetry (Harder, Osborn & Stotts, 2010).

4. The following statistics are taken directly from the American Indians/Alaska Natives and Cardiovascular Diseases—Statistics (2010 update):

   Among American Indian men ages 45–74, the incidence of CVD ranges from 15 to 28 per 1,000 population. Among women, it ranges from 9 to 15 per 1,000.
   - Use of any tobacco product in 2006 was 42.3% for non-Hispanic American Indians and Alaska Natives age 12 and older.
   - American Indians (67.5%) and Blacks (66.2%) were more likely to report not engaging in vigorous activity than white respondents (57.2%).
   - Among American Indians/Alaska Natives age 18 and older, 69.6% are overweight or obese (42.1% are obese).
   - The CDC analyzed data from 1994 to 2004 collected by the Indian Health Service (IHS), which indicated that the age-adjusted prevalence per 1,000 population of diabetes mellitus increased 101.2% among American Indian/Alaska Native adults of age 35 and older (from 8.5%–17.1%).

5. Choose lean meats and poultry without skin and prepare them without added saturated and trans fat.
   - Select fat-free, 1% fat, and low-fat dairy products.
   - Cut back on foods containing partially hydrogenated vegetable oils to reduce trans fat in the diet.
   - Cut back on foods high in dietary cholesterol. Eat less than 300 mg of cholesterol each day.
   - Cut back on beverages and foods with added sugars.
   - Choose and prepare foods with little or no salt. Eat less than 2,300 mg of sodium per day.
   - Alcohol in moderation, or none at all. That means one drink per day for a woman and two drinks per day for a man.
   - Follow the American Heart Association recommendations when eating out, and keep an eye on portion sizes.
   - Vegetables and fruits are high in vitamins, minerals, and fiber—and low in calories. Eating a variety of fruits and vegetables may help control weight and blood pressure.
   - Unrefined whole-grain foods contain fiber that can help lower blood cholesterol and help patients feel full, which may help manage weight.
   - Eat fish at least twice a week. Research shows that eating oily fish containing omega-3 fatty acids (salmon, trout, and herring) may help lower risk of death from coronary artery disease.
   - Cut back on foods containing partially hydrogenated vegetable oils to reduce trans fat in the diet.

6. First, Mr. Nightwolf should discuss an exercise plan with his primary care provider. If permitted, Mr. Nightwolf could
   - work in the garden or mow the grass
   - rake leaves, prune, dig, and pick up trash
86  CASE 11.6: ABDOMINAL AORTIC ANEURYSM: ANSWERS

- go out for a short walk before breakfast, after dinner or both. Start with 5–10 minutes and work up to 30 minutes
- when walking, pick up the pace from leisurely to brisk. Choose a hilly route. When watching TV, sit up instead of lying on the sofa. Throw away the video remote control
- stand up while talking on the telephone
- walk the dog
- park farther away while shopping and walk the extra distance; wear walking shoes and walk lap or two around the store
- stretch to reach items in high places and squat or bend to look at items at floor level (Dressler, 2010).

7. Mr. Nightwolf’s total cholesterol is still normal at 182 mg/dl
   - His LDL-cholesterol is improved at 110 mg/dl (but is still above normal)
   - Triglycerides are improved at 250 mg/dl (but are still above normal)
   - HDL-cholesterol is better at 39 mg/dl (but is still below normal)
Mr. Nightwolf’s lab tests show that his diabetes is under better control:
   - Fasting serum glucose level is still elevated at 148 mg/dl (but is still above normal)
   - Hemoglobin A1c is better at 7.2% (but still shows that average fasting blood sugar for the last 3 months is above normal)
In addition, his blood urea nitrogen is better at 21 mg/dl, and his creatinine is better at 1.1, which indicates an improvement in renal function.

Life’s Simple 7 includes the following:
1. Get active
2. Eat better
3. Lose weight
4. Stop smoking
5. Control cholesterol
7. Control blood sugar

Case 11.6  Abdominal Aortic Aneurysm: Answers

1. Male, Caucasian, 75-years-old, and a long-term smoker. In addition, the case study later addresses his history of coronary artery disease and hyperlipidemia, which are also risk factors.
2. The U.S. Preventive Task Force recommends one-time screening for abdominal aortic aneurysm (AAA) by ultrasonography in men aged 65–75 who have ever smoked.
3. The total lifetime dose (TLD) is based on the average number of cigarettes smoked per day, plus the number of years an individual has smoked. Vincent has a TLD of 100 (or a 100-pack year history). He had 25 years at 3 packs per day (75), plus 25 years at 1 pack per day (25).

4. An AAA occurs from a weakness and dilatation of the wall of the vessel. The most common cause is atherosclerosis. About 80% of aneurysms can be palpated (Canwell-Gab, 2010). It may be diagnosed through observing a pulsating mass in the middle or upper abdomen. In addition, a systolic bruit may be heard over the aneurysm.

5. The majority of patients do not have symptoms, about 40% have the sensation of their heart beating in the abdomen when lying down, (Canwell-Gab, 2010) or if the mass is large enough, the individual can feel it.

6. Source: (Mohler, 2008). Students' information should be similar.

- Less than 4.0 cm in diameter = No risk of rupture
- Between 4.0 and 4.9 cm in diameter = 0.5%–5%
- Between 5.0 and 5.9 cm in diameter = 3%–15%
- Between 6.0 and 6.9 cm in diameter = 10%–20%
- Between 7.0 and 7.9 cm in diameter = 20%–40%
- Greater than or equal to 8.0 cm in diameter = 30%–50%

7. Rupture of an AAA can cause severe pain in the abdomen or lower back. With anterior rupture, the vessel bursts and hemorrhage into the peritoneum causes signs of shock to occur instantly secondary to massive blood loss. With posterior rupture, back pain is present due to the pressure of an expanding hematoma. Overall, a rupture will result in low to absent blood pressure, increasing pulse rate, and decreased pulse pressure.

8. Smaller size AAAs (less than 5.5 cm), which are not rapidly growing or causing symptoms, have a low incidence of rupture and often require no treatment other than “watchful waiting” under the management of a vascular disease specialist. This typically includes follow-up ultrasonography at regular intervals (typically every 6 months) to determine whether the aneurysm has increased in size, or possibly leaking (Brewster et al., 2003).

9. Intervventional radiology repair is a form of treatment that can be performed safely and results in lower morbidity and lower mortality rates compared to those reported for open surgical repair. This is a less invasive method of placing a graft within the aneurysm to redirect blood flow and stop direct pressure from being exerted on the weak aortic wall. With this method, there is no need for a large abdominal incision. It also does not require the need to clamp the aorta during the procedure. Clamping the aorta creates significant stress on the heart, and people with severe heart disease may not be able to tolerate this major surgery. Stent grafts are most commonly considered for patients at increased surgical risk due to age or other medical conditions. Patients are often discharged the day after interventional repair, and typically do not require intensive care stay postoperative (Interventional Radiologists Treat Abdominal Aneurysms Nonsurgically, 2010). In addition, advantages include the following:
   - Once discharged, most return to normal activity within 2 weeks compared to 6–8 weeks after surgical repair
   - No sutures, or sutures only at the groins
• Faster recovery, shorter time in the hospital
• No general anesthesia in some cases
• Less pain
• Reduced complications http://www.sirweb.org/patients/abdominal-aortic-aneurysms/

Case 11.7  Anemia: Answers

1. While many patients with anemia may be asymptomatic and the anemia may be discovered incidentally on routine laboratory examination, Mr. Brown shows some common symptoms associated with anemia. These are weakness, fatigue, dizziness, and orthostatic hypotension (by report).

2. Anemia is a common condition in the older adult and is defined by the World Health Organization (WHO) as hemoglobin of less than 12 g/dl for women and less than 13 g/dl for men. Anemia is no longer considered a normal consequence of aging but is most often seen in the older adult when comorbid conditions are present. Several conditions can cause anemia in the older adult including iron deficiency, vitamin deficiency (B12, folic acid), gastrointestinal acute or occult blood loss, disorders of hematopoiesis, and chronic diseases or inflammation.

3. Findings that indicate anemia include hemoglobin 8.5, hematocrit 26, platelet count 110,000; MCV 104, peripheral smear showed increased blasts, and ringed sideroblasts.

4. MDS is a hematological cancer causing anemia and increases in incidence with aging with a sharp rise in occurrence after the age of 70. The anemia associated with MDS is characterized by macrocytic anemia, cytopenias, reduced reticulocytes, and increased blast cells (ringed sideroblasts may be present). The goals of treatment of MDS are supportive care, reducing the need for hospitalization, blood transfusion, and reducing the risk of infections.

5. Patient teaching the nurse should provide includes (1) blood transfusion procedures: frequent vital sign monitoring, intravenous infusion procedures, blood specimen collection procedures, (2) possible complications and side effect monitoring—report any itching, difficulty breathing, fever, chills, rashes, (3) medical/prescribing practitioner/specialist follow-up and monitoring.

6. Mr. Brown’s comment, “…I don’t know if I will do anything else after this” should prompt the nurse to provide resources and literature on anemia and MDS. In addition, Mr. Brown may be indicating a readiness to discuss his advance directives. Attentive listening and a caring demeanor expressed by the nurse provide comfort and reassurance when patients are coping with new diagnoses, uncertainty, and complex care decisions.

7. The purpose of nursing assessment prior to initiating blood transfusion is to determine whether (1) there are any contraindications to transfusion, (2) the patient appears able to tolerate blood transfusion, and (3) whether there are any known past reactions or complications from blood transfusion.

Mr. Brown appears stable for blood transfusion.
8. B, D, E, C, A

The nurse wants to assure a large bore IV access is available prior to the blood product being retrieved from the laboratory. An 18 gauge angiocath, or central line, is preferred for the two units of PRBCs as blood products are more viscous and may not infuse adequately with a smaller gauge. Next, the nurse obtains the blood product from the Blood Bank; this may involve reporting the recent vital signs and/or patient identification in a printed form. The registered nurse (RN) validates the patient’s identification, blood type, donor type, and expiration of the blood product at the bedside with another licensed professional; in addition, there is often a unit number, which must be verified by both parties. A Y-type tubing is used to spike the unit of blood; the other side will be attached to normal saline fluids. In the event of a transfusion reaction, this isotonic solution can be administered to prevent circulatory collapse. Lastly, most blood products are to be administered between 2 and 4 hours in a non-life-threatening situation.

9. Transfusion complications that can occur include the following:
   1. Febrile reaction due to anti-white blood cell antibodies.
   2. Hemolytic reaction due to blood type or RH incompatibility.
   3. Allergic reaction due to reaction to leukocytes or plasma in the donor blood.
   4. Bacterial reaction due to bacteria in donor blood.
   5. Transfusion-associated Graft-versus-host disease is seen in immunocompromised or stem cell transplant patients.

Older adults are at risk for fluid volume overload due to underlying preexisting conditions such as heart failure or renal failure.

10. Mr. Brown is exhibiting early symptoms of fluid volume overload. The nurse should decrease the rate of the blood infusion and notify the physician of the change in vital signs.

11. Prior to March 2010, an inpatient hospitalization was required with the drug administered intravenously over 3 hours, then repeated every 8 hours for 3 days. A new outpatient dosing option provides physicians and patients with the flexibility of a dosing regimen in an outpatient setting for 1 hour a day for 5 consecutive days. This cycle is repeated every 4 weeks.

Case 11.8 Pacemaker Implantation: Answers

1. Findings from the largest antihypertensive study ever completed, “The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial” (ALLHAT), showed that African Americans do not respond well to using a beta-blocker, calcium channel blocker, or ACE inhibitor drugs alone; combination therapy for hypertension is recommended (Daleidan, 2007).

2. A pacemaker is an electronic devise which stimulates the heart muscle. It is generally indicated for use when a patient has a slower than normal pulse formation either due to a problem with the heart’s natural pacemaker (sinoatrial or SA node) not firing adequately or when there is a blockage in the electrical conduction. The types include single chamber (one lead in the atria or ventricle), dual chamber...
(one lead in both), or biventricular (one lead in the right atrium, right ventricle, and left ventricle). In addition, pacemakers can be fixed-rate where electrical impulses are delivered at a steady, regular rate, regardless of level of activity, or response rate, which changes along with activity level. Mr. Beecher has an AV block, thus a dual chamber would be used.

3. Pacemaker insertion is considered minimally invasive; an operating room or cardiac catheterization suite is used. Local anesthetic is used to the chest site and IV sedation is provided as well. An endocardial approach (transvenous) is most common. The leads are inserted through a small incision and into a vein, guided into the heart with assistance of fluoroscopy. The lead tip attaches to the heart muscle, while the other end of the lead (attached to the pulse generator) is placed in a pocket created under the skin in the upper chest. When the leads are in place, they are tested for proper functioning known as “pacing,” and then connected to the pacemaker. The rate and settings of the pacemaker are determined by the MD. After the pacemaker implant procedure, the doctor uses an external device (programmer) to program final pacemaker settings (Cleveland Clinic, 2010).

4. Local infection, bleeding, or hematoma at lead entry sites, hemothorax from puncture of a vessel, pneumothorax, ventricular ectopy or tachycardia, dislocation of the lead, failure to pace, failure to sense, pulse generator failure, or pacemaker syndrome (Casey, 2010).

5. Patients may have a dressing over the area to be left in place 72 hours, or open to air. However, the site should be inspected for redness, swelling, drainage, or increased heat. Avoid showering for 3 days, tub baths or applying lotion, cream, or powder to the area. Take temperature and report increase. If steri-strips were used, let them fall off on their own. Avoid tight, restrictive clothing (possibly a bra for females). There should be no heavy lifting, contact sport, and lifting left arm above the head for 2 weeks.

6. Cardiac devices transmit data between the device and a wireless, remote monitor. Patient data can be captured daily and sent to the MD for viewing using an online patient management system, thus allowing for follow-up visits and care without the patient being physically seen in an office.

7. C: Individuals should be asked to be hand searched after showing ID of a pacemaker versus having a “wand” passed over their body.

E: Cell phones are controversial in the literature; patients are generally instructed to use it with the right hand and ear (opposite side of pacemaker). In addition, magnetic resonance imaging (MRI), large motors, arc welding, and lithotripsy can deactivate the device.

8. When the surgeon reviewed potential complications/risks of the procedure (required with informed consent), this would have been the logical time to discuss avoidance of electromagnetic exposure and/or “lifestyle changes” post implantation. The nurse should allow Mr. Beecher to express his feelings and acknowledge them, encourage him to discuss his job situation with a supervisor, and possibly make contact with the specific pacemaker company to gain further information. Some guidelines suggest staying a foot away from the antitheft devices in the doors, certainly not being physically up against them.
Case 12.1  Pneumonia: Answers

1. Age-related changes of the respiratory system which can affect incidence of pneumonia includes alveoli become flatter and shallower, there is a decreased alveolar surface, the amount of blood distributed to pulmonary system declines; thus respiratory volumes and capacities are affected. The chest wall has less compliance affecting expansion, changes in elasticity affect the efficiency of oxygen delivery, along with weakened diaphragmatic function for some elderly (Heineman, Hamrick-Ding, & Sewell, 2010). Risk factors increasing an older person's incidence of pneumonia include age older than 65 years, immune deficiencies, smoking and/or alcohol abuse, intensive care unit stay, chronic pulmonary disease, long-term corticosteroid use, and exposure to chemicals or pollutants (Mayoclinic.com, 2010).

2. Pneumonia is one of the most common and significant health problems in the elderly. It is the eighth leading cause of death and the leading infectious cause of death in this age group (Center for Disease Control and Prevention [CDC], 2010).

3. Community-acquired pneumonia (CAP) occurs outside a health care setting or within the first 48 hours of being hospitalized. The most common causative agents include *Streptococcus pneumoniae*, *Mycoplasma pneumoniae*, *Chlamydia pneumoniae*, respiratory viruses, *Legionella pneumophila*, *H. influenzae*, or *Pseudomonas aeruginosa*. Hospital-acquired pneumonia (HAP), also called nosocomial pneumonia, is defined as onset of symptoms after 48 hours with no symptoms upon admission. The most common agents include Enterobacter species, *E. coli*, *H. influenzae*, Klebsiella series, Proteus, and methicillin-resistant staphylococcus aureus (MRSA).

4. With Mr. Dooley's bacterial pneumonia, temperature would be elevated (101–105 °F), and in relation to increased metabolism, tachycardic heart rate and tachypnea of 25–45 breaths per minute. Mrs. Lee would not be as likely to have an abrupt onset of high fever.

5. A mucolytic agent such as Mucomyst or Guaifenesin, increased oral intake, or a nebulizer treatment using a bronchodilator such as Albuterol.

6. Antibiotics and probable pain medication for pleurisy.

7. Improving airway patency: keeping head of bed elevated, encouraging hydration of 3 L of fluids/day, using humidified oxygen therapy as directed, instructing to take deep breaths or use incentive spirometry prior to coughing (and splinting chest as needed). Chest physiotherapy may be indicated involving percussion, vibration, and postural drainage.
Promoting rest and conserving energy: the patient should be encouraged to provide as much self-care as is tolerated; perhaps washing face, brushing teeth, and feeding self. Keep frequently used items close at reach. In the initial stages, bed rest is recommended.

Promoting fluid intake: patients often breathe faster and with more labor and have a dry mouth. It is recommended for a goal of 3 L per day. Keep water pitcher filled and in reach. Try to establish a goal such as 4 oz every half hour. Hydrating with intravenous fluids is also common, but due to preexisting cardiac problems, this must be monitored carefully.

Maintaining nutrition: patients often have a poor appetite. Smaller meals or snacks of high calorie content are recommended; soft or pureed foods may be taken over items, which have to be chewed (thus using energy).

Promoting patient knowledge: providing an overview of pneumonia in terms understood, the treatments, prevention, and risk factors should be emphasized, and home care instructions verbalized by the patient to assure understanding.

8. Shock, respiratory failure, sepsis, pleural effusion, lung abscess, and atelectasis. Confusion due to decreased oxygenation can be an early or late complication.

9. 1. Vaccinate all previously unvaccinated adults aged 65 years and older.
   2. Vaccinate all adults who smoke cigarettes.
   3. Vaccinate persons aged 2–64 years who
      • have chronic cardiovascular disease (e.g., congestive heart failure, cardiomyopathy), chronic pulmonary disease (e.g., COPD, emphysema, adults with asthma), or diabetes mellitus, or who are cochlear implant patients.
      • have chronic liver disease (including cirrhosis), are alcoholic, or have a cerebrospinal fluid leak.
      • live in special environments or social settings (e.g., adults aged 50–64 years who are Alaska Natives or certain American Indian populations if recommended by local health authorities).
   4. Vaccinate persons aged 2–64 years with functional or anatomic asplenia (including persons with sickle cell disease or splenectomy patients).
   5. Vaccinate immunocompromised persons aged 2 years and older, including those with HIV infection, leukemia, lymphoma, Hodgkin's disease, multiple myeloma, generalized malignancy, chronic renal failure (including dialysis patients), or nephrotic syndrome; those receiving immunosuppressive therapy (including long-term systemic corticosteroids); and those who have received an organ or bone marrow transplant.

A one-time revaccination is indicated for all adults aged 65 years and older who were previously vaccinated with PPSV prior to age of 65 years if 5 years (or more) have elapsed since the previous dose (Atkinson & Kroger, 2009).
Case 12.2  Lung Cancer: Answers

1. The intent of the question is to raise awareness of risk factors for lung disease and cancer. For example, the author’s county rate is 29% and state is 26%; quite high in comparison to Summit, Utah, at 8% and 11%.

2. Environmental and occupational exposure to secondhand smoke, asbestos, radon, pollutants, motor vehicle emissions, and industrial carcinogens. Familial predisposition in relation to risk increasing two to three times that of the general population (including smoking status) for those with a close relative experiencing lung cancer (Brooks, 2010).

3. Small cell lung cancer represents 15%–20% of tumors, while NSCLC the remaining 80%. The cell types of non-small are squamous cell carcinoma (20%–30%), large cell (15%), and adenocarcinoma at 40%.

4. In order to diagnose a tumor as malignant, a number of tests may be utilized. These include a fiberoptic bronchoscopy or a CT scan with fine needle aspiration. Assessing for tumor metastasis would include bone scans, abdominal scans, positron emission tomography (PET) scans, liver ultrasound, CT of the brain, and magnetic resonance imaging (MRI) (Brooks, 2010).

5. The most common symptom is a cough, or change in a chronic cough: either attributed to smoking if a history exists. Although bothersome, a cough may be ignored for quite some time, whereas an individual is more likely to see health care when in pain. Other symptoms include dyspnea, hemoptysis, and hoarseness. With tumor spread, head or neck edema and/or dysphagia may be present (Brooks, 2010).

6. Although published in 1969, Elizabeth Kubler Ross’s work, On Death and Dying, is still a well used conceptual framework for grieving. The five stages identified include denial, anger, bargaining, depression, and acceptance. Mary Lou’s prayers are representative of bargaining.

7. Based on 100,000 persons, African American women have a rate of lung cancer at 161.2, in contrast to White (133.8), Native Hawaiian (129), Japanese American (50), and Latino (46.7).

8. African Americans may have less insurance coverage, less likely to receive care in the same amount of time, and undergo surgical resection less frequently than White patients. Other reasons underlying the disparities in treatment patterns include differences in pulmonary function, provider biases, inadequate physician-patient communication, distrust of the health care system and physicians, and a greater likelihood of refusing surgery (Brigham and Women’s Hospital, 2010).


10. The study addresses the high use of menthol cigarettes in the African American population, which are thought to be inhaled deeper, thus more harmful. The marketing techniques and enticement of women were addressed.
Case 12.3  ■ Chronic Obstructive Pulmonary Disease: Answers

1. Smoking history, living in an urban setting (pollution), former plastics factory worker (chemical exposure).

2. Antibiotics (Cipro): the use of antibiotics, other than in treating infectious exacerbations of COPD or other bacterial infections, such as pneumonia, is not recommended. Mucolytic agents: (Humabid). Although a few patients with viscous sputum may benefit from mucolytics, the overall benefits seem to be very less. Therefore, the widespread use of these agents cannot be recommended on the basis of present evidence.

3. Maximum lung function decreases with age, the number of alveoli decreases, and there is a corresponding decrease in lung capillaries. The lungs also become less elastic due to various factors including the loss of elastin. The airways tend to collapse when an older person breathes shallowly or with prolonged immobility. Breathing shallowly because of pain, illness, or surgery causes an increased risk for pneumonia, or other lung problems.

4. Anxiety, fear, impaired social interaction, impaired coping, hopelessness, impaired situational low self-esteem, and others.

5. Smoking by anyone in the home, the potential for tripping over the oxygen tubing, and taking meds exactly as ordered. Also consider minimizing the need to climb stairs through use of an elevator or moving to a first floor apartment.

6. Corticosteroids impair glucose metabolism.

7. Patients with COPD typically show a decrease in both forced expiratory volume in 1 second (FEV1) and forced vital capacity (FVC).

8. Distant or decreased lung sounds, hyperresonance, or tympany on percussion.

9. ABG shows respiratory acidosis with hypoxia and hypercapnia. Partially compensated-bicarb is above normal level.

10. Due to a decrease in arterial oxygen tension, but minimal accompanying change in carbon dioxide tension, ABG values for older patients will appear abnormal.

11. OA HP2020-3 (Developmental) increase the proportion of older adults with one or more chronic health conditions who report confidence in managing their conditions.

Case 12.4  ■ Tuberculosis: Answers

1. The symptoms of TB are a chronic cough of unclear origin, fever, night sweats, loss of appetite, weight loss, bowel irregularities, and in later stages, bloody sputum, and renal impairment.

2. Answer B.

3. Answer D.

4. Answer C.
5. Risk factors for developing or reactivating TB include the following:
   - Impaired immune system
   - TB infection within the last 2 years
   - Malnutrition
   - Diabetes mellitus
   - Gastrectomy or jejunoileal bypass
   - Renal failure
   - Impaired respiratory function (e.g., silicosis, COPD, lung infection)
   - Malignancy
   - HIV infection
   - The use of immunosuppressive medications (e.g., corticosteroids or anticancer drugs)
   - IV drug users
   - Individuals who were not correctly treated for TB in the past (e.g., did not complete the full course of medication)
   - Living in an institution type setting
   (Agency for Healthcare Research and Quality [AHRQ], 2010; American Lung Association, 2009; National Institute of Allergy and Infectious Diseases [NIAID], 2010; Tabloski, 2010)

6. Airborne in droplets by a TB infected person who coughs, sneezes, speaks, sings, or laughs (Tabloski, 2010).

7. Lungs, lymph nodes, intestinal tract, spine, bones, kidneys, and/or liver.

8. Medications to treat TB are Isoniazid (INH), Rifampin, Rifampin Plus, and/or Pyrazinamide. Once a person has been treated with the appropriate medications for 2 weeks, they are no longer considered contagious (NIAID, 2010). The patient must remain on INH for 6–9 months and Rifampin for 4 months (Tabloski, 2010). Adherence can be difficult due to length of treatment and side effects of the medications like loss of appetite, abdominal pain, nausea, vomiting, diarrhea, jaundice, fever, and tingling in the fingers and toes (AHRQ, 2010).

9. Liver function tests and oxygen saturation levels. Liver function is critical for clearance of the medication and O₂ levels, because oxygen saturations are tenuous due to her emphysema. Simply increasing O₂ levels will decrease her respiratory drives further decreasing her O₂ levels.

10. Patients are placed in private rooms with a special filtration systems and ultraviolet light to sterilize the air. The airflow is controlled with ventilation, which is a reversed airflow.

Case 12.5  Pulmonary Embolism: Answers

1. D: following the “ABCs” (airway, breathing, circulation) of priority response, elevating the head of the bed will promote a better air exchange. Listening to lung
sounds relates to breathing and assessing blood pressure, and removal of the CPM machine address circulation.

2. Students' answers will vary; the objective of the question is to create awareness of how common PE is and the frequency increases with age. According to the Merck Manual of Geriatrics (2009), “in the United States, pulmonary emboli and its primary cause, DVT, are estimated to lead to 110,000 hospitalizations annually in patients older than 65 years. Annual incidence rates per 1,000 persons aged 65–69 are 1.3 and 1.8 for pulmonary emboli and deep vein thrombi, respectively.” Both rates increase with age.

3. Although the gold standard for a definitive diagnosis of PE is pulmonary angiography, the test is expensive, invasive, and often times not available. Therefore, in the majority of cases the diagnosis of is made on clinical probability and noninvasive methods such as ventilation-perfusion (V/Q) lung scan, echocardiography, venous ultrasound (Doppler) of lower extremities, spiral computerized tomography (CT) electrocardiogram, chest X-ray, and laboratory tests.

4. “D-dimer allows excluding PE in only 5% of patients aged 80 and older, compared with 60% younger than 40” (Righini, Le Gal, Perrier, & Bounameaux, 2005).

5. Advanced age, hormone replacement, postoperative, heart disease (hyperlipidemia and hypertension).

6. The surgeon should have been notified when the first dose was refused. Perhaps with coaxing and explanation of the importance and emotional support, the patient would have agreed to take the medicine. If not, other medications could have been adjusted to provide more protection against developing a DVT.

7. Compression stocking on the unaffected leg, sequential compression (pneumatic) device to the ankles bilaterally, increased mobility as tolerated, and careful, frequent assessment (Rauen, Makic, & Bridges, 2009).

8. Heparin therapy is continued until the international normalized ratio (INR) is within a therapeutic range of 2.0–2.5 or the partial thromboplastin time (PTT) is 1.5 times the control. For Coumadin (warfarin), a protime (PT) should be 1.5–2 times normal or the INR is 2.0–3.0 (Cantwell-Gab, 2010).

9. Begin with an explanation of the absolute need for monitoring anticoagulant therapy in relation to patient safety. As stated in the case study, an anesthetic cream (ELMA, for example) can be applied to the area up to an hour prior of being stuck. Diversion such as her husband or the nursing staff being present to hold her other hand or put their arm around her, combined with focused, and deep-breathing techniques may be helpful. The lab should be notified of the phobia so the various phlebotomists can have a calm, understanding manner of approach. With multiple lab tests a day, using non-pharmacologic measures is preferred over dosing with an anxiolytic agent such as Valium (diazepam) each time.

10. Although a blood clot is the most common cause of pulmonary embolism, air, fat, bone marrow, foreign bodies, arthroplasty cement, and tumor cells also can obstruct the pulmonary vessels (Brooks, 2010).

11. Students should identify at least two of three diagnoses related to the act of respiration. These may include Impaired Gas Exchange, Ineffective Tissue Perfusion: Cardiopulmonary, Ineffective Breathing Pattern, Ineffective Airway, Decreased Cardiac Output, and many others including psychosocial-focused such as Fear/Anxiety.
12. Avoid an excessive diet of foods that are high in vitamin K, such as green leafy vegetables, broccoli, green onions, asparagus, and olive oil. Coumadin and vitamin K work against each other as vitamin K actually helps thicken the blood. Use a soft bristle toothbrush when brushing your teeth. Men should use an electric razor. Refrain from contact sports or activities, which may result in injury. Carry a medical alert card all times stating that Coumadin is used. Be aware of any signs of abnormal bleeding and report them to your doctor immediately; this includes pronounced bruising, nosebleeds, red sclera, obvious blood in the sputum, urine, or feces. Do not take aspirin, acetaminophen, or any nonsteroidal anti-inflammatory (NSAID) agents.

Case 12.6  Influenza Prevention in the Elderly: Answers

1. Flu season is generally considered to be highest during the winter months. If the program was offered in the preceding season, September through November for example, it would likely be of greater benefit.

2. One thought is the climate changes in Eastern Asia result in epidemics to develop at different times of the year in very crowded regions (Swaminathan, 2008). In the past centuries, lack of medical care, and the high numbers of individuals living with poultry and swine in close proximity may have also been a contributing factor.

3. Influenza A and B are the viruses responsible for human disease; type C generally does not cause illness (DeLuca & Osborn, 2010).

4. Transmission occurs by small-particle aerosols. The lower respiratory tract receives virus deposits, which attach to and infect epithelial cells. Coughing and/or sneezing by an infected person produce droplets in the air, which transfer to the mouth or nose of others in close proximity.

5. With aging comes an increased susceptibility to infection due to a decline in immunity. In addition, loss of physiologic reserve and presence of chronic illnesses (respiratory, cardiac, renal, etc.) increase the risk for infection. Older individuals living in close quarters, such as in a nursing home, are more at risk due to exposure rates increasing.

6. B and C are the current available forms of vaccination.

7. B and C (Seasonal Influenza, 2010).

8. According to the FDA Web site (Drugs, 2010), the current two antivirals are Relenza (zanamivir) and Tamiflu (oseltamivir phosphate). The two antivirals that many strains of flu have shown resistance toward include Symmetrel (amantadine) and Flumadine (rimantadine).

9. Rather than complete social exclusion, avoid large crowds inside an enclosed area (movie theater, sports game, arts performance). Washing hands more frequently when out of the home and covering the mouth and nose when sneezing are important. Avoiding contact with known sick persons is pertinent.
Case 13.1 Diabetes Mellitus (Screening): Answers

1. Input Mrs. Spivey's height and weight. Her BMI is 32.6 indicating she is obese.

2. Answer C. The nurse suspects due to the sudden weight loss, change in vision, and bladder infection, she should be screened for Type II diabetes. Mrs. Spivey's affect is bright, so while she could have feelings of being overwhelmed and fatigue due to caring for her husband her mood overall is not depressed.

3. Answer D: a combination of insulin resistance and insulin secretory defect. Answer A is Type I diabetes. Type II diabetes (answer B) is not a normal process of aging. Excessive intake of sugar increases blood sugar but does not cause diabetes, a combination of factors contribute to Type II diabetes.

4. Gather additional information about family history of diabetes, take her blood pressure, inquire about additional medications she is currently taking, conduct an integumentary inspection of her legs and feet for poorly healing wounds, assess her nutritional intake, and assess for polydipsia and polyuria.

   - Being over age 50
   - Being overweight (BMI >25)
   - Having a waist-to-hip ratio approaching 1
   - Having a parent or sibling with diabetes
   - Being African American, Hispanic, American Indian, Asian American, or Pacific Islander
   - Previously having gestational diabetes
   - Having an elevated blood glucose level
   - Blood pressure 140/90 or higher
   - Elevated cholesterol
   - Inactivity
   - Having acanthosis nigricans (darkening around the neck or armpits, the skin appears dark, thick, and velvety)
   - Cardiovascular disease
6. The nurse should consider the following:

1. Nutritional Education: glycemic index of foods, keeping a diet diary
2. Importance of exercise
3. Scanning the home for objects that could cause a fall injury. Diabetic neuropathies place her at risk for undetected injury. Poor wound healing is a potential side effect of Type II diabetes.
4. Appropriate foot care and inspection.
5. Signs and symptoms of diabetic ketoacidosis and reinforcing this is a medical emergency:
   • Polydipsia
   • Polyuria
   • Fatigue and/or weakness
   • Nausea/Vomiting
   • Anorexia
   • Confusion
   • Shortness of breath
   • Abdominal pain
   • Dry skin and mouth
   • Tachycardia
   • Hypotension
   • Increased respirations
   • Fruity odor to the breath

7. The following labs would be recommended for follow-up:
   • Fasting blood sugar
   • Glycosylated hemoglobin (HbA1c), values greater than 6.1 indicate diabetes
   • Thyroid panel
   • Urinalysis for albuminuria
   • Serum creatinine for renal function
   • Lipid profile to assess cardiovascular risk

8. Uncontrolled blood sugar could cause the following:
   • Eye disease
   • Kidney failure
   • Cardiovascular disease
   • Peripheral neuropathies
   • Periodontal disease
   • Stroke
   • Poor wound healing
Case 13.2  Diabetes Mellitus and Medication: Answers

1. Normal fasting blood sugar levels are less than 100 mg/dl and hemoglobin A1C levels less than 5.5 mmol/L.

2. The nurse may need to counsel her on the new diabetes medication. Providing an overview of the medicine, how it is different from the previous medication, and potential side effects would be helpful. Repetition of information from all healthcare providers is necessary. In addition, Sybel may have questions about the medication since she last visited her Physician. The nurse may also counsel her on an exercise program that fits her specific needs and abilities. The nurse may suggest a nutrition and weight loss program as well.

3. Low blood sugar levels, gastrointestinal disturbance, bloating.

4. Students should research three medications and provide comparisons.


6. Students should research local diabetes resources.

7. When oral diabetes medication options along with diet and exercise have been used without successfully controlling blood sugar levels.

8. Some issues that may arise include being physically able to administer an injection, being able to rotate injection sites, proper dosage levels, closely monitoring side effects, and reading the bottle and syringe correctly due to visual impairment.

Case 13.3  Diabetes Mellitus and Nutrition: Answers

1. Go to the grocery store with a list of items that following a diabetic diet and pre-plan meals for the week to make cooking easier. Go to the local farmers market to find fresh fruits and vegetables. Try to choose lean cuts of meat, low-fat salad dressing, and small amounts of whole wheat carbohydrates. Make healthy choices at restaurants.

2. Students should research three nutritional resources and document.

3. Proper nutrition helps to stabilize blood sugar levels and lowers stress on the body. Constant increases in blood sugar levels cause the body along with the medication to work harder to balance out sugar levels.

4. Proper nutrition and a balanced diet help to maintain target blood sugar levels. Appropriate nutrition especially with carbohydrates with a low glycemic index helps to stabilize blood sugar levels. According to the ADA, even losing 5–10 lbs helps the body better manage diabetes.

5. Some individuals may be able to discontinue diabetes medication after weight loss and/or with diet and exercise; however, most individuals will need to continue
diabetes medication but maybe at a lower dose. Some individuals will progress from oral medications to insulin no matter how closely they control weight, nutrition, and exercise. Medication should be monitored on case-by-case basis by a health care professional.

6. The three main types are starches (e.g., peas, corn, potatoes, dried beans, grains), sugars (e.g., natural sugars in fruit or processed sugar such as heavy syrup), and fiber (e.g., whole grains, legumes, nuts, fruits, and vegetables).

7. It is best to plan ahead and choose restaurants that have healthy options on the menu or request a dish to be prepared without added fat or substitute side dishes for healthier options. Consult the ADA Guide to Healthy Restaurant Eating by Hope Warshaw or the ADA Guide to Health Fast-Food Eating by Hope Warshaw found at the American Diabetes Web site.

8. Superfoods: beans, dark green leafy vegetables, citrus fruit, sweet potatoes, berries, tomatoes, fish high in omega-3 fatty acids, whole grains, nuts, and low-fat milk and yogurt.
Case 14.1  Transient Urinary Incontinence: Answers

1. Respect is the foundation of interpersonal relationships in Vietnamese society. It is expressed by nonverbal behavior such as avoiding direct eye contact to people senior in age, status, or of the opposite sex. Smiling is a nonverbal method to convey agreement, embarrassment, disbelief, mild disagreement, appreciation, or apology (Thi, 2008).

2. Coining therapy, also known as Cao gio, is a dermabrasion therapy used to treat a variety of illnesses such as aches, pains, fevers, colds, cough, nausea, abdominal pain, chills, and symptoms related to changes in the weather. Balms or oils such as tiger balm or liquid herbal medicines containing camphor, methanol, winter green oil, eucalyptus oil, peppermint oil, and cinnamon oil are most commonly used. The skin is first lubricated with a balm or oil, and then the coin is rubbed firmly and repeatedly in a linear pattern until blood appears under the skin, usually at the spine area or ribs (Pich, 2006).

3. Several changes occur with aging that may affect a person's ability to control urination. With aging, the bladder capacity tends to decline. Also, the ability to postpone urination after feeling the need to urinate may decrease. In addition, the amount of urine remaining in the bladder after urination is finished (residual urine) increases with aging. There is weakening of the voluntary pelvic floor muscles. In women, the urethra shortens and its lining becomes thinner as the level of estrogen declines during menopause. These changes decrease the ability of the urinary sphincter to close tightly (Zurakowski, 2010).

4. DIAPPERS (Resnick & Yalla, 1985)
   Delirium
   Infection (e.g., urinary tract infection)
   Atrophic urethritis or vaginitis
   Pharmacology (e.g., diuretics, anticholinergics, calcium channel blockers, narcotics, sedatives, alcohol)
   Psychological disorders (especially depression)
   Endocrine disorders (e.g., heart failure, uncontrolled diabetes)
   Restricted mobility (e.g., hip fracture population, environmental barriers, restraints)
   Stool impaction
**TOILETED**

Thin, dry vaginal and urethral epithelium (atrophic urethritis or vaginitis)

Obstruction (stool impaction/constipation)

Infection

Limited mobility (restricted mobility)

Emotional (psychological, depression)

Therapeutic medications (pharmacological)

Endocrine disorders

Delirium

(Information in parenthesis refers to the DIAPPERS mnemonic.)

5. Bladder diaries continue to be the standard tool for assessing patterns of UI episodes. The brevity and ability to be self-administered are strengths to make this tool user-friendly and providing a pattern of data.

6. Felodipine (Plendil), a calcium channel blocker, may cause decreased detrusor muscle contractility, sometimes resulting in urinary retention and overflow incontinence. With diphenhydramine (Benadryl), an antihistamine, bladder contractility can be impaired, sometimes causing urinary retention and overflow incontinence. And pseudoephedrine (Sudafed), an alpha adrenergic agonist, may increase bladder neck tone, sometimes causing urinary retention and overflow incontinence (Lui, 2007).

7. A post-voiding residual (PVR) measures the amount of urine left in the bladder after voiding. The most acceptable and noninvasive method for determining bladder emptying is the use of a portable, ultrasound instrument. Nurses at the bedside can easily evaluate bladder function as recommended with this scanning technology without using invasive instrumentation such as catheterization that may cause infections. Using ultrasonography to determine PVR has become the standard of nursing practice in most clinical settings. Double-voiding (urinating and then immediately attempting to urinate again) followed by the Crede maneuver is also recommended. This maneuver can be taught to the patient or provided by the nurse. It involves applying manual pressure over the lower abdomen to completely empty the bladder.

8. Urinary incontinence should not be considered a normal consequence of aging despite the high frequency among older people.

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**Case 14.2  Benign Prostatic Hypertrophy:**

**Answers**

1. Patients feel uncomfortable talking about prostate problems, because the prostate is functional in both the urinary and reproductive systems. It may not be uncommon for a spouse in the relationship to want to discuss the symptoms before the patient himself feels the need. It is important that Cheryl emphasize that the issue is not anything to be embarrassed about and that it is very common in older gentlemen, but needs attention because non-life-threatening conditions such as benign prostatic hypertrophy can share symptoms with more serious conditions such as prostate cancer.
2. Renal impairment refers to a condition in which the kidneys fail to appropriately make urine. In urinary retention, the urine is formed adequately but cannot be emptied from the bladder.

3. Acute urinary retention can occur because antihistamines and decongestants may prevent the relaxation of the bladder opening, which allows urine to empty. This response couples with the enlarged prostate to prevent elimination from the bladder. It is a common affect that will cause men with previously asymptomatic enlarged prostate to seek medical attention (National Kidney and Urologic Disease Information Clearinghouse, 2006).

4. The DRE confirms that Henry’s prostate is enlarged but cannot help a practitioner determine whether the enlargement is benign or cancerous. The PSA blood test provides additional information regarding the nature of the problem. Elevated PSA, a protein produced by prostate cells, has been positively correlated with presence of prostate cancer but is not a definitive test (National Cancer Institute, 2009).

5. To rule out prostate cancer, a biopsy should be performed as this will definitively identify whether the enlarged prostate is due to the presence of cancer or a benign enlargement.

6. Drug agents for BPH fall into two categories, those that inhibit prostate production of the hormone dihydrotestosterone (DHT), which is involved in prostate enlargement, and those that improve urine flow by relaxing the smooth muscle of the prostate and bladder neck. Medications that fall into the first category include finasteride (Proscar) and dutasteride (Avodart). Those that fall into the second category include terazosin (Hytrin), doxazosin (Cardura), tamsulosin (Flomax), and alfuzosin (Uroxatral). A common Web site that might be consulted is listed here. Use reliable Web sites to check student work.


7. Saw palmetto has been proposed as a treatment for BPH. It should be noted that the American Urological Association is opposed to this treatment, questioning its efficacy and the purity of supplements available.

8. Many men worry about whether surgical intervention for BPH might affect their ability to enjoy a healthy sexual experience. It is common for there to be a temporary interruption in the ability to engage in sexual relations. How soon recovery happens is directly related to the degree of the invasiveness of the procedure (National Kidney and Urologic Diseases Information Clearinghouse, 2006). Nearly all men will recover complete function within a year.

Case 14.3  ■ Functional Incontinence: Answers

1. Functional incontinence is caused by nongenitourinary factors, such as cognitive or physical impairments that result in an inability for the individual to be independent in voiding. The nurse can perform an incontinence assessment, such as DIAPERS, a mnemonic which represents the presence of delirium, infection, atrophic urethritis or vaginitis, pharmacological agents, psychological disorders,
endocrine disorders, restricted mobility, and stool impaction (Resnick & Yalla, 1985). She could also utilize Mr. Carson’s history, which is negative for incontinence, but positive for gait problems. The combination of his slower gait, a different environment, and the IV pole leads the nurse to believe that he has functional incontinence.

2. A different, unfamiliar environment; the hospital bed; lack of prompt assistance from staff; and, hospital equipment (IV pole) contributed to Mr. Carson’s incontinence.

3. The sweet tea that his daughter brought was an immediate contributor to his incontinence due to the caffeine, which is a bladder irritant. From his history, the occasional beer could also contribute.

4. Incontinence treatment consists of identifying the cause and eliminating it. Use of an indwelling catheter would not be a treatment. Furthermore, indwelling catheters are indicated in patients with severe illness, pressure ulcers, or urinary retention. Mr. Carson does not have any of these.

5. The following measures would be helpful to Mr. Carson:
   a. Identify the cause and eliminate it.
   b. Perform a medication review to determine whether any medications might contribute to incontinence.
   c. Keep a bladder diary.
   d. Monitor fluid intake and maintain an appropriate hydration schedule.
   e. Modify the environment to make it easier for Mr. Carson to void. Possible modifications include a bedside commode or a urinal to be kept at the bedside.
   f. Assist Mr. Carson to the bathroom every 2 hours, regardless of whether or not he calls for assistance.
   g. Refer Mr. Carson to physical therapy to assess his gait.

6. The first thing to teach Mr. Carson is that incontinence is NOT a normal change of aging. Mr. Carson should be taught to keep a bladder diary to monitor his own incontinence and determine the cause, if able. A copy of a bladder diary is available at http://consultgerirn.org. He should also be encouraged to develop an individualized toileting schedule, such as going to the bathroom every 2 hours. His daughter should be included in this teaching and should be asked to prompt him to void on a regular schedule. Physical therapy should be continued at home, if Mr. Carson is gaining strength from it in the hospital. In addition, home equipment, such as a bedside commode, should be ordered for Mr. Carson. In regards to his diet, Mr. Carson should be taught to avoid bladder irritants, such as caffeine, and also taught to increase his intake of water. Finally, Mr. Carson should be taught to wear clothing that is easy to manipulate, such as pants with an elastic waist.

7. Orthostatic hypotension is a concern, because it places the person at risk for falling. If Mr. Carson hurries to the restroom, he may not take the time to rise slowly and regain his balance before he rushes to the bathroom.

8. The home care nurse should assess Mr. Carson’s environment for safety to ensure that he can easily access the restroom and make adaptations as necessary. The nurse should help create an individualized toileting schedule, and his daughter should be instructed to remind Mr. Carson to void at regular intervals. The nurse
should assess for the need for physical therapy and make the referral if needed. The nurse should teach Mr. Carson to maintain adequate hydration, but to avoid liquids too close to bedtime. Finally, the nurse should teach Mr. Carson to avoid bladder irritants that may cause frequent urination.

Case 14.4  Acute Renal Insufficiency: Answers

1. Older adults are at risk for losing functional ability during and after a hospitalization. The Hospital Admission Risk Profile (HARP) can be used to classify hospitalized older adults as being at low, intermediate, or high risk for losing the ability to perform activities of daily living (ADLs), based on assessments of age, cognitive function, and the ability to perform independent ADLs. Age is recorded and cognition is assessed using the abbreviated 21-question Folstein Mini-Mental State Exam (MMSE). Preadmission function in seven IADLs is evaluated by asking whether each can be performed, and if so, whether assistance is needed. The HARP uses IADL assessment, because a loss of ability to perform IADLs usually precedes a loss of ability to perform ADLs (Graf, 2008).

2. Factors that increased the risk of developing kidney stones in Mr. Harris include the following:
   • Family or personal history of kidney stones. If a family member has kidney stones, it increases the risk of developing kidney stone. A patient who has already had one or more kidney stones has an increased risk of developing another.
   • Being an adult. Kidney stones are most common in adults aged 40 and older, although kidney stones may occur at any age.
   • Male gender. Men are more likely to develop kidney stones.
   • Dehydration. Not drinking enough water each day can increase the risk of kidney stones. People who live in warm climates and those with excessive perspiration may have a need to increase fluids.
   • Certain diets. A diet that is high-protein, high-sodium, and high-sugar may increase the risk of some types of kidney stones.
   • Being obese. High body mass index (BMI), increased waist size and weight gain, has been linked to an increased risk of kidney stones.

3. Mr. Harris should be instructed to drink water throughout the day. For people with a history of kidney stones, doctors usually recommend passing about 2.6 quarts (2.5 liters) of urine a day. Marcia can suggest that Mr. Harris measure his urine output to ensure that he is drinking enough water.
   • Mr. Harris should be instructed to choose a diet low in salt and animal protein. He should reduce the amount of sodium he eats and choose non-animal-protein sources, such as nuts and legumes. This may help decrease his chance of developing kidney stones.

4. Mr. Harris should be instructed that he can continue eating foods that contain calcium, but he should be cautious about calcium supplements. No evidence shows that calcium in food increases the risk of kidney stones. Mr. Harris should ask his
doctor before resuming calcium supplements, as these have been linked to an increased risk of kidney stones.

5. Physical examination findings include the following:
   1. left flank pain
   2. swelling of his hands and feet
   3. heart rate of 100 bpm
   4. BP 150/00
   5. BUN 48 mg/dl
   6. serum creatinine 2.8 mg/dl

   Symptoms and lab tests that might indicate ARI include the following:
   • swelling, especially of the legs and feet
   • little or no urine output
   • thirst and a dry mouth
   • rapid heart rate
   • dizziness
   • loss of appetite, nausea, and vomiting
   • confusion, anxiety, or restlessness
   • flank pain

   The normal range of urea nitrogen in blood or serum is 5–20 mg/dl, or 1.8–7.1 mmol urea per liter.
   • BUN measures the amount of nitrogen in the blood (from the waste product urea). If the kidneys are not able to remove urea from the blood, BUN level increases. A BUN of 48 mg/dl would represent significantly impaired renal function.

   For the adult male, the normal range for creatinine is 0.6–1.2 mg/dl.
   • An increase in the amount of creatinine in the blood (serum creatinine) is often the first sign of ARI. Repeated tests of serum creatinine can help monitor the development of renal failure and can help determine whether treatment has been successful.

6. Conditions that increased the risk for Mr. Harris to develop acute kidney failure include the following:
   • advanced age
   • high BP
   • bladder outlet obstruction
   • NSAID use

7. The nurse should monitor the following:
   • Serum electrolyte tests: Calcium, phosphate (phosphorus), and sodium may be elevated in renal failure. Hyperkalemia is a life-threatening condition that may result from renal failure.
   • Complete blood count (CBC): A CBC provides important information about the red blood cells, white blood cells, and platelets. It can be used to check for diseases or infections that could be causing renal failure. Anemia may result from reduced erythropoietin production.
The nurse should also monitor the patient for the following:

1. shortness of breath
2. lower-extremity edema
3. significant increases (>2 lbs per day) in weight
4. changes in vital signs
5. seizures
6. headache
7. muscle twitching
8. IV medications should be given in the smallest possible amount of fluid. The nurse should consult with the pharmacist on the minimum amount of fluid to safely dilute and administer IV medications.

9. The diet for the renal patient should be as follows:
   - low in protein (meat, poultry, milk products, eggs)
   - low in potassium (bananas, chocolate, oranges, broccoli, coffee (limit to two cups per day)
   - low in sodium (table salt, bouillon cubes, potato chips, nuts, bacon, cold cuts, cheese, canned, dehydrated, or instant soup, canned vegetables, processed dinner mixes, such as Hamburger Helper)
   - fluids should be limited, depending on the physician's orders. Mr. Harris should be instructed to measure out the total amount of fluid he can drink for the day and place the water in a container. During the day, he should drink only from this container so that he can monitor the amount of fluid he has consumed.

Case 14.5 — Pelvic Organ Prolapse: Answers

1. For women older than 65 years, ACOG recommends an annual pelvic examination. However, cervical cytology may be discontinued if the woman has had three or more normal test results in a row, no abnormal test results in 10 years, no history of cervical cancer, no DES exposure in utero, is HIV negative and immunocompetent, and does not have other risk factors for STDs. The need to begin screening again should be evaluated at each annual examination (Lowry, 2009).

2. Perhaps allow the client's daughter to remain in the room to hold her mother's hand or be nearby. Rather than removing all clothes, just underpants with her skirt serving as a means of “coverage” as a sheet would normally provide. The article from Harvard Women's Health (2006) reports “researchers found that women who were allowed to keep their feet on the examining table felt significantly more comfortable than those whose feet were placed in stirrups. The study also demonstrated that it’s possible to perform pelvic exams and obtain Pap smears—important screening tests for cervical cancer—without using stirrups.”

3. A cystocele occurs when the bladder protrudes out through the vaginal vault as a result of the wall between the bladder and anterior vagina weakening. This is fairly common with women as they age; multiple vaginal deliveries can contribute to
the disorder. In addition, obesity can cause increased abdominal pressure, chronic coughing or straining at stool, and estrogen deficiency are contributing factors.

4. Symptoms may include urine leakage similar to stress incontinence when the woman sneezes, laughs, or coughs. Incomplete bladder emptying is present in some cases, as well as complaining of feeling pelvic pressure (Kelly & Osborn, 2010).

5. Nonsurgical treatments include using Kegel exercises to strengthen the pelvic floor and perineal body, use of a pessary to provide support, and/or biofeedback.

6. After fitting, the pessary should be removed on occasion to be washed with soap and water. Follow-up visits to assure proper fitting and no damage to surrounding tissue are important.

7. Oral estrogen is still highly controversial due to adverse effects; however, estrogen cream to the vaginal area may have benefits for women using a pessary as it makes the skin thicker, softer, and smoother.

8. This topic may be unfamiliar to students, however, an ethical issue which may be encountered in their nursing careers. Generally in the mental health field, gifts are discouraged other than a small token of appreciation. If the quilt is immediately given back, it may be insulting to the family, and they may not return for further health care. If the nurse keeps it, will the patient feel obligated to give a comparable item each visit? Perhaps the nurse practitioner could ask for permission to raffle the quilt with the proceeds used to buy supplies for the health center.
Case 15.1  Mealtime Difficulties: Answers

1. Multiple factors can affect nutrition in the elderly. These include the following: Sensory changes including a decline in sight and peripheral vision, hearing, smell, and taste. These could affect fear of using a stove to cook, inability to read recipes, food labels, and so forth. Loss of hearing may decrease asking questions at the grocery or a restaurant. Changes in taste and smell affect the appetite. Health restrictions in salt, sugar, or fat may deter eating if familiar, favorite foods are not allowed. Loss of lean body mass affects vital organ function and a decrease in metabolism resulting in a decline of total protein tissue. In addition, loss of lean body mass affects fluid balance as 72% of total body water is in the lean muscle tissue. Loss of bone density following menopause can be detrimental. The slowing digestive tract activities along with digestive secretions diminish markedly, although enzymes remain adequate. In addition, aging can slow the immune system’s response in making antibodies (Anderson & Prior, 2010).

2. B, C, D, and E.

3. Putting too much food in the mouth, eating too fast, swallowing without chewing, and attempting to eat nonedible items (Tonarelli, 2010).

4. Students’ answers will vary; the intention of the question was awareness of criteria to assess.

5. Mrs. Kelty will need physical assistance, continued monitoring and social stimulation with each meal, and assistance with the activities of daily living (ADLs) of dressing and bathing. These needs must be communicated and appropriately delegated among all staff involved in her care.

6. All nursing interventions listed under the environment and caregiver sections are appropriate for Mrs. Kelty (Amella, 2008).

7. “The program is based on the enjoyment of meals with friends and families. It targets individuals at risk for malnutrition, dehydration, and pressure wounds and provides them with companionship at meals. Specifically, family members and “volunteer meal companions” are trained to appropriately assist residents during meals. The program trains the volunteers on concepts such as cueing, “hand-over-hand” assistance, the “power of touch,” and the importance of pleasant conversation. Residents who receive assistance from families or companions during meals consume a larger portion of their meals and decrease their risk of malnutrition, dehydration, and pressure wounds. This supports the concept that “nursing staff,
families, and feeding companions should be an important part of the interdisciplinary team” (Speroff et al., 2005, p. 294).

8. A, C, D, and E. Alertness was not mentioned in the article, but perhaps over time this behavior could also be improved.

**Case 15.2  ▶ Oral Health: Answers**

1. The lymph nodes, tissue inside the cheek, floor and roof of mouth. In addition, the gums between teeth (or artificial teeth). Presence of saliva, condition of teeth, chewing position of pairs, and the oral cleanliness.

2. Mr. Briggs needs follow-up by a dentist immediately.

3. Lemon glycerin swabsticks can be drying to the oral mucosa and damage tooth enamel. For an older individual experiencing xerostomia, combined with decreased saliva production, erosion can be increased using them (O’Connor, 2008).

4. According to Mayo Clinic.com (2009), “Among the more likely types to cause problems are some of the drugs used to treat depression and anxiety, antihistamines, decongestants, high blood pressure medications, antidiarrheals, muscle relaxants, drugs for urinary incontinence, and Parkinson’s disease medications.”

5. According to Turner and Ship (2007), oral moisturizers and lubricants along with artificial salivas may be helpful. Chewing sugar-free gum, candies, and mints can stimulate salivary output. Two secretagogues (drugs stimulating secretions from the stomach or pancreas) are pilocarpine and cevimeline used for the treatment of xerostomia and salivary hypofunction, which have been approved by the FDA.

6. B, C, D, and E. As far as the frequency, dentures should be cleansed and oral hygiene provided every morning and evening and prn.

7. Currently, Medicare does not cover routine dental care or most dental procedures such as cleanings, fillings, tooth extractions, or dentures. Medicare will pay for a dentistry-related hospitalization, such as treating an infection following a procedure (Rondon, 2009).

8. There are numerous potential nursing diagnoses. A sampling includes the following:


**Case 15.3  ▶ Diverticular Disease: Answers**

1. Diverticula are herniations of the muscle layer of the large intestines.

2. The answer to this question is varied. Diverticulosis is the presence of diverticula that are asymptomatic or accompanied by symptoms (following) that only happen occasionally and resolve quickly or are resolved when the patient releases gas or passes stool. Diverticulitis is the presence of diverticula accompanied by symptoms
such as abdominal pain, constipation, diarrhea, and flatulence. Possible complications of diverticulitis are bleeding, abscess, or perforation of the diverticula. Perforation can lead to peritonitis, fistula, and intestinal obstruction. Symptoms are generally severe (National Digestive Diseases Information Clearinghouse, 2007).

3. Based on the symptoms that Mr. Shepherd reports, he is likely in the category of diverticulosis but the problem merits attention.

4. Several sources indicate that diverticular disease is common among the elderly, reporting incidence of 65% in patients over 65 years old (Bogardus, 2006).

5. The predominant theory is that diets low in fiber can lead to diverticular disease. This is based upon the prevalence of diverticular disease in developed/industrialized countries. The theory is that lack of fiber in the diet can lead to constipation and increased colonic pressures which in turn can lead to weakening of the muscularis layers of the colon (Rafferty, 2010).

6. Mr. Shepherd could benefit from increasing fiber intake. Instead of cornflakes in the morning, he might choose to have a higher fiber cereal choice, such as oatmeal and add fresh fruits and vegetables to snack off during the day. Evidence indicates that diets higher in fiber, particularly fruit and vegetable fiber, can reduce symptoms of diverticular disease (Eglash & Lane, 2006).

7. One randomized control trial assessed 168 people with uncomplicated diverticular disease and found that dietary fiber supplementation, Glucomannan, 2 g per day plus treatment with oral antibiotics, Xifaxan (Rifaximin), 400 mg twice daily for 7 days per month significantly increased the proportion of patients reporting no symptoms or decreased symptoms of diverticular disease when compared with fiber supplementation alone (Simpson & Spiller, 2004).

8. In addition to the symptoms already noted, cramping and change in bowel habits; Mr. Shepherd should contact his health care provider if he experiences nausea, vomiting, fever, chills and/or signs of blood in the stools (National Digestive Diseases Information Clearinghouse, 2008).

9. Surgery for diverticulitis might be indicated if a patient does not respond to antibiotics and has recurrent episodes of diverticulitis. In acute conditions, surgery might be indicated when the patient has complications such as perforation, intestinal obstruction or severe bleeding (National Digestive Diseases Information Clearinghouse, 2007).

**Case 15.4  Chronic Constipation: Answers**

1. Constipation is defined as infrequent (three or less per week) bowel movements resulting in a hardened or reduced caliber of stool with a sensation of incomplete evacuation or the need to strain with bowel movements (Gutierrez, 2008; Tabloski, 2010).

2. Answer C: Dehydration and cognitive impairment.

3. Additional causes of constipation are as follows:
   - immobility
   - side effect of medications
• diet (insufficient fiber intake)
• coexisting medical illness (Alzheimer’s, hernias, metabolic/endocrine disorder, neurologic disorders/injury, muscular dystrophy, Parkinson’s, cerebrovascular accident, surgical adhesions, and/or abdominal surgery)
• obstructive disorders (e.g., tumor)
4. Medications known to cause constipation are as follows:
• ACE inhibitors
• aluminum containing antacids
• antiarrhythmia medications
• anticholinergics/antihistamines
• antidepressants
• antispasmodics
• antiparkinsonian agents
• antipsychotics
• benzodiazepines
• beta-blockers
• calcium channel blockers
• calcium supplements
• diuretics
• iron sulfate
• muscle relaxants
• neuroleptics
• opiates
5. Complications of chronic constipation are as follows:
1. Fecal impaction that may result in intestinal obstruction, colonic ulceration, incontinence leakage of stool around the impaction, and an over compensated shift to diarrhea (Tabloski, 2010)
2. Excessive straining may result in increased risk of syncope/stroke, hemorrhoids, rectal prolapse, fissures, tears, and subsequent risk of infection
3. Megacolon (abnormal dilation of the colon)
4. Generalized symptoms of abdominal discomfort, rectal pain, bloating, distension, loss of appetite, nausea, or vomiting
6. Treatments for constipation can be dietary approaches, behavioral changes, medication reviews for causative factors, and enemas and/or laxatives.
7. She explains exercise, which strongly stimulates defecation and helps strengthen the abdominal muscles, can aid in defecation. She also recommends bowel training, explaining that patients with constipation should attempt to move their bowels early in the morning, particularly after breakfast, when colonic motor activity is at the highest (Merck, 2009). The nurse describes dietary changes George can make such as the following:
Increasing his fiber, fluid intake, and increasing foods into his diet that are natural laxatives (e.g., licorice/anise seeds, avocados, almonds, dates, figs, mangos,
olives, pineapple, prunes, flaxseed, turnips, soybeans, walnuts, or watercress), or promoting intestinal equilibrium (e.g., yogurt), as long as they are not contraindicated due to dietary restrictions (diabetic) or coexisting irritable bowel syndrome, or diverticulosis/itis. Geneva, RN, also recommends reducing the intake of red meats, dairy, and high processed foods.

8. Recommendations for further management of George’s constipation with MOM should include the following:
   • take the medication with 8 oz of water
   • establish a clear plan for fluid and dietary intake
   • make sure his MOM is taken at the same time every other day, results usually occur within 3–6 hours, so stools can be predictable after initial dosing
   • make sure this medication is not taken within 2 hours of other medications unless recommended by his nurse practitioner, because it can interfere with absorption of other medications

Case 15.5 Hiatal Hernia: Answers

1. Age 50 or older, obese, and smokers.
2. Up to 70% of individuals who are 70 years or older will develop a hiatal hernia. Factors that may predispose the aged include muscle weakening and a loss of elasticity. The gastric cardia may not return to the original position below the diaphragmatic hiatus (Thomas & Sutton, 2010, p. 1385).
3. • Obesity (BMI 44.0)
   • Smoking history
   • Dietary habits (large meals)
   • History of hiatal hernia
   • Complaints of regurgitation, sore throat, cough, and sour taste in mouth
   • Abdominal obesity; wearing tight clothing
4. Avoid foods and beverages that can trigger GERD. Some foods weaken the lower esophageal sphincter (LES). They include alcohol, coffee, tea, cola drinks, and other beverages containing caffeine, carbonated beverages, chocolate, citrus fruits and juices, tomatoes and tomato sauces, and spicy foods.
5. • Eat smaller meals. A full stomach puts extra pressure on the LES, increasing the chances that food will reflux into the esophagus.
   • Lose weight. Obesity increases abdominal pressure, which can push stomach contents up into the esophagus.
   • Stop smoking. Chemicals in cigarette smoke weaken the LES.
   • Sleep with the head raised. Sleeping with the head higher than the stomach reduces the pressure at which partially digested food in the stomach presses on the LES. If Mr. Lynch cannot tolerate two pillows, he can try placing books, bricks, or blocks securely under the legs at the head of the bed. He could also use a foam wedge extending from buttocks to head to provide elevation.
• Avoid eating within 2 hours of bedtime. Lying down with a full stomach results in stomach contents pressing harder against the LES; this can cause food to reflux.

• Avoid tight-fitting belts or clothes around the waist. They compress the stomach and may force food to reflux into the esophagus.

• Avoid bending over or stooping after meals. Lift objects by keeping the upper part of the body straight and bend the knees.

6. Severe GERD that continues for years without proper treatment can damage the esophagus and result in serious health problems like dysphagia (difficulty swallowing) that is due to the strictures and narrowing that obstructs the esophagus. When swallowing food, especially meat, individuals with strictures (narrowing of the esophagus) may feel that food is catching in the esophagus. Esophageal strictures develop in about 10% of individuals with gastroesophageal reflux disease.

7. An endoscope can be used to place an uninflated balloon into the opening of the stricture. The balloon is then inflated to open the stricture and restore the lumen of the esophagus. Surgical instruments called dilators can be inserted into the esophagus from the mouth to open the stricture. The doctor starts with small dilators, and uses larger ones until the stricture has been opened.

8. Dilation (stretching) of the esophagus is the preferred treatment.

• Repeated dilation may be necessary to prevent the stricture from returning.

• Proton pump inhibitors (acid-blocking medicines) can keep a peptic stricture from returning.

• The patient may develop the stricture again in the future.

• Swallowing difficulties may keep the patient from getting enough fluids and nutrients.

• There is also an increased risk (with regurgitation) of having food, fluid, or vomit enter the lungs and cause choking or aspiration pneumonia.

9. Continue to eat smaller meals. Lose more weight. Stop smoking. Continue to elevate the head of the bed and no late p.m. meals.

Case 15.6  Hydration Management: Answers

1. With increased age, thirst perception is decreased and the homeostatic mechanisms that regulate osmolality function less effectively (Mentes, 2008).
   Gastroenteritis with vomiting and diarrhea contribute to fluid loss, acid base imbalance, and electrolyte imbalance.
   Impaired mobility from arthritis may make getting fluids more difficult and trips to the bathroom more taxing.
   Living alone increases the difficulty of obtaining fluids when ill and increases risk that medical help will not be obtained promptly.
   Not driving while living alone increases the difficulty in obtaining electrolyte replacement fluids and medical attention. Living on limited income also contributes to this.
Diuretic use may compound fluid losses.
Confusion may contribute to poor decision making about intake and seeking medical help.

2. BP and HR should be evaluated lying, sitting, and standing to assess for postural changes. Neck veins should be evaluated. Dizziness on position change should be evaluated, as it may pose a safety risk. Mucus membranes should be assessed for dryness. Skin turgor should be assessed over the sternum, as skin turgor in exposed areas of the body is poorly indicative of fluid status. Abdomen should be assessed for activity of bowel sounds and tenderness to palpation. Urine output and specific gravity (or osmolality) should be determined. Serum electrolytes should be determined (Mulvey, 2010).

3. Mild elevation of temperature is a symptom of fluid volume deficit. Her WBC count does not indicate infection, and most cases of gastroenteritis are nonbacterial and self-limiting.

4. Vomiting and diarrhea lead to extracellular fluid volume deficit. Diuretic therapy with furosemide is a risk for hypokalemia, because it causes loss of potassium in the urine. Both vomiting and diarrhea also contribute to hypokalemia. The diarrhea seen with gastroenteritis may be osmotic diarrhea, in which large quantities of water, sodium, and potassium are lost. It can lead to rapid fluid, potassium, and sodium depletion. Hypokalemia is a laboratory diagnosis with findings of K+ less than 3.5 mEq/L. Signs and symptoms include neuromuscular weakness and cardiac dysrhythmias (Sartin, 2005).

   Hyponatremia occurs when there has been excess loss of sodium. It can occur after vomiting but does not typically follow diarrhea. Hyponatremia is indicated by serum sodium of less than 135 mEq/L. Signs and symptoms of the hypovolemic hyponatremic individual include decreased urine output and cardiovascular collapse.

   Hypernatremia indicates water deficit. Use of furosemide can contribute to water loss in excess of sodium loss. Osmotic diarrhea can lead to rapid hypernatremia. Hypernatremia is a laboratory diagnosis evidenced by serum sodium greater than 145 mEq/L. Signs and symptoms include confusion and poor skin turgor. Stomach contents are rich in H+ ions, and vomiting can lead to metabolic alkalosis through loss of this acid. Alternately, intestinal fluids are usually high in bicarbonate ions; diarrhea can lead to metabolic acidosis because of loss of bicarbonate. Which condition a patient develops depends on the relative severity of the vomiting and diarrhea, although metabolic acidosis is more commonly seen in chronic diarrhea than acute diarrhea. It is important that acid-base balance be evaluated at baseline and as treatment progresses.

   Metabolic alkalosis is indicated by an arterial blood pH of greater than 7.45 with HCO3− over 26 mEq/L. Clinical manifestations include apathy, confusion, weakness, dizziness, muscle cramps, and slow shallow breathing.

   Metabolic acidosis is indicated by an arterial blood pH of less than 7.35 with HCO3− less than 22 mEq/L. Clinical manifestations include deep rapid breathing and confusion.

5. Stand patient slowly, since she is likely to have postural hypotension and dizziness, which can lead to fall risk. Give frequent, thorough mouth care, since the foul taste of the mouth that accompanies dehydration is unpleasant and can contribute to
anorexia. Offer fluids of choice frequently and encourage intake even if only a few sips. Offer the toilet frequently, since she may be inattentive of the need to void or pass stool due to mild confusion. Monitor skin condition carefully, since dehydration is an important risk factor for skin breakdown. Particular attention should be given to perineal hygiene, since the perianal area may be raw from diarrhea, and diarrhea may contribute to development of a urinary tract infection. Since she has arthritis of the knees and is weak, use of a bedside commode may be less taxing on her than going to the bathroom.

6. Since older patients’ hearts may not be able to handle a sudden increase in vascular volume, the nurse should assess for signs of fluid overload frequently, including urine output, vital signs, and lung sounds. It is particularly important to evaluate adequacy of urine output when IV fluids containing K+ are administered, to avoid hyperkalemia. The nurse should also assess the IV site frequently for placement, patency, and irritation since K+ is irritating to veins and can damage tissues if infiltration and extravasations occur. This is particularly a risk in older patients with fragile veins, and in patients with confusion, IV fluids containing potassium should be controlled by an automatic infusion control device. Serum electrolytes should be monitored to evaluate adequacy of fluid replacement.

7. Use of an indwelling catheter would have the advantage of being convenient for the nursing staff, because it would decrease the need to change linens or to get Mrs. Williams out of bed to go to the toilet. Use of an indwelling catheter would also allow more precise monitoring of output and facilitate collection of urine specimens for U/A. However, an indwelling catheter would dramatically increase Mrs. Williams’ risk of development of a urinary tract infection. It might also distress or agitate her, leading to possible need for restraints. Use of an indwelling catheter for several days may impair Mrs. Williams’ ability to be continent following removal of the catheter.

8. Mrs. Williams’ electrolytes should be repeated. Her weight should be taken again, as her weight on admission reflected fluid loss: each liter of unreplaced fluid loss will result in approximately a kilogram of weight loss. Her CBC should also be repeated, since her “normal” hemoglobin and hematocrit on admission may have been the result of hemoconcentration, and she may actually be anemic, contributing to her fatigue. Her creatinine level should be evaluated to determine whether she has experienced renal damage. Her mental status should be reevaluated to see whether her confusion resolves with restoration of fluid and electrolyte balance.

9. Many patients fear abandonment, of being a burden, loss of dignity, and loss of control. Caregivers might provide emotional comfort by keeping the person company (talking, watching TV or movies, reading, or just being there); allowing the person to express fears and anxieties about dying; listening; reminiscing; avoiding withholding information or excluding person from discussions about issues that concern them; reassuring the person that you will honor their advanced directives and goals of care; asking whether there is anything you can do; and respecting the person’s privacy.

10. Arguments supporting hydration at end-of-life:
    • Provides a basic human need and comfort.
    • Prevents uncomfortable symptoms: confusion, agitation, thirst, nausea, vomiting, and muscle cramps.
• Prevents complications, for example, neurotoxicity with high-dose narcotics.
• Does not prolong life to any meaningful degree.
• Allows providers to continue their efforts to find ways to improve comfort and life quality, despite the perception of a poor quality of life.
• Provides minimum standards of care; not doing so would break a bond with the patient.
• May set a precedent to withhold therapies from other patients who are compromised.

Arguments against hydration at end-of-life:
• Interferes with acceptance of the terminal condition.
• Intravenous therapy is painful and intrusive.
• Prolongs suffering and the dying process.
• Unnecessary since unconscious patients do not experience uncomfortable symptoms, such as pain or thirst.
• Less urine output means less need for bed pan, urinal, commode, or catheter.
• Less fluid in the GI tract and less vomiting.
• Less pulmonary secretions and less cough, choking, and congestion.
• Minimizes edema and ascites.
• Ketones and other metabolic by-products in dehydration act as natural anesthetics for the CNS, causing decreased levels of consciousness and decreased suffering (Dalal & Bruera, 2004).

11. Peripheral intravenous complications: pain, short duration of access, infection, phlebitis.
Central intravenous complications: sepsis, hemothorax, pneumothorax, central vein thrombosis, air embolus, brachial plexus injury, arterial laceration.
Subcutaneous hypodermoclysis complications: pain, infection, third spacing, tissue sloughing, local bleeding (Schaffner, Kedziera, & Coyle, 2010).


Case 16.1 Chemotherapy and the Aged: Answers

1. Wear personal protective equipment (PPE) during administration, such as disposable, long-sleeved gown made of lint-free, low-permeability fabric with knitted or elastic cuffs and a closed front, and good-quality disposable gloves long enough to tuck over the cuffs of the gown. Follow the institution’s guidelines for safe administration, and refer to the Occupational Safety and Health Administration (OSHA) and the Oncology Nursing Society for protective standards and practice guidelines.

2. 5-fluorouracil (Adrucil): Antimetabolite. This drug closely resembles normal metabolites and “fools” cancer cells into using the antimetabolites in cellular reactions. The antimetabolites cannot function properly for cellular reactions and, as a result, their presence interferes with cellular division.

Doxorubicin (Adriamycin): Antitumor Antibiotics-Anthracyclines. This drug interferes with RNA and DNA synthesis.

Cyclophosphamide (Cytoxan): Alkylating-Nonplatin. This drug interferes with DNA replication through cross linking of DNA strands, DNA strand breaking, and abnormal base pairing of proteins.

3. Cancer takes decades to develop and thus appears in those who have lived a long time, those who have aged have been exposed longer to environmental carcinogens, and/or have comorbid conditions.

4. "Nadir" is a term which reflects the lowest point of white blood cell depression after therapy that has toxic effects on the bone marrow.

5. Bone marrow suppression, which results in decreases to the white blood cell count, red blood cell count, and platelet count. Gastrointestinal (stomach and intestinal) problems, such as nausea, vomiting, diarrhea, and dehydration. Cardiac toxicity, demonstrated by abnormalities in heart function; pumping capacity and rhythm. In addition, neurotoxicity which manifests as fatigue, worsening dementia (decline in mental abilities, such as thinking or judgment), and memory loss. Screening for any problems before starting treatment and adjusting the dose of type of drug during treatment can minimize these side effects. The older adult is more likely to be taking multiple medications for other conditions, known as polypharmacy, which increases the probability of interaction between chemotherapy and other drugs. Knowing every medication, prescribed and over-the-counter, along with herbal and vitamin supplements is of necessity (Cancer.net, 2008).

6. African American women who get breast cancer are more likely to die from the disease than caucasian women and are less likely to survive for 5 years after diagnosis. Studies suggest that this disparity is due to African American women being...
CASE 16.2: COLORECTAL CANCER: ANSWERS

7. Primary chemotherapy will affect the oral cavity of 40% of clients (National Cancer Institute, 2009). The most common oral complications related to cancer therapies are mucositis, infection, salivary gland dysfunction (resulting in dry mouth), taste dysfunction, and pain. These complications can lead to secondary complications such as dehydration, persistent abnormal taste reducing appetite, and malnutrition. In myelosuppressed cancer patients, the oral cavity can also be a source of systemic infection. Severe oral toxicities can compromise delivery of optimal cancer therapy. The client may have a dose reduction or delay in their treatment schedule due to healing of oral lesions.

8. These symptoms could be due to bone marrow depression, altered nutrition, or leukopenia. This patient should be assessed during chemotherapy for evidence of stomatitis, renal and hepatic abnormalities, and symptoms of infection. Decreased RBCs (anemia) and platelets (thrombocytopenia) may cause the client to feel fatigued and may also cause hypoxia and an increased tendency to bleed. If this patient is diagnosed as having thrombocytopenia, the nurse should assess for hematuria, hematemesis, and ecchymosis. Clients and family members should be taught measures to prevent bleeding and what to do if bleeding should occur while at home. The decreased WBCs, or neutropenia, place the client at an extreme risk for infection. For protection against infection, practice good hand washing before any contact with this client. Aseptic technique should be used when performing any invasive procedure. Teach the client measures of reducing the risk of infection while at home.

9. Because the staff possibly ignored the patient’s pain, which could have been controlled, and the staff were practicing in an environment rich with information about treating pain aggressively and attentively, the staff were found to be negligent, which accounts for elder abuse. Based on the information provided, either the staff was ignorant of the patient’s right to pain relief, or these knew the patient’s rights and chose to ignore them.

Case 16.2  ■  Colorectal Cancer: Answers

1. Students’ answers may vary based on the source. Colorectal cancer is the third most common malignancy in both men and women with an estimated 150,000 new cases diagnosed each year (Brophy & Ignatavicius, 2010, p. 1294).

2. Common risk factors for the patient include age, overweight, alcohol use, and possibly red meat consumption. Otherwise, there is a genetic link and those with inflammatory bowel disease history are at higher risk.

3. The USPSTF recommends screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy, or colonoscopy in adults, beginning at age 50 years and continuing until age 75 years (from the U.S. Preventive Services Task Force, Agency for Healthcare Research and Quality, 2008).
4. Virtual colonoscopy is a technique that uses a computerized tomographic (CT) scan for a three-dimensional video to construct virtual images of the colon that are similar to the views of the colon obtained by direct observation by optical colonoscopy. According to physician Dr. Lee (2007, p. 2):

“Virtual colonoscopy is less invasive and faster to perform than optical colonoscopy and does not require conscious sedation. Even though virtual colonoscopy is less invasive than optical colonoscopy, virtual colonoscopy still involves injecting air into the colon, which can be uncomfortable for some patients. On the other hand, with adequate conscious sedation, patients usually experience little or no discomfort with optical colonoscopy. Virtual colonoscopy is not as reliable as optical colonoscopy in detecting small polyps (less than 5 mm in size). Even though most experts believe that polyps smaller than 5 mm are usually benign, some small polyps can be cancerous or become cancerous if not removed. Virtual colonoscopy is not as accurate as colonoscopy in finding flat cancers or polyps that are not protruding, that is, are not polyp-like. Virtual colonoscopy cannot remove polyps. If polyps are found by virtual colonoscopy, then optical colonoscopy must be performed to remove the polyps. Therefore, many individuals having virtual colonoscopy will have to undergo a second procedure, optical colonoscopy.”

5. Some types of testing have no restrictions. Others suggest avoiding aspirin or any type of nonsteroidal anti-inflammatory (NSAID) product, along with vitamin C and red meat 48 hours prior to giving a stool specimen (Brophy & Ignatavicius, 2010).

6. Dehydration. Receiving IV fluids before and during the procedure and returning to a regular diet afterwards is often sufficient to avoid complications.

7. No. The surgical term “anastomosis” indicates rejoining of the sections of the colon where the tumor and tissue were removed.

8. T2: The cancer has grown through the submucosa and extends into the muscularis propria (thick outer muscle layer). N1a represents: Cancer cells are found in 1 nearby lymph node with M0 meaning no metastasis.

9. Anticipated nursing diagnoses include the following:
   - Deficient knowledge
   - Powerlessness
   - Fear
   - Anxiety
   - Ineffective coping
   - Acute Pain
   - Disturbed Body Image
   - Anticipatory Grieving

10. The hospital stay can be as short as 3 days versus 6, less pain medication needed, much less incision required, and perhaps an hour and a half procedure time versus two and a half with open procedure (Minimally invasive colon surgery, 2010). For many years, 5-FU and Leucovorin were the primary chemotherapy drugs used for adjuvant chemotherapy. With the addition of Oxaliplatin (Eloxatin), survivor rates have improved.

11. For many years, 5-FU and Leucovorin were the primary chemotherapy drugs used for adjuvant chemotherapy. With the addition of Oxaliplatin (Eloxatin), survivor rates have improved.

12. The authors emphasize the need for careful assessment of functional status, presence of comorbidities, and scrutinizing the likelihood of relapse in relation to life expectancy. The elderly can tolerate chemotherapy equally as well as a younger person in many situations; however, this group has been studied minimally in clinical trials; a definite need with the aging of America.
Case 16.3  HIV/AIDS: Answers

1. The most recent statistics are from 2005. The Center for Disease Control and Prevention reports the number of people between ages 55 and 64 of age living with AIDS more than doubled from the 5-year reporting period prior. The intention of the question was to increase awareness how widespread, and growing, this infection has become among the older population. With HIV positive individuals living longer due to medication regimes, in addition to the aging of America, the statistics will likely continue to climb.

2. Taken directly from the National Institute on Aging (2009):
   Older Americans know less about HIV/AIDS than younger people do. They do not always know how it spreads or the importance of using condoms, not sharing needles, getting tested for HIV, and talking about it with their doctor.
   Health care workers and educators often do not talk with middle-aged and older people about HIV/AIDS prevention.

3. Health care personnel do not think about testing.
   People may mistake symptoms as part of normal aging.
   Embarrassment, shame, fear.
   Older people may live with HIV for years and not be tested until converting to AIDS.

4. “HAART is the name given to aggressive treatment regimens used to suppress HIV viral replication and the progression of HIV disease. The usual HAART regimen combines three or more different drugs such as two nucleoside reverse transcriptase inhibitors (NRTIs) and a protease inhibitor (PI), two NRTIs and a non-nucleoside reverse transcriptase inhibitor (NNRTI) or other such combinations. These HAART regimens have proven to reduce the amount of active virus and in some cases can lower the number of active virus until it is undetectable by current blood testing techniques” (Cichocki, 2009).

5. With AIDS related dementia, the obvious cause is viral; Alzheimer’s is associated with aging. Anti-viral drug therapy can slow or reduce cognitive, behavioral or physical decline with AIDS, while antidepressants and neuroleptics would be used for Alzheimer’s.

6. The highest comorbidity was depression at 52%.

7. The recommendations specify routine testing for persons up to age 64. If those over age 64 are assessed to have risk factors, counseling and HIV testing should be made available. Making testing routine for older persons can help facilitate communication as well as lessen the stigma of being sexually active. Other preventive strategies include . . . “education to increase awareness and knowledge, skills training to help them negotiate risk-reduction behaviors, and messages that are age-appropriate and culturally sensitive. Intervention strategies to help older women negotiate safer sexual behavior are especially important” (Center for Disease Control and Prevention [CDC], 2008).

8. Students’ answers will vary based on locality. For the author’s residence, in the state of Indiana, it is a felony for an HIV-positive person to engage in high-risk behavior that deliberately exposes another person to the virus. Confidential and anonymous HIV testing is provided.
**Case 16.4  Hospice Care: Answers**

1. • Hospice is a philosophy of care. The hospice philosophy or viewpoint accepts death as the final stage of life.
   • Hospice affirms life and does not hasten or postpone death.
   • A goal of hospice is to ensure that individual patients are free of symptoms and are able to die with dignity. Promotion of quality of life and allowing death with dignity while living each day as fully as possible is the goal of care.
   • Provision of care is directed by the needs, choices, and values of the patient as well as the family.
   • Care is provided not just to the terminally ill patient; families and significant others (including neighbors and friends) may also receive support, education, guidance, and bereavement care. Hospice care is family-centered care—it involves the patient and the family in the plan of care.

2. • Referrals for hospice care can be initiated by anyone who is interested in this type of care. In the past, physician referrals were the most common source of referrals. Discharge planners, nurses, social workers, and other members of the health care team can also contact the hospice agency. In many areas of the country and for many patients, self-referrals are becoming commonplace. It is important to know that individuals as well as families are permitted to request services for themselves. This is becoming a more common occurrence as the hospice movement continues to grow in the United States. As a nurse, you need to be aware of services available in your community and be able to make appropriate referrals as necessary in an effort to assist your patients interested in hospice care.

3. • Hospice care is provided by a specially trained team that cares for the “whole person,” including his or her physical, emotional, social, and spiritual needs. Among its major responsibilities, the interdisciplinary hospice team:
   • Manages the person's pain and symptoms
   • Provides emotional support
   • Provides needed medications, medical supplies, and equipment
   • Teaches significant others how to provide hands on care
   • Provides grief and bereavement support to loved ones and friends

Specific team member responsibilities:

- **Physician:** The physician providing care may be a hospice physician or the patient's own doctor. On admission, it is important to determine the role of the patient's primary physician. It is at this time that the patient can choose to have their own physician continue providing their care or accept services of the hospice medical director and their team.

- **Nurses:** Admission nurses complete referrals; team nurses provide care on a 24-hour basis by making home visits or being on-call to assist with symptom management, provide hands on care for physical, emotional, or spiritual needs of the patient and family.

- **Home Health Aides:** Provide direct hands on care based on a plan of care developed by the nurse.
• Clergy may include the patient’s own clergy or a clergy member employed by hospice to provide spiritual care.
• Social workers perform social assessments, provide social or financial counseling, and assist the patient to meet their goals at the end-of-life.
• Trained volunteers provide support and assistance on an individual basis.
• Art, music, and massage therapists provide symptom control as needed.
• Pharmacists provide education and support to members of the health care team, patients, and families.
• Speech, physical, and occupational therapists provide care to promote comfort and quality of life.

4. Jane understands that to be considered for the hospice benefit, two doctors need to diagnose her as being terminally ill. Jane understands that the life expectancy to be admitted to the hospice program is 6 months, but she wants to live for another year to be able to see her granddaughter get married. She would like the benefits that hospice provides, but she is fearful that this is not the right time to begin hospice care. Describe the Medicare benefit periods to Jane, and services that are provided.

   It is important for Jane to understand that she can live for more than 6 months and still maintain care provided by the hospice team. When it is determined that a patient is terminally ill, they can be admitted to a hospice program. Hospice care is provided in periods of care. Patients can receive hospice care for two 90-day periods followed by an unlimited number of 60-day periods. At the start of each period of care, the hospice medical director or other hospice doctor must recertify that the patient is terminally ill. Medicare covers the following hospice services for your terminal illness and related conditions:
• Doctor services
• Nursing care
• Medical equipment (such as wheelchairs or walkers)
• Medical supplies (such as bandages and catheters)
• Drugs for symptom control or pain relief (may need to pay a small copayment)
• Hospice aide and homemaker services
• Physical and occupational therapy
• Speech-language pathology services
• Social worker services
• Dietary counseling
• Grief and loss counseling for you and your family
• Short-term inpatient care (for pain and symptom management)
• Short-term respite care (may need to pay a small copayment)
• Any other Medicare-covered services needed to manage your pain and other symptoms, as recommended by your hospice team.

5. The most common symptoms patients experience at the end of life include pain, shortness of breath or dyspnea, anorexia and cachexia, fatigue, constipation, diarrhea, depression, anxiety, nausea and vomiting, and cough.
• The National Consensus Project Clinical Practice Guidelines for Quality Palliative Care include a domain that is focused on physical aspects of care based upon the best available evidence. National Consensus Project Web site www.national-consensusproject.org.

6. • It is essential that the hospice nurse assess Jane's prior knowledge of hospice care and pain management techniques utilized in end-of-life care. As a nurse, you would next assess Jane's fear of pain, and the statement she made about "how she is going to die." If she is comfortable discussing her disease and current condition, you can discuss disease progression. Many people have a need to understand what is going to occur during this time. It is also important to teach Jane about measures that will be utilized to decrease pain while letting her know that every measure will be taken to decrease her level of pain while promoting quality of life. The goal of hospice is to promote comfort while maintaining personal dignity and independence.

7. • Research has demonstrated that many people feel that if they accept hospice services, they are “giving up” and nothing else can be done. It is important to inform Jane and her family that hospice promotes quality of life and patients and families can benefit from hospice services provided even if the patient is not actively dying.

• Patients are often not admitted to a hospice program in enough time for their end of life goals to be supported by the hospice interdisciplinary team. Sometimes doctors, patients, or family members will refuse hospice because they think it means giving up, or that there's no hope. This is not always true. If Jane’s condition would improve or her health status does not decline, discharge from hospice services may occur. Jane could then return to active treatment focused on cure. In addition, Jane could be readmitted to hospice at a later date if her condition warrants.

• In addition, Jane may actually have an improved quality of life as her symptoms are being controlled with assistance of members of a health care team who are knowledgeable in symptom management.

• The nurse also needs to consider that the choice to enroll in a hospice care program is deeply personal. It depends almost as much on the patient's philosophy of living and spiritual beliefs as it does on his or her physical condition and the concerns of family members (Hospice Care, n.d.).

• Decision-making capacity should be assessed prior to the decision being made to accept or deny hospice services. If Jane is able to make her own decisions and follow through with the decision once it has been made, then she should be the one to make her own decision.

• Once the health care team has determined that Jane is competent to make her own decisions, the decision to accept or reject hospice services should be her own to make. The hospice team then has the responsibility to advocate for Jane as she begins hospice care ensuring that her choices are being complied with and that her needs are being met. Education and support are necessary for the family as they begin to adjust to the decision that Jane has made.
Case 17.1  Acute Confusion (Delirium): Answers

1. Delirium is a syndrome that can manifest itself in multiple ways, but it is always acute in onset and affects attention, cognition, and level of consciousness. There is a change in the level of consciousness of the patient with some patients exhibiting a hyper-alert state and others a decreased level of alertness. It is not uncommon for the delirious patient to experience visual hallucinations and psychomotor changes (either retardation or agitation).

2. The prevalence of delirium among hospitalized patients is frighteningly high. Thirty to forty percent of older adults who are hospitalized will experience an episode of delirium. The risk of developing delirium is even higher for patients who have surgery or are admitted to the intensive care unit. Patients who develop sepsis or are ventilator-dependent are at greatest risk for the development of delirium.

3. Advanced age and preexisting dementia pose the greatest risk for the development of delirium, but there are numerous other risk factors as well. Alcohol and tobacco abuse, depression, functional limitations, pain, renal disease, vision and hearing deficits, hypoalbuminemia, and polypharmacy are risk factors for the development of delirium. Sara’s age and preexisting dementia and her use of a beta-blocker put her at risk. If her depression is not adequately managed with Celexa, this would create increased risk, as well. Vascular surgery and hip surgery appear to put patients at exceptionally high risk for the development of delirium. It will be important to optimally manage her pain after surgery.

4. Anesthesia used during surgery can reduce the cardiac output and reduce the blood flow to the brain. Certain cerebral structures are very susceptible to hypoxic damage. Hypoxia triggers an inflammatory response, which causes cytokines to stimulate the release of neurotoxins which trigger delirium. The adrenal cortex releases glucocorticoids in response to this surgically-induced stress, which exacerbates the delirium. Neurotransmitter release by neurons is impacted by hypoxia, as well. The excitatory neurotransmitter, glutamate, is released in excess. This increases the oxygen requirements of the neighboring neurons in the brain and contributes to disorganized thought. Dopamine levels are also elevated with hypoxic damage, and dopamine contributes to the problems created by high levels of glutamate.

5. Older adults often develop an irreversible loss in functional and cognitive status as a result of a delirium. In fact, if an older adult develops a delirium, he or she will ultimately develop an irreversible, persistent loss of cognitive and functional status.
6. Delirium poses a risk for patients both during the acute hospitalization and afterwards. At least one quarter of patients who develop delirium in the hospital will die within 6 months. Patients with delirium are more apt to be admitted to the ICU and will require more ventilator days than patients without delirium. These patients have significantly longer hospital stays and are more likely to require long-term care placement after discharge.

7. Multiple strategies for minimizing risk factors and for providing a therapeutic environment are provided in the guidelines as means of reducing delirium.

8. The tool is used to determine whether the disease course has been fluctuating and acute in onset and whether the patient is inattentive. The nurse also assesses the patient for disorganized thinking and altered mental status. Conditions of inattentiveness, acute onset, and fluctuating course as well as either disorganized thinking or altered mental status must be met to diagnose delirium.

9. Benzodiazepines, H2 blockers, Beta-blockers, Antihistamines, Antiemetics

10. The GDS is a 15-item scale of yes/no questions that are categorized based on whether an affirmative or negative response is consistent with depression. The numbers of answers that favor depression are added and scores above five are consistent with depression.

    The Mini-Cog is a two-part test consisting of a three-item recall and a clock drawing section. Scoring is based on the number of items recalled after the patient has drawn a clock and on the quality of the clock drawing.

    The Trails B requires that the patient match letters A, B, C . . . with corresponding numbers 1, 2, 3 and is scored based on the time it takes the patient to complete the task.

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Case 17.2  Early Dementia: Answers

1. According to the Alzheimer’s Foundation Web site, Claudine is experiencing Stage 3: Mild cognitive decline (early-stage Alzheimer’s).

2. a. Fletcher (2008) describes dementia as:

   “A clinical syndrome of cognitive deficits that involves both memory impairments and a disturbance in at least one other area of cognition (e.g., aphasia, apraxia, agnosia) and disturbance in executive functioning.”

   • In addition to disruptions in cognition, dementias are commonly associated with changes in function and behavior.

   • The most common forms of progressive dementia are Alzheimer’s disease, vascular dementia, and dementia with Lewy bodies; the pathophysiology for each is poorly understood.

   • Differential diagnosis of dementing conditions is complicated by the fact that concurrent disease states (e.g., comorbidities) often coexist.

b. According to Fletcher (2008), the prevalence includes the following:

   • Dementia affects about 5% of individuals aged 65 and older.

   • Four to five million Americans have Alzheimer’s disease (AD)
• 13.2 million are projected to have AD by 2050.
• Global prevalence of dementia is about 24.3 million, with 6 million new cases every year.

(3) Mayo Clinic at http://www.mayoclinic.com/health/alzheimers-disease/DS00161

4. Memory changes, problems in planning, problems with completing typical tasks, confusion about the time of day or place, visual problems, difficulty with word retrieval or understanding, losing things, poor judgment, social withdrawal, personality changes, or mood changes.

5. According to the Alzheimer's Association, no one “type” of practitioner is best for diagnosing Alzheimer's disease. The Alzheimer's Association can help a person find a local practitioner to start the process. Or, a family might choose to visit their regular physician/practitioner. A general medical practitioner might refer Claudine to a psychiatrist, a neurologist, or a psychologist for further examination, diagnosis, and treatment.

6. According to the Alzheimer's Association, treatments for cognitive symptoms include various cholinesterase inhibitors and memantine, and treatments for behavioral symptoms: either medication or other approaches. Students might discover others from reputable Web sites.

7. Respite care can actually help care providers to continue taking care of their family member suffering from the disease. Many groups provide respite services for families of persons with Alzheimer's disease. The most common respite services are in-home care and adult day care, but for this family and their current needs regarding the wedding, in-home or residential respite care may be the best options.

8. Adult day care centers provide caregivers the chance to take a break from their caregiving responsibilities. The hours a person with Alzheimer's disease spends at a day care center allows the caregiver to get a haircut, to run other errands, or to rest. By virtue of these breaks, the caregiver may be refreshed and better able to provide care for their loved one. The day care center also provides a safe environment to engage in social activities with others.

9. The family needs to examine this issue carefully as it may be a question of safety for Claudine. They may need to get advice from Claudine's primary health care provider about this and must be aware that a decision made about this issue today may need to be reconsidered tomorrow, next month, or in the near future based on the progression of the disease. Three questions to consider are as follows:
   (1) Does Claudine become confused and/or unpredictable when she is under stress?
   (2) Would Claudine know when and how to get help in an emergency situation?
   (3) Does Claudine wander and sometimes lose her way, becoming disoriented?

10. In a home's entryway, it is important to: (1) remove throw rugs to minimize opportunities for slipping and falling in the area and (2) install texturized strips to slippery hardwood or tile entryway floors, again to minimize risk of falling.
11. Students are asked to give an opinion with a rationale to support their belief on knowingly withholding, or falsifying information to a patient with Alzheimer's. The son-in-law has been a part of the family unit for over 30 years; he may choose to continue contact with Claudine, her daughter may need emotional or perhaps, financial support from her parents. There is no single correct response for this ethical dilemma.

**Case 17.3 [Dementia (Late Stage): Answers**

1. Stage 5: Moderately severe cognitive decline.
2. Three of the recommendations from the pamphlet are (1) Stay calm, (2) Offer corrections as suggestions, and (3) Try not to take it personally.
3. a. Shift her focus to another activity before leaving;
   b. Get a staff member to take her to another activity when the family member leaves;
   c. Ask the staff what they do when this behavior occurs;
   d. Accept other reasonable answers students develop.
4. Provide an environment that is modestly stimulating, avoiding overstimulation that can cause agitation and increase confusion, and understimulation that can cause sensory deprivation and withdrawal. Utilize patient identifiers (name tags and photographs), medic alert systems and bracelets, locks, wander guard; eliminate any environmental hazards and modify the environment to enhance safety; provide environmental cues or sensory aides that facilitate cognition; and maintain consistency in caregivers and approaches (Fletcher, 2008).
5. a. Identify yourself;
   b. Call the person by name;
   c. Talk slowly and clearly;
   d. Patiently wait for a response.
6. Set a toileting schedule, and keep a written record of when Claudine goes to the bathroom, along with how much she eats and drinks.
7. Allow plenty of time for eating, make sure Claudine is sitting in a comfortable upright position, choose soft foods that can be chewed and swallowed easily, and monitor Claudine's weight daily to verify there is no weight loss.
8. Ensure the toileting schedule is followed to prevent incontinence, turn Claudine every 2 hours, make sure Claudine is comfortable, and that her body is aligned, use pillows to support her arms and legs, and apply moisturizer on her skin located over bony areas.
9. Anxiety, agitation, shouting and sleeping problems, and wincing.
10. By searching the Web for “Hospice care in the nursing home,” several resources were found to answer this question. The answer is “yes.”
11. The long-term care (nursing home) staff members provide her daily care, with the added help of the professional hospice team who focus on comfort and palliative care, educating the family, and who may provide and supervise a hospice aide if needed.
Case 17.4  Wandering/Need for Movement: Answers

1. She may have suggested (1) making signs to attach to the exterior doors instructing Mary to STOP or another diversion; (2) setting up an alarm system for the exterior doors; or (3) giving Mary a low dose anti-anxiety medication such as lorazepam (Ativan), oxazepam (Serax), or temazepam (Restoril) to help her sleep at night.

2. Memory training methods such as spaced-retrieval and errorless learning have been used in individuals with dementia to modify repetitive question asking and other behaviors (Anderson, Arens, Johnson, & Coppens, 2001; Camp et al., 1993; Clare et al., 2000). This is just one example, please discuss other options.

3. Students should discuss their views on autonomy, human rights, and so forth as it relates to diminished mental capacity and safety.

4. A Golden Alert stating a description and picture of the older adult should be issued in order to alert the public.

5. Incorporating familiar or similar objects, pictures, and other décor from the person’s childhood/early adulthood may create a sense of “home” that the person with dementia wants.

6. An identity bracelet with name, address, phone number, and medical information can aid others to identify the person. Also, alerting neighbors or surrounding businesses to the person’s memory impairment situation and the need to aid the person or alert the caregiver or police would be a preventative measure.

7. A good place to start is the nearest Alzheimer’s Association, but numerous Web sites and books are available on dementia in general and wandering. Finding a support group would also be of benefit.

8. Individuals with dementia tend to experience sundowning, or being awake a lot at night. Others in the house are asleep, leaving the person with dementia unsupervised and providing an opportunity to wander out of the home.

Case 17.5  Agitation and Aggression: Answers

1. Mr. Ison had multiple losses beginning with retirement (role loss), his wife’s death, no longer driving, leaving his home of 50+ years, and loss of independence with entering the long-term care facility.

2. Mood and behavior changes, unable to handle finances, self-care deficits (grooming, taking medication), short-term memory loss, and getting lost in familiar places.

3. Students’ answers will vary. It may be suggested she should have moved closer to him, or moved him to a facility earlier. The intent of the question was to increase awareness of the caregiver role stressors, in particular with decision making and problem solving.

4. According to Cheong (2004, p. 197) “Agitation is generally defined as observable, situation-inappropriate behavior that is characterized by excessive motor or ver-
bal activity. Agitation is differentiated from aggression, which is behavior—either physical or verbal—that is directed against an object or another person or being.”

5. Some individuals with cognitive impairment have confusion, agitation, the need to wander and in the extreme form, hallucinations, at the time of sunset. Thus, the term “Sundowner's Syndrome” was coined as a reference to the change of behavior compared to daylight hours. Many contributing factors have been explored including overstimulation and fatigue from the day's activities, nocturnal hormone changes, hunger or thirst triggers, circadian rhythm imbalance, decreased hearing or vision, and organic causes such as stress or medication reactions.

6. An important assumption of the PLST model is that all behavior has meaning; therefore, all stress-related behavior has an underlying cause (Hall & Buckwalter, 1987).

7. Six factors that contribute to stress include (1) physical stressors (e.g., pain, discomfort, infection), (2) misleading stimuli or inappropriate stimuli, (3) change of environment, caregiver, or routine; (4) internal or external demand that exceed functional capacity, (5) fatigue, and (6) affective response to perceptions of loss.

8. All are guiding principles of the PLST Model with the exception of “C” which should read: Use anxiety and avoidance to gauge activity and stimulation level (Buckwalter, 2004).

9. “By standing with feet about 18 in. apart, staff are able to work and move with a resident without losing their balance.” It is also recommended for the health care worker to maintain a position at the resident’s side rather than directly in front when there is aggressive behavior. Lastly, maintaining a distance of approximately 6 ft, results in less chance of a staff member being struck by the resident, along with decreasing the perception of feeling threatened, which is common for residents (Soreff & Siddles, 2004, p. 2).

10. Fiblets are described as “little white lies,” which are used to address the subject the resident is dwelling on, provide some comfort, and allow the resident to mentally move on to another subject. Students’ answers will vary in relation to confabulation versus truth telling. As nurses, we focus on beneficence as a foundation for provision of care; students may rationalize that a white lie which prevents patient harm or danger to others is an acceptable strategy.
Case 18.1  Cultural Diversity Part I: Answers

1. In simple terms, culture represents the “way of life” of a population. Components of culture may include customs, thoughts, communications, shared knowledge, beliefs, morals, values, attitudes, rules of behavior, language, skills, and world view.

2. Ethnocentrism is the belief that one’s culture is superior to another, dismissing the cultural needs of others. Examples are making a derogatory remark about Jewish people not eating pork, or Asian people using chopsticks rather than a fork and knife.

3. Table 18.1 Distribution of U.S. Population by Race/Ethnicity, 2010 and 2050

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>% White, non-Hispanic</td>
<td>64.7</td>
<td>46.3</td>
</tr>
<tr>
<td>% Hispanic</td>
<td>16.0</td>
<td>30.2</td>
</tr>
<tr>
<td>% African American, non-Hispanic</td>
<td>12.2</td>
<td>11.8</td>
</tr>
<tr>
<td>% Asian</td>
<td>4.5</td>
<td>7.6</td>
</tr>
<tr>
<td>% Native Hawaiian and Pacific Islander</td>
<td>0.1</td>
<td>0.8</td>
</tr>
<tr>
<td>% American Indian/Alaskan Native</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td>% Two or more races</td>
<td>1.5</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: Kaiser Family Foundation, 2010

4. Students’ answers will obviously vary; many will be approaching or already retired from their nursing career in 2050, joining the largest predicted group of elderly persons in American history as well.

5. The intent of the question is self-awareness and exposure to one of many tools available for cultural assessment.

6. Answers C and D are correct. It is respectful to address a client by Ms., Mrs., or Mr. initially, and informal conversation can put someone at ease rather than immediately focusing on illness, symptoms, health history, and so forth.

7. The following information is taken directly from the Hartford Institute of Geriatric Nursing Web site, http://consultgerirn.org/topics/ethnogeriatrics_and_cultural_competence_for_nursing_practice/want_to_know_more (McBride, n.d.).
Physical distance: Provide patients with a choice about physical proximity by asking them to sit wherever they like. Individuals from some cultures (e.g., Northern European) tend to prefer to be about an arm’s length away from another person while those from some other cultures tend to prefer closer proximity (e.g., some Hispanic/Latino cultures) or greater distance (e.g., some Asian cultures).

Eye contact: While European Americans typically encourage members to look people in the eye when speaking to them, some others may consider this disrespectful or impolite (e.g., some Asian and Native American groups). Some Moslem groups may consider eye contact inappropriate between men and women. Observe the patient when talking and listening to get clues regarding appropriate eye contact.

Emotional expressiveness: Some cultures value stoicism (e.g., British, Japanese), while others encourage open expressions of feelings, such as sorrow, pain, or joy. Older persons from some backgrounds may laugh or smile to mask other emotions (e.g., Japanese, Filipino, Thai).

Body movements: Body gestures can be easily misinterpreted based on what is considered culturally appropriate. Individuals from some cultures may consider some types of finger pointing or other typical American hand gestures or body postures disrespectful or obscene (e.g., Filipino, Chinese, Iranian), while others may consider vigorous hand shaking as a sign of aggression (e.g., some American Indian) or a gesture of good will (e.g., European). When in doubt, ask an interpreter or a cultural guide.

8. A variety of health care personnel share their perception of cultural competence. An encounter with a Hispanic gentleman, in pain, who does not speak English, demonstrates the need.

Case 18.2 Cultural Diversity Part II: Answers

1. Ethnogeriatrics is a subspecialty in geriatrics which interconnects knowledge bases from the fields of aging, health, and ethnicity.

2. “A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race” (Talmantes, Lindeman, & Mouton, 2001).

3. A level of acculturation is defined as: “The degree in which an ethnic older person has integrated the cultural beliefs, values, and practices of the mainstream society into her/his cultural beliefs and values. The blending of these cultural domains enables the patient to acquire a set of skills and level of comfort to carry on everyday living in mainstream society” (McBride, n.d.). It is important to have information about what level a person is acculturated, to assist health care providers to avoid wrong assumptions about the differences/similarities in comparison to other elderly individuals.

4. McBride (n.d.) suggests that a quick method for assessing the level of acculturation is to find out the length of time older patients or their ancestor has been in the United States along with the language used at home, specifically the fluency in spoken and written English.
5. An interpreter is used for assisting with verbal communication and a translator for written material.

6. Answers B, C, and D are correct. Using hand gestures is not recommended as they may be interpreted differently (offensively) in another culture.

7. Table 18.2 Description of Hispanic/Latino Cultural Themes

<table>
<thead>
<tr>
<th>Cultural Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familismo</td>
<td>Importance of family at all levels: Nuclear, extended, fictive, kin (compadres). Needs of family take precedence over individual needs. Mutual reciprocity.</td>
</tr>
<tr>
<td>Personalismo</td>
<td>Display of mutual respect, trust building</td>
</tr>
<tr>
<td>Jerarquismo</td>
<td>Respect for hierarchy</td>
</tr>
<tr>
<td>Presentismo</td>
<td>Emphasis on present</td>
</tr>
<tr>
<td>Espiritismo</td>
<td>Belief that good/evil spirits can affect well-being and spirit of the dead person</td>
</tr>
</tbody>
</table>


8. A curandero is a “general practitioner” of Mexican folk healing and providing cures for physical or spiritual illness. Herbs such as St. John’s Wort, Gingko Biloba, Kava Kava, and Valerian Root.

Case 18.3 The Homeless Aging: Answers

1. People who are living in a place not meant for human habitation, in emergency shelter, in transitional housing, or are exiting an institution where they temporarily reside. People who are losing their primary nighttime residence, which may include a motel or hotel or a doubled up situation, within 14 days and lack resources or support networks to remain in housing.

   Families with children or unaccompanied youth who are unstably housed and likely to continue in that state. This is a new category of homelessness, and it applies to families with children or unaccompanied youth who have not had a lease or ownership interest in a housing unit in the last 91 or more days, have had three or more moves in the last 90 days, and who are likely to continue to be unstably housed because of disability or multiple barriers to employment. People who are fleeing or attempting to flee domestic violence, have no other residence, and lack the resources or support networks to obtain other permanent housing.

2. “There are two primary demographic factors that contribute to the projected increase in homelessness among the elderly. One is the overall growth in the elderly
population, which is expected to more than double in size between now and 2050. The other factor is the relative stability in the proportion of the elderly population facing economic vulnerability” (National Alliance to End Homelessness, 2010a).

3. According to the Homeless Resource network (2007), the following factors lead to homelessness:


4. External barriers to accessing assistance include the following:

A. Difficulty utilizing shelter system: Physical limitations and multiple medical conditions can be problematic in addition to losing or having medications stolen. There is usually a lack of private, personal space. In addition, shelters located up or down stairs may not be accessible to those with limited mobility.

B. Lack of respite services and transitional housing programs: Elderly persons who are homeless often have compromised immune systems related to aging, poor nutrition, and chronic medical illnesses. They may be prematurely discharged from hospitals or substance abuse treatment programs without a housing placement, making it difficult to recuperate and regain their health.

C. Conflicting service hours: Homeless elderly may have to choose to stand in line for hours to get a bed for overnight sleeping or to eat at another location.

D. Lack of transportation: Poor mobility may affect the elderly from getting to and from necessary services. There may be no public transportation, or cognitive deficits affect the ability to use.

E. Lack of awareness of resources and benefits: the extensive paperwork procedures and follow-up procedures in addition to lack of information about resources or eligibility.

F. Inadequate number substance abuse and mental health services.

G. Lack of affordable housing: The waiting list for subsidized housing can be as long as 3–5 years. Most housing programs seek applicants who have clean housing histories with no prior evictions. In addition, they are often hesitant to accept applicants who have a history of mental health, substance abuse problems, or past criminal records.

H. Lack of economic resources: Fixed income through the Social Security system may be inadequate.

5. Students’ answers will vary depending on rural versus urban environments. If no coalitions or organizations exist, perhaps the United Way, Red Cross, or local churches will be identified.

6. Exposure to weather extremes, being assaulted, having medicines or personal effects stolen, having to walk long distances when mobility may be compromised, and so forth.

7. Medical status based on history, physical, and laboratory tests

- Medication review
- Functional status that measures mobility, continence, mentation, and self-sufficiency for ADLs and IADLs
• Cognitive and psychological health using both dementia and affect screens
• Health literacy
• Determination of social networks and support
• Access to and source of primary health care services

8. Students' answers will vary; the concept of Americans being “three paychecks away from homelessness” was emphasized several times in the video; the purpose of the exercise is to stimulate the affective domain of learning.
Case 19.1   Undertreatment of Pain: Answers

1. Myth: Pain is a normal part of aging—Older adults may be more likely to experience pain, but pain is not an inevitable result of the normal aging process.

Myth: The perception of pain decreases with age—There is no scientific basis that older adults have a decreased perception of pain. There are minimal changes related to the neuroanatomy or neurophysiology of pain that would indicate a decreased perception or increased sensitivity to pain in the older adult.

Myth: If the older adult does not report pain, they are not experiencing pain—Not True! Older adults frequently underreport pain as they don’t want to bother or alarm their family, friends, or health care providers. In addition, a fear of the loss of independence may prevent the expression of pain. As nurses, we need to be aware of nonverbal cues to pain and implement further assessment measures.

Myth: Opioid analgesics have dangerous side effects for the older adult and should be avoided if at all possible—Safe opioid use in the older adult is possible. A common method of beginning an opioid analgesic in an older adult is to “start low and go slow”—which means that treatment begins with a small dose and is titrated up slowly and carefully to obtain the desired effect of pain relief without side effects.

2. Many older adults believe that pain is a normal part of aging and will not report pain. As noted, Mr. Jones does not ask for pain medication. They may also fear that they may be labeled as a “complainer.” Older adults may also fear pain as it relates to their disease or potential disease progression. Fear of pain medications, their potential side effects, and the potential for addiction are also powerful factors that lead to undertreatment of pain. Cost may also be a barrier for some patients as they do not have the financial ability to acquire necessary medications for pain.

- Pain management may also be hindered by health care providers themselves as they also believe that pain is a normal part of aging. An example in this case is that the pain medication, Tylenol, that is ordered for arthritis pain is only offered to Mr. Jones twice a day as it has been ordered on pro re nata ([prn] as the thing is needed) basis and not around the clock. Nursing staff caring for Mr. Jones only offer the pain medication in the morning when he awakens and at bedtime, which does not allow adequate pain relief. Lack of adequate assessment of pain and inadequate knowledge of pain management are key barriers to pain management. Fear of the side effects of narcotic/opioid use is also found in health care providers as well as the older adult. In addition, lack
of knowledge of appropriate pain relief measures can contribute to undertreatment of pain. Nurses must be knowledgeable of all aspects of pain and pain management techniques, nonpharmacologic as well as pharmacologic, if they are going to be in a position to adequately treat pain in the older adult.

3. Major problems for the older adult who suffers from untreated pain include the following:

- As a nurse, you need to assess pain and its relation to overall health and most importantly functional status and quality of life. Depression, withdrawal, sleep disturbances, impaired mobility, and decreased levels of socialization can occur with untreated or undertreated pain. In addition, falls, deconditioning, and malnutrition may occur in the older adult with undertreated pain.

4. Addiction to narcotics or opioid analgesics is rare in people who are truly experiencing pain. Pain receptors in the brain are activated when patients experience pain. The medication blocks those pain receptors in the central nervous system to decrease the level of pain. When narcotics are given to an older adult, the dosage begins at a low level and is titrated upward to the desired effect, which is a decreased level of pain without sedation. People who most often become addicted to narcotics are not experiencing pain, or the level of pain for the dosage of medication being taken. This allows the narcotic analgesic to be in the bloodstream which promotes a sense of euphoria. Mr. Jones is experiencing a level of pain that may require a narcotic analgesic, and if the dose is correctly identified, he will experience a decreased level of pain without the adverse effects including a sensation of euphoria. Letstalkpain.org (2010) defines addiction as: “Addiction is a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.”

Addiction to narcotics/opioids rarely occurs in the older adult population when these drugs are used appropriately for the management of pain.

5. Pain assessment involves a physical examination, a pain history, assessment of the location, intensity, quality, pattern, aggravating and alleviating factors, medication history, and the meaning of pain for the individual patient. Scales, tools, and further discussion of pain management can be found in the “Try This Series” found on the Hartford Institute for Geriatric Nursing Web site, http://consultgerinn.org/.


The World Health Organization (WHO) recommends a simple and effective three-step approach for treating pain based on its severity (mild, mild-to-moderate, or moderate-to-severe). The three-step ladder has been used to provide effective pain relief for up to 90% of patients with cancer, but has broader implications. If pain occurs, there should be prompt oral administration of drugs in the following order: nonopioids (aspirin and acetaminophen); then, as necessary, mild opioids (codeine); then strong opioids such as morphine, until the patient is free of pain. To calm fears and anxiety, additional drugs—“adjuvants”—should be used. To maintain freedom from pain, drugs should be given around the clock rather than as needed. Climbing each step of the ladder sequentially is not necessary. Severe pain mandates the immediate use of opioids for moderate-to-severe pain without progressing sequentially from Step 1 to Step 3.
7. Nonpharmacological techniques for pain management include the following:

**Physical measures:**
- Heat/cold
- Massage
- Positioning/bracing

**Cognitive-behavioral therapies:**
- Relaxation
- Guided imagery
- Distraction
- Pastoral counseling/prayer

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**Case 19.2 Side Effects of Opioids: Answers**

1. Nausea is common with the first dose of an opioid analgesic, such as morphine. This symptom or side effect often subsides when future doses are given. Antiemetics are used if nausea continues to be a problem when the narcotic given is relieving the identified symptom. To lessen the effect of this symptom, Mrs. Neuschwander should be prescribed low doses of the opioid and increase the dose slowly as needed for relief of shortness of breath and pain.

2. The most common side effect of opioid analgesics is constipation.
   - Nursing interventions to prevent constipation include the following:
     - Assessment of normal bowel patterns and habits
     - Monitor frequency of bowel movements
     - Perform an abdominal assessment with attention to bowel sounds and the presence of distention or tenderness
     - Encourage fluid intake
     - Encourage fiber in the diet
     - Begin a bowel regimen if your patient is going to be on narcotic analgesics for any length of time. Potentially included in a bowel regimen are stool softeners: Senna (Senekot), Docusate Sodium (Colace), laxatives, Lactulose (Chronulac), Milk of Magnesia, suppositories Bisacodyl (Dulcolax), or Fleets enemas as warranted.

3. Helen may be experiencing an increase in sleep related to several reasons. If she has not slept well prior to beginning morphine for pain and shortness of breath, she may be able to sleep now that she is comfortable and she may be “catching up” on her rest. In addition, it is important to discuss with Helen and her family that many patients experience sedation when opioid therapy is instituted or when doses are increased. Tolerance to sedation occurs over time, and most people are only sleepy for a couple of days. If the patient feels that they are too sleepy, but their pain is controlled, it may be useful to discuss slowly decreasing the dose of the opioid being given. It is then essential to continually assess pain levels and adjust pain medications as needed to promote comfort.
4. • Long-term use of opioids can lead to increased doses necessary to achieve the desired effect of pain management or management of shortness of breath.
  • Tolerance refers to the fact that the morphine used for Helen’s pain and shortness of breath loses its pain relieving effectiveness when used over time. Tolerance is not considered to be a problem by practitioners who are knowledgeable of symptom management at the end of life. Many people with chronic nonmalignant pain may also require higher doses of opioids for pain relief.
  • The family should be assured that Helen is being assessed on a regular basis for an overdose of medications, but at this time her pain is controlled and her respirations are within normal limits. There has been minimal change in her physical condition, but as the disease progresses, she may require higher opioid doses to control her pain and manage her shortness of breath.

5. Urinary retention may occur in people taking opioids for symptom management. There is a potential for the smooth muscle tone in the bladder and ureters to increase causing bladder spasm and urgency. In addition, an increase in sphincter tone can make it difficult for Helen to urinate. Dependent nursing interventions include decreasing the opioid dosage, or intermittent catheterization (which may be required only once or twice to relieve the symptom). If persistent urinary retention occurs, the potential for utilization of a foley catheter will need to be evaluated, especially if Helen’s pain is controlled and she is comfortable.

6. Myoclonus is used to describe random jerking motions of the extremities when patients are on high doses of opioid analgesics. This jerking movement may decrease as tolerance develops. If the jerking does not decrease and is bothersome to the patient, the dosage of the opioid may need to be decreased or the medication may need to be changed to an alternate pain medication. As nurses, we would consult with the pharmacist when this occurs. It is also important to evaluate renal function as metabolites of the drug may not be excreted if there is a decrease in renal function.

7. Respiratory depression occurs when there is a clinically significant decrease in the individual’s respiratory rate and depth of respirations from their baseline level. This is one of the most feared side effects of opioid use, especially in the older adult. It is important to assess for this side effect when opioids are initiated in an opioid naïve patient (someone who has never received an opioid).
  • Assessment of respiratory rate, depth, and rhythm is necessary at least every hour in opioid-naïve patients and patients who are receiving high doses of opioids to manage acute pain. The potential for respiratory depression is not related to the dose of opioid for someone with chronic pain as they have often developed a tolerance and require higher doses of medication to control their pain.
  • Prevention of respiratory depression can be achieved if patients are started on low doses of opioid analgesics and the medication is titrated upward slowly to the desired effect of pain relief.
  • After consultation with the prescribing physician, the dosage of the opioid may need to be decreased if excessive sedation is occurring.
  • If the patient is minimally responsive and suffering from true respiratory depression, the drug Naloxone (Narcan) is used as an opioid antagonist to reverse the effects of the opioid.
Those at risk for developing respiratory depression include infants less than 6 months old, opioid naïve patients, elderly patients, and those who have comorbid conditions, such as respiratory disease or other organ failure.

**Case 19.3  Adjuvants for Pain Control: Answers**

1. In essence, an adjuvant analgesic is a medication that has a primary indication for something other than pain, but is used as an analgesic for some painful conditions. Adjuvant medications are used with other medications (pain medications) to decrease pain, but they can also be used by themselves for pain control.

2. **Neuropathic pain:** Neuropathic pain is most often due to injury in the peripheral nervous system and is often found as a cause of phantom limb pain such as that Mr. James is experiencing. In essence, neuropathic pain is caused by injury to actual nerve fibers. This type of pain is often described as burning, stabbing, “needles,” “electric shock,” and can be accompanied by numbness. Neuropathic pain is not well controlled by commonly used nonopioid or opioid medications used for pain management. Anticonvulsant medications are often used to treat this type of pain. Mr. James would benefit from the addition of an anticonvulsant to assist in decreasing phantom limb pain.

   **Phantom limb pain:** Phantom limb pain can occur following amputation of a body part as the person continues to experience pain as if the amputated part of the body is still attached. The cause, as in neuropathic pain, is a result of injury to nerves that have been severed. These nerve endings continue to produce electrical activity at the site of the injury, which can cause pain. This type of pain is considered neuropathic pain and is also treated effectively with anticonvulsant medications. Mr. Jones had a surgical (versus traumatic) amputation that has led to phantom limb pain.

   **Bone pain:** Bone pain is often treated with nonsteroidal anti-inflammatory medications such as ibuprofen (Motrin). This classification of medication acts to inhibit prostaglandin synthesis, which is a precursor to pain. Severe or chronic nonmalignant bone pain that occurs as a result of a compression fracture can often be managed with a combination of an opioid analgesic and a nonsteroidal anti-inflammatory medication as the pain is being treated in the central nervous system (opioid) and the peripheral nervous system (anti-inflammatory). Mr. Jones is experiencing bone pain related to compression fractures as a result of osteoporosis.

   **Muscle spasticity:** There are many causes for muscle spasticity. When considering the pain cycle, pain leads to anxiety, which leads to muscle tension, which leads to an increased level of pain. The cycle of pain can be interrupted if muscle tension can be relieved and the underlying cause for spasticity is an addressed in the pain management protocol. Mr. Jones has increased muscle tension from underlying undertreated pain that is causing him an increased level of pain. In addition, the decreased mobility status that Mr. Jones is experiencing can also lead to muscle tension and spasticity.
3. **Antidepressants**: Antidepressants act to potentiate or enhance other pain medications (opioids) and also have some direct analgesic effects. These medications can also improve mood that may have a positive effect on the overall pain experience.
   - amitriptyline (Elavil)
   - doxepin (Sinequan)
   - paroxetine (Paxil)
   - citalopram (Celexa)

   **Corticosteroids**: Medications classified as steroids act to inhibit prostaglandin synthesis and decrease inflammation as a means to decrease pain. Corticosteroids are effective for bone pain.
   - prednisone (Deltasone)
   - dexamethasone (Decadron)

   **Anticonvulsant agents**: These medications are often used when there has been pain associated with injury to a nerve.
   - gabapentin (Neurontin)
   - pregabalin (Lyrica)
   - lamotrigine (Lamictal)
   - levetiracetam (Keppra)
   - phenytoin (Dilantin)

   **Muscle relaxants**: used to treat muscle spasms that are associated with pain.
   - baclofen (Lioresal)
   - cyclobenzaprine (Flexeril)
   - orphenadrine (Norflex)
   - metaxalone (Skelaxin)
   - diazepam (Valium)

4. Adjuvant medications used to treat chronic pain conditions can act to decrease the dosage or amount of the opioid medication being used to control pain. The benefit would be a decrease in the potential for side effects of the opioid medication. In addition, if side effects of uploads are present in the older adult and an adjuvant medication is used, side effects may be decreased. Adjuvant pain medications are also especially useful for those who are experiencing poor control of pain with the use of opioid analgesics.

5. As with any pain medication, there are also potential for side effects with the adjuvant medications used for the management of pain. With the older adult population, it is essential to start at a low dose of the medication being used, assess for side effects, and titrate the dosage up slowly to the desired effect to decrease the pain.

6. Potential for producing gastritis, gastrointestinal bleeding, fluid retention, and renal failure. These medications are not indicated for people with a history of gastrointestinal bleeding, peptic ulcer disease, or other types of bleeding disorders.

7. Antidepressants need to be used cautiously in the older adult population as there are potential cardiac side effects (arrhythmias and orthostatic hypotension). Other milder symptoms include dry mouth, constipation, or blurred vision.
addition, there may be a delayed onset of pain relief related to the action of these medications.

8. Side effects of long-term steroid use include candidiasis, gastritis, fluid retention, hypertension, hyperglycemia, and alteration in mood and thought processes. Consideration of the benefits versus the risks of using corticosteroids for pain management must be addressed.

9. Anticonvulsants used as an adjuvant for pain relief need to be started at a low dose, and the effects need to be carefully monitored as the dose is slowly titrated upward to gain relief of pain. Side effects include the potential for sedation, dizziness, or unsteadiness that could all lead to the potential for falls in the older adult population.

10. The major side effect of muscle relaxants that needs to be carefully monitored in the older adult population is the potential for sedative effects that may also lead to falls in the older adult.

Case 19.4 Noninvasive Interventions for Pain: Answers

1. Obesity
   - Chronic knee pain
   - Early morning stiffness, stiffness after inactivity, difficulty exercising
   - Perceived instability of knee joints
   - Difficulty rising from a chair
   - Overuse of acetaminophen (Tylenol)

2. • Older age. OA typically occurs in older adults. People under the age of 40 rarely develop OA.
   • Sex. Women are more likely to develop OA.
   • Obesity. Carrying more body weight places more stress on weight-bearing joints, such as the knees and hips.
   • Certain occupations. Jobs that place repetitive stress on particular joints may predispose those joints to eventually developing OA.

3. Nonpharmacologic
   - Cognitive–behavioral strategies focus on changing the person’s perception of pain (e.g., relaxation therapy, education, and distraction) and may not be appropriate for cognitively impaired persons.
   - Physical pain relief strategies focus on promoting comfort and altering physiologic responses to pain (e.g., heat, cold, TENS units) and are generally safe and effective.
   - Combination approaches that include both pharmacological and nonpharmacological pain treatments are often the most effective.
• Psychotherapy, relaxation and medication therapies, biofeedback, and behavior modification may also be employed to treat chronic pain.

4. In general, the scientific evidence does not support the use of magnets for pain relief. Preliminary studies looking at different types of pain—such as knee, hip, wrist, foot, back, and pelvic pain—have had mixed results. Some of these studies, including a recent NIH-sponsored clinical trial that looked at back pain in a small group of people, have suggested a benefit from using magnets. The majority of rigorous trials, however, have found no effect on pain.

Researchers led by rheumatologist Daniel O. Clegg, MD, of the University of Utah School of Medicine, conducted the 4-year primary GAIT study at 16 sites. The results, published in the New England Journal of Medicine, February 22, 2006, showed that the popular dietary supplement combination of glucosamine plus chondroitin sulfate did not provide significant relief from OA pain among all participants. However, a smaller subgroup of study participants with moderate-to-severe pain showed significant relief with the combined supplements.

5. • Lose weight: Ms. Taylor should be advised that weight loss has been shown to decrease joint stress and pain and to improve ability to exercise. A 12-lbs weight loss can decrease the chance of developing OA in women by 50%.

• Stay active: Ms. Taylor should be told that routine physical activity plays a key role in self-care and health. Three types of exercise are essential in OA management. First, strengthening exercises help keep or increase muscle strength. Strong muscles help support and protect joints affected by arthritis. Second, aerobic conditioning exercises improve cardiovascular condition, help control weight, and improve overall function. Finally, range-of-motion exercises help reduce stiffness and preserve or improve proper joint movement and decrease stiffness.

• Most people with OA exercise best when their pain is least severe. Begin with a warm-up and start exercising slowly. Resting frequently decreases the risk of injury.

• Before beginning any type of exercise program, Ms. Taylor should consult with her primary care provider.

• Eat well: Ms. Taylor should be taught that no particular diet will “cure” arthritis, but eating a balanced diet and controlling weight can help Ms. Taylor, by minimizing stress on the weight bearing joints of the knees, hips, and feet.

• Get plenty of sleep: If arthritis pain makes it difficult for Ms. Taylor to sleep at night, she might need to replace her mattress, or change her sleeping positions. She may need to change the timing of medications to provide more pain relief at night.

• Keep a positive attitude: Ms. Taylor should be encouraged to keep a positive attitude and find ways to live a meaningful life with the challenges of OA.

6. Physical therapy. A program of physical therapy can be established for Ms. Taylor, with the goal of increasing range of motion (ROM) and flexibility. She might be advised to strengthen her quadriceps, as weak quadriceps muscles are associated with pain severity in OA.

Occupational therapy. Ms. Taylor could benefit from occupational therapy for training in ADLs. Such instruction can help patients by providing an individual, functional evaluation and joint protective strategies to be used during ADLs.
Mrs. Taylor can be taught to conserve energy, protect her joints, and manage stress, to improve her functional capacity, and prevent loss of joint function.

7. Referrals Miranda might make include the following:
   - County or State Senior Information and Assistance Center
   - Caregiver Assistance Programs
   - Senior Transportation Programs
   - Senior Health Insurance Assistance Programs
   - Home-delivered meals

8. The use of adaptive equipment and alternative methods may enable patients to carry out ADLs. Placement of grab rails by the bathtub and elevating the toilet seat may noticeably improve the home environment for patients with OA. These modifications may allow Ms. Taylor to have more independent functioning, and it will assist her to take care of her own personal hygiene. She could also use a raised toilet seat, which would decrease the required range of motion and force placed on the hip and knee joints.

9. Complementary and alternative therapies:
   - **Acupuncture**: One of the most popular alternative pain-relief methods is acupuncture, an ancient Chinese practice in which fine needles are inserted at specific points in the body. According to research funded by the National Center for Complementary and Alternative Medicine, acupuncture may help reduce pain and improve function for individuals with knee OA when used as an adjunct to medication.
     
     One study underway compares the benefits of acupuncture with physical therapy to the benefits of physical therapy alone. The hope is that acupuncture will help relieve pain that makes exercise difficult and, therefore, will improve the effectiveness of traditional exercise physical therapy.

   - **Glucosamine and chondroitin sulfate**: In recent years, the nutritional supplement pair glucosamine and chondroitin has shown some potential for reducing the pain of OA, though no conclusive proof has emerged to date. Both of these nutrients are found in small quantities in food and are components of normal cartilage.
     
     The recently concluded Glucosamine/Chondroitin Arthritis Intervention Trial (GAIT), which was cosponsored by the National Center for Complementary and Alternative Medicine and the National Institute of Arthritis and Musculoskeletal and Skin Diseases, assessed the effectiveness and safety of these supplements, when taken together or separately.
     
     The trial found that the combination of glucosamine and chondroitin sulfate did not provide significant relief from OA pain among all participants. However, a smaller subgroup of study participants with moderate-to-severe pain showed significant relief with the combined supplements.

   - **Other complementary and alternative therapies**: Other research suggests that certain hyaluronic acid preparations, substances called anthraquinones, gelatin-related substances, and electrical stimulation, may have a beneficial effect on cartilage growth and repair. Although these agents have shown varying degrees of promise in basic and clinical studies, additional trials are needed.
• **Vitamins D, C, E, and beta carotene:** The progression of OA may be slower in people who take higher levels of vitamin D, C, E, or beta carotene. NIAMS is sponsoring a clinical trial on use of vitamin D to treat OA. More studies are needed to confirm these reports.

• **Green tea:** Many studies have shown that green tea possesses anti-inflammatory properties. One recent study showed that mice predisposed to a condition similar to human OA had mild arthritis and little evidence of cartilage damage and bone erosion when green tea polyphenols were added to their drinking water. Another study showed that when added to human cartilage cell cultures, the active ingredients in green tea inhibited chemicals and enzymes that lead to cartilage damage and breakdown. Further studies are looking at the effects of green tea compounds on human cartilage.

• **Prolotherapy:** This is a popular, growing, and unregulated therapy for chronic musculoskeletal pain in which an irritant solution is injected into painful ligaments and adjacent joint spaces. However, no rigorous, scientifically valid clinical trials have proven the therapy’s action or usefulness. A clinical trial sponsored by the National Center for Complementary and Alternative Medicine is studying prolotherapy’s effectiveness for the pain of knee OA. It is also using animals to assess the healing response after prolotherapy.

10. Ms. Taylor should be taught to avoid high-impact activities like running and jumping. She should be instructed to take up low-impact activities such as swimming and bicycling, which have been proven most helpful for the arthritic knee. If possible, Ms. Taylor should avoid squatting, and ascending and descending stairs.
Case 20.1  Restless Legs Syndrome: Answers

1. Perhaps, the other widows live alone and envy JoAnn’s return to a family setting, caretaker role, and active lifestyle. Having constant interaction with one’s daughter and the daily contact with grandchildren may not be possible for other women. In addition, the positive family relationships may not be present for others.

2. Nocturnal movement disorder, night walkers, or “the jimmy legs.” Periodic limb movement disorder (PLMD) is a different problem as it affects people only during sleep; symptoms of RLS can occur during waking hours.

3. The neurological system.

4. (1) A desire to move the limbs, often associated with paresthesias or dysesthesias, (2) symptoms that are worse or present only during rest and are partially or temporarily relieved by activity, (3) motor restlessness, and (4) nocturnal worsening of symptoms.

5. Taking a hot bath, massaging the legs, or using a heating pad or ice pack can help relieve symptoms in some patients. Distraction with a normal enjoyable activity such as reading, needlework, crossword puzzles or computer games can be attempted. Often patients are too tired during the night to want to focus on these activities, however.

6. Ferritin, TIBC, folate, B12, fasting blood sugar, TSH, BUN, creatinine, calcium, and magnesium.

7. Researchers have found that caffeine, alcohol, and tobacco may aggravate or trigger symptoms in patients who are predisposed to develop RLS. Some studies have shown that a reduction or complete elimination of such substances may relieve symptoms. It remains unclear whether elimination of such substances can prevent RLS symptoms from occurring at all (National Institute of Neurological Disorders and Stroke, 2009).

Students should create a menu based on the following table.

<p>| Table 20.1  Selected Food Sources of Vitamin B12 |
|------------|---------------------|------------------|
| Food       | Micrograms (mcg) per serving | Percent DV*      |
| Liver, beef, braised, 1 slice | 48.0               | 800              |
| Clams, cooked, breaded, and fried, 3 oz | 34.2               | 570              |</p>
<table>
<thead>
<tr>
<th>Food</th>
<th>Micrograms (mcg) per serving</th>
<th>Percent DV*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast cereals, fortified with 100% of the DV for vitamin B12, 1 serving</td>
<td>6.0</td>
<td>100</td>
</tr>
<tr>
<td>Trout, rainbow, wild, cooked, 3 oz</td>
<td>5.4</td>
<td>90</td>
</tr>
<tr>
<td>Salmon, sockeye, cooked, 3 oz</td>
<td>4.9</td>
<td>80</td>
</tr>
<tr>
<td>Trout, rainbow, farmed, cooked, 3 oz</td>
<td>4.2</td>
<td>50</td>
</tr>
<tr>
<td>Beef, top sirloin, broiled, 3 oz</td>
<td>2.4</td>
<td>40</td>
</tr>
<tr>
<td>Cheeseburger, double patty and bun, 1 sandwich</td>
<td>1.9</td>
<td>30</td>
</tr>
<tr>
<td>Breakfast cereals, fortified with 25% of the DV for vitamin B12, 1 serving</td>
<td>1.5</td>
<td>25</td>
</tr>
<tr>
<td>Yogurt, plain, 1 cup</td>
<td>1.4</td>
<td>25</td>
</tr>
<tr>
<td>Haddock, cooked, 3 oz</td>
<td>1.2</td>
<td>20</td>
</tr>
<tr>
<td>Tuna, white, 3 oz</td>
<td>1.0</td>
<td>15</td>
</tr>
<tr>
<td>Milk, 1 cup</td>
<td>0.9</td>
<td>15</td>
</tr>
<tr>
<td>Cheese, Swiss, 1 oz</td>
<td>0.9</td>
<td>15</td>
</tr>
<tr>
<td>Beef taco, 1 taco</td>
<td>0.8</td>
<td>13</td>
</tr>
<tr>
<td>Ham, cured, roasted, 3 oz</td>
<td>0.6</td>
<td>10</td>
</tr>
<tr>
<td>Egg, large, 1 whole</td>
<td>0.6</td>
<td>10</td>
</tr>
<tr>
<td>Chicken, roasted, ½ breast</td>
<td>0.3</td>
<td>6</td>
</tr>
</tbody>
</table>


8. The discovery of the first gene variant that contributes substantially to risk for RLS in 2007 and ongoing studies looking at dopamine deficiency.

Case 20.2  Insomnia: Answers

1. Stages of NREM sleep

<table>
<thead>
<tr>
<th>Characteristics</th>
</tr>
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<tbody>
<tr>
<td>Stage I</td>
</tr>
<tr>
<td>Stage II</td>
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<tr>
<td>Stage III</td>
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<tr>
<td>Stage IV</td>
</tr>
</tbody>
</table>

Source: Diebold, Fanning-Harding, & Hanson, 2010.
2. Subjective sleep quality, sleep latency (the time it takes to fall asleep), sleep duration, habitual sleep efficiency (the ratio of total sleep time to time in bed), sleep disturbances, the use of sleep-promoting medication (prescribed or over-the-counter), and daytime dysfunction. The tool has only 14 questions, it is easy to score, and can be self-administered or read to the client by another individual.

3. Some of the factors that are thought to contribute to insomnia in the elderly include multiple comorbid medical problems, polypharmacy, anxiety, and environmental factors, such as absence of time/schedule cues.

   Risk factors for insomnia that have emerged from data related to insomnia include female gender, less education, unemployment, separation or divorce, and medical illness (Buscemi et al., 2005).

4. Avoid caffeine within 4–6 hours of bedtime.
   • Avoid the use of nicotine close to bedtime or during the night.
   • Do not drink alcoholic beverages within 4–6 hours of bedtime.
   • While a light snack before bedtime can help promote sound sleep, avoid large meals.
   • Avoid strenuous exercise within 6 hours of bedtime.
   • Minimize light, noise, and extremes in temperature in the bedroom.

5. Students may choose either to condone or denounce this suggestion and provide a rationale supporting their opinion. Information taken directly from the brochure at http://www.mcw.edu/FileLibrary/User/amonroe/SleepHygienebrochure.pdf describing “Worry Time” is as follows:

   “A technique that can be helpful is to designate a particular time for worry. This time is dedicated to sorting out problems and coming up with possible solutions. Set aside 30 minutes in the evening to sit alone and undisturbed. On 3 × 5 cards, write down each of your worry as it comes to mind (one worry per card). These worries can range from the mundane (needing to call someone in the morning or remembering an anniversary) to the serious (financial concerns or problems with a relationship). When all worries have been written down, sort the cards into three to five piles according to the priority of the worry. Next, look at each card and formulate a possible solution to that worry. While not all worries will have easy solutions, even small progress in remedying a worry can yield helpful results. The morning after recording your worries, review the worry cards and begin to work on resolving the worries you’ve identified.”

6. (B) Tai chi, (C) Valerian, (D) Aromatherapy, (E) Music therapy, and (F) Auricular Acupuncture Therapy (Cuellar et al., 2007).

7. There are numerous herbs such as passion flower, peppermint, chamomile, and red clover tea, sage, thyme, St. John's Wort, spearmint, and theanine found in green tea plant. Other CAM strategies that may be helpful for some people, yet not evidence-based, are massage, mindfulness meditation, hypnosis, reflexology, qi gong, reiki, therapeutic touch, guided imagery, chiropractic medicine, and homeopathic medicine.

8. Stimulus control is designed to extinguish the negative association between the bed and undesirable outcomes such as wakefulness, frustration, and worry. These negative states are frequently conditioned in response to efforts to sleep as a result of prolonged periods of time in bed awake. The objectives of stimulus control
therapy are for the patient to form a positive and clear association between the bed and sleep and to establish a stable sleep–wake schedule.

**Instructions:** Go to bed only when sleepy; maintain a regular schedule; avoid naps; use the bed only for sleep; if unable to fall asleep (or back to sleep) within 20 minutes, remove yourself from bed—engage in relaxing activity until drowsy then return to bed—repeat this as necessary. Patients should be advised to leave the bed after they have *perceived* not to sleep within *approximately* 20 minutes, rather than actual clock-watching, which should be avoided (Schutte-Rodin, Broch, Buysse, Dorsey, & Sateia, 2008, p.499).

*Progressive muscle relaxation* is designed to lower somatic and cognitive arousal states, which interfere with sleep. Relaxation training can be useful in patients displaying elevated levels of arousal and is often utilized with cognitive behavioral therapy.

**Instructions:** Progressive muscle relaxation training involves methodical tensing and relaxing different muscle groups throughout the body. Specific techniques are widely available in written and audio form (Schutte-Rodin et al., 2008, p. 499).

*Paradoxical intention* is a specific cognitive therapy in which the patient is trained to confront the fear of staying awake and its potential effects. The objective is to eliminate a patient's anxiety about sleep performance (Schutte-Rodin et al., 2008, p. 49).

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**Case 20.3  Hypersomnia: Answers**

1. Hypersomnia, somnolence, and excessive daytime sleepiness.

2. Hypersomnia is sometimes misdiagnosed as narcolepsy. In many ways, the two are similar. One significant difference is that people with narcolepsy experience a sudden onset of sleepiness, while people with hypersomnia experience increasing sleepiness over time. Also, people with narcolepsy find daytime sleep refreshing, whereas people with hypersomnia do not.

3. GERD (using a proton pump inhibitor).

4. Benadryl is part of the first generation of H1 receptor antagonists. It is very powerful for blocking histamine from attaching and triggering symptoms caused by the H1 receptor. This drug is not highly specific (like third-generation Claritin), and also interacts with other receptors. It is a powerful anticholinergic, and one effect is that it blocks the reuptake of serotonin. Excess serotonin in normal populations results in drowsiness. This is so pronounced that the active ingredient in Benadryl is used in many sleep aids. Experiencing drowsiness with NSAIDs may occur but is generally considered a low-level adverse effect.

5. The daily cycle of sleep and wakefulness, which is called a circadian rhythm, is often altered in older adults. They tend to fall asleep earlier in the evening and wake up earlier in the morning. This may be due in part to decreases in hormones that regulate circadian rhythms, such as melatonin and growth hormone. Older persons also spend less time in REM and deep sleep and more time in shallower sleep stages, which may make sleep less refreshing.
6. For any score of “9” and above, the rating is “very sleepy,” and the client should seek medical advice.

7. Having a large neck size (17 in. or greater in men and 16 in. or greater in women) is considered a risk factor as the airway may be narrowed.

8. Excess weight, being male, hypertension (furosemide Rx), being older, and use of alcohol.

9. Driving a car, operating machinery, cooking (leaving a burner on the stove), overmedicating due to forgetfulness, any childcare-related activities, and so forth.

10. For patients with a current diagnosis of a sleep disorder, ongoing treatments such as CPAP should be documented, maintained, and reinforced through patient and family education. In addition, CPAP masks may require minor adjustments or refitting to find the most comfortable fit. Most such changes are needed during the acclimation period, but patients should be encouraged to seek assistance if mask problems develop.