Chapter 35 - Geriatric Emergencies

National EMS Education Standard Competencies (1 of 7)
Special Patient Populations
Applies a fundamental knowledge of growth, development, and aging and assessment findings to provide basic emergency care and transportation for a patient with special needs.

National EMS Education Standard Competencies (2 of 7)
Geriatrics
• Impact of age-related changes on assessment and care

National EMS Education Standard Competencies (3 of 7)
• Changes associated with aging, psychosocial aspects of aging, and age-related assessment and treatment modifications for the major or common geriatric diseases and/or emergencies
  – Cardiovascular diseases
  – Respiratory diseases
  – Neurological diseases

National EMS Education Standard Competencies (4 of 7)
• Changes associated with aging, psychosocial aspects of aging, and age-related assessment and treatment modifications for the major or common geriatric diseases and/or emergencies (cont’d)
  – Endocrine diseases
  – Alzheimer disease
  – Dementia

National EMS Education Standard Competencies (5 of 7)
Patients With Special Challenges
• Recognizing and reporting abuse and neglect
• Health care implications of
  – Abuse
  – Neglect

National EMS Education Standard Competencies (6 of 7)
Trauma
Applies fundamental knowledge to provide basic emergency care and transportation based on assessment findings for an acutely injured patient.

National EMS Education Standard Competencies (7 of 7)
Special Considerations in Trauma
• Recognition and management of trauma in the
  – Geriatric patient
• Pathophysiology, assessment, and management of trauma in the
  – Geriatric patient

Introduction
• Geriatrics is the assessment and treatment of disease in a person 65 years of age or older.
• Geriatric patients present as a special challenge for health care providers.
• Injuries and illness are affected by chronic conditions, multiple medications, and the
Generational Considerations (1 of 2)

- It is important to understand and appreciate how the life of an older person might differ from yours.
- It takes time and patience to interact with an older person.
  - Treat the patient with respect.

Generational Considerations (2 of 2)

- Make every attempt to avoid ageism.
  - Not all older people have dementia.
  - Not all older people are hard of hearing.
  - Not all older people are sedentary or immobile.

Communication and Older Adults (1 of 2)

- Effective verbal communication skills are essential.
- Communication techniques
  - Speak respectfully.
  - Identify yourself.
  - Be aware of how you present yourself.
  - Look directly at the patient at eye level.
  - Speak slowly and distinctly.

Communication and Older Adults (2 of 2)

- Communication techniques (cont’d)
  - Have one person talk to the patient and ask only one question at a time.
  - Do not assume that all older patients are hard of hearing.
  - Give the patient time to respond.
  - Listen to the answer.
  - Explain what you will do before you do it.

Common Complaints and the Leading Causes of Death in Older People (1 of 2)

- The geriatric population is predisposed to a host of problems not seen in youth.
  - Hip fractures are common.
  - More likely to occur when bones are weakened by osteoporosis or infection
  - Sedentary behavior can lead to pneumonia and blood clots.

Common Complaints and the Leading Causes of Death in Older People (2 of 2)

Changes in the Body (1 of 2)

- The aging process is accompanied by changes in physiologic function.
  - All tissues in the body undergo aging.
  - Decrease in the functional capacity of various organ systems is normal, but can affect the way a patient responds to illness.

Changes in the Body (2 of 2)

- Normal changes should not be mistaken for signs of illness.
• Genuine symptoms should not be attributed to “just getting old.”

18 Changes in the Respiratory System (1 of 7)
• Age-related changes can predispose an older adult to respiratory illness.
  – Airway musculature becomes weakened.
  – Alveoli in the lung tissue become enlarged and the elasticity decreases.
  – The body’s chemoreceptors slow with age.

19 Changes in the Respiratory System (2 of 7)
• Pneumonia
  – Inflammation/infection of the lung from bacterial, viral, or fungal causes
  – Leading cause of death from infection in Americans older than 65 years
  – Aging causes some immune suppression and increases the risk of contracting infections like pneumonia.

20 Changes in the Respiratory System (3 of 7)
• Pneumonia (cont’d)
  – Increased mucus production, pulmonary secretions, and infection all interfere with the ability of the alveoli to oxygenate the blood.
  – Wear respiratory protection when you are assessing a patient with a potentially infectious respiratory disease.

21 Changes in the Respiratory System (4 of 7)
• Pulmonary embolism
  – Condition that causes a sudden blockage of an artery by a venous clot
  – A patient will present with shortness of breath and sometimes chest pain.

22 Changes in the Respiratory System (5 of 7)
• Pulmonary embolism risk factors:
  – Living in a nursing home
  – Recent surgery
  – History of blood clots or heart failure
  – Presence of a pacemaker or central venous catheter
  – Obesity or sedentary behavior
  – Recent long-distance travel
  – Trauma, cancer, or paralyzed extremities

23 Changes in the Respiratory System (6 of 7)
• Pulmonary embolism presents with:
  – Tachycardia
  – Sudden onset of dyspnea
  – Shoulder, back, or chest pain
  – Cough
  – Syncope in patients in whom the clot is larger
  – Anxiety

24 Changes in the Respiratory System (7 of 7)
• Pulmonary embolism presents with (cont’d):
  – Apprehension
  – Low-grade fever
  – Hemoptysis
– Leg pain, redness, and unilateral pedal edema
– Fatigue
– Cardiac arrest (worst-case scenario)

25 Changes in the Cardiovascular System (1 of 5)
• The heart hypertrophies with age.
• Cardiac output declines.
• Arteriosclerosis contributes to systolic hypertension.
• Many people tend to limit physical activity and exercise as they grow older.

26 Changes in the Cardiovascular System (2 of 5)
• Geriatric patients are at risk for atherosclerosis
  – Accumulation of fat and cholesterol in the arteries
  – Major complications include myocardial infarction and stroke.
  – Affects more than 60% of people older than 65 years

27 Changes in the Cardiovascular System (3 of 5)

28 Changes in the Cardiovascular System (4 of 5)
• Older people are at increased risk for formation of an aneurysm
  – Abnormal, blood-filled dilation of the blood vessel wall
  – Severe blood loss can occur.
• Blood vessels and heart valves become stiff and degenerate.
  – Heart rate becomes too fast, too slow, or too erratic.

29 Changes in the Cardiovascular System (5 of 5)
• Another vessel-related problem is venous stasis.
  – Loss of proper function of the veins in the legs that carry blood back to the heart
  – Causes blood clots
  – Deep vein thrombosis can lead to pulmonary embolism.
  – People usually exhibit edema of the legs and ankles.

30 Heart Attack (1 of 3)
• The classic symptoms of a heart attack are often not present in geriatric patients.
  – “Silent” heart attacks are particularly common in women and people with diabetes.

31 Heart Attack (2 of 3)
• Any of the following symptoms may be a manifestation of acute cardiac disease:
  – Dyspnea
  – Epigastric and abdominal pain
  – Loss of bladder or bowel control
  – Nausea and vomiting
  – Weakness, dizziness, light-headedness, syncope
  – Fatigue or confusion

32 Heart Attack (3 of 3)
• Other signs and symptoms include:
  – Issues with circulation
  – Diaphoresis
  – Pale, cyanotic, or mottled skin
  – Abnormal or decreased breath sounds
  – Increased peripheral edema
Chapter 35 - Geriatric Emergencies

33 Heart Failure (1 of 4)
  • The signs and symptoms will differ depending on whether the right or left side of the heart is not functioning correctly.

34 Heart Failure (2 of 4)
  • Right-sided heart failure occurs when the fluid backs up into the body.
    – Causes jugular vein distention, ascites, peripheral edema, and an enlarged liver
    – Right-sided heart failure is often caused by left-sided heart failure, so it is common to see signs of both.

35 Heart Failure (3 of 4)
  • With left-sided heart failure, fluid backs up into the lungs.
    – Causes a condition called pulmonary edema and shortness of breath
    – The patient will have severe shortness of breath and hypoxia with crackles in the lungs.

36 Heart Failure (4 of 4)
  • Paroxysmal nocturnal dyspnea
    – Characterized by a sudden attack of respiratory distress that wakes the person when he or she is reclining
    – Caused by fluid accumulation in the lungs
    – Patients report coughing, feeling suffocated, and cold sweats.
    – You will notice tachycardia.
    – If you suspect congestive heart failure, ask, “Do you sleep sitting up?”

37 Stroke (1 of 4)
  • Leading cause of death in older people
  • Preventable risk factors: smoking, hypertension, diabetes, atrial fibrillation, obesity, and a sedentary lifestyle
  • Uncontrollable factors: age, race, and gender

38 Stroke (2 of 4)
  • Signs and symptoms
    – Acute altered level of consciousness
    – Numbness, weakness, or paralysis on one side
    – Slurred speech, difficulty speaking
    – Visual disturbances
    – Headache and dizziness
    – Incontinence
    – Seizure

39 Stroke (3 of 4)
  • Hemorrhagic strokes are less common and more likely to be fatal.
    – Broken blood vessel causes bleeding into the brain.
  • Ischemic strokes occur when a blood clot blocks the flow of blood to a portion of the brain.

40 Stroke (4 of 4)
  • The treatment goal is to salvage as much of the surrounding brain tissue as possible.
  • If the symptoms occurred within the past few hours, the patient will be a candidate for stroke center therapy.
• Transient ischemic attack (TIA) can present with the same signs and symptoms as a stroke.

Changes in the Nervous System (1 of 6)
• Changing in thinking speed, memory, and posture stability are the most common findings
  – The brain decreases in weight and volume.
  – There is a 5% to 50% loss of neurons in older people.
  – The performance of most of the sense organs declines with increasing age.

Changes in the Nervous System (2 of 6)
• Vision
  – Visual acuity, depth perception, and ability to accommodate to light change with age.
  – Cataracts interfere with vision.
  – Decreased tear production leads to drier eyes.

Changes in the Nervous System (3 of 6)
• Vision (cont’d)
  – Inability to differentiate colors
  – Decreased night vision
  – Inability to see up close (presbyopia)
  – Other diseases:
    • Glaucoma
    • Macular degeneration
    • Retinal detachment

Changes in the Nervous System (4 of 6)
• Hearing
  – Hearing problems cause changes in the inner ear, making hearing high-frequency sounds difficult.
  – Problems with balance make falls more likely.
  – Presbycusis is a gradual hearing loss.
  – Heredity and long-term exposure to loud noises are the main factors.

Changes in the Nervous System (5 of 6)
• Taste
  – Decrease in the number of taste buds
  – Negative result might be lessened interest in eating, which can lead to:
    • Weight loss
    • Malnutrition
    • Complaints of fatigue

Changes in the Nervous System (6 of 6)
• Touch
  – Decreased sense of touch and pain perception from the loss of the end nerve fibers
  – An older person may be injured and not know it.
  – Decreased sensation of hot and cold

Dementia (1 of 3)
• Slow onset of progressive disorientation, shortened attention span, and loss of cognitive function
• Chronic, generally irreversible condition that causes a progressive loss of:
  – Cognitive abilities
– Psychomotor skills
– Social skills

Dementia (2 of 3)
• Dementia is the result of many neurologic diseases, and may be caused by:
  – Alzheimer disease
  – Parkinson disease
  – Cerebrovascular accidents
  – Genetic factors

Dementia (3 of 3)
• On assessment, patients may:
  – Have short- and long-term memory loss
  – Have a decreased attention span
  – Be unable to perform daily routines
  – Show a decreased ability to communicate
  – Appear confused or angry
  – Have impaired judgment
  – Be unable to vocalize pain

Delirium (1 of 3)
• Sudden change in mental status, consciousness, or cognitive processes
• Marked by the inability to focus, think logically, and maintain attention
• Affects 15% to 50% of hospitalized people aged 70 years or older
• Acute anxiety may be present.

Delirium (2 of 3)
• Generally the result of a reversible physical ailment, such as tumors, fever, or metabolic causes
• In the history, look for:
  – Withdrawal from alcohol or sedatives
  – Medical conditions
  – Psychiatric disorders such as depression
  – Malnutrition or vitamin deficiencies
  – Environmental emergencies

Delirium (3 of 3)
• Assess and manage the patient for:
  – Hypoxia
  – Hypovolemia
  – Hypoglycemia
  – Hypothermia
• You may see changes in circulation, breath sounds, motor function, and pupillary response.

Syncope
• Assume this is a life-threatening problem until proven otherwise.
• Often caused by an interruption of blood flow to the brain

Neuropathy (1 of 4)
• Disorder of the nerves of the peripheral nervous system
• Function and structure of the peripheral motor, sensory, and autonomic neurons are impaired.
• Symptoms depend on which nerves are affected and where they are located.

**Neuropathy (2 of 4)**
• Motor nerves
  – Muscle weakness
  – Cramps
  – Spasms
  – Loss of balance
  – Loss of coordination

**Neuropathy (3 of 4)**
• Sensory nerves
  – Tingling
  – Numbness
  – Itching
  – Pain
  – Burning, freezing, or extreme sensitivity to touch

**Neuropathy (4 of 4)**
• Autonomic nerves
  – Changes in blood pressure and heart rate
  – Constipation
  – Bladder and sexual dysfunction

**Changes in the Gastrointestinal System (1 of 5)**
• Reduction in the volume of saliva
• Dental loss
• Gastric secretions are reduced.
• Changes in gastric motility occur.
• Incidence of certain diseases involving the bowel increases.
• Blood flow to the liver declines.

**Changes in the Gastrointestinal System (2 of 5)**
• Age-related changes in the GI system:
  – Issues with dental problems
  – Decrease in saliva and sense of taste
  – Poor muscle tone of the sphincter between the esophagus and stomach
  – Decrease in hydrochloric acid
  – Alterations in absorption of nutrients
  – Weakening of the rectal sphincter

**Changes in the Gastrointestinal System (3 of 5)**
• GI bleeding can be caused by inflammation, infection, or obstruction of the upper or lower GI tract
  – Usually heralded by hematemesis
  – Bleeding that travels through the lower digestive tract usually manifests as melena.
  – Red blood usually means a local source of bleeding, such as hemorrhoids.
  – A patient with GI bleeding may experience weakness, dizziness, or syncope.
Changes in the Gastrointestinal System (4 of 5)

- Specific GI problems in older patients include:
  - Diverticulitis
  - Bleeding in the upper and lower GI system
  - Peptic ulcer disease
  - Gallbladder disease
  - Bowel obstruction

Changes in the Gastrointestinal System (5 of 5)

- When assessing patients, ask about NSAID and alcohol use.
- Orthostatic vital signs can help determine if a patient is hypovolemic.
  - Blood pressures and pulse rates are obtained with the patient lying, sitting, and standing.
  - Note any drop in blood pressure and increase in heart rate that occurs as the patient moves to an upright position.

Acute Abdomen– Nongastrointestinal Complaints

- Extremely difficult to assess in the prehospital setting
- Most serious threat from abdominal complaints is blood loss
- Abdominal aortic aneurysm (AAA) is one of the most rapidly fatal conditions.
  - Walls of the aorta weaken, and blood leaks into the layers of the vessel
  - If enough blood is lost, shock occurs.

Changes in the Renal System (1 of 4)

- Age brings changes in the kidneys.
  - Reduction in renal function
  - Reduction in renal blood flow
  - Tubule degeneration

Changes in the Renal System (2 of 4)

- Changes in the genitourinary system:
  - Decreased bladder capacity
  - Decline in sphincter muscle control
  - Decline in voiding senses
  - Increase in nocturnal voiding
  - Benign prostatic hypertrophy (enlarged prostate)

Changes in the Renal System (3 of 4)

- Incontinence is not a normal part of aging and can lead to skin irritation, skin breakdown, and urinary tract infections.
  - Stress incontinence occurs during activities such as coughing, laughing, sneezing, lifting, and exercise.
  - Urge incontinence is triggered by hot or cold fluids, running water, or thinking about going to the bathroom.

Changes in the Renal System (4 of 4)
The opposite of incontinence is urinary retention or difficulty urinating.  
– In men, enlargement of the prostate can place pressure on the urethra, making voiding difficult.  
– Bladder and urinary tract infections can also cause inflammation.  
– In severe cases of urinary retention, patients may experience renal failure.

Changes in the Endocrine System (1 of 4)

• Reduction in thyroid hormones (thyroxine)  
• Signs and symptoms:  
  – Slower heart rate  
  – Fatigue  
  – Drier skin and hair  
  – Cold intolerance  
  – Weight gain  

Changes in the Endocrine System (2 of 4)

• Other endocrine changes include:  
  – An increase in the secretion of antidiuretic hormone, causing fluid imbalance  
  – Hyperglycemia  
  – Increases in the levels of norepinephrine, possibly having a harmful effect on the cardiovascular system  

Changes in the Endocrine System (3 of 4)

• Hyperosmolar hyperglycemic nonketotic syndrome (HHNS) is a type 2 diabetic complication in older people.  
• On assessment, you may see:  
  – Warm, flushed skin  
  – Poor skin turgor  
  – Pale, dry, oral mucosa  
  – Furrowed tongue  
  – Signs of shock  

Changes in the Endocrine System (4 of 4)

• Assessment of the patient should include:  
  – Obtaining blood pressure  
  – Distal pulses  
  – Auscultation of breath sounds  
  – Temperature  
  – Assessment of blood glucose level (if permitted by local protocol)  

Changes in the Immune System

• Infections are commonly seen in older people because of their increased risk.  
  – Less able to fight infections  
  – Anorexia, fatigue, weight loss, falls, or changes in mental status may be the primary symptoms.  
  – Pneumonia and UTIs are common in patients who are bedridden.  
  – Signs and symptoms may be decreased because of loss of sensation, lack of awareness, or fear of being hospitalized.

Changes in the Musculoskeletal System (1 of 4)
• Decrease in bone mass
  – Especially in postmenopausal women
  – Bones become more brittle and tend to break more easily.
• Joints lose their flexibility.
• A decrease in the amount of muscle mass often results in less strength.

74 Changes in the Musculoskeletal System (2 of 4)
• Changes in physical abilities can affect older adults’ confidence in mobility.
  – Muscle fibers become smaller and fewer.
  – Motor neurons decrease in number.
  – Strength declines.
  – Ligaments and cartilage of the joints lose their elasticity.
  – Cartilage goes through degenerative change.

75 Changes in the Musculoskeletal System (3 of 4)
• Osteoporosis is characterized by a decrease in bone mass
  – Reduction in bone strength and greater susceptibility to fracture
• Extent of bone loss depends on:
  – Genetics, body weight
  – Smoking, alcohol consumption
  – Level of activity, diet

76 Changes in the Musculoskeletal System (4 of 4)
• Osteoarthritis is a progressive disease of the joints that destroys cartilage, promotes the
  formation of bone spurs, and leads to joint stiffness.
  – Results from wear and tear
  – Affects joints in the hands, knees, hips, and spine

77 Changes in Skin (1 of 3)
• Proteins that make the skin pliable decline with age.
• Layer of fat under the skin becomes thinner
• Bruising becomes more common.
• Sweat glands do not respond as readily to heat.

78 Changes in Skin (2 of 3)
• Pressure ulcers become a problem.
  – Sometimes referred to as bedsores or decubitis ulcers
  – The pressure from the weight of the body cuts off the blood flow to the area of skin.
  – With no blood flow, a sore develops.

79 Changes in Skin (3 of 3)
• Stages of ulcer development:
  – Stage I: Nonblanching redness with damage under the skin
  – Stage II: Blister or ulcer that can affect the dermis and epidermis
  – Stage III: Invasion of the fat layer through to the fascia
  – Stage IV: Invasion to muscle or bone

80 Toxicology (1 of 3)
• Older people are more susceptible to toxicity because of:
  – Decreased kidney function
  – Altered gastrointestinal absorption
– Decreased vascular flow in liver
– Kidneys undergo many changes with age.
– Decreased liver function makes it harder for the liver to detoxify the blood and eliminate medications and alcohol.

Toxicology (2 of 3)
– Typical OTC medications can have negative effects when mixed with each other or with herbal substances, alcohol, and prescription medications

Toxicology (3 of 3)
– Polypharmacy refers to the use of multiple prescription medications by one patient.
– Negative effects can include overdosing and negative medication interaction.
– Medication noncompliance occurs due to:
  • Financial challenges
  • Inability to open containers
  • Impaired cognitive, vision, and hearing ability

Depression (1 of 2)
– Depression is not part of normal aging, but a medical disease.
– Treatable with medication and therapy
– If depression goes unrecognized or untreated, it is associated with a higher suicide rate in the geriatric population.

Depression (2 of 2)
– Risk factors include history of depression, chronic disease, and loss.
– The following conditions contribute to the onset of significant depression:
  – Substance abuse
  – Isolation
  – Prescription medication use
  – Chronic medical condition

Suicide (1 of 3)
– Older men have the highest suicide rate of any age group in the United States.
– Older persons choose much more lethal means than younger victims.
– Generally have diminished recuperative capacity to survive an attempt

Suicide (2 of 3)
– Common predisposing events and conditions include:
  – Death of a loved one
  – Physical illness
  – Depression and hopelessness
  – Alcohol abuse
  – Alcohol dependence
  – Loss of meaningful life roles

Suicide (3 of 3)
– When assessing the patient who is displaying signs of depression, it is appropriate to ask if he or she is considering suicide.
  – If the answer is “yes,” the next question should be, “Do you have a plan?”
  – Include this information in your report.

The GEMS Diamond (1 of 4)
• Created to help you remember what is different about older patients
  – Not intended to be a format for the approach to geriatric patients or replace the ABCs of care
  – Serves as an acronym for the issues to be considered when assessing every older patient

89 The GEMS Diamond (2 of 4)
• Geriatric patient
  – Older patients may present atypically.
  – Be familiar with the normal changes of aging.
• Environmental assessment
  – The environment can help give clues to the patient’s condition and the cause of the emergency.

90 The GEMS Diamond (3 of 4)
• Medical assessment
  – Older patients tend to have a variety of medical problems and numerous medications.
  – Obtain a thorough medical history.

91 The GEMS Diamond (4 of 4)
• Social assessment
  – Older people may have less of a social network.
  – They may need assistance with activities of daily living.
  – Consider obtaining information pamphlets about some of the agencies for older people in your area.

92 Special Considerations in Assessing a Geriatric Medical Patient
• Assessing an older person can be challenging because of:
  – Communication issues
  – Hearing and vision deficits
  – Alterations in consciousness
  – Complicated medical histories
  – Effects of medications

93 Scene Size-up (1 of 2)
• Geriatric patients are commonly found in their own homes, retirement homes, or skilled nursing facilities.
  – Many older people live alone.
  – Access may be hampered if their condition prevents them from getting to the door.
  – Take note of negative or unsafe conditions.

94 Scene Size-up (2 of 2)
• Mechanism of injury/nature of illness
  – May be difficult to determine in older people with altered mental status or dementia
  – Ask the family member, caregiver, or bystander why he or she called.
  – Multiple and chronic disease processes may also complicate the determination of the NOI.
  – Chest pain, shortness of breath, and an altered level of consciousness should always be considered serious.

95 Primary Assessment (1 of 6)
• Address life threats.
• Determine the transport priority.
• Form a general impression.
  – You should be able to tell if the patient is generally in stable or unstable condition.
  – Use the AVPU scale to determine the patient’s level of consciousness.

Primary Assessment (2 of 6)
• Airway and breathing
  – Anatomic changes that occur as a person ages predispose geriatric patients to airway problems.
  – Ensure that the patient’s airway is open and not obstructed by dentures, vomitus, fluid, or blood.

Primary Assessment (3 of 6)
• Airway and breathing (cont’d)
  – Anatomic changes affect a person’s ability to breathe effectively.
  – Loss of mechanisms that protect the upper airway cause a decreased ability to clear secretions.
  – Airway and breathing issues should be treated with oxygen as soon as possible.

Primary Assessment (4 of 6)
• Circulation
  – Poor perfusion is a serious issue in the older adult.
  – Physiologic changes may negatively affect circulation.
  – Vascular changes and circulatory compromise might make it difficult to feel a pulse.

Primary Assessment (5 of 6)
• Transport decision
  – Any complaints that compromise the ABCs should result in prompt transport.
  – Determine conditions that are life threatening.
  – Treat them to the best of your ability.
  – Provide transport to priority patients.

Primary Assessment (6 of 6)
• Priority patients are those who have:
  – Poor general impression
  – Airway or breathing problems
  – Acute altered level of consciousness
  – Shock
  – Severe pain
  – Uncontrolled bleeding
  – Older people will easily decompensate.

History Taking (1 of 2)
• Investigate the chief complaint.
  – Find and account for all medications.
  – Obtain a thorough patient history.
  – Determine early whether the altered LOC is acute or chronic.
  – Multiple disease processes and multiple and/or vague complaints can make assessment complicated.

History Taking (2 of 2)
• Collect a SAMPLE history.
  – You may have to rely on a relative or caregiver to help you.
  – List the patient’s medications or take the medications with you to the hospital.
  – The last meal is particularly important in patients with diabetes.
  – Transport to a facility that knows the patient’s medical history if possible.

103 Secondary Assessment (1 of 3)
• May be performed on scene, en route to the emergency department, or not at all
• Physical examinations
  – An older patient may not be comfortable with being exposed.
  – Protect his or her modesty.
  – Consider the need to keep your patient warm during exam.

104 Secondary Assessment (2 of 3)
• Vital signs
  – The heart rate should be in the normal adult range but may be compromised by medications such as beta-blockers.
  – Weaker and irregular pulses are common.
  – Circulatory compromise may make it difficult to feel a radial pulse; consider other pulse points.

105 Secondary Assessment (3 of 3)
• Vital signs (cont’d)
  – Blood pressure tends to be higher.
  – Capillary refill is not a good assessment.
  – The respiratory rate should be in the same range as in a younger adult.
  – Be sure to auscultate breath sounds.
  – Carefully assess pulse oximetry data.

106 Reassessment (1 of 4)
• Reassess the geriatric patient often.
• Reassess the vital signs.
• Reassess the patient’s complaint.
• Recheck interventions.
• Identify and treat changes in the patient’s condition.

107 Reassessment (2 of 4)
• Interventions
  – Maintain position of comfort.
  – Assist ventilation as needed.
  – Administer glucose for a patient with diabetes.
  – In specific cases, you may also assist with nitroglycerin, aspirin, or inhalers.
  – Provide psychological support.

108 Reassessment (3 of 4)
• Communication and documentation
  – Communicate your findings and the interventions you used to emergency department personnel.
  – Document all history, medication, assessment, and intervention information.

109 Reassessment (4 of 4)
Trauma and Geriatric Patients (1 of 10)
- Conditions that create risk and complicate assessment:
  - Slower homeostatic compensatory mechanisms
  - Limited physiologic reserves
  - Normal effects of aging on the body
  - Existing medical issues

Trauma and Geriatric Patients (2 of 10)
- Physical findings in an older adult may be more subtle and more easily missed.
  - Mechanisms are much more minimal.
  - Recuperation from trauma is longer and often less successful.
  - Many injuries are undertriaged and undertreated.

Trauma and Geriatric Patients (3 of 10)
- Because of changes in the body, older pedestrians are more likely to have life-threatening complications after being struck by a vehicle.
  - Commonly suffer injury to the legs and arms
  - Other injuries can be caused by a secondary collision onto the street, often involving the head.

Trauma and Geriatric Patients (4 of 10)
- Older people are more likely to experience burns because of altered mental status, inattention, and a compromised neurologic status.
- Risk of mortality is increased when:
  - Preexisting medical conditions exist
  - The immune system is weakened
  - Fluid replacement is complicated by renal compromise

Trauma and Geriatric Patients (5 of 10)
- Higher mortality from penetrating trauma in older adults, especially gunshot wounds
  - Penetrating trauma can easily cause serious internal bleeding.
- Falls are the leading cause of fatal and nonfatal injuries in older adults.
  - Nearly half of fatal falls in geriatric patients result in traumatic brain injury.

Trauma and Geriatric Patients (6 of 10)
- Anatomic changes and trauma
  - Changes in pulmonary, cardiovascular, neurologic, and musculoskeletal systems make older patients more susceptible to trauma.
  - A geriatric patient’s overall physical condition may lessen the body’s ability to compensate for simple injuries.

Trauma and Geriatric Patients (7 of 10)
- As a result of osteoporosis, older patients are prone to fractures, especially of the hip.
- Contributing factors:
  - Stresses of ordinary activity
  - A standing fall
  - Vitamin D and calcium deficiencies
  - Metabolic bone diseases
  - Tumors
Trauma and Geriatric Patients (8 of 10)
- Geriatric patients with osteoporosis are also at risk for pelvic fractures.
- With age, the spine stiffens as a result of shrinkage of disk spaces, and vertebrae become brittle.
  - Compression fractures of the spine occur.

Trauma and Geriatric Patients (9 of 10)
- Because brain tissue shrinks with age, older patients are more likely to sustain closed head injuries.
  - Acute subdural hematomas are among the deadliest of all head injuries.
  - Serious head injuries are often missed because the mechanism may seem relatively minor.

Trauma and Geriatric Patients (10 of 10)
- Other factors that predispose an older patient to a serious head injury include:
  - Long-term abuse of alcohol
  - Recurrent falls or repeated head injury
  - Anticoagulant medication

Environmental Injury
- Internal temperature regulation is slowed.
- Half of all deaths from hypothermia occur in older people.
  - Including most indoor hypothermia deaths
- Death rates from hyperthermia are more than doubled in older people.
  - People older than 85 years are at highest risk

Special Considerations in Assessing Geriatric Trauma Patients
- Trauma is never isolated to a single issue when you are assessing and caring for a geriatric patient.

Scene Size-up
- Look for clues that indicate your patient’s traumatic incident may have been preceded by a medical incident.
  - Bystander information may help.
  - MOI is important in establishing whether an injury is considered critical, and it affects treatment and transport considerations.

Primary Assessment (1 of 3)
- Address life threats.
- Determine the transport priority.
  - Recommended that older trauma patients be transported to a trauma center
- Form a general impression.
  - Is patient’s condition is stable or unstable?
  - Use AVPU and the Glasgow Coma Scale to determine mental status.

Primary Assessment (2 of 3)
- Airway and breathing
  - If the patient is talking to you, the airway is patent.
  - Patients who have noisy respirations have airway compromise.
  - Older patients may have a diminished ability to cough, so suctioning is important.
  - Assess for the presence of dentures.
Primary Assessment (3 of 3)
- Circulation
  - Manage any external bleeding immediately.
  - Drinking alcohol and taking anticoagulant medications can make internal bleeding worse or external bleeding more difficult to control.
  - Older patients can more easily go into shock.
  - Patients who were hypertensive prior to injury may have a normal BP when they are actually in shock.

History Taking
- Investigate the chief complaint.
  - Considerations in your assessment must include past medical conditions, even if they are not currently acute or symptomatic.

Secondary Assessment (1 of 2)
- Physical examinations
  - Performed in the same manner as for any adult but with consideration of the higher likelihood of damage from trauma
  - Any head injury can be life threatening.
  - Check lung sounds.
  - Look for bruising and other evidence of trauma.

Secondary Assessment (2 of 2)
- Vital signs
  - Assess the pulse, blood pressure, and skin signs.
  - Capillary refill is unreliable because of compromised circulation.
  - Remember that some older people take beta-blockers, which will inhibit their heart from becoming tachycardic.

Reassessment (1 of 3)
- Repeat the primary assessment.
  - A geriatric patient has a higher likelihood of decompensating after trauma.
- Interventions
  - Broken bones are common and should be splinted.

Reassessment (2 of 3)
- Interventions (cont’d)
  - Do not force a patient with joint flexion or kyphosis into a “normal” position.
  - Provide blankets and heat to prevent hypothermia.

Reassessment (3 of 3)
- Communications and documentation
  - Communication can be challenging.
  - Provide psychological support as well as medical treatment.

Assessment of Falls
- Falls can be caused by a medical condition such as fainting, a cardiac rhythm disturbance, or a medication interaction.
  - Whenever you assess a geriatric patient who has fallen, it is important to find out why the fall occurred.
  - Consider that the fall may have been caused by a medical condition, possibly life-threatening.
Response to Nursing and Skilled Care Facilities (1 of 3)
- Many calls will occur at a nursing home or other skilled care facility.
- Calls can be challenging.
  - Patients often have an altered level of consciousness.
  - Staff may be spread thin and may not know how to assist you.
  - Ask, “What is wrong with the patient that is new or different today?”

Response to Nursing and Skilled Care Facilities (2 of 3)
- Infection control needs to be a high priority for EMTs.
  - Methicillin-resistant *Staphylococcus aureus* (MRSA) infections are common.
  - Many infections in hospitals are caused by vancomycin-resistant enterococci.
  - The respiratory syncytial virus causes an infection of the upper and lower respiratory tracts.

Response to Nursing and Skilled Care Facilities (3 of 3)
- Infection control (cont’d)
  - *Clostridium difficile* is a bacterium responsible for the most common cause of hospital-acquired infectious diarrhea.
  - Typical alcohol-based hand sanitizers do not inactivate or kill *C. difficile*.

Dying Patients
- More patients are choosing to die at home rather than in a hospital.
  - Dying patients receive palliative care.
  - Be understanding, sensitive, and compassionate.
  - Determine if the family wishes for the patient to go to the hospital or stay in the home.

Advance Directives (1 of 3)
- Specific legal papers that direct relatives and caregivers about what kind of medical treatment may be given to patients who cannot speak for themselves.
  - Dealing with advance directives has become more common for EMS providers.

Advance Directives (2 of 3)
- May take the form of a “do not resuscitate” (DNR) order
  - Gives you permission not to attempt resuscitation for a patient in cardiac arrest
  - DNR does not mean “do not treat.”
  - Basic ABCs should still be provided.

Advance Directives (3 of 3)
- When transporting patients from nursing facilities, consider these guidelines:
  - Patients have the right to refuse treatment.
  - A DNR order is valid only if it is in the form of a written order by a physician.
  - Review state and local protocols.
  - When in doubt, try to resuscitate the patient.

Elder Abuse and Neglect (1 of 7)
- Any action on the part of an older person’s family member, caregiver, or other person that takes advantage of the older person’s:
  - Person
  - Property
  - Emotional state
• Includes acts of commission and acts of omission

141 Elder Abuse and Neglect (2 of 7)
• The extent of elder abuse is not known for several reasons:
  – It has been largely hidden from society.
  – Definitions of abuse and neglect among the geriatric population vary.
  – Victims are often hesitant to report the problem.

142 Elder Abuse and Neglect (3 of 7)
• The abused person may feel traumatized by the situation or be afraid that the abuser will
  punish him or her for reporting the abuse.
• Elder abuse occurs more often in women older than 75 years.
• Abusers of older people are sometimes products of child abuse themselves.

143 Elder Abuse and Neglect (4 of 7)
• Take note of the environment and conditions a patient lives in, and of soft-tissue injuries
  that cannot be explained by the person’s lifestyle and physical condition.
• Suspect abuse when answers are concealed or avoided.
• Suspect abuse when you are given unbelievable answers.

144 Elder Abuse and Neglect (5 of 7)
• Information that may be important in assessing abuse includes:
  – Caregiver apathy about the patient’s condition
  – Overly defensive reaction by caregiver
  – Caregiver does not allow patient to answer questions
  – Repeated visits to the ED or clinic
  – A history of being accident-prone
  – Unbelievable or vague explanations of injuries

145 Elder Abuse and Neglect (6 of 7)
• Information that may be important in assessing abuse includes (cont’d):
  – Psychosomatic complaints
  – Chronic pain without medical explanation
  – Self-destructive behavior
  – Eating and sleep disorders
  – Depression or a lack of energy
  – Substance and/or sexual abuse history

146 Elder Abuse and Neglect (7 of 7)
• Repeated abuse can lead to a high risk of death.

147 Signs of Physical Abuse (1 of 4)
• Inflicted bruises are usually found on the buttocks and lower back, genitals, inner thighs,
  face, and ears.
• Pressure bruises caused by the human hand may be identified by oval grab marks, pinch
  marks, or handprints.
• Human bites are typically inflicted on the upper extremities and can cause lacerations and
  infection.

148 Signs of Physical Abuse (2 of 4)
• Typical abuse from burns is caused by contact with:
– Cigarettes
– Matches
– Heated metal
– Forced immersion in hot liquids
– Chemicals
– Electrical power sources

**Signs of Physical Abuse (3 of 4)**

- Check for signs of neglect, such as:
  - Lack of hygiene
  - Poor dental hygiene
  - Poor temperature regulation
  - Lack of reasonable amenities in the home

**Signs of Physical Abuse (4 of 4)**

- Regard injuries to the genitals or rectum with no reported trauma as evidence of sexual abuse in any patient.
  - Geriatric patients with altered mental status may never be able to report sexual abuse.
  - Many women do not report cases of sexual abuse because of shame and the pressure to forget.

**Review**

1. The LEAST common cause of death in patients over 65 years of age is:
   A. stroke.
   B. diabetes.
   C. heart attack.
   D. drug overdose.

**Review**

Answer: D

Rationale: The leading causes of death in patients over 65 years of age are heart disease, diabetes, stroke, cancer, pulmonary diseases, and trauma. Drug overdose—intentional or unintentional—is not a leading cause of death in this age group.

**Review**

1. The LEAST common cause of death in patients over 65 years of age is:
   A. stroke.
   Rationale: This is one of the common causes of death.
   B. diabetes.
   Rationale: This is one of the common causes of death.
   C. heart attack.
   Rationale: This is one of the common causes of death.
   D. drug overdose.
   Rationale: Correct answer

**Review**

2. According to the GEMS diamond, a person’s activities of daily living are evaluated during the:
   A. SAMPLE history.
   B. social assessment.
   C. medical assessment.
   D. environmental assessment.
Chapter 35 - Geriatric Emergencies

Review

Answer: B

Rationale: The GEMS diamond was created to help you remember what is unique to older people. During the social assessment (the "S" in the GEMS diamond), the patient’s activities of daily living (eg, eating, dressing, bathing, toileting) are evaluated. Are these activities being provided? If so, by whom? Are there delays in obtaining food, medication, or other necessary items?

Review (1 of 2)

2. According to the GEMS diamond, a person’s activities of daily living are evaluated during the:
   A. SAMPLE history.
      Rationale: This is a mnemonic used when obtaining information during a focused history and physical exam.
   B. social assessment.
      Rationale: Correct answer

Review (2 of 2)

2. According to the GEMS diamond, a person’s activities of daily living are evaluated during the:
   C. medical assessment.
      Rationale: “M” is obtained by a thorough medical history. It is important and is completed before the social assessment.
   D. environmental assessment.
      Rationale: “E” is the assessment of the environment. It considers if the home is well kept, too hot or too cold, or poses any hazards.

Review

3. A condition that clouds the lens of the eye is called:
   A. cataract.
   B. nystagmus.
   C. astigmatism.
   D. glaucoma.

Review

Answer: A

Rationale: As people get older, cataracts, or clouding of the lens of the eye, may interfere with vision. Glaucoma is a condition caused by increased intraocular pressure (IOP). Nystagmus is characterized by involuntary movement of the eyes. Astigmatism is an optical defect that causes blurred vision due to the inability of the eye to focus an object into a sharp, focused image on the retina.

Review

3. A condition that clouds the lens of the eye is called:
   A. cataract.
      Rationale: Correct answer
   B. nystagmus.
      Rationale: This is a horizontal, involuntary movement of the eyes.
   C. astigmatism.
      Rationale: This is an optical defect that causes blurred vision.
   D. glaucoma.
      Rationale: This is a condition caused by increased intraocular pressure (IOP).
4. You are called to a neatly kept residence for an 80-year-old woman who lives by herself. She burned her hand on the stove and experienced a full-thickness burn. When treating this patient, it is important to note that:
   A. there is a high likelihood that she has been abused.
   B. isolated full-thickness burns to the hand are not critical burns.
   C. this patient should probably be placed in an assisted-living center.
   D. slowing of reflexes causes a delayed pain reaction in older people.

Answer: D
Rationale: In older patients, the sense of touch decreases due to a loss of the end-nerve fibers. This loss, in conjunction with slowing of the peripheral nervous system, causes a delayed reaction to pain. In this particular scenario, there is no indication that the patient has been abused. Partial- and full-thickness burns to the hands, feet, face, and genitalia are considered critical burns, regardless of the patient’s age.

4. You are called to a neatly kept residence for an 80-year-old woman who lives by herself. She burned her hand on the stove and experienced a full-thickness burn. When treating this patient, it is important to note that:
   B. isolated full-thickness burns to the hand are not critical burns.
   Rationale: Any full-thickness burns of the hands, feet, face, and genitalia are considered critical.

4. You are called to a neatly kept residence for an 80-year-old woman who lives by herself. She burned her hand on the stove and experienced a full-thickness burn. When treating this patient, it is important to note that:
   C. this patient should probably be placed in an assisted-living center.
   Rationale: This is no indication that the patient cannot take care of herself.

D. slowing of reflexes causes a delayed pain reaction in older people.
Rationale: Correct answer

5. The slow onset of progressive disorientation, shortened attention span, and loss of cognitive function is called:
   A. senility.
   B. delirium.
   C. dementia.
   D. delusion.

Answer: C
Rationale: Dementia is defined as the slow onset of progressive disorientation, shortened
attention span, and loss of cognitive function. Alzheimer disease is an example of dementia. In contrast to dementia, delirium is an acutely altered mental status, such as that caused by hypoglycemia.

Review (1 of 2)
5. The slow onset of progressive disorientation, shortened attention span, and loss of cognitive function is called:
   A. senility.
   Rationale: Senility causes forgetfulness and confusion. The person is mentally less acute in later life.
   B. delirium.
   Rationale: Delirium is an acutely altered mental status.

Review (2 of 2)
5. The slow onset of progressive disorientation, shortened attention span, and loss of cognitive function is called:
   C. dementia.
   Rationale: Correct answer
   D. delusion.
   Rationale: Delusion is a fixed belief that is not shared by others and cannot be changed by reasonable argument.

Review
6. A 71-year-old man with a history of hypertension and vascular disease presents with tearing abdominal pain. His blood pressure is 80/60 mm Hg, his heart rate is 120 beats/min, and his respirations are 28 breaths/min. Your assessment reveals that his abdomen is rigid and distended. Considering his medical history and vital signs, you should be MOST suspicious for a(n):
   A. aortic aneurysm.
   B. hemorrhagic stroke.
   C. acute myocardial infarction.
   D. infarction of the large intestine.

Review
Answer: A
Rationale: Arteriosclerosis is a vascular disease in which the arteries thicken, harden, and calcify. This places the patient at risk for stroke, heart disease, bowel infarction, and hypertension, among other conditions. Hypertension and vascular disease are significant risk factors for an aneurysm—a weakening in the wall of an artery. The patient’s vital signs; abdominal pain; and rigid, distended abdomen should make you highly suspicious for a leaking abdominal aortic aneurysm.
6. A 71-year-old man with a history of hypertension and vascular disease presents with tearing abdominal pain. His blood pressure is 80/60 mm Hg, his heart rate is 120 beats/min, and his respirations are 28 breaths/min. Your assessment reveals that his abdomen is rigid and distended. Considering his medical history and vital signs, you should be MOST suspicious for a(n):
   C. acute myocardial infarction.
   Rationale: Although the patient history could predispose him to an acute MI, the symptoms would be pain in the chest or shoulder, nausea, vomiting, a feeling of shortness of breath, and sweating.

6. A 71-year-old man with a history of hypertension and vascular disease presents with tearing abdominal pain. His blood pressure is 80/60 mm Hg, his heart rate is 120 beats/min, and his respirations are 28 breaths/min. Your assessment reveals that his abdomen is rigid and distended. Considering his medical history and vital signs, you should be MOST suspicious for a(n):
   D. infarction of the large intestine.
   Rationale: If the large intestine ruptures, it would present with signs of peritonitis.

7. Which of the following is a physiologic change that occurs during the process of aging?
   A. Increased elasticity of the alveoli
   B. A gradual decrease in blood pressure
   C. A decline in kidney function
   D. 10% to 15% increase in brain weight

Answer: C
Rationale: As a person gets older, certain anatomic and physiologic changes occur. The alveoli in the lungs become less elastic, even though their overall size increases. Blood pressure gradually increases secondary to the process of arteriosclerosis (hardening of the arteries). A decline in kidney function occurs because of a decrease in the number of nephrons. By the age of 85 years, a 10% reduction in brain weight occurs, which causes an increased risk of head trauma.
8. Which of the following conditions makes the elderly patient prone to fractures from even minor trauma?
   A. Hypertension
   B. Osteoporosis
   C. Arteriosclerosis
   D. Rheumatoid arthritis

**Review**
Answer: B
Rationale: Osteoporosis, a decrease in bone density that causes the bones to become brittle, makes elderly patients prone to fractures, even from minor trauma. It is especially common in postmenopausal women.

**Review (1 of 2)**
8. Which of the following conditions makes the elderly patient prone to fractures from even minor trauma?
   A. Hypertension
      Rationale: This is high blood pressure.
   B. Osteoporosis
      Rationale: Correct answer

**Review (2 of 2)**
8. Which of the following conditions makes the elderly patient prone to fractures from even minor trauma?
   C. Arteriosclerosis
      Rationale: This is the stiffening or hardening of the arteries.
   D. Rheumatoid arthritis
      Rationale: This is an inflammatory disorder that affects the entire body and leads to degeneration and deformation of joints.

**Review**
9. Polypharmacy is a term used to describe a patient who takes:
   A. multiple medications.
   B. other people’s medications.
   C. a medication more than once a day.
   D. medication only when he or she feels the need to.

**Review**
Answer: A
Rationale: Polypharmacy is a term used to describe a patient who takes multiple medications every day. The more medications a patient takes, the greater the risk of a negative drug interaction.

**Review**
9. Polypharmacy is a term used to describe a patient who takes:
   A. multiple medications.
      Rationale: Correct answer
   B. other people’s medication.
      Rationale: This is incorrect.
   C. a medication more than once a day.
      Rationale: Many medications are taken more than once a day.
   D. medication only when he or she feels the need to.
Rationale: This is considered noncompliant.

Review
10. Inflicted bruises are commonly found in all of the following areas, EXCEPT:
   A. the buttocks.
   B. the lower back.
   C. the inner thighs.
   D. the forearms.

Answer: D
Rationale: Inflicted bruises are typically found on the buttocks and lower back, genitalia and inner thighs, cheek or earlobe, upper lip and inside the mouth, and neck. Bruises to these areas should increase your index of suspicion for abuse.

Review
10. Inflicted bruises are commonly found in all of the following areas, EXCEPT:
   A. the buttocks.
      Rationale: This is an area where bruises are typically inflected.
   B. the lower back.
      Rationale: This is an area where bruises are typically inflected.
   C. the inner thighs.
      Rationale: This is an area where bruises are typically inflected.
   D. the forearms.
      Rationale: Correct answer