Long-Term Care Clinical Conditions Desk Reference

Barbara Acello, MS, RN

An Evidence-Based Approach

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HCPro
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Long-Term Care Clinical Conditions Desk Reference: An Evidence-Based Approach is published by HCPro, a division of BLR.

ISBN: 978-1-55645-494-3

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Introduction

A desk reference is an eclectic collection of information, in this case, related to long-term care nursing. The book is a quick reference guide, not an exhaustive or comprehensive source of long-term care information, such as a textbook. It will complement more exhaustive sources of long-term care nursing reference material. The topics included were those identified by nurses at all levels as trending issues for which a succinct overview of current clinical information was needed.

We live in a very litigious society. Long-term care is often misunderstood and sometimes maligned. Physicians, nurses, and the public at large often do not understand the differences between a hospital and a long-term care facility. When an elderly person is discharged from the hospital, for instance, the physician offers to send them to a bed in "rehab." They avoid the use of terms such as "nursing home" and "skilled nursing facility" (SNF), which they believe are much less aesthetically appealing. (In this context, rehab is being used as a synonym for SNF.) Residents are often admitted to the facility, expecting hospital-level care that is not realistic in this setting.

As nurses, we are responsible for educating others in the differences between the long-term care we provide and the acute care given in hospitals with many more resources. We do this verbally as well as by providing conscientious monitoring and high-quality care. Nurses teach by example. Some people are visual learners, so show them what good care looks like. Nurses are jacks of all trades, but it is impossible to remember everything you learned in school and continuing education classes. One goal of this book is to help you quickly find information for which you are responsible, but have not committed to memory.

Nurses must stay informed regarding issues affecting nursing practice. Laws, also called statutes, affecting long-term care facilities have been changing rapidly. Your state and federal legislators write the laws that determine what each license holder can do. They also establish guidelines and grant authority for regulatory agencies to make rules. Your state board of nursing and department of health are the two primary agencies that write rules for nursing practice and long-term care.

Rules and regulations are much more comprehensive and specific than laws. They explain how to correctly implement the law. Your state board of nursing, or other regulatory agency, writes the rules for the licensees. In conjunction with the department of health, they also determine how the rules will be applied. Rules address standards of conduct and can be changed or updated frequently. In some situations, state and federal rules conflict. In this case, follow the federal rules. If you can't differentiate state from federal, use the rules that are the most strict.

When laws change, they usually become more strict. They are seldom relaxed. Resident acuity has increased, because hospitals discharge patients earlier and sicker than before. Because healthcare is very reimbursement driven, this affects admission, discharge, and length of stay. Some areas of the United States have a nursing shortage, and complying with regulations and caring for residents has become much more difficult than it was in the past. Something new is always trending, and there is much important information to share.

Regulatory demands and resident acuity have increased markedly in a brief period of time. This book contains updated regulatory quality assurance information that was suggested by your peers. Infection control is an area that changes daily. Because of this, there is much infection-related information.

This book is designed to make the material easy to find. The format consists of many short, concise narratives, charts, lists, and tables so that you can readily access and apply or implement the information. Each subject is self-contained, and the book is not meant to be read sequentially. Doing so may make it seem redundant. However, everything included is important. Some of the information is difficult to find in other nursing sources. Information is grouped together in logical format that will enable you to quickly locate the subjects for which the long-term care nurse is accountable.

In addition to the care provided by physicians, some facilities are also fortunate to have the services of advanced practice nurses (including nurse practitioners and clinical nurse specialists) and physician assistants. These well-educated and highly qualified individuals provide excellent care to residents in long-term care facilities. In some situations, we note that physician notification is necessary. We are using the term "physician" for brevity only. This is not intended to minimize the important work of advance practice nurses and physician assistants. When the reader is advised to notify the physician, facilities may also notify the advanced practice nurse or physician assistant, if available, and as required by state law and facility policies.

This writer has worked in every position in a long-term care facility at one time or other. It is very difficult work. I deeply admire the many professionals and paraprofessionals who are committed to our long-term care elderly. I sincerely hope that this information is useful to you in providing quality care and making a difference in the lives of the residents. If you have suggestions,

questions, or comments, feel free to email me at *bacello@aol.com*. We also welcome suggestions for topics to be included in the next edition of this book.

Barbara Acello
August 2015

Chapter 1

Geriatric Conditions

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Dementia

When a resident presents with new onset of confusion, always consider delirium first. Remember that dementia is always a diagnosis of exclusion, and reversible (treatable) causes should always be ruled out. Always obtain a history and presentation of the problem. There are many common conditions that cause dementia (Table 1.1). For example, Lyme disease mimics dementia in some people. Dooming a person to a life of dementia would be unfortunate if he or she could be treated and cured with antibiotics.

Table 1.1 | Common conditions that cause dementia

Condition or Disease	Features and Information	Onset and Course
Alzheimer's disease (AD). This was formerly called senile dementia. Some professionals call this disorder "senile dementia of the Alzheimer's type [SDAT])	The most common type of dementia. Lack of certain chemicals in the brain causes tangles and plaques in the brain that looks somewhat like spiderwebs. The person has progressive memory loss, behavioral changes, poor judgment, and loss of ability for abstract thinking. Eventually may cause loss of speech, loss of self-care ability, and apathy. As the disease progresses, they will not recognize their family, and they will refuse to eat.	Onset age: 60–80. Slow, progressive and irreversible. Most people die within 4 to 6 years after diagnosis, but some may live up to 20 years. Some drugs will help improve the memory, but nothing has been found to reverse the disease.
Vascular dementia (also called *multi-infarct dementia*)	Interference with blood circulation in brain cells due to arteriosclerosis or atherosclerosis. Many different areas of the brain die due to lack of oxygen. The most common form of dementia after Alzheimer's disease. Believed to be caused by a series of strokes. Each stroke worsens the mental decline.	Onset age: 55–70. Outcome depends on rate of brain damage. People who have had a stroke have a ninefold greater risk of dementia compared with people who have not had a stroke. About 1 in 4 people who have had a stroke develop signs of dementia within 1 year.
Mixed dementia	Several types of mixed dementia have been identified:	Much more research is needed. Unfortunately, this cannot be done on living individuals. It appears that mixed dementia may be more common than previously realized. Signs and symptoms are determined by the affected area in the brain and the types of brain changes involved.
	Alzheimer's protein deposits and blood vessel problems from vascular dementia are both present.	
	Alzheimer's changes and Lewy bodies may both be present.	
	Occasionally, brain changes linked to Alzheimer's disease, vascular dementia, and Lewy body dementia are present at one time.	
Lewy body dementia (DLB or LBD)	Named after round nerve cell deposits found in the brain after death. These are different from Alzheimer's deposits. Agitation, delusions, and speech problems are early symptoms. Involves a progressive mental decline, fluctuations in alertness and attention span, drowsiness, staring into space for long periods, and visual hallucinations. The person develops motor symptoms similar to those of Parkinson's disease.	Develops later in life than other dementias; usually between ages 68 and 80.
Normal pressure hydrocephalus	Caused by increased pressure from an excess of cerebrospinal fluid in the ventricles of the brain. Symptoms include memory loss, difficulty thinking and reasoning, incontinence, and difficulty walking.	Some cases can be corrected with surgical implantation of a shunt in the brain to drain excess fluid. This surgery is not without risks, including hearing loss. No nonsurgical treatments have been effective. Additional research needed.

Table 1.1 | Common conditions that cause dementia (cont.)

Condition or Disease	Features and Information	Onset and Course
Frontotemporal dementia (Pick's disease)	Accounts for about 5% of all dementias. Caused by damage to the frontal and temporal lobes of the brain, resulting in marked changes in behavior, personality, and/or speech. Usually begins with aphasia. Other signs and symptoms appear gradually over a period of years. As the condition progresses, memory and attention span also become impaired. Some people have permanent personality and behavior changes. It deposits Pick bodies in areas of damage in the brain. Behaviors vary from socially inappropriate to listless and apathetic.	Can occur in people as young as 20, but usually begins between ages 40 and 60; the average age at which it begins is 54. A brain biopsy is the only test that can confirm the diagnosis. Rapidly worsens, causing total disability early in the course of the disease. Usually causes death within 210 years, typically from infection or organ failure.
Huntington's disease (also called Huntington's Chorea)	Inherited from either parent who has a gene for the disease. Causes abnormal, jerking movements and progressive mental decline. A blood test is available to show whether the person will develop the disease later in life. Some people want the test, so they can make long-term plans. Others would prefer not to know.	Onset age: 25–45. Average duration 15 years.
Parkinson's disease	Deficiency of chemical (dopamine) in brain. Causes a progressive mental decline in some persons. Signs of dementia include memory loss, distractibility, slowed thinking, disorientation, confusion, moodiness, and lack of motivation. The person develops tremors, the appearance of rolling a pill between the thumb and fingers, a masklike expression, and a shuffling gait.	Approximately 20% of people with Parkinson's, develop dementia. This is typically persons over age 70. There is usually a delay of 10-15 years from the Parkinson's diagnosis until the onset of dementia. This condition is also caused by Lewy bodies, but they are in a different area of the brain than in Lewy body dementia.
AIDS Dementia Complex (ADC)	Cognitive decline, severe loss of motor skills and difficulty balancing. Thinking and speaking become slower, develops poor safety judgment and loss of instrumental activities of daily living such as balancing the checkbook.	A common and important complication of end stage HIV-1 infection. It is a source of great morbidity and mortality. It is believed to be caused by the HIV virus attacking the nervous system. It is not as common today as it was in the early years of the AIDS epidemic because we have a much wider variety of effective drugs to treat the condition (AIDS). Prognosis is poor.
Tertiary syphilis	Untreated syphilis causes neurological problems. The spirochete (bacterium) causes brain damage. The internal organs are also affected. At this stage, the person cannot be cured.	Usually occurs 15–20 years after the primary infection, but can occur as early as 1 year in some people. Although the person is highly symptomatic, the condition is not contagious and standard precautions are used.

Table 1.1 | Common conditions that cause dementia (cont.)

Condition or Disease	Features and Information	Onset and Course
Creutzfeldt-Jakob disease	A rare and incurable disorder that causes changes in the brain. Thought to be viral in origin for many years, it is now believed to be caused by prions. Harmless and infectious prions are nearly identical, but the infectious form has a folded appearance and structure.	Onset age: 50–60. Rapidly progressive. About 90% of persons die within 1 year.
Prion diseases	The existence of prions was discovered only recently. Prion is an abbreviation for proteinaceous infectious particle. Prions may be ingested through infected food, such as meat. This is an area in which research must be done to identify factors that influence prion infectivity and determine how they cause brain damage. Researchers are also trying to identify risk factors for the condition and determine when in life the disease appears.	Usual onset age: 50–60. Rapidly progressive and incurable.
	Less common prion diseases include Gerstmann-Sträussler-Scheinker syndrome and fatal familial insomnia. Animal prion diseases include bovine spongiform encephalopathy (BSE, "mad cow disease") in cattle, scrapie in sheep, chronic wasting disease in deer and elk, and transmissible mink encephalopathy.	
Dementia pugilistica Punch drunk syndrome Boxer's syndrome Chronic Traumatic Encephalopathy	First discovered in the 1920s in boxers. This is an injury–related dementia caused by repeated blows to the head, or repeated concussions. It can be seen in many other amateur athletes, and professional football players.	May be mistaken for Alzheimer's disease. It may go undiagnosed for many years. Signs and symptoms include tremors, slowed movement, lack of coordination, speech problems, declining mental ability, and confusion. This is an area of ongoing research related to prevention and treatment.
Lyme Neuroborreliosis and Dementia	A rare but reversible dementia with a high risk for misdiagnosis. The outcome is good after antibiotic treatment. Some experts recommend doing a Lyme test in persons with new signs and symptoms of dementia. If the blood test is positive, central spinal fluid should be analyzed. People who are misdiagnosed with dementia can live the remainder of their lives with a potentially treatable and reversible condition (Lyme disease). Do not consider the absence of the typical Lyme bull's-eye rash. Approximately 40% of people with neurological Lyme disease do not develop the rash.	The incidence is unknown because of the potential for misdiagnosis, and similarities between Lyme dementia, Alzheimer's disease, and Lewy body dementia. The best approach is to make it a routine part of the dementia workup.

The following protocols were developed by Barbara Massey, RN, from the Genesis Program of the Los Angeles County Department of Mental Health. The Genesis Program is primarily contacted to manage people with "dementia." At some point in time, the Genesis staff began questioning cases of alleged "dementia" and examining the clients for causes.

Ms. Massey said they find the cause in 75-80% of cases. She estimates that 98% of the cases they see have medically-induced dementia (not Alzheimer's). This includes sudden memory loss, delusions, etc. Other causes include:

- Hypothyroidism
- B12 deficiency
- General poor nutrition
- Urinary tract infection
- Subdural hematoma (ask about recent falls and head injuries)
- Mixing the wrong medications or contra-indicated herbs and medications (or even too many different herbs) or wrong doses. The Genesis staff physically go to the patient's house to observe and ask what the person takes. Ms. Massey reported one case of a woman taking both a brand name drug and a generic form, apparently thinking they were two different drugs.

The following protocols were developed to assess the causes of dementia:

- Full physical examination
- Vital signs, including orthostatic blood pressure
- Weight
- Nutrition and hydration evaluation
- Hearing and vision evaluation
- Neurological exam (CN II-XII, sensory motor reflexes, gait)
  - A pronounced change in gait may be an early sign of rapidly declining health
- Polypharmacy evaluation (Evaluating each of a patient's drugs and doses.)

Diagnostic tests include:

- Full physical exam
- Labs: CBC, electrolytes,
- BUN/creatine, blood sugar, calcium, phosphorus,
- B12, folate, RPR, LFT, TSH
- Urinalysis
- EKG
- Chest x-ray
- Pulse-oximetry
  - Arterial blood gas if indicated
- Head CT/MRI/SPECT (Originally optional tests used in special situations, but now Genesis staff include them in the routine workup)

In certain circumstances or for special residents, further diagnostic tests are performed, which can include:

- PT/PTT
- Lumbar puncture (Identify Lyme disease and other conditions)
- HIV
- Syphilis (RPR and VDRL)
- Ammonia
- Cultures
- Drug screen (alcohol, narcotics, benzodiazapenes)
- Medication levels as appropriate
- Mammography, PSA, occult blood

Refer to Finding the Medical Causes of "Dementia" in the Elderly: the Genesis Protocols. Online at *www.alternativementalhealth.com/articles/genesis.htm* Accessed 8/26/15. (Used with permission.)

Pseudoaddiction

Pseudoaddiction is an elusive issue with the potential for survey and legal problems. Although the term was first introduced in 1989, many healthcare professionals have never heard it used. However, nurses in your facility probably have residents that they call "clockwatchers." Most of these are residents with diagnoses of painful, chronic diseases. Residents with pseudoaddiction are your "clockwatchers."

Addiction versus pseudoaddiction

Addiction is a compulsive physiological need for and use of a habit-forming substance. The prefix "pseudo" means "a false image" or "something that resembles the original subject," which in this case is addiction. Pseudoaddiction is a syndrome, not a diagnosis. Persons with this condition have pain that is not adequately relieved by their current pain management regimen. This is often due to the following:

- The drugs given provide inadequate relief
- The dosage is too low
- The interval between doses is too long

Pseudoaddiction is created by healthcare personnel because of:

- Inadequate, inconsistent, and irregular pain assessment

- Lack of understanding of pain management and methods of assessing pain, such as using the various pain rating scales—most nurses use only the 0–10 scale, and this is not appropriate for many people
- Fear and misunderstanding of pain, pain treatment, and addiction

Identifying the pseudoaddicted resident

The resident with pseudoaddiction usually does not trust staff, and drug use is often a source of conflict between the resident and caregivers. Nurses believe the person is an addict, and the person believes that the pain regimen is inadequate.

The resident may be labeled a behavior problem because of clockwatching and acting out in frustration. Some residents are very dramatic. The conflict usually escalates, and there is no middle ground. Nurses sometimes ask the physician to order a placebo. You should consider two principles in this situation:

1. Pain is whatever the resident says it is, and nurses must accept and respect his or her word, even in the absence of physical signs and symptoms of pain.
2. Placebos are never appropriate unless fully informed consent is obtained. The American Geriatrics Society and American Medical Directors Association both state that their use is unethical and has no place in clinical practice.

Tolerance and dependence

Drug tolerance is a state in which a larger dose of analgesic medication is needed to control pain or maintain the original drug effect. In this condition, the pain exceeds the ability of the prescribed drug to control it. You correct it by gradually increasing the dosage of the drug. Some clinicians believe in reducing the dosage to eliminate tolerance, but this is ineffective much of the time. Drug tolerance is an unavoidable phenomenon in people who take narcotic analgesics over a prolonged period.

Physical dependence is the development of physical withdrawal symptoms when opioids are abruptly discontinued. Tolerance and dependence are both normal responses to narcotic analgesic use. These are expected after two to four weeks of regular drug use, although it may take longer in some individuals. Healthcare personnel do not usually consider the potential for tolerance and dependence at the time the drug is ordered or discontinued. Tapering the drug off gradually by decreasing the dosage or frequency usually eliminates intolerable withdrawal side effects related to dependence.

Resident improvement

Occasionally, residents' pain will improve on its own through surgery or other intervention. When the pain is less severe, people with pseudoaddiction usually request the analgesic less often. However, the need to decrease the drug is much less common than the need to increase it.

Residents with pseudoaddiction are usually alert and unafraid to complain to surveyors. Inadequate pain relief may result in a facility receiving deficiencies for decreased quality of life, inability to maintain the maximum level of physical and psychosocial function, and whatever other complaints an angry resident can conjure up in retaliation for inadequate pain management and ongoing conflict with the nurses.

Resident treatment

Pseudoaddiction should be ruled out any time there is a suggestion of addiction due to a change or escalation of pain behaviors. Do this by performing a complete pain assessment and reviewing the history of analgesic administration. You should have a variety of pain rating scales available for residents, and each resident should select the one he or she wants to use. The pain rating scale is nothing more than a tool for communication that keeps residents, nurses, and physicians on the same page regarding the level and intensity of each resident's pain.

The "cure" for pseudoaddiction is to adjust the pain-management regimen so the resident is regularly medicated with an appropriate drug dosage at an appropriate frequency. The World Health Organization's (WHO) pain ladder is an excellent tool for planning a pain management regimen. Although originally developed for the treatment of cancer pain, the WHO ladder is accepted for treatment of all types of acute and chronic pain. The WHO pain ladder is being revised at the time of this writing and is not available for publication. It should be available sometime in early 2016. For additional information, go to *www.who.int/cancer/palliative/painladder/en*.

Do not be afraid of administering opioid (i.e., narcotic) analgesics. Many facilities fear that they cause respiratory depression in elderly persons. Reactions of this nature are rare, particularly when the dosage is started low and increased gradually. However, certain drugs, such as meperidine, methadone, propoxyphene, and tramadol, are not recommended for elderly persons. Another consideration is to medicate the resident before the pain is out of control. Some residents do much better on a four- to six-hour scheduled regimen instead of receiving the analgesic drugs on an as-needed basis. Some residents do well if a narcotic analgesic is alternated with an anti-inflammatory, such as ibuprofen. This may mean medicating the resident as often as every two to four hours with one drug or the other, but for a resident with uncontrolled pain, it can make a huge difference in quality of life and satisfaction with care.

The need for pain management education

If you see yourself or other nurses withholding or strategizing to suppress pain medications, consider taking a continuing education class on pain management. You may be surprised and pleased by what you learn.

Erroneous and inadequate pain-management education is shockingly common among physicians and nurses. Sadly, some textbooks and teaching materials being used for pain-management education are inaccurate. Due to being uninformed or misinformed, nursing home staff often experience great anxiety when deciding when and how to administer narcotic analgesics. Improvements in professional education would contribute to an improved understanding of the differences between drug abuse and the legitimate use of narcotic medications for pain. Meanwhile, always consider pain as a factor if residents (whether alert and confused) are acting out. Consider unrelieved pain as the reason for your "clockwatchers" and modify dosage and schedules as appropriate. Residents will benefit from your improved understanding of pain assessment and management.

Bariatric Conditions

Obesity is a very misunderstood medical condition. Obese individuals are often stereotyped by both the public and the medical community. They may be considered dirty, slovenly, lazy, and lacking in willpower. Some eat excessive amounts of food, while others do not. Genetics and lack of exercise are contributing factors in about 70% of all individuals with weight problems. Lifestyle and environment also contribute to weight issues. Obesity is definitely a risk factor for many serious diseases, including a reduced lifespan.

Body mass index (BMI)

BMI is a calculation that is used to determine the degree to which a person is overweight. Guidelines for these classifications include:

- Underweight: having a BMI that is less than 18.5
- *Ideal weight: calculated by the facility dietitian based on individual factors*
- Mild obesity: having a BMI of 25 to 29.9
- Obesity: having a BMI of 30 to 39
- Moderate obesity: having a BMI of 30 to 34.9 (also called Class I obesity)
- Severe obesity: having a BMI of 35 to 39.9 (also called Class II obesity)
- Morbid obesity: having a BMI of 40 to 49
- Super obesity: having a BMI of 50 or more

The BMI calculation should not be used in isolation. There are many variables affecting each individual's weight category.

Comorbidities

Comorbidities are risk factors that directly or indirectly contribute to the outcome of morbid obesity. They create many additional management problems. Comorbidities increase as the BMI increases. Weight loss improves or even eliminates comorbidities. In addition, obesity is a contributing factor, and one of the top 10 leading causes of death.

Persons with obesity also experience many mental health problems, including depression, low self-esteem, anxiety, substance abuse, and eating disorders. The problems are believed to be a response to how the person is treated. Most experience deep emotional pain because of the insensitivity and stereotyping of others, and the discrimination is a difficult obstacle to overcome.

Insecurity

Persons of size know that their body size makes care difficult for staff, and some will have feelings of shame, embarrassment, and fear upon admission to your facility. Many are insecure and unstable on admission, because they waited too long to seek treatment. Remember that obesity is a chronic medical problem, like diabetes and other medical conditions. Treat overweight persons with sensitivity, understanding, consideration, dignity, and respect.

Bariatric residents admitted to the long-term care facility are often very ill and totally dependent for activities of daily living. Some can direct their own care, but others are unable to do so. Some are simply ashamed to ask for help. Some have been battling their insurance companies to ensure medical bills are covered. They are not always successful. Others will have no insurance at all, often because no one will insure them due to their weight. This group often avoids medical care because of the cost. This problem is gradually changing since the Affordable Care Act (ACA) was passed, but the many complex problems will take quite some time to correct.

Care overview

Depending on the setting of your facility, you will care for bariatric clients preoperatively, intra-operatively, and post-operatively. You will also care for many overweight persons needing medical management and assistance with personal care. Some of these patients may plan to have weight loss surgery in the future, but some will not. Comorbidities often require stabilization and management before bariatric surgery can safely be done. This problem is gradually changing, since the Affordable Care Act (ACA) was passed, but the many complex problems will take some time to correct.

Uncontrolled high blood pressure, uncontrolled diabetes, sleep apnea, strokes, and congestive heart failure are common in the overweight population. Certain cancers are more common in bariatric clients, and some will be admitted for treatment of malignancies and related conditions. Ulcerations, varicose veins, and skin-related problems are also very common because the skin is often stretched, thin, and in poor condition. The client may have difficulty reaching skin folds or lack the range of motion necessary for cleansing and performing routine skin care. Wound healing and normal correction of skin conditions are often adversely affected by lack of oxygen in the tissues.

Cardiac and respiratory problems are common. The effects of gravity, weight of the chest wall, and the size and position of the neck cause hypoventilation and inadequate oxygenation. Breathing is more difficult when the person is lying down, so positioning the bed with the head elevated may be essential. However, remember that this increases pressure on the buttocks and hips, increasing the risk for skin breakdown. Move the resident regularly and monitor skin integrity closely. Breakdown often occurs quickly and may be undetected because of skin with many folds.

The descending diaphragm usually provides space for the lungs to fill with air on inhalation, but for a person of size, the weight of the abdominal tissue prevents the diaphragm from descending fully, inhibiting chest expansion. To compensate, the person hyperventilates. This involves breathing abnormally hard, fast, and deep, which upsets the balance of gases in the body. This causes an increased loss of carbon dioxide in the blood. The person has excessive oxygen in the lungs, resulting in decreased lung capacity and inadequate oxygenation of body tissues.

Some persons of size must use oxygen continuously or use special masks called CPAP (continuous positive airway pressure, pronounced “see pap”) and BiPAP (bi-level positive airway pressure, pronounced “by pap”) when in bed. These devices affect pressure in the airway, holding it open and preventing sleep apnea.

If the CPAP or BiPAP device is used, monitor the fit of the mask. It must have no air leaks. However, if the mask is too tight, it may cause pain, redness, or skin breakdown on the nose. The resident may prefer to be in the semi-Fowler’s position when the mask is being used. If the person swallows a great deal of air, he or she may belch frequently and complain of abdominal fullness or pressure. Elevating the head also reduces air swallowing. A person using one of these masks may complain of nasal dryness. Avoid lubricating them with petroleum jelly or other petroleum products. The physician may order normal saline nasal spray or nose drops to relieve irritation. Wash the face prior to applying the mask, and wash the mask with soap and water each morning or whenever it is removed. Dry the mask well and store it in a plastic bag or as directed.

Complications of immobility

Persons of size are at great risk for complications of immobility. Care is often designed to keep them moving and to maximize circulation. Persons who are unconscious, immobile, or bedfast are at high risk of developing the following conditions:

- Pneumonia
- Atelectasis (collapse of the alveoli)
- Deep vein thrombosis (DVT, blood clot in the leg)
- Pulmonary embolism (a blood clot in the lung that usually results from a DVT that breaks off from a blood vessel in the leg and travels through the system, becoming trapped in a small blood vessel in the lungs)
- Pressure ulcers, skin tears, ecchymosis (bruising), pain, and other skin problems
- Yeast infections in the skin folds

The risk of aspiration is also much higher in obese persons than it is in adults of normal weight. This is due to a combination of positioning problems and the large volume of residual gastric fluid in the stomach, which has been stretched. The gastric fluid is under pressure, and the incidence of reflux is higher. Reflux is a backflow of fluid upward into the esophagus. The common term for reflux is "heartburn." In this case, the gastric juices and food in the stomach are under high pressure and flow back into the mouth and esophagus. The person inhales a small amount of fluid, causing it to inadvertently make its way to the lungs. Aspiration causes pneumonia and other serious complications.

Persons of size often have chronic pain associated with musculoskeletal wear and tear and underlying chronic disease. Chronic pain may worsen underlying depression and anxiety. Monitor the residents carefully for pain. Use massage and positioning to relieve pain when appropriate. Medicate if needed.

Personal and environmental needs

Over the years, many facilities have remodeled and built new facilities, increasing the number of private rooms. Some facilities have converted semi-private (two bed) rooms into private rooms for bariatric care. A private room is ideal when caring for persons of size, because the rooms can be modified to meet special needs without interfering with the rights of a roommate. Staff working with bariatric clients should have additional education in the complexities of obesity and bariatric care. Having a dedicated bariatric care room or unit is believed to be safer for both residents and staff.

In some facilities, persons of size are admitted to regular medical and surgical units. If your facility does not have a dedicated bariatric care area, try to anticipate client needs and gather

essential items at the beginning of your shift. Unplanned admissions can be challenging if the facility does not maintain a regular stock of basic items needed for bariatric care. Another consideration is that doorways must be wide enough to move beds and other special equipment in and out of the rooms.

Regular hospital furniture is designed to safely hold persons who weigh 350 pounds or less. It is not safe for most bariatric persons. Special bariatric furnishings are available for rent or purchase. These reduce the risk of injury to residents and workers and increase client comfort. Learning the weight limits of regular furnishings and equipment is essential when providing bariatric care. Avoid assuming that items that are considered "large size" are safe to use. Some of these will not support a bariatric person's weight, and special bariatric furnishings may be necessary. Some facilities mark the weight limits on the back or underside of the furnishings equipment where it is not visible. Some facilities use color-coded stickers to denote bariatric-safe equipment. The code to weight limits must be discrete so it is not offensive to the person or visitors.

Many environmental adaptations are necessary for safety and dignity. For example, a floor-mounted toilet is essential. Wall-mounted toilets are not safe for persons weighing more than 350 pounds. Helpful information is available from *www.recovercare.com*.

Aphasia

Aphasia is difficulty speaking. It commonly occurs with the left-sided stroke, but it can occur with many other conditions. Approximately 25% to 40% of stroke survivors develop aphasia. It is very frustrating for the resident because he or she may be able to understand, but unable to find the right words to communicate with you. For example, the resident is trying to ask for a glass of water. What comes out is a request to use a hair brush.

Aphasia affects speaking and understanding, or both. It usually occurs rapidly, but occasionally can develop slowly. For example, it would develop rapidly in a person who has had a stroke or a head injury. It would develop slowly in a person with a brain tumor. Recovery may take up to two years of aggressive speech therapy, but some people never recover their speaking ability. Table 1.2 describes the various types of aphasia. For comprehensive information, refer to *www.aphasia.org/aphasia-faqs*.

Types of aphasia

Table 1.2 | Types of aphasia

Type of Aphasia	Description
Anomic (amnesic) aphasia	Occurs in persons with minimal brain damage. Subtle signs and symptoms that may be unnoticed. Persons with anomic aphasia may selectively forget interrelated groups of words, such as the names of people or kinds of objects.
Expressive aphasia	Damage to Broca's area, which is the language center on the dominant side of the brain. Residents have difficulty conveying thoughts through words or writing. They can think of the words they want, but cannot speak the words or organize them into coherent, grammatically correct sentences.
Receptive aphasia	Damage to Wernicke's area, a language center in a rear portion of the brain. Residents have difficulty understanding spoken or written language and often have incoherent speech. Residents can sometimes form grammatically correct sentences, but their speech is often devoid of meaning.
Global aphasia	The most severe form of aphasia, caused by extensive damage to several areas of the brain associated with language function. Residents with this condition lose almost all linguistic abilities. They cannot understand language or use it to convey their thoughts.

Transient Ischemic Attack (TIA)

A TIA is sometimes called a mini stroke or a warning stroke. Take this condition very seriously. A TIA is caused by a blood clot in the brain. It is similar to a stroke. However, a stroke blocks an area of the brain permanently. With a TIA, an area is blocked temporarily, then the clot seems to free itself and move on. There is no permanent damage.

About one-third of people who experience a TIA subsequently have a stroke. If the TIA is accurately identified, it can be treated and a stroke can be prevented from developing. A resident who is having a suspected TIA should be transferred to the emergency room for further evaluation and treatment. Treat this condition the same as you would a stroke. Call in a 911 ambulance. Contact the emergency department and tell them you suspect a stroke, and the time the symptoms developed. There is a limited window in which signs and symptoms can be treated and reversed. A common expression is "time is brain."

Various studies have shown that the ABCD and ABCD2 scales are very helpful in identifying a TIA or a stroke. Using FAST is another method of remembering signs and symptoms of TIA or stroke.

F = facial drooping
A = arm weakness
S = speech difficulty
T = time to call 911

Other signs and symptoms of TIA or stroke may include:

- sudden confusion, trouble understanding, or having trouble speaking
- new onset trouble seeing in one or both eyes
- new onset numbness or weakness in the face, arm or leg on one side of the body
- dizziness loss of balance or coordination and difficulty walking
- sudden onset severe headache with no known cause

The ABCD and ABCD2 scales (Tables 1.3 and 1.4) are useful in helping you confirm the diagnosis.

Predicting stroke and TIA risk

Several scoring systems have been accurately used to predict the risk of having a TIA or a stroke. Table 1.3 shows the ABCD score for predicting strokes.

Table 1.3 | ABCD score for predicting strokes

Factor	Score
Age over 60	1
Elevated blood pressure	1
Symptoms – weakness on one side of body – speech difficulty	2
Symptoms – weakness on one side of body (only)	1
Symptoms – no weakness on either side of body	0
Duration of Symptoms – more than 60 minutes	2
Duration of Symptoms – 10 to 59 minutes	1
Duration of Symptoms – less than 10 minutes	0
Total Score	

Risk of stroke within seven days of a TIA:

Score	Risk
1–3	0.0%
4	1.1%
5	12.1%
6	31.4%

TIAs are very difficult to diagnose. They may be mistaken for migraines, seizures, and other conditions unrelated to the vascular system. The ABCD2 score has been used to identify future stroke risk (within 90 days) and helps confirm a TIA diagnosis. Higher scores confirm the TIA diagnosis and help predict the likelihood of future strokes. Table 1.4 shows the ABCD2 scale for predicting TIAs.

Table 1.4 | ABCD2 score for TIA

Criteria	Score
A = age	1 point if >60 years
B = blood pressure	1 point for hypertension >140/90
C = clinical features	2 points for unilateral (one-sided) weakness
	1 point for speech disturbance without weakness
D = symptom duration	1 point for 10 to 59 minutes
	2 points for more than 60 minutes
D = diabetes	1 point for diabetes
Total Score	

Total scores: 0 (lowest risk) to 7 (highest risk)

Stroke risk at 2 days, 7 days, and 90 days:

Scores 0–3: low risk

Scores 4–5: moderate risk

Scores 6–7: high risk

Stroke

A stroke or cerebrovascular accident (CVA) is one of the most devastating conditions you will care for. Stroke is the leading cause of long-term disability in the United States. It affects approximately 2.5 million people. Approximately 200,000 people die each year. CVA affects both vascular system and the nervous system. It involves a complete or partial blood loss to brain tissue. The most common cause is atherosclerosis, but there are many other causes. The most common cause is a thrombotic stroke. A hemorrhagic stroke usually has the worst outcome. Getting rapid treatment is essential.

The nerve pathways cross in the brain, so a stroke on the right side of the brain affects the left side of the body. Signs and symptoms will vary depending on the location and the extent of damage to the brain.

A TIA may precede a stroke. It occurs rapidly and may last from a few minutes to 24 hours. Symptoms are similar to a stroke, but they are temporary and reversible. Many excellent stroke resources are available at *http://tinyurl.com/33spr9m*.

Table 1.5 will assist you in assessing residents who you suspect have had a stroke.

Table 1.5 | Types and causes of stroke

Type of Stroke	Cause	Incidence
Ischemic	The most common type of stroke. Caused by a clot or other blockage within an artery in the brain.	Accounts for approximately 87% of all strokes
Lacunar Infarct	Small, deep infarcts located mainly in the basal ganglia and thalamus. May also affect the brain stem, internal and external capsules, and periventricular white matter. When a stroke occurs due to small vessel disease, a very small infarction results, sometimes called a lacunar infarction. It is most likely caused by atherosclerotic occlusion of perforating branches. "Lacunar" comes from the Latin word meaning "hole" or "cavity." Lacunar infarctions commonly occur in persons with diabetes or hypertension.	Accounts for approximately 25% of all ischemic strokes.
Embolic Stroke	A clot (embolus) forms somewhere in a part of the body other than the brain (commonly the heart) and travels through the bloodstream into the brain, where it lodges in a small artery. This stroke occurs suddenly and without warning.	Approximately 15% percent of embolic strokes occur in persons with atrial fibrillation.
Thrombotic Stroke	A clot forms in the blood vessels of the brain, usually one of the cerebral arteries. It remains attached to the artery wall until it grows large enough to occlude blood flow. May be preceded by one or more TIAs.	Accounts for about 60% of acute ischemic strokes.
Cerebral Hemorrhage	Caused by the sudden rupture of an artery in the brain. Blood spills out, compressing brain structures. This stroke is the most deadly and difficult to treat. Most common type of stroke in younger persons.	Approximately 10% of strokes are caused by hemorrhage.
Subarachnoid Hemorrhage	Caused by the sudden rupture of an artery. The location of the rupture leads to blood filling the space surrounding the brain rather than inside of it. This is also an hemorrhagic stroke and is deadly and difficult to treat.	Approximately 3% of all strokes

Characteristics of right and left hemiplegia

Table 1.6 describes the characteristics of right and left hemiplegia.

Table 1.6 | Characteristics of right and left hemiplegia

Hemiplegia	Characteristics (Residents may have some, but not all of these)
Left CVA, right hemiplegia	**Aphasia, dysarthria, speech impairment, deficit new language information**
	Hearing impairment
	Writing impairment
	Impaired ability for abstract thinking, impaired analytical skills
	Difficulty recalling symbols
	Impaired ability to understand what he or she hears
	Difficulty learning or relearning
	Difficulty generalizing and conceptualizing information
	Right homonymous hemianopsia (partial blindness resulting in vision loss in the same visual field of both eyes)
	Normal awareness, judgment intact
	Depression and slow, cautious, disorganized behavior
Right CVA, left hemiplegia	**Loss of speech inhibition, uncontrolled talking, but ability to speak intact; although resident is able to communicate, may be more disabled than residents with right hemiplegia**
	Left homonymous hemianopsia (partial blindness resulting in vision loss in the same visual field of both eyes)
	Memory problems, short-term memory loss
	Unilateral neglect
	Loss of numerical concept (important if numeric pain scale is used)
	Limited awareness of errors
	Misjudges distance, size, speed, and/or position; has difficulty and seeing and understanding how parts are connected to wholes
	May be unable to differentiate right side up versus upside down
	Deficit in processing new spatial information
	Impulsive, quick behavior, judgment impaired, in denial
	Unaware of deficits and limitations
Right or left hemiplegia	**Emotional lability, may laugh or cry inappropriately**
	Loss of sensation on affected side
	Loss of 3-D concepts; cannot identify objects by feel
	Loss of sense of position of extremities
	Easily fatigued
	Paralysis, usually flaccid, but may be spastic
	Impaired sense of balance

Table 1.6 | Characteristics of right and left hemiplegia (cont.)

Hemiplegia	Characteristics (Residents may have some, but not all of these)
	Pain in arm and shoulder, frozen shoulder, foot drop, contractures, and/or spasticity
	Memory deficits
	Reduced attention span
	Apraxia (resident is able to move but cannot use body part for specific purpose)

Approaches to use when caring for residents with CVA

Table 1.7 describes various approaches you can use when caring for residents with CVA.

Table 1.7 | Approaches to use when caring for residents with CVA

Right hemiplegia (Left brain stroke)	Left hemiplegia (Right brain stroke)	Unilateral Neglect (Most common in left-sided paresis or paralysis, but can occur in right)
Hemianopsia (loss of the visual field on one side) occurs in 25% of left brain strokes.	Hemianopsia (loss of the visual field on one side) occurs in 36% of right brain strokes.	Unilateral neglect has been identified in 82% of right-brain stroke survivors and 65% of left-brain stroke survivors. Anosognosia (unawareness of the condition, especially paralysis) also occurs. The resident cannot recognize the involved extremities as his or her own or does not recognize the disabilities in those extremities.
Avoid overestimating abilities	Avoid underestimating abilities	Promote awareness of body and environment on affected side.
Stimulate as many senses as possible. Many residents have the ability to learn, regardless of communication problems or aphasia.	May have spatial-perceptual deficits; learning and physical ability may be limited.	Stand and work on unaffected side of body. Position door of room on this side, if possible. Approach on this side when possible.
Be prepared to repeat instructions. Give frequent feedback. Use demonstration and gestures if resident does not understand instructions. Hand over hand technique is often effective.	Verbal cues and demonstration are helpful. Repeat procedures each time the task is used. Consistent approaches to the procedure are essential. Be sure all caregivers are familiar with the care plan and need for consistency. Will need constant supervision and cueing when learning a new task.	Avoid making the resident feel trapped or confined
Keep information brief and simple. Make good eye contact and avoid information overload. Speak with the resident as an adult; avoid baby talk.	Use task segmentation. Set up equipment and supplies on the right. Approach from right, but stimulate the left side by touching.	Give frequent verbal cues. Provide orientating information.

Table 1.7 | Approaches to use when caring for residents with CVA (cont.)

Right hemiplegia (Left brain stroke)	Left hemiplegia (Right brain stroke)	Unilateral Neglect (Most common in left-sided paresis or paralysis, but can occur in right)
Avoid shouting; the resident's hearing is intact even if communication problems are present. Monitor own tone of voice and body language. This is a slow process; don't betray your own frustration through verbal clues, posture, or movement. Make positive comments. Avoid negative feedback.	Make your point by using visual references whenever possible. Avoid startling the resident; move slowly. Avoid clutter in the environment.	Touch and remind the resident to use the neglected side.
Use task segmentation; break tasks into tiny parts. Provide as much sensory stimulation as possible.	Monitor safety and teach safety repeatedly. This resident has poor safety judgment. Learn the resident's true ability; don't take her word for what she can safely do. Verify the resident's yes and no answers. Although the resident is, actions may be inconsistent. He or she is probably not able to identify errors.	Arrange needed items on the unaffected side. Continue stimulating and touching the affected side.
All Residents		
For residents with hemianopsia, promote safety and prevent weight loss. Turn items around so the resident can see them. Request a consultation with a physician who specializes in neuro-optometric rehabilitation. Using a combination of regular glasses, lens coatings, filters, and prisms, the visual problem can be improved or corrected. Addressing the visual problem is essential to resident safety and well-being.		
Provide immediate feedback for each step of a task. This is much more meaningful than waiting until task completion. The resident may not remember the feedback but knows you made her feel good with your compliments and comments. People tend to repeat behavior for which they are praised.		
After a stroke, the affected areas of the brain are edematous and cannot conduct impulses. As swelling declines, the neurons begin to reawaken. Beginning treatment early, using range of motion on the affected side, and working with the resident to use compensatory strategies to remain functional will help allocate the awakening neurons for movement. Provide passive range of motion (PROM) several times daily.		
In addition to PROM, remind the resident to make voluntary (active) range of motion movements on the affected side to the extent possible, even if he or she responds with comments such, "I am paralyzed. I can't." Trying hard often results in small movements. Build on them! These are not meaningless movements, and with nursing focus can be developed into meaningful function. Increasing ROM improves strength and muscle bulk, promotes vascular return, reduces the risk for contracture development, pain, and stiffness. Active movement promotes other options, including return of function. Early, consistent treatment is key.		
Some nurses and therapists have learned that small, voluntary movements are nonfunctional and purposeless. We now know this is incorrect. Encouraging voluntary movement helps teach compensatory maneuvers and reestablishes control over the affected extremities by the "original" neurons. Remember that the terms "recovery" and "functional" are not used synonymously. Address both. Over the long term, they will be indistinguishable.		

Approaches to use with memory and behavior problems in residents with CVA

Table 1.8 describes various approaches to use with residents with CVA who also have memory and behavior problems.

Table 1.8 | Approaches to use with memory and behavior problems in residents with CVA

Abusive language, inappropriate behavior
• Always praise in public and correct in private. • Give the resident immediate feedback; avoid waiting, which will dilute the effect. • Inform the resident that the behavior is inappropriate. Be neutral or positive. Avoid berating the resident. • Avoid threats, negative or punitive comments, and an angry demeanor. • Provide positive feedback immediately when the resident does something right or well. • Work with the resident individually in a private area or in a small group. Avoid large groups.
Forgetfulness, memory problems
• Teach new skills in the setting in which they will be practiced at the logical time for the task to be used. This resident may master the task but be unable to perform it in a new location. • Be consistent. Develop a fixed routine and adhere to it. Make sure all staff are consistent. • Keep it simple. Provide concise directions one step at a time. Avoid complex directions. • After the resident responds, give and get feedback before moving to the next step. • Provide frequent, positive feedback. The resident may have forgotten previous success. • Use memory aids, including written directions, memory cards, an appointment book, and pictures. Individualize the aids to the resident. • Use familiar objects and old associations to teach new skills.
Emotional lability, flat affect
• Protect the resident's dignity at all costs. • Avoid embarrassing the resident, such as by interrupting or inappropriate laughing. • Ignore inappropriate outbursts. If emotions fluctuate or are labile, change the subject. Try leaving the resident alone for a few minutes, then return.

Types of Paralysis

Table 1.9 shows common terms associated with types of paralysis and their definitions.

Table 1.9 | Common terms associated with types of paralysis

Paralysis Term	Definition
diplegia	Paralysis of the same region on both sides of the body
flaccid paralysis	Loss of muscle tone and absence of tendon reflexes; the body part is immobile and feels loose and relaxed
hemiplegia	Paralysis on one side of the body (such as an arm, leg, and side of face)
hemiparesis	Weakness or partial paralysis on one side of the body (such as an arm, leg, and side of face)
locked-in syndrome	A condition in which a person is aware and alert but cannot communicate or move as a result of complete paralysis of all voluntary muscles except for those in the eyes
monoplegia	Paralysis affecting one limb
paraparesis	Weakness of both lower extremities
paraplegia	Paralysis of both legs
quadriplegia	See tetraplegia
spastic paralysis	Paralysis of a body part with no voluntary movement; spasticity is a painful condition in which the extremities are very jerky (spastic), and the person is aware of the movements but cannot stop them
tetraplegia	Paralysis below the neck, both arms, and both legs Note: The term quadriplegia is used only in the U.S. Professionals in the rest of the world have always used tetraplegia to describe this condition. In 1991, the American Spinal Cord Association recommended a change in terminology to be consistent with the rest of the world. This change has been slow to catch on in the U.S.
total locked-in syndrome	A condition similar to locked-in syndrome (see above) in which the eyes are also paralyzed

Grieving Associated With Loss of Independence

Table 1.10 describes the stages of grieving associated with loss of independence.

Table 1.10 | Grieving associated with loss of independence

Stage	Resident Response	Nursing Response
Denial	• Refusing to accept inability to perform routine tasks • Poor safety judgment • Refusing to ask for help • Refusing to accept an unfavorable prognosis or permanent disability	Reflect and paraphrase the resident's comments; avoid confirming or denying an unfavorable prognosis. **Example:** "My daughter said she will sell my house to pay my bill, but I will improve soon and return home." "It must be very difficult for you. You have been through a lot."
Anger	• Taking risks because of anger • Feelings of loss of control over body, environment, routines • Not wanting to accept help • Anxiety, fear of the unknown • Frequent use of call signal for minor requests • Refusing care • Lashing out at caregivers and family members	Try to identify and understand the source of the anger. Provide empathy, understanding, and support. Use active listening skills. Anticipate needs, give the resident choices and as much control as possible, and try to meet reasonable needs and demands quickly. **Example:** "This food is terrible—not fit to eat." "Let me see if I can find something that would appeal to you more."
Bargaining	• Anxiety, fear of the unknown persists • Worrying about how to complete unfinished business from prior to disability • Making deals with the higher power for return of function in return for good deeds	Meet the resident's requests, if possible. Use active listening skills. **Example:** "If God will spare me this, I'll go to church every week." "Would you like a visit from your pastor?"
Depression	• Profound sadness over leaving home, belongings, loved ones, pets • Taking risks because of apathy • Feeling as if it is not worth it, too difficult to rebound • Feeling as if regaining independence is far too difficult; there is no point in trying • May neglect hygiene and appearance • Giving up, wanting to die, refusing restorative and rehabilitative care • Worry about bills and other responsibilities	Avoid clichés that minimize or dismiss the resident's condition or depression ("It could be worse—you could be in pain, have lost your mind, etc."). Be caring and supportive. Avoid false hope. Let the resident know that it is all right to be depressed. **Example:** "There is no point in trying." "I understand you are feeling sad and depressed."

Table 1.10 | Grieving associated with loss of independence (cont.)

Stage	Resident Response	Nursing Response
Acceptance	• More cooperative • Willing to try • Realizes the disability is permanent, wishes things were different	Avoid assuming that the resident has accepted the condition and no longer needs emotional support. Acknowledge that the resident may be afraid of what the future holds. Use active listening. Be supportive and caring. **Example:** "I feel so alone." "I am here with you. Would you like to talk?"

Heat-Related Illness

Risk for heat-related illness

Elderly persons are at high risk for complications of heat-related illness and death due to normal aging changes. When environmental temperature exceeds body temperature or the humidity is high, heat remains in the body, increasing temperature. Thirst and fluid consumption are reduced. Aging reduces the effectiveness of sweating in cooling the body. Heart disease greatly increases the risk of heat stress. Cerebrovascular disease, diabetes, and chronic obstructive pulmonary disease (COPD) are also high risk conditions. Certain common categories of medications impair thermoregulatory ability in the elderly by interfering with the body's natural ability to dissipate heat. These are:

- Alcohol: alters awareness of heat, diminishes the ability to respond to heat stress
- Anticholinergics: inhibit sweating
- Amphetamines: increase body temperature by affecting the hypothalamus
- Antihistamines: inhibit sweating
- Beta-blockers: impair cardiovascular response
- Diuretics: increase fluid losses, increase the risk of dehydration and hypovolemia
- Phenothiazines, tricyclic antidepressants: impair hypothalamic function and sweat output

Heat exhaustion

Heat exhaustion may also be called heat prostration. This condition occurs as a result of overexposure to heat or to the sun. Prolonged exposure to heat or sun increases perspiration, which eliminates fluid and salt from the body, upsetting the electrolyte balance. When this occurs, the resident is diagnosed with heat exhaustion. Signs and symptoms of heat exhaustion include:

- Temperature normal or slightly below or above
- Headache

- Weakness
- Fatigue
- Dizziness
- Loss of appetite
- Nausea and vomiting
- Muscle cramps in the arms, legs, or abdomen
- Pale skin color
- Rapid pulse and respirations
- Orthostatic hypotension
- Cool, moist skin
- Excessive perspiration
- Confusion
- Clumsiness, incoordination

Nursing care for heat exhaustion

Remove the resident to a cool environment and increase fluid intake, if resident is able to swallow. Contact the physician promptly for specific directions for care.

Heat stroke

Heat stroke may also be called sunstroke. This is a serious condition indicating a profound disturbance of the body's heat regulating mechanism. It is caused by prolonged exposure to excessive heat, particularly when there is little or no circulation of air. Early signs and symptoms of heat stroke include:

- Headache
- Dizziness
- Weakness
- Fatigue
- Skin hot and dry to touch

Unrecognized and untreated, the condition progressively worsens. Later symptoms include:

- Extremely high fever
- Shortness of breath
- Slow, thready pulse or strong, rapid pulse
- Blood pressure may be low or difficult to hear/palpate
- Absence of perspiration

- Bizarre behavior
- Combativeness
- Seizures
- Loss of consciousness
- Lethargy, stupor, or coma
- Cardiac abnormalities
- Metabolic acidosis
- Respiratory alkalosis
- Severely low potassium levels
- Death

Nursing care for heat stroke

Heat stroke is a medical emergency, and the resident should be transferred to the hospital by 911 ambulance. While waiting for the ambulance, manage the ABCs. Keep the resident NPO. Cool the resident's body as rapidly as possible by immersing the resident in cool water (if awake and alert) or sponging with cool water.

Prevention of heat-related illness

In order to prevent heat-related illness in warm temperatures, you can take preventive measures, which include:

- Keep the air circulating; place fans in hallways, common areas, and resident rooms to circulate air.
- Close shades, drapes, and curtains in areas and rooms that are exposed to direct sunlight.
- Remove the residents from areas that are exposed to direct sunlight. Relocate the residents to cooler areas during the daytime hours.
- Keep residents indoors; discourage outside activity. If residents must go out, have them wear hats.
- Give frequent baths.
- Sponge with cool, wet cloths.
- Dress residents appropriately with lightweight clothes, loose-fitting, preferably cotton fabric.
- Change sheets for bedfast residents frequently.
- Cover residents with sheets when in bed.
- Encourage and offer fluids to the residents frequently. Select beverages residents are likely to accept and consume. Avoid hot, heavy meals, caffeine, and sugary drinks.
- Open windows at night.

- Plan rest periods.
- Monitor residents for and report fever, edema, shortness of breath, and skin hot and dry to touch.

Taking temperature using the temporal artery

The temporal artery is in close proximity to the heart, so the temperature of this artery provides an accurate internal value. Fortunately, the temporal artery is positioned close to the skin of the forehead, making temperature measurement possible.

The temporal artery thermometer (TAT) has a wider range than other types of clinical thermometers and can measure temperatures from 60°F to 107.5°F (15.5°C to 42°C). Error codes will appear on the screen to alert the user to values that are dangerously high or low. In a stable person, the temporal artery temperature is approximately equal to the rectal temperature value, or 0.8°F higher than an oral temperature. The temporal artery is an inexpensive, noninvasive device that is replacing other types of thermometers in many health care facilities.

Hypothermia

Definitions

Hypothermia is a lowering of core body temperature to 95°F or below. The severity of hypothermia is determined by the degree to which core temperature is lowered:

- Mild hypothermia: 93°F to 95°F
- Moderate hypothermia: 86°F to 93°F
- Severe hypothermia: lower than 86°F

As hypothermia persists undetected and untreated, dehydration and liver and kidney failure develop. Heart rate, respiratory rate, and blood pressure may rise in the early stages, but decrease markedly once the 90°F mark is passed. Below 86°F most residents are comatose, and below 82°F, ventricular dysrhythmias develop.

Hypothermia may be classified as primary or secondary. Primary hypothermia results from an overwhelming cold stress, whereas secondary hypothermia is part of other clinical conditions. Clinical syndromes associated with secondary hypothermia may be acute and severe, such as shock or sepsis.[1] These are much more common in elderly persons.

Another source defines hypothermia as temperature significantly below the normal body temperature of 98.6°F.[2] Since elderly persons normally have a lower temperature than younger individuals, this is probably not entirely accurate, either. A better definition may be that the

elderly person *is cold relative to his or her baseline temperature*. Since many elderly persons become hypothermic with sepsis and overwhelming infection, pay close attention to residents with abnormally low body temperature, vigilantly observe them, assess them completely, and monitor vital signs frequently.

Survival depends on maintaining a stable temperature between 97°F and 100°F by balancing the heat produced by the body with heat lost to the environment through (primarily) the skin and lungs. When heat loss exceeds heat production, the brain triggers certain involuntary responses, such as shivering, to restore the balance. If the cold stress is too great and the body is overwhelmed, body temperature decreases.

Signs and symptoms

The highest mortality rates from hypothermia occur in elderly persons. The mortality increases if symptoms are present. Signs and symptoms of hypothermia are very nonspecific, and may be seen in a number of different conditions. They may be especially difficult to identify in a cognitively impaired resident or a resident with communication barriers. Signs and symptoms include:

- Abnormally low body temperature
- Poor coordination
- Stumbling, staggering gait
- Slurred speech
- Irrational behavior
- Poor judgment
- Amnesia
- Hallucinations
- Cyanosis
- Slight edema or puffiness of the skin
- Dilated pupils
- Decreased respiratory rate
- Weak or irregular pulse
- Stupor
- Tremors, intense shivering, and/or muscle rigidity (stops below 90°F)
- Fatigue
- Feeling of deep cold or numbness
- Disorientation
- Visual disturbances

Diagnosing hypothermia

The only accurate method of diagnosing hypothermia is by measuring the *core* body temperature. The thermometers used in health care facilities typically measure 94°F–105°F. Some have a narrower range. To accurately measure the core body temperature a rectal temperature must be used. A thermometer that measures from 77°F to 104°F is needed. A TAT may be used as long as the operator is proficient in the technique. The TAT has a range between 60°F and 107.5°F (15.5 to 42°C). If a TAT is not available, use a rectal thermometer.

Risk factors

Elderly individuals are at higher risk of developing hypothermia than younger individuals. Many do not respond adequately, if at all, by using compensatory mechanisms (homeostasis) to adjust to temperature changes. Some chronic medical conditions, such as postpolio syndrome, diabetes, malnutrition, infection, thyroid disease, spinal cord injuries, stroke, and other neurological diseases further impair temperature regulating ability. Males are at slightly higher risk than females. Non-white individuals may also have a slightly higher risk. Other problems of aging further increase risk, such as:

- Vasoconstriction and shivering are adaptive measures to help conserve heat in the body; both mechanisms are impaired and may be reduced in elderly persons
- Many elderly persons do not differentiate, discriminate, or compensate for changes in environmental temperatures well

Other factors that influence the rate of heat loss include:

- Poor physical condition
- Inadequate nutrition
- Inadequate food or fluid intake
- Inadequate insulation/protection
- Increased exposure to cold environmental temperatures, wind, rain, and snow
- Fatigue
- Alcohol consumption or intoxication
- Drug overdose
- Side effects of medications
- Immobility
- Acute medical illness or infection
- Exposure to cool or cold environmental temperature
- Immersion in water below body temperature

The greatest area of heat loss is from the head, so if the head is wet or exposed to temperature extremes, internal body temperature will decrease rapidly.

Treatment for hypothermia

Prevention is the best treatment. Keep the residents warm! Make sure the clothing is appropriate to the season. Layer clothing in cold weather, and keep the resident indoors. Never ignore low temperature values! If you find subnormal temperature values, recheck the temperature. Avoid using the axillary method, which reads lowest and is the least accurate. If hypothermia is suspected, check a rectal temperature whenever possible. Monitor the resident carefully and inform the physician of the abnormal temperature, signs, and symptoms.

Severe hypothermia cannot be treated in the long-term care facility. The resident requires gradual rewarming, using special techniques. Improper rewarming techniques can cause fatal dysrhythmias. Transport the resident to the emergency department by 911 ambulance for temperatures 94°F or below. Promptly contact the physician for low temperatures above 94°F. He or she will most likely order the resident transferred to the hospital. While waiting for the ambulance to arrive, keep the resident warm and dry by using blankets. Cover the head. Avoid rubbing the skin. Handle the resident gently and as little as possible. If the resident is alert and able to swallow, provide a warm beverage if the temperature is above 90°F and the resident can swallow safely.

Arthritis

Arthritis is the most common painful condition reported in the United States. Although it may occur in children, the primary incidence is with older adults. It Is a major cause of disability in older persons. The American Arthritis Organization estimates that there are over 50 million diagnosed cases in the United States. The prevalence increases with age, especially rheumatoid arthritis. There is a higher incidence and greater disability in women. Arthritis is a painful condition, and most people with this diagnosis take some type of analgesic medication. Persons with infectious arthritis may be cured with antibiotic therapy. Other types of arthritis are generally not curable. Many cause visible joint deformities. Exercise is important, or the joints may contract. You will find an overview of the common types of arthritis in Table 1.11. For more comprehensive information, refer to *http://www.arthritis.org/*.

Table 1.11 | Common types of arthritis

Type	Overview Information
Osteoarthritis (OA), Primary (Also called Degenerative Joint Disease [DJD])	The most common type of arthritis, caused by wear and tear of joints over time. However, it is a disease and not part of the aging process. Causes cartilage breakdown, degeneration of joints, and reactive bone formation. Often damages muscles, ligaments, and menisci.
Osteoarthritis (OA), Secondary	Secondary osteoarthritis develops earlier in life, usually ten or more years after a specific cause, such as trauma, injury, immobility, hip dislocation, birth defect, obesity, genetics, leg length discrepancy, scoliosis, or inflammation caused by other diseases. This condition is also diagnosed when a specific cause cannot be identified. Treatment is the same as primary osteoarthritis.
Rheumatoid Arthritis (RA)	A chronic, progressive disease that primarily occurs in peripheral joints, muscles, tendons, ligaments, and blood vessels. It is most common in women. This condition has remissions and exacerbations, although about 10% of those affected become permanently disabled.
Gouty Arthritis (Gout)	A metabolic disease caused by excess uric acid, causing exquisitely painful joints. Although it can occur in any joint in the body, it seems to gravitate to feet and legs. This condition has remissions and exacerbations, and the resident may be asymptomatic for prolonged periods of time. In some residents, it leads to chronic disability, severe hypertension, and chronic renal disease.
Pseudogout	A type of arthritis caused by calcium crystals in the joint space, which induces pain and inflammation. It is most common in the knees of those over age 50.
Fibromyalgia	A chronic pain syndrome of unknown cause. Diagnostic criteria include pain above and below the waist on both sides of the body. There must be point tenderness in at least 11 of 18 designated areas.
Psoriatic Arthritis	A syndrome that occurs in some people with psoriasis. Clinically indistinguishable from RA except that the rheumatoid nodules are not present, and laboratory tests for rheumatoid factor are negative. Usually mild with severe exacerbations.
Infectious Arthritis	Caused by a bacterium or virus, such as Lyme disease. Treatable with antibiotics if diagnosed early.
Ankylosing Spondylitis	A chronic, progressive inflammation affecting the spine. Bone and cartilage degeneration may lead to development of fibrous tissue and eventual fusion of vertebrae and peripheral joints. Although equally prevalent in both genders, its diagnosis is often overlooked in women because signs and symptoms are commonly in peripheral joints instead of the sacroiliac and spinal joints.
Polymyositis	Inflammation and weakness in muscles. Frequent remissions and exacerbations. Progressively disabling, which affects the whole body.
Tendinitis (Also called tendonitis)	Inflammation of tendons caused by overuse, injury, or a rheumatic condition. Causes pain, tenderness, and limited range of motion in affected joints.
Bursitis	Inflammation of the bursae caused by arthritis, injury, or infection of the bursae. Causes pain, tenderness, and limited range of motion in affected joints.

HIV/AIDS

Incidence of HIV disease and AIDS in elderly persons in the United States A growing number of people aged 50 and older in the United States are living with HIV infection. People aged 55 and older accounted for over one-quarter (26%, 313,200) of the estimated 1.2 million people living with HIV infection in the United States in 2011.

Older persons are much more likely than younger individuals to be diagnosed with HIV infection later in the course of their disease. Table 1.12 notes the WHO clinical staging of HIV/AIDS and case definition. Many healthcare workers simply do not consider the potential of HIV when an older person comes in with symptoms. They treat blindly, and never consider HIV, and never draw a blood test. When the person does not improve, eventually they will test for HIV. At this point it is much later in the disease.

Table 1.12 | WHO clinical staging of HIV/AIDS and case definition

Stage	Signs & Symptoms to Monitor
Primary HIV Syndrome (Asymptomatic)	Asymptomatic Acute retroviral syndrome
Clinical Stage I (Asymptomatic)	Asymptomatic Persistent generalized lymphadenopathy
Clinical Stage II (Mild symptoms)	Moderate unexplained weight loss (<10% of presumed or measured body weight) Recurrent respiratory infections (sinusitis, tonsillitis, otitis media, and pharyngitis) Herpes zoster Angular cheilitis (Inflammation of lips at corners of mouth with pain and swelling) Recurrent oral ulceration Papular pruritic eruptions Seborrheic dermatitis Fungal nail infections

Table 1.12 | WHO clinical staging of HIV/AIDS and case definition (cont.)

Stage	Signs & Symptoms to Monitor
Clinical Stage III (Advanced symptoms)	Unexplained severe weight loss (>10% of presumed or measured body weight) Unexplained chronic diarrhea for >1 month Unexplained persistent fever for >1 month (>37.6°C, intermittent or constant) Persistent oral candidiasis (thrush) Oral hairy leukoplakia Pulmonary tuberculosis (current) Severe presumed bacterial infections (e.g., pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteremia) Acute necrotizing ulcerative stomatitis, gingivitis, or periodontitis Unexplained anemia (hemoglobin <8 g/dL) Neutropenia (neutrophils <500 cells/iL) Chronic thrombocytopenia (platelets <50,000 cells/iL)
Clinical Stage IV (Severe symptoms)	HIV wasting syndrome, as defined by the CDC Pneumocystis pneumonia Recurrent severe bacterial pneumonia Chronic herpes simplex infection (orolabial, genital, or anorectal site for >1 month or visceral herpes at any site) Esophageal candidiasis (or candidiasis of trachea, bronchi, or lungs) Extrapulmonary tuberculosis Kaposi sarcoma Cytomegalovirus infection (retinitis or infection of other organs) Central nervous system toxoplasmosis HIV encephalopathy Cryptococcosis, extrapulmonary (including meningitis) Disseminated nontuberculosis mycobacteria infection Progressive multifocal leukoencephalopathy Candida of the trachea, bronchi, or lungs Chronic cryptosporidiosis (with diarrhea) Chronic isosporiasis Disseminated mycosis (e.g., histoplasmosis, coccidioidomycosis, penicilliosis) Recurrent nontyphoidal Salmonella bacteremia Lymphoma (cerebral or B-cell non-Hodgkin) Invasive cervical carcinoma Atypical disseminated leishmaniasis Symptomatic HIV-associated nephropathy Symptomatic HIV-associated cardiomyopathy Reactivation of American trypanosomiasis (meningoencephalitis or myocarditis)

World Health Organization. WHO Case Definitions of HIV for Surveillance and Revised Clinical Staging and Immunological Classification of HIV-Related Disease in Adults and Children; 2007. *http://tinyurl.com/5w5r74p*

Characteristics of Seizure Activity

Table 1.13 describes various characteristics of seizure activity.

Table 1.13 | Characteristics of seizure activity

Type of Seizure	Signs of Seizure Activity	Comment
Generalized Tonic-Clonic Seizure (Grand Mal Seizure)	May be preceded by an aura. Often begins with the resident crying out involuntarily. The body stiffens initially, then begins jerking, seizure movements. Resident may bite the tongue, produce frothy sputum, or excessive salivation. Cyanosis common due to of lack of oxygen. Respirations shallow; may experience apnea during tonic phase. Incontinence of bowel and bladder. After a few minutes, jerking movements slow down and consciousness gradually returns. • Rigidity • Brief staring • Sudden muscle contractions • Sudden falls • Convulsions	Typically lasts two to five minutes. Postictally, the resident may be very tired and have a headache, mental confusion, slurred speech, weakness. Lethargy may last up to an hour. The resident will not remember the seizure.
Absence Seizure (Petit Mal Seizure)	Staring, blinking, or stopping what the resident is doing. May stare blankly. Momentary loss of consciousness. One muscle group may twitch or jerk.	Usually last less than a minute, but may occur many times a day. No postictal period; resident returns to normal activity.
Simple-Partial (Jacksonian)	Consciousness is not impaired. Muscle spasms of the face, hands, or feet. Starts in one extremity, such as an arm or leg, and progressively moves upward unilaterally. • Sudden mood swings • Trembling that progresses up one side of the body • Out of body experiences • Disturbed speech • Unexplained fear or anger • Jamais vu (familiar things seem unfamiliar) • Déjà vu (unfamiliar things seem familiar)	May spread to other areas in the brain, resulting in a grand mal seizure.

Table 1.13 | Characteristics of seizure activity (cont.)

Type of Seizure	Signs of Seizure Activity	Comment
Complex-Partial (Psychomotor)	Abnormal acts, irrational behavior, or loss of judgment due to a temporary change in consciousness. Eyes may be wide open, giving the impression the resident is aware of activity. Automatic behavior may continue normally. May uncontrollably smack lips, wander aimlessly, or twitch uncontrollably. • Disrobing • Wandering • Picking at clothes • Lip smacking • Swallowing • Lack of responsiveness to others • Repeated phrases • Purposeless, senseless, or clumsy movements • Lost time • Being briefly unaware of danger or pain	Usually lasts only a few seconds. Postictally, the resident may be confused. The resident usually does not remember the seizure.
Myoclonic	Consists of one or more myoclonic jerks. The jerking may be single or multiple. The resident remains conscious but cannot control the muscle movement.	The resident is aware that an extremity is jerking but is unable to stop it. Remains conscious throughout and can remember the seizure activity.
Clonic	Resembles a myoclonic seizure, but repetitions are slower.	Lasts up to several minutes.
Tonic	Flexion of arms and extension of legs. Muscle tone in torso and face suddenly increases.	Lasts for seconds.
Atonic	Abrupt loss of muscle tone without warning; resident may fall.	Lasts for seconds.
Status Epilepticus	Multiple seizures occurring simultaneously with no break between seizures.	Status epilepticus may be precipitated by sudden withdrawal of anti-seizure medications, fever, and infection. This type of seizure is an extreme emergency and can lead to decreased mental function, neurological impairment, and death. Emergency department care is indicated; the resident cannot be adequately treated in the long-term care facility.

Medical Implants

If a person with an implant is admitted to your unit, the medical record will identify the type of implanted medical device and its location. However, occasionally a person will not inform the facility of the presence of an implanted device. Pacemakers, implanted cardiac defibrillators (ICDs), and medication pumps are palpable, hard to touch, and visible beneath the skin. If you observe an implant that you were not made aware of through normal facility channels, question the person and notify the physician during the next visit. He or she will further assess the person and add the information to the medical record. The physician may also schedule any follow up care and monitoring necessary for the device. Implanted devices are always followed by a health professional. In addition to the need for follow-up care, certain medical implants must be considered when scheduling diagnostic tests and certain activities, such as magnetic resonance imaging (MRI).

The device manufacturer furnishes identification cards to persons with medical device implants. The person should carry the card at all times and provide a copy to the facility and all physicians involved in his or her care. The information on the card is useful in situations such as when an implanted medication pump triggers a metal detector. Some physicians recommend that persons also obtain a medical alert bracelet listing implant information. Bracelets are recommended rather than necklaces, because they are more readily located by emergency workers if the wearer is unconscious. The identification card also lists the manufacturer's lot and part numbers and other identifying information. This is essential to determine whether the device is affected by a product recall, which sometimes happens.

Postmortem care of persons with medical implants

Nurses are responsible for care of the body after death. Those working in long-term care, home care, and hospice are often responsible for assisting the funeral home with transfer of the body after death. You have likely learned to notify the funeral director if the person has an infectious disease, because the body continues to be infectious after death. The funeral director must also be notified of implanted devices. Some of these must be removed, especially if cremation is planned. Some medication pump implants are gas propelled. The gases will cause an explosion in the crematorium. If a copy of the medical information card is available, give it to the funeral home or provide the device name, serial number, and manufacturer. Privacy laws do not prohibit the sharing of this information to other medical professionals with a need to know of the device. The funeral director falls into the "need to know" category.

Many implant manufacturers want the device returned to them after a person dies. They will provide the funeral director with instructions for device removal and a prepaid mailer so the device can be returned. In some situations, they will send a team of medical professionals to remove the device. Although much is known about using prosthetics inside human tissue, scientists continue

to seek information about how the devices interact with joint tissues and how to improve them.[3] Rush University in Chicago has provided this service since 1990 for removal of artificial joint implants. The program is funded by a philanthropist, and there is no cost to the decedent's family.

Rush has retrieval teams on call, and they respond quickly when a donor dies, so funeral plans are not delayed. The team travels to the community to remove the artificial joint. They bring everything they need with them, including surgical instruments, collection containers, and protective apparel. If the deceased is a long distance from Chicago, they may work with others in the local community to see that the joint is properly removed and shipped to Chicago via a refrigerated carrier.

Joint replacement surgery has improved the quality of life for many individuals, and studying joints post mortem will help to improve the prostheses to benefit future generations. Post-mortem retrieval is the only effective means of studying joints that have outlasted the person. When the joint is removed, the surgical team also removes tissues surrounding the joint to learn how they have been affected by the implant. For example, researchers have found that screw holes and uncoated surfaces are susceptible to migration of debris caused by normal joint wear and tear. The debris triggers a local immune response, causing pain, loosening of the implant, and bone loss in the natural joint. Researchers have also learned that bone continues to grow into the porouscoated implant surfaces, strengthening the joint, for years after surgery.

Most artificial joint donors learn of this program from their physicians and are happy to volunteer the joints after death because of the benefits and improved quality of life they have experienced. Family members of the decedent are also usually happy to honor their loved one's wishes in this manner. Providing complete information to the funeral director shows respect for the person and family and helps ensure the safety and well-being of your colleagues working in the mortuary and crematory.

Endnotes

1. *Centers for Disease Control and Prevention definition*
2. *Stedman's Electronic Medical Dictionary version 5.0. 82000. Williams & Wilkins.*
3. *Associated Press. (2006). Volunteers bequeath their artificial joints to science. Quad City Times. January 29, 2006. Online. http://www.qctimes.net/articles/2006/01/29/news/state/doc-43dc52b43f851502615491.txt. Accessed 01/29/06.*

Long-Term Care Clinical Conditions Desk Reference

This clinical desk reference will provide long-term care nurses with detailed information on assessing and documenting common long-term care clinical issues.

It will include resident care information, essential policies and procedures, and up-to-date regulatory and safety requirements specific to long-term care. The reference consists of many short, concise narratives, charts, lists, and tables so that the long-term care nurse can readily access and apply the information.

This resource will help you to do the following:

- Keep up to date on all regulatory requirements
- Learn about new issues pertaining to short-stay residents, transgender residents, social media, professional organizations, and reduction of psychosocial medications
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- Understand implications of rapidly changing long-term care statutes

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ISBN-13: 978-1-55645-494-3
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