



State-approved Curriculum
NURSE AIDE I TRAINING PROGRAM
July 2019
Module H



North Carolina Department of Health and Human Services
Division of Health Service Regulation
Health Care Personnel Education and Credentialing Section

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Module H – Body Systems Teaching Guide

Objectives

- Identify the structure and function of the cell and the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems
- Describe the nurse aide's role in the provision of care for a resident with cancer
- Discuss changes in the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems due to aging
- Compare and contrast normal findings and variation of normal findings of the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems
- Describe common disorders of the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems
- Describe the nurse aide's role related to a resident's integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems

Instructional Resources/Guest Speakers

- Male/female mannequin(s) (Activity #5H)
- A skeleton from the biology department (Teaching Tip #6H)

Supplies

- 28-feet of cheap cord or rope (Activities #3H and #4H)
- 2 brightly colored straws, preferably in different colors or 2 per student – instructor's choice (Activity #5)
- Urine display – 3 specimen cups with lids, a small amount of sand, yellow food coloring, red food coloring (Teaching Tip #9H)
- Activity #6H
 - Card stock paper or computer paper (with access to a laminator)
 - Pair of goggles
 - Petroleum jelly or water-soluble lubricant
 - Mannequin in a bed
 - Cotton balls, at least 12 per student
 - Sewing needle and 2-foot piece of thread
 - Newspaper
 - Small change purse with 2 or 3 dimes in it
 - A pair of gloves for each student
 - Pair of extra-large pants

Module H

- Chair
- Walker
- Blindfold, scarf or headband
- A meal tray with 3 different foods (such as pudding, applesauce, fruit cocktail, cottage cheese, gelatin, etc.) that will not be eaten, placed on the plate and covered with plastic wrap
- Generic diet card
- Plastic wrap

Advance Preparation – In General

- Review curriculum and presentation materials
- Add examples or comments in Notes Section
- Set up computer/projector
- Establish Internet connection

Advance Preparation – Teaching Tips

- **#2H Skeleton:** Borrow a skeleton to demonstrate structure and function of the skeletal system
- **#4H Right-brain/Left-brain dominance:** Review the literature and create a resource folder to use in conjunction with a short discussion about right-brain and left-brain dominance. You may want to locate a quiz to let students determine which side of their brains are dominant
- **#7H Videos:** Preview the following videos and determine if you would like to use one or both to complement instruction: *Pursed-Lip Breathing, by the American Lung Association*
<https://www.youtube.com/watch?v=7kpJ0QIRss4> and/or *Top 3 Breathing Ex. for COPD -Chronic Obstructive Pulmonary Disease*
<https://www.youtube.com/watch?v=oa5Sn-R8FCg>
- **#9H: 3 Simulated Urine Specimens: Create 3 different urine specimens for students to view and pass around – normal urine, urine with red food coloring (blood) and urine with sand/dirt (sediment).**

Advance Preparation – Activities

- * **#1H Pressure Injury Presentations – Class Project:** In preparation for curriculum content on pressure injuries, early in the course, divide the class equally into teams so that the following concepts will be researched by and presented in class: A) introduction of topic including an overview, statistics, and the Centers for Medicare and Medicaid Services (CMS); B) define, describe, and demonstrate the following terms – pressure, bony prominence, shear, and friction, and their relationship to pressure injuries; C) residents at

risk; D) stages of pressure injury; E) pressure points; and F) prevention. If class numbers do not allow for team assignments, then convert this activity to an individual project. Encourage creativity. [Ideas: for pressure points, take index cards and label pressure points on a mannequin or label them on an actual person; for stages of pressure injuries, create a model using plumber's putty and little bottles of paint in the crafts' section of your local store OR project images of stages from the internet.] Determine how to assign a grade for this project, for example, as a stand-alone grade, part of the homework/quizzes grade, or a part of the participation grade.

- **#2H Web sites:** Familiarize self with web sites that feature images of pressure ulcer staging and project in class
- **#3H and #4H Simulated Small and Large Intestines:** Measure and cut the cord or rope into 2 pieces – one piece, 23-feet long; and the other piece, 5-feet long. Separately, wind both pieces of rope up in preparation for class.
- **#5H Female and Male Urethras:** Measure and cut the first straw, 1½ inches and the other one 7 to 8 inches. You may choose to provide sets of pre-cut straws to each student.
- **#6H Experiencing Changes with Aging and/or Disability:** Print instruction cards using card stock paper or computer paper that you will laminate. Decide how to pair up students and think about special situations (odd number of students, whether you want to set up additional stations beyond the 5 specified). Set up 5 stations in the lab as directed in the instructor guide. Think about how you are going to notify students when it is time to move on to the next station.

Module H – Body Systems Definition List

Cell Theory

Benign tumor – a non-life-threatening, non-cancerous tumor that does not spread to other body parts

Cell Theory – basic unit of all living tissues or organisms, all living organisms made of cells, and cellular function is essential process of living things

Cells – are building blocks of the human body and when combined, are said to form tissue

Chemotherapy (or chemo) – a medical treatment that uses medications given orally or intravenously to kill cancer cells

Connective tissue – tissue that anchors, connects, and supports other tissues; located in every part of the body; bones, tendons, ligaments, and cartilage; blood is a form of connective tissue

Epithelial tissue – tissue that covers internal and external body surfaces; lines nose, mouth, respiratory tract, stomach, and intestines; skin, hair, nails, and glands

Malignant tumor – a cancerous tumor that invades and destroys nearby tissues and can spread to other parts of the body

Metastasis – when a cancer spreads to other parts of the body by breaking off and travelling to other parts of the body

Muscle tissue – tissue that stretches and contracts to let body move

Nerve tissue – tissue that receives and carries impulses to the brain

Organ – made of tissue, may be several different types of tissue, that carry on a special function, and combine to form a system

Organelle – carry on work of cell

Organism – made up of systems functioning together to perform activities of daily living needed for continued life

Radiation – a medical treatment that kills cancer cells using X-ray beams aimed at the tumor, or radioactive material implanted at or near the tumor

System – made of groups of several organs functioning together for a specific purpose or purposes

Tissue – cells grouped together to carry out a particular activity or function; when grouped together, tissues become organs

Tumor – growth of abnormal cells which may be benign or malignant

Integumentary System

Avoidable pressure injury – one that develops from improper use of the nursing process

Bedfast – confined to bed

Bony Prominences – areas of body where bone is close to the skin, such as elbows, shoulder blades, sacrum

Deep tissue pressure injury – purple or deep red localized area of discolored intact skin or blood-filled blister; usually due to damage of underlying soft tissue from pressure and/or shear

Dermatitis – inflammation of skin

Dermis – layer of skin under the epidermis

Eczema – red, itchy areas on the surface of skin

Epidermis – outer layer of skin

Friction – rubbing of one surface against another; skin is dragged across a surface

Integumentary System – the skin; the largest organ and system in the body, responsible for providing a natural protective covering of the body

Pressure injury (or pressure ulcer) – any lesion caused by unrelieved pressure that results in damage to underlying tissues

Pressure injury stage 1 – intact skin; redness over bony prominence

Pressure injury stage 2 – skin loss (partial-thickness); may see a blister or shallow reddish-pink ulcer; the blister may be intact or open

Pressure injury stage 3 – skin loss (full-thickness); skin gone; may see subcutaneous fat; slough (dead soft tissue, often moist and varies in color – white, yellow, green, or tan) may be present; could be attached or stringy loose

Pressure injury stage 4 – full-thickness skin and tissue loss with muscle, tendon, and bone exposure; slough and eschar (thick, leathery dead tissue that may be loose or attached to skin); often black or brown

Shear – when layers of skin rub up against each other; or it could be when skin remains in place, but tissues underneath move and stretch causing damage to capillaries and blood vessels

Shingles (or Herpes Zoster) – a disease caused by a virus, most common in people over 50, with signs that include a rash or blisters on one side of the body, burning pain, numbness, and itching

Stasis Dermatitis – a skin condition affecting lower legs and ankles that occurs from a buildup of fluid under the skin and causes problems with circulation

The 30° lateral position – position of a resident when the bed is not raised more than 30° and pillows are placed under the head, shoulder, and leg to lift up the hip at about a 30° angle to avoid pressure on the hip

Unavoidable pressure injury – a pressure injury occurs despite efforts to prevent one through proper use of the nursing process

Unstageable pressure injury – full-thickness tissue loss with injury covered by slough and/or eschar

Musculoskeletal System

Abduction – moving a body part away from the midline

Adduction – moving a body part toward the midline

Amputation – removal of all or part of a limb because of a disease or an accident

Arthritis – Inflammation or swelling of the joints causing stiffness, pain, and decreased mobility

Ball-and-socket joint – a joint that allows movement in all directions, made up of the rounded end of one bone fitted into the hollow end of another bone, for example, the hip and the shoulder

Bone Marrow – soft and spongy tissue located in the inside part of the bone

Bones – hard and rigid structures that make up the skeleton and together form the framework of the body

Cardiac Muscle – striated, involuntary muscle of the heart

Cartilage – connective tissue that cushions bones at the joints and keeps them from rubbing together

Closed fracture – a broken bone that does not break the skin

Contracture – permanent shortening of muscle resulting in immovable joints

Dorsiflexion – bending the toes and foot upward at the ankle

Extension – straightening a body part

External Rotation – turning the joint outward

Flexion – bending a body part

Fracture – break in the bone caused by an accident or osteoporosis

Hinge joint – a joint that allows movement in one direction, for example, the elbow and knee

Hip Fracture – a serious condition involving a break in the hip bone due to an accidental fall or a fall from weakened bones

Internal Rotation – turning the joint inward

Involuntary muscle – a muscle that works automatically and cannot be controlled

Joints – the point where bones meet, made up of connective tissue called cartilage that cushions bones and keeps them from rubbing together during movement

Ligaments – connect bone to bone

Muscle atrophy – the wasting away of a muscle due to disuse, causing a decrease in size and increase in weakness of the muscle

Muscle Strain – damage of the muscle caused by trauma

Muscles – structure of the body that powers movement of skeleton and helps body stay erect

Musculoskeletal System – system of the body that provides structure and movement for the body

Open fracture (or compound fracture) – a broken bone that breaks through the skin

Opposition – touching the thumb to a finger of the same hand

Osteoarthritis – degenerative joint disease affecting the elderly and may occur with aging or joint injury, usually involving weight-bearing hips and knees

Osteoporosis – loss of bone density causing bones to become porous and brittle, resulting in bones breaking easily

Phantom pain – pain experienced in the area that a body part has been amputated possibly due to damaged nerve endings

Phantom sensation – the feeling that an amputated body part is still there

Pivot joint – a joint that allows turning from side to side, for example, the skull connected to the spine

Plantar Flexion – bending the foot downward at the ankle

Pronation – turning downward

Prosthesis – device that replaces body part that is missing or deformed

Rheumatoid Arthritis – systemic, crippling disease-causing deformities, with stiff, painful, swollen joints

Skeletal muscle – striated voluntary muscles attached to the bones that powers movement of the skeleton

Smooth Muscle – involuntary muscle of the inner linings of organs, such as the stomach, intestines, blood vessels, and others

Sprain – stretched or torn ligaments or tendons

Supination – turning upward

Synovial membrane – lining of the joints that secretes synovial fluid that acts as lubricant allowing joints to move smoothly

Tendons – connect muscle to bone

Total Knee Replacement (or TKR) – surgical replacement of the knee with a prosthesis performed to relieve pain and restore mobility, damaged by arthritis or injury

Voluntary muscle – a muscle that can be controlled

Nervous System

Brain – located in the skull and consists of three parts – cerebrum, cerebellum, and the brainstem

Brainstem – part of the brain that controls breathing, opening and closing of blood vessels, heart rate, swallowing, gagging, and coughing

Central nervous system (or CNS) – one of the two divisions of the nervous system that includes the brain and spinal cord

Cerebral cortex – outer layer of the cerebrum where ideas, thinking, analysis, judgment, emotions, and memory occurs; also guides speech, interprets messages from senses, and controls voluntary muscle movement

Cerebrovascular accident (or CVA or stroke) – damage to part of the brain due to blood clot or hemorrhage cutting blood supply off

Cerebellum – part of the brain located just below the cerebrum that controls balance and regulates movement

Cerebrum – center of the brain where thought and intelligence occur and is divided into two hemispheres and four lobes

Cognitive impairment – poor judgment, memory loss, inability to solve problems, confusion

Dysphagia – difficulty swallowing

Emotional lability – inappropriate or uncalled for laughing, crying, or expressions of anger

Expressive aphasia – trouble communicating thoughts by speech or writing

Frontal lobe – lobe of the cerebrum important for cognitive functions and control of voluntary movement or activity

Head and spinal cord injuries – injuries resulting from diving accidents, sports injuries, motor vehicle accidents, and war injuries, resulting in mild concussion to coma, paralysis, and death

Hemiparesis – weakness on one side of body

Hemiplegia – paralysis on one side of body

Left hemisphere of the cerebrum – the half of the cerebrum that controls the right side of the body

Nerves – structures that are made up of nerve cells or neurons that carry messages to and from the brain and to and from the rest of the body

Nervous System – the control and message center of the body

Neurons – nerve cells and basic unit of the nervous system

Occipital lobe – lobe of the cerebrum primarily responsible for vision

Paraplegia – complete loss of function occurs to the lower body

Parietal lobe – lobe of the cerebrum that processes information about temperature, taste, touch and movement

Paresis – loss of use of muscle function affecting only part of body

Parkinson's Disease – progressive, incurable disease that causes a part of the brain to degenerate, resulting in stiffening muscles, shuffling gait, and bent posture

Peripheral nervous system – one of the two divisions of the nervous system that includes nerves that travel throughout the body

Quadriplegia – complete loss of function occurs to lower and upper body, plus trunk

Receptive aphasia – difficulty understanding spoken or written words

Right hemisphere of the cerebrum – the half of the cerebrum that controls the left side of the body

Sensory Organs - receive impulses from environment and relay impulses to brain including skin, tongue, nose, eyes, and ears

Spinal Cord – located within the spine, connected to the brain and conducts messages between the brain and the body by pathways

Temporal lobe – lobe of the cerebrum that processes memories, integrating them with sensations of taste, sound, sight and touch

Cardiovascular System

Angina pectoris (or angina) – chest pain occurring when the heart muscle is not getting enough oxygen due to narrowed blood vessels, brought about by exercise, stress, excitement, or digesting a big meal

Arteries – blood vessels that carry blood with oxygen and nutrients away from the heart and to the cells

Atherosclerosis – arteries harden due to plaque build-up from fatty deposits; what lay people refer to as “hardening of the arteries”

Cardiovascular System – also called the circulatory system and is the continuous movement of blood through the body

Congestive Heart Failure (or CHF) – when one or both sides of the heart stop pumping effectively

Coronary Artery Disease (or CAD) – a condition in which blood vessels in the coronary arteries narrow, lowering blood supply to the heart and depriving it of oxygen

Hypertension – high blood pressure

Myocardial Infarction (or heart attack or MI) – a condition where the heart muscle does not receive enough blood and lacks oxygen, causing damage or death to that area of the heart

Peripheral Vascular Disease (or PVD) – poor circulation of legs, feet, arms, hands due to fatty deposits that harden in blood vessels

Varicose Veins – enlarged, twisted veins usually in the legs

Veins – blood vessels that carry blood with waste products away from the cells and to the heart

Respiratory System

Asthma – chronic inflammatory disease occurring when the respiratory system reacts quickly and strongly to irritants, such as pollen and dust, characterized by

difficulty breathing, wheezing, and a sense of tightness or constriction in the chest due to spasm of the muscles

Chronic bronchitis – chronic irritation and inflammation of bronchi usually caused by smoking

Chronic Obstructive Pulmonary Disease (or COPD) – chronic, progressive disease of the lungs causing trouble breathing, particularly getting air out of lungs; includes chronic bronchitis and emphysema

Cyanosis – changes in skin color, pale or bluish color of lips and extremities

Dyspnea – difficulty breathing

Emphysema – chronic, progressive disease of the lungs causing irreversible damage, usually resulting from chronic bronchitis and smoking

Exhale – when carbon dioxide is expelled out of the nose and the mouth from the lungs

Expiration – involves the breathing out of carbon dioxide

Inhale – when air (or oxygen) is pulled in through the nose and down into the lungs

Inspiration – involves the breathing in of oxygen

Lobes – segments or areas of the lung

Lower Respiratory Tract – consists of lower trachea, bronchi, and lungs

Lungs – elastic, spongy, cone-shaped air-filled structures involved in respiration

Pneumonia – acute (sudden onset) infection of the lung or lungs caused by bacteria, virus, or fungus

Pursed-lip breathing – an assistive breathing pattern for residents with chronic lung disease that requires inhaling slowly through nose and exhaling slowly through pursed lips (as if about to whistle)

Respiratory System – involves the breathing in of oxygen (inspiration) and the breathing out of carbon dioxide (expiration)

Thorax – closed cavity of the body that contain the structures needed for respiration, extending from the base of the neck to the diaphragm

Upper Respiratory Infection (or URI or a cold) – viral or bacterial infection of nose, sinuses, and throat with nasal drainage, sneezing, sore throat, fever, and tiredness

Upper Respiratory Tract – consists of nose, mouth, sinuses, pharynx, larynx, and top of trachea

Digestive System

Bowel Movement (or feces or stool or BM) – semi-solid material made of water, solid waste, bacteria, and mucus that is eliminated via the anus

Colostomy – a surgically created opening (stoma) through the abdomen into large intestine to allow stool to be expelled into a bag affixed to the abdomen

Constipation – inability to have a stool or infrequent, difficult, and possibly painful elimination of a hard, dry stool

Defecation (bowel elimination) – the passage of the bowel movement from the large intestines out of the body through the anus

Diarrhea – liquid stool

Digestive System – also known as the digestive system, extends from the mouth to the anus, and responsible for digestion and elimination

Enema – specific amount of water that may or may not have an additive and is inserted into the colon to stimulate passage of stool

Esophagus – the food tube of the body between the throat and the stomach

Fecal Impaction – hard stool stuck in the rectum and cannot be expelled, resulting in ongoing constipation

Feces – tubular shaped stool passed from the rectum

Flatulence – gas

Gastritis – inflammation of the stomach lining

Gastric ulcer (or peptic ulcer) – raw sores in stomach caused by excessive acid secretion

Gastroesophageal reflux disease (or GERD) – chronic condition when liquid contents of the stomach back up into the esophagus and that can damage the lining of the esophagus

Incontinence of stool – not able to control bowel movements, leading to an unintentional, spontaneous passage of stool

Intestines (small and large) – lower GI structures

Peristalsis – involuntary contractions that move food through the digestive system

Ulcerative Colitis – chronic inflammatory disease of large intestine; serious condition that can result in a colostomy

Urinary System

Benign Prostatic Hypertrophy (or BPH) – enlargement of prostate gland, a donut-shaped structure around the male urethra, leading to urinary dysfunction

Chronic Kidney Disease (or CKD) – damage of the kidneys that worsens gradually

Cystitis – inflammation of bladder due to infection

Dysuria – painful urination

Functional incontinence – loss of urine caused by cognitive, physical, or environment reasons

Hematuria – blood in the urine

Kidney Stones (or renal calculi) – jagged stones formed when urine crystallizes in the kidneys that can block kidneys and ureters causing excruciating pain

Kidneys – paired organs responsible for filtering waste products from the blood and producing urine

Nephritis – inflammation of kidney due to infection

Overflow incontinence – loss of urine due to bladder overflow or distention

Retention – inability to completely empty the bladder

Stress incontinence – loss of urine with sneezing or coughing

Ureters – narrow tubes that connect the kidneys to the urinary bladder

Urethra – a tube located between the urinary bladder to the outside of the body

Urge incontinence – involuntary loss of urine from a sudden urge to void

Urinary Bladder – muscular sac that stores the urine until it passes from the body

Urinary Incontinence – inability to control the bladder leading to an involuntary loss of urine

Urinary System – the filtering system of the body, responsible for ridding body of waste products from blood

Urinary Tract Infection (or UTI) – an infection of urethra, bladder, ureter, or kidney typically caused by E. coli, a bacteria found in the digestive system

Urination (or micturition or voiding) – the passing of urine from the bladder through the urethra to the outside of the body

Urine – made up of water, salt, and waste substances filtered from the blood by the kidneys that passes out of the body via the urethra

Urine straining – process of pouring urine into a fine filter strainer to catch any particles, particularly kidney stones

Reproductive System

Cystocele – weakening of the wall between the urethra and the vagina causing the bladder to drop down into the vaginal canal

Prolapse – when a pelvic organ drops into the vaginal canal

Rectocele – occurs when the wall of tissue separating the rectum from the vagina weakens causing the rectum to shift downward into the vagina canal

Reproductive System – system that allows human beings to create a new human life and may be subdivided into two categories (1) the female reproductive system and (2) the male reproductive system

Uterine prolapse – when the pelvic floor muscles weaken resulting in the uterus shifting downward into the vaginal canal

Endocrine System

Diabetes Mellitus (or DM or diabetes) – the most common disorder of the endocrine system and occurs when the pancreas produces too little insulin or does not use insulin properly causing sugar build up in the blood

Endocrine System – system of glands that secrete chemicals directly into the bloodstream to regulate body functions

Gestational diabetes – a type of diabetes that occurs during pregnancy

Glands – an organ that secretes chemicals, called hormones that regulate bodily function

Hyperglycemia – high blood sugar

Hypoglycemia – low blood sugar

Pancreas – organ of the body that produces insulin

Type 1 diabetes – a lifelong condition typically beginning during childhood and early adult when the pancreas does not produce insulin

Type 2 diabetes – a type of diabetes that develops after about age 35 when the pancreas secretes insulin, but does not use it well

Immune System

Acquired Immune Deficiency Syndrome (or AIDS) – disease caused by a virus and attacks the immune system and destroys infection-fighting and cancer-fighting cells of the body

Graves Disease – immune system attacks thyroid gland which causes it to secrete more thyroid hormone

Immune System – system defends threats both inside and outside the body

Lupus – when immune system attacks tissues causing redness, pain, swelling, and damage

Module H – Body Systems (Cell Theory)	
<p>(S-1) Title Slide (S-2, 3 & 4) Objectives</p> <ol style="list-style-type: none"> 1. Identify the structure and function of the cell and the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems. 2. Describe the nurse aide’s role in the provision of care for a resident with cancer. 3. Discuss changes in the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems due to aging. 4. Compare and contrast normal findings and variation of normal findings of the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems. 5. Describe common disorders of the integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems. 6. Describe the nurse aide’s role related to a resident’s integumentary, musculoskeletal, nervous, cardiovascular, respiratory, digestive, urinary, reproductive, endocrine, and immune systems. 	
Content	Notes
<p>ACTIVITY #1H: Pressure Injury Presentations – Class Project</p> <p>In preparation for curriculum content on pressure injuries, early in the course, divide the class equally into teams so that the following concepts will be researched by and presented in class: A) introduction of topic including an overview, statistics, and the Centers for Medicare and Medicaid Services (CMS); B) define, describe, and demonstrate the following terms – pressure, bony prominence, shear, and friction, and their relationship to pressure injuries; C) residents at risk; D) stages of pressure injury; E) pressure points; and F) prevention. If class numbers do not allow for team assignments, then convert this activity to an individual project. Encourage creativity. [Ideas: for pressure points, take index cards and label pressure points on a mannequin or label them on an actual person; for stages of pressure injuries, create a model using plumber’s putty and little bottles of paint in the crafts’ section of your local store OR project images of stages from the internet.] It is up to the individual program as to how to assign a grade for this project, for example, as a stand-alone grade, part of the homework/quizzes grade, or a part of the participation grade.</p>	
<p>(S-5) Title Slide</p>	

Module H – Body Systems (Cell Theory)	
<p>(S-6) Cell Theory – Overview</p> <ul style="list-style-type: none"> • Basic unit of all living tissues or organisms • All living organisms made of cells • Cellular function is essential process of living things • Cells have several functioning structures called organelles, that carry on work of cell 	
<p>(S-7) Cells – Structure and Function</p> <ul style="list-style-type: none"> • Are building blocks of the human body • Have same basic structure; function, size, and shape may differ • Need food, water, and oxygen to live and function • Microscopic in size • Divide, grow, and die, renewing tissues and organs • Reproduce for tissue growth and repair in an orderly manner • Combine to form tissue 	
<p>(S-8) Tissue – Structure and Function</p> <ul style="list-style-type: none"> • Grouped together and carry out a particular function • Types <ul style="list-style-type: none"> ○ Epithelial – covers internal and external body surfaces; lines nose, mouth, respiratory tract, stomach, and intestines; skin, hair, nails, and glands ○ Connective – anchors, connects, and supports other tissues; located in every part of the body; bones, tendons, ligaments, and cartilage; blood is a form of connective tissue ○ Muscle – stretches and contracts to let body move ○ Nerve – receives and carries impulses to the brain • Combine to form organs 	
<p>(S-9) Organ – Structure and Function</p> <ul style="list-style-type: none"> • Made of tissue, may be several types of tissues • Carries on a special function; examples are heart, stomach, bladder • Some are paired; examples are kidneys, lungs • Combine to form a system 	
<p>(S-10) System – Structure and Function</p> <ul style="list-style-type: none"> • Made of groups of several organs functioning together for a specific purpose or purposes • Combine to form an organism • Systems of the body include urinary, musculoskeletal, nervous, respiratory, cardiovascular, digestive, integumentary, endocrine, and reproductive 	
<p>(S-11) In Summary, Organization of the Body</p> <ul style="list-style-type: none"> • Cells, the basic unit of body structure; then tissue, then 	

Module H – Body Systems (Cell Theory)	
organ, then system	
<p>(S-12) Organism – Structure and Function</p> <ul style="list-style-type: none"> Made up of systems functioning together to perform activities of daily living needed for continued life 	
<p>(S-13) Cells – Normal Findings</p> <ul style="list-style-type: none"> Reproduce for tissue growth and repair in a controlled and orderly manner 	
<p>(S-14) Cells – Variation of Normal</p> <ul style="list-style-type: none"> Cell division and growth are out of control developing into a mass or clump of cells Tumor – growth of abnormal cells; may be benign or malignant <ul style="list-style-type: none"> Benign (non-cancerous) – do not spread to other body parts; may grow large, but nonlife-threatening; do not grow back when removed Malignant (cancerous) – invade and destroy nearby tissues; can also spread to other parts of body (metastasis) by breaking off and travelling; may be life-threatening; may grow back when removed; can occur almost anywhere in or on the body, but commonly occurs on skin and in the lung, colon, breast, prostate, uterus, ovary, bladder, and kidney 	
<p>(S-15) Cancer (CA) – Risk Factors</p> <ul style="list-style-type: none"> Second largest cause of death; National Cancer Institute describes risk factors <ul style="list-style-type: none"> Age – getting older most important risk factor Tobacco – actual use (smoke, chew, dip) and second-hand (being around it) Radiation – sunlight, x-rays, and radon gas Infections – certain viruses and bacteria 	
<p>(S-16) Cancer – Risk Factors</p> <ul style="list-style-type: none"> Immuno-suppressive drugs – lower body’s natural defense of stopping cancer from forming (organ transplant) Alcohol Diet – high in fat, protein, calories, and red meat (colon and rectal); fruits and vegetables are great 	
<p>(S-17) Cancer – Risk Factors</p> <ul style="list-style-type: none"> Hormones – female hormones Obesity Environment – air pollution, second-hand smoke, and asbestos 	
<p>(S-18) Cancer – Seven Warning Signs</p> <ul style="list-style-type: none"> Change in bowel or bladder habits 	

Module H – Body Systems (Cell Theory)	
<ul style="list-style-type: none"> • A sore that does not heal • Unusual bleeding or discharge from any body opening • Thickening or lump in breast or elsewhere • Indigestion or difficulty swallowing • Obvious change in a wart or mole • Nagging cough or hoarseness 	
<p>(S-19) Cancer – Treatment</p> <ul style="list-style-type: none"> • Goals – cure (removal from body and kill cancer cells); control (help resident live longer); reduce signs and symptoms from disease and treatment • Key is to find cancer early • Includes – surgery, radiation, chemotherapy, others (hormone, stem cell transplants, alternative) • Dependent on type, site, size, and if it has spread • May need 1 or several types of treatment • Can damage healthy cells and tissues nearby cancer • Side effects depend on type and extent of treatment 	
<p>(S-20) Cancer Treatment – Radiation</p> <ul style="list-style-type: none"> • Kills cancer cells using X-ray beams aimed at tumor or radioactive material implanted at or near the tumor 	
<p>(S-21) Cancer Treatment – Radiation</p> <ul style="list-style-type: none"> • Side effects <ul style="list-style-type: none"> ○ At site – sore, irritated, redness, and blistering ○ Head and neck – dry mouth and sore throat ○ Tiredness ○ Discomfort, nausea, vomiting, diarrhea, and loss of appetite • Be aware of safety needs for health care providers and visitors; follow directives from care plan and nurse • Nurse aide care directed at minimizing side effects and providing emotional support 	
<p>(S-22) Cancer Treatment – Chemotherapy (or Chemo)</p> <ul style="list-style-type: none"> • Affects whole body; cancer cells and normal cells affected • Targeted therapy may be given that can tell the difference between cancer cells and normal cells • May be given orally or intravenously, which may require a port (implanted device in a vein allowing for medications and/or IV fluids to be given and blood drawn) • Be aware of safety needs for health care providers and visitors, specifically handling body fluids; follow directives from care plan and nurse 	
<p>(S-23) Cancer Treatment – Chemotherapy (or Chemo)</p>	

Module H – Body Systems (Cell Theory)	
<ul style="list-style-type: none"> • Side effects depend on drugs used <ul style="list-style-type: none"> ○ Hair loss (alopecia) ○ Digestive disturbances, such as poor appetite, nausea, vomiting, diarrhea, and loss of appetite ○ Stomatitis – inflammation of the mouth ○ Decreased blood cell production, resulting in potential for bleeding and infection; weakness and tiredness ○ Changes in thinking and memory ○ Emotional changes • Targeting chemotherapy can also raise blood pressure • Nurse aide care directed at minimizing side effects and providing emotional support 	
<p>(S-24) The Resident with Cancer – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Resident’s needs include pain relief or control, rest and exercise, fluids and nutrition, prevention of skin breakdown, prevention of bowel problems, dealing with side effects of treatment, psychologic and social needs, and spiritual needs 	
<p>(S-25) The Resident with Cancer – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Understand that each case is different; the residents you care for may live several months or many years; treatment effects each resident differently; never make assumptions about the resident or the resident’s treatment • Social interaction – resident may want to talk or not; listen if resident wants to share feelings or experiences; never push resident to express self; be honest, sensitive; be positive, comment if resident is eating more of diet or seems stronger • Proper nutrition – follow care plan; encourage a variety of foods with small portions if appetite is poor; for nausea or swallowing complaints, soups or gelatin may be tolerated; use plastic utensils if resident is receiving chemo (food tastes better) • Pain control – watch for signs and report to nurse; provide comfort measures, such as repositioning and distraction • Assist with comfort and circulation – try a variety of positioning devices, assist to chair if care plan directs, reposition at least every 2 hours if weak or immobile • Skin care – watch for signs of pressure injury, keep skin clean and dry; never wash off markings; avoid applying lotion to radiation site; follow skin care directives on care plan • Mouth care – understand that chemo, nausea, vomiting, 	

Module H – Body Systems (Cell Theory)	
<p>mouth infections can cause pain and bad taste in mouth; soft toothbrush, mouth care cleaning per care plan but avoid mouthwash with alcohol (can increase irritation); and gentle swabbing with oral swabs dipped in a rinse for mouth sores</p>	
<p>(S-26) The Resident with Cancer – Nurse Aide’s Role</p> <ul style="list-style-type: none"> Observe for and report to the nurse the following – increased weakness, tiredness fainting; nausea, vomiting, diarrhea, weight loss, change in appetite; depression, confusion, change in mental state; blood in mouth, urine, or bowel movement; changes in skin, new lumps, sores, rash; and increase in pain or pain that is not relieved by medication 	
<p>(S-27) The Resident with Cancer – Nurse Aide’s Role</p> <ul style="list-style-type: none"> Self-image – may be an issue if weakened and has had change in appearance; hair loss common side effect, assist with grooming, show concern and interest 	
<p>(S-28) The Resident with Cancer – Nurse Aide’s Role</p> <ul style="list-style-type: none"> Visitors and family – if visit is positive one, do not intrude; check with nurse about support groups in community if requested by visitors; watch for and report negative interactions to the nurse during visits 	

Module H – Body Systems (Integumentary)	
Content	Notes
(S-29) Title Slide	
(S-30) Integumentary System – Overview <ul style="list-style-type: none"> • The skin • Largest organ and system in the body • Accessory structures include hair and nails • Responsible for providing a natural protective covering of the body 	
(S-31) Integumentary System – Structure <ul style="list-style-type: none"> • Three layers <ul style="list-style-type: none"> ○ Epidermis – the outer layer; has living and dead cells; living cells push dead cells up as they divide and dead cells flake off; living cells contain pigment that give the skin its color; does not have blood vessels and only few nerve cells ○ Dermis – inner layer; made up of connective tissue; blood vessels, nerves, sweat glands, oil glands, and hair roots located there ○ Subcutaneous (fatty) tissue – thick layer of fat and connective tissue 	
(S-32) Integumentary System – Function <ul style="list-style-type: none"> • Protects body from injury and pathogens • Regulates body temperature • Eliminates waste through perspiration • Contains nerve endings for cold, heat, pain, pressure and pleasure • Stores fat and vitamins 	
(S-33) Integumentary System – Normal Findings <ul style="list-style-type: none"> • Warm, dry • Absence of breaks, rash, discoloration, swelling 	
(S-34) Integumentary System – Changes Due to Aging <ul style="list-style-type: none"> • Skin is thinner, drier, more fragile • Skin loses elasticity • Fatty layer decreases so person feels colder • Hair thins and may gray 	
(S-35) Integumentary System – Changes Due to Aging <ul style="list-style-type: none"> • Folds, lines, wrinkles and brown spots may appear • Nails harden and become more brittle • Reduced circulation to skin, leading to dryness and itching • Development of skin tags, warts and moles 	
(S-36) Integumentary System – Variation of Normal <ul style="list-style-type: none"> • Breaks in skin 	

Module H – Body Systems (Integumentary)	
<ul style="list-style-type: none"> • Pale, white or reddened areas • Black and blue areas • Changes in scalp or hair 	
<p>(S-37) Integumentary System – Variation of Normal</p> <ul style="list-style-type: none"> • Rash, itching or skin discoloration • Abnormal temperature • Swelling 	
<p>(S-38) Integumentary System – Variation of Normal</p> <ul style="list-style-type: none"> • Ulcers, sores, or lesions • Dry or flaking skin • Fluid or bloody drainage 	
<p>(S-39) Shingles (Herpes Zoster)</p> <ul style="list-style-type: none"> • Caused by a virus; same virus that causes chicken pox; virus is inactive in nerve tissue and can become active years later; most common in people over 50 • Signs – rash or blisters on one side of body, burning pain, numbness, and itching; lasts about 3 to 5 weeks; Centers for Disease Control (CDC) states that the following should avoid contact with infected resident: never had chicken pox or immunization, have a weakened immune system, is pregnant never had chicken pox or immunization • Infectious until lesions are crusty • Nurse aide’s role – per directive of care plan, keep rash covered until crusty, remind resident to wash hands often and avoid scratching or touching rash; vaccine recommended for people 60 years or older who have had chicken pox 	
<p>(S-40) Stasis Dermatitis</p> <ul style="list-style-type: none"> • Skin condition affecting lower legs and ankles • Occurs from buildup of fluid under skin • Problems with circulation resulting in fragile skin • Can lead to open ulcers and wounds • Early signs – scaly, red, itchy areas; later signs – swelling of legs, ankles, or other areas; thin skin; darkening skin, leg pain • Nurse aide’s role – report signs; note too tight stockings and shoes and report to nurse; follow directives of care plan which may include anti-embolism stockings and elevation of feet 	
<p>TEACHING TIP #1H: Evolution of the Pressure Injury</p> <p>Tell students that the term used for pressure injury has evolved through time: bedsore, pressure sore, decubitus</p>	

Module H – Body Systems (Integumentary)	
ulcer, pressure ulcer, and now, the pressure injury.	
<p>ACTIVITY #1H: Pressure Injury Presentations – Class Project</p> <p>This will be an excellent point in the curriculum for student teams to complete their Pressure Injury Projects by presenting to the class. You may add content that was omitted right after each part or at the end of the presentations.</p>	
<p>(S-41) The Pressure Injury</p> <ul style="list-style-type: none"> • The Centers for Medicare and Medicaid Services (CMS) defines the pressure ulcer (injury) as “any lesion caused by unrelieved pressure that results in damage to underlying tissues; friction and shear are factors” • The CMS requires that long term care facilities identify residents at risk for pressure ulcers • Many pressure ulcers occur within first 4 weeks of admission to the facility 	
<p>(S-42) Pressure Injury – Key Terms</p> <ul style="list-style-type: none"> • Bony prominence – an area where bone sticks out or projects from flat surface of the body; back of head, shoulder blades, elbows, hips, spine, sacrum, knees, ankles, heels, and toes 	
<p>(S-43) Pressure Injury – Key Terms</p> <ul style="list-style-type: none"> • Shear – when layers of skin rub up against each other; or it could be when skin remains in place, but tissues underneath move and stretch causing damage to capillaries and blood vessels • Friction – rubbing of one surface against another; skin is dragged across a surface • CMS has defined two other terms <ul style="list-style-type: none"> ○ Unavoidable pressure injury – a pressure injury occurs despite efforts to prevent one through proper use of the nursing process ○ Avoidable pressure injury – one that develops from improper use of the nursing process 	
<p>(S-44) Pressure Injury – At Risk Factors</p> <ul style="list-style-type: none"> • Pressure is major cause of pressure injuries; shearing and friction are contributing factors; all contribute to skin breakdown • Risk factors – immobility, breaks in skin, poor circulation to area, moisture, dry skin, and urine and feces irritation • Older residents and disabled residents are at risk due to 	

Module H – Body Systems (Integumentary)	
skin changes due to age, chronic disease, and frailty	
<p>(S-45) Pressure Injury – Residents at Risk</p> <ul style="list-style-type: none"> • Bedfast (confined to bed) residents • Requires some or total help moving (coma, paralysis, hip fracture) • Agitated or have involuntary muscle movement • Urinary or fecal incontinence • Exposed to moisture • Poor nutrition; poor fluid balance • Lowered mental awareness • Problems sensing pain or pressure • Have circulatory problems • Are older • Are obese or very thin • Refuse care • History of pressure injuries 	
<p>ACTIVITY #2H: Pressure Injury Staging Illustrations</p> <p>A picture is worth a thousand words and that is true for the stages of pressure injury development. Locate images of these stages using your favorite search engine and project during instruction.</p> <p>You may want to include additional images separate and apart from those that the students who are assigned to that section of Activity #1H have located.</p>	
<p>(S-46) Pressure Injury Stages</p> <ul style="list-style-type: none"> • Stage 1 – intact skin; redness over bony prominence • Stage 2 – Skin loss (partial-thickness); may see a blister or shallow reddish-pink ulcer; the blister may be intact or open • Stage 3 – Skin loss (full-thickness); skin gone; may see subcutaneous fat; slough (dead soft tissue, often moist and varies in color – white, yellow, green, or tan) may be present; could be attached or stringy loose • Stage 4 – Full-thickness skin and tissue loss with muscle, tendon, and bone exposure; slough and eschar (thick, leathery dead tissue that may be loose or attached to skin); often black or brown • Unstageable – Full-thickness tissue loss with injury covered by slough and/or eschar • Deep tissue injury – purple or deep red localized area of discolored intact skin or blood-filled blister; usually due to 	

Module H – Body Systems (Integumentary)	
damage of underlying soft tissue from pressure and/or shear	
<p>(S-47) Pressure Injury – Pressure Points</p> <ul style="list-style-type: none"> • Occur over bony areas, called pressure points and include back of head, ears, shoulder blades, elbows, hips, spine, sacrum, knees, ankles, heels, and toes; sacrum being the most common site 	
<p>(S-48) Pressure Injury - Sites</p> <ul style="list-style-type: none"> • Objects can contribute to pressure injury – eye glasses, oxygen tubing, tubes, casts, braces • Obese people can have pressure areas occur where skin is in contact with skin, such as abdominal folds, legs, buttocks, thighs, and under breasts 	
<p>(S-49) Prevention is Key</p> <ul style="list-style-type: none"> • Identify residents at risk • Measures directed at 1) handling, moving, and positioning of the resident and 2) providing skin care 	
<p>(S-50) Handling, Moving, and Positioning of Resident</p> <ul style="list-style-type: none"> • Refer to care plan for directives • Follow repositioning schedule • Use assistive devices (pillows, foam wedges); support feet properly • Do not position on red area, pressure injury, on tubes or other medical devices • Prevent bed friction (powdered sheets are an example) • Prevent shearing (do not raise the head more than 30°) • Keep feet and heels off bed 	
<p>(S-51) The 30° Lateral Position</p> <ul style="list-style-type: none"> • Bed is not raised more than 30° • Pillows are placed under head, shoulder, and leg • Position lifts up the hip to avoid pressure on the hip at about a 30° angle • Person does not lie on hip as with the side-lying position 	
<p>(S-52) Providing Skin Care</p> <ul style="list-style-type: none"> • Inspect skin every time care is provided • Follow care plan for bathing schedule; do not use hot water; use cleansing agent (soap can dry and irritate skin) • Prevent incontinence • Check for perspiration or wound drainage • Apply moisturizer to dry areas • Give a back rub when repositioning; do not rub over bony prominences • Keep linen clean, dry, and free of wrinkles 	

Module H – Body Systems (Integumentary)	
<ul style="list-style-type: none">• Avoid scrubbing vigorously when bathing or drying• Avoid skin-to-skin contact by using pillow or blanket placement• No heat directly on pressure injury	

Module H – Body Systems (Musculoskeletal)	
Content	Notes
(S-53) Title Slide	
(S-54) Musculoskeletal System – Overview <ul style="list-style-type: none"> • Provides structure and movement for the body • Protects and gives the body shape 	
(S-55) Muscles – Structure <ul style="list-style-type: none"> • Muscles <ul style="list-style-type: none"> ○ Body has over 600 muscles made up of elastic tissue ○ Some are connected to bones by tendons • May be involuntary (cardiac or smooth) or voluntary (skeletal) • Involuntary – work automatically; cannot control <ul style="list-style-type: none"> ○ Cardiac – in the heart; striated ○ Smooth – control action of organs, such as stomach, intestines, blood vessels, and others; smooth • Voluntary – can be controlled <ul style="list-style-type: none"> ○ Skeletal – attached to the skeleton; include the arm and the legs; striated 	
(S-56) Muscles – Function <ul style="list-style-type: none"> • Power movement of skeleton – tendons that connect muscles to bone and move bones when muscles contract (shorten) • Give body form (or posture) • Produce most of body heat – when muscles contract, food is burned for energy producing heat; more muscle activity, greater amount of heat; when body is cold, rapid muscle contractions occur producing heat, called shivering 	
(S-57) Skeletal (Bones) – Structure <ul style="list-style-type: none"> • The skeleton <ul style="list-style-type: none"> ○ Has 206 bones ○ Framework • Bones <ul style="list-style-type: none"> ○ Outside is hard and rigid ○ Covered with periosteum, which contains blood vessels ○ Bone marrow, located inside, is soft and spongy ○ Connected to other bones by ligaments ○ Connected to muscles by tendons 	
(S-58) Skeleton (Bones) – Function <ul style="list-style-type: none"> • The skeleton <ul style="list-style-type: none"> ○ Provides framework for body ○ Protects organs of the body 	

Module H – Body Systems (Musculoskeletal)	
<ul style="list-style-type: none"> • Bones <ul style="list-style-type: none"> ○ Allows body to move ○ Stores calcium ○ Make and store blood cells (in bone marrow) 	
<p>TEACHING TIP #2H: Model Skeleton</p> <p>Use a model skeleton to show how bones support the body and protect the organs.</p>	
<p>(S-59) Joints – Structure</p> <ul style="list-style-type: none"> • Point where bones meet • Made up of connective tissue called cartilage that cushions bones; keeps them from rubbing together • Synovial membrane lines joints and secretes synovial fluid that acts as lubricant so joints move smoothly • May be movable (ankle), slightly movable (backbone), or immovable (skull) • Ligaments located here hold bones together • Types – ball-and-socket, hinge, and pivot 	
<p>(S-60) Types of Joints – Function</p> <ul style="list-style-type: none"> • Ball-and-socket – allows movement in all directions; made up of rounded end of one bone fitted into the hollow end of another bone; examples – hips and shoulders • Hinge – allows movement in one direction; example – elbow and knee • Pivot – allows turning from side to side; example – skull connected to spine 	
<p>(S-61) Musculoskeletal System – Normal Findings</p> <ul style="list-style-type: none"> • Ability to perform routine movements and activities of daily living • Ability to perform full range of motion exercises bilaterally, without pain • Able to perform the following movements 	
<p>TEACHING TIP #3H: Musculoskeletal Movement</p> <p>Following along with the next slides, demonstrate and have the students stand and follow along and perform each movement:</p> <ul style="list-style-type: none"> • Abduction and adduction • Extension and flexion • Pronation and supination • Dorsiflexion and plantar flexion 	

Module H – Body Systems (Musculoskeletal)	
<ul style="list-style-type: none"> • Opposition 	
(S-62) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Abduction bilaterally without pain 	
(S-63) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Adduction bilaterally without pain 	
(S-64) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Extension of arm bilaterally without pain 	
(S-65) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Flexion of arm bilaterally without pain 	
(S-66) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Extension of leg bilaterally without pain 	
(S-67) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Flexion of leg bilaterally without pain 	
(S-68) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Pronation 	
(S-69) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Supination 	
(S-70) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Dorsiflexion 	
(S-71) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Plantar flexion 	
(S-72) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Opposition 	
(S-73) Musculoskeletal System – Changes Due to Aging <ul style="list-style-type: none"> • Muscles weaken and lose tone • Bones lose density and become brittle • Slower muscle and nerve interaction • Joints stiffen, become less flexible, and become painful causing decrease in range of motion and flexibility 	
(S-74) Musculoskeletal System – Changes Due to Aging <ul style="list-style-type: none"> • Height decreases from 1 to 2 inches, between age 20 and 70 • Slowed recovery from position changes and sudden movement • Pain when moving • Reaction time, movement speed, agility, and endurance decrease • Poorer response to stimuli 	
(S-75) Musculoskeletal System – Variation of Normal <ul style="list-style-type: none"> • History of falls • Difficulty with holding or lifting objects • Loss of muscle strength and tone 	

Module H – Body Systems (Musculoskeletal)	
<ul style="list-style-type: none"> • Generalized weakness and tiredness • Bruising • Slow and unsteady body movement 	
<p>(S-76) Musculoskeletal System – Variation of Normal</p> <ul style="list-style-type: none"> • White, shiny, red, or warm areas over a joint • Complaints of pain in joints or muscles • Swelling, redness, and warmth of joints • Complaints of pain with movement • Inability to move joints 	
<p>(S-77) Arthritis</p> <ul style="list-style-type: none"> • Inflammation or swelling of the joints; causes stiffness, pain, and decreased mobility; two common types: <ul style="list-style-type: none"> ○ Osteoarthritis (degenerative joint disease); affects the elderly and may occur with aging or joint injury; usually weight-bearing hips and knees involved, but may also include fingers, thumbs, and spine; pain and stiffness typically increase with damp, cold weather ○ Rheumatoid arthritis – affects any age; starting with smaller joints then progressing to larger ones; joints become red, swollen, and very painful, fever, tiredness, and weight loss occur; severe and painful deformities can result with eventual movement restricted; considered an autoimmune disease when normal tissue is attacked by the immune system 	
<p>(S-78) Arthritis – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Encourage activity, follow care plan, canes, safety rails helpful; • Encourage independence by assisting with use of devices that help with bathing, dressing, and feeding; offer clothing choices that are easy to put on and fasten; treat each resident individually; • Help maintain self-esteem by encouraging self-care as much as possible, listen • Watch for and report stomach upset and heartburn, due to medicine 	
<p>(S-79) Osteoporosis</p> <ul style="list-style-type: none"> • Bones lose density causing them to become porous and brittle; bones break easily • Caused by lack of calcium in diet, lack of regular exercise, decrease in mobility, decrease in female hormones • Signs – low back pain, stooped posture, becoming shorter, and broken bones • Nurse aide’s role – to prevent or slow progress, 	

Module H – Body Systems (Musculoskeletal)	
<p>encourage walking and simple exercise per care plan or nurse’s directive; move resident carefully</p>	
<p>(S-80) Fracture</p> <ul style="list-style-type: none"> • Broken bone caused by an accident or osteoporosis • Closed (does not break the skin) or open (also called compound and breaks through the skin); • Most common – fractures of arms, wrists, elbows, legs and hips • Goal is to put bone back in alignment, so it can heal; bone tissue grows and fuses area together, but must be allowed to do so by not moving area by typical use of a cast • Signs – pain, swelling, bruising, limited mobility • Nurse aide’s role – prevention in falls crucial, follow fall prevention concepts; cast – elevate arm or leg slightly higher than level of heart; observe circulation of fingers or toes (warmth, color, movement of fingers or toes); report swelling, tightness of cast, sores, cool fingers or toes, drainage or bleeding; report irritation from edges of cast; keep cast dry and assist with personal care per directive of care plan or; nurse; monitor and report if resident sticks objects in the cast 	
<p>(S-81) Hip Fracture</p> <ul style="list-style-type: none"> • A break in the hip bone, serious condition requiring months of recovery; older resident heals slowly, and complications may occur – secondary illnesses and disability • Results from falling and breaking the hip, OR a broken hip due to weakened bones that causes a fall • Most require surgery and total hip replacement; goals of care include – healing of incision, slow strengthening of muscles of the hip region, mobility, gait and endurance increase • Nurse aide’s role – prevention in falls crucial, follow fall prevention concepts; after surgery and during rehabilitation, follow care plan carefully as it will provide guidance on weight bearing limitation, how much resident can do, and which assistive devices may be used; following and understanding directives about weight-bearing limitations (how much weight the resident can support – non, partial, or full); do not perform range of motion until directed to do so; be very aware of limitations of leg and hip movements, use abduction pillow (special foam pillow placed in between legs that immobilizes and positions hips and legs using straps) as 	

Module H – Body Systems (Musculoskeletal)	
<p>directed by care plan and nurse; report the following to the nurse – incision redness, drainage, bleeding; increased pain; numbness or tingling of feet and legs; tenderness or swelling in calves of legs; shortening or rotation outward of affected leg; abnormal vital signs; resident is being non-compliant with limitations; decrease in appetite; and improvements that are noted</p>	
<p>(S-82) Total Knee Replacement (TKR)</p> <ul style="list-style-type: none"> • Surgical replacement of knee with a prosthesis; prosthesis – device that replaces body part that is missing or deformed • Performed to relieve pain and restore mobility, damaged by arthritis or injury • Post-op care is similar to hip replacement; resident does have greater ability to do self-care though • Goals – prevent blood clots, special stockings and machines used; speed up recovery, decrease stiffness, increase range of motion, • Nurse aide’s role – follow care plan and nurse’s directive regarding mobility; encourage fluids to reduce urinary infections; report pain and redness, swelling, heat, or tenderness in calves 	
<p>(S-83) Amputation</p> <ul style="list-style-type: none"> • Surgical removal of some or all of a body part; occurs – arm, hand, leg, foot; caused – disease or accident • Phantom sensation – person feels the body part is still there; phantom pain – person experiences pain in the area that has been amputated; do not ignore either; possibly results from damaged nerve endings; report to nurse • Nurse aide’s role – per care plan and nurse directive, provide assistance with activities of daily living; provide support if phantom statements are made and do not argue with resident, report to nurse; assist with position changes and range of motion exercises per directive; follow care plan regarding prosthetic care 	
<p>(S-84) Contracture and Muscle Atrophy</p> <ul style="list-style-type: none"> • Contracture – the muscle or tendon shortens, freezes, becomes inflexible; causes permanent disability • Muscle atrophy – the muscle wastes away, decreases in size, and becomes weak, from disuse • Prevention of these two conditions critical; perform range of motion exercises; use positioning and supportive devices to maintain structure and function of extremities 	
<p>(S-85) Musculoskeletal – Nurse Aide’s Role</p>	

Module H – Body Systems (Musculoskeletal)	
<ul style="list-style-type: none">• Prevention, prevention, prevention!• Most falls are preventable in the long-term care facility; answer call lights immediately, keep pathways clear, clean up spills, and do not move furniture; keep walkers and canes nearby so resident can reach them; resident should wear correctly fitted, non-skid footwear that is secured correctly to the feet• Encourage regular movement, activity, self-care with ADLs• Encourage resident to walk, do light exercise, and active range of motion	

Module H – Body Systems (Nervous)	
Content	Notes
(S-86) Title Slide	
(S-87) Nervous System – Overview <ul style="list-style-type: none"> • Control and coordinate all body functions • Reflex centers for heartbeat and respiration • Senses and interprets information from outside the body and responds to needed changes both inside and outside the body 	
(S-88) Nervous System – Overview <ul style="list-style-type: none"> • Consists of two main divisions <ul style="list-style-type: none"> ○ Central nervous system (CNS) – brain and spinal cord ○ Peripheral nervous system – includes nerves that travel throughout the body 	
(S-89) The Neuron (Nerve Cell) <ul style="list-style-type: none"> • Neuron – basic unit of the nervous system • Carry messages or impulses through spinal cord to and from the brain <ul style="list-style-type: none"> ○ Fragile and take long time to heal if injured; ○ Some are covered and insulated with a protective fiber, called the myelin sheath; also allows for speed of conduction of impulses 	
(S-90) The Brain <ul style="list-style-type: none"> • 3 Parts <ul style="list-style-type: none"> ○ Cerebrum ○ Cerebellum ○ Brainstem • Protected by the skull 	
(S-91) Brain – The Cerebrum <ul style="list-style-type: none"> • Divided into right and left hemispheres <ul style="list-style-type: none"> ○ Right hemisphere controls movement and function of left side ○ Left hemisphere controls movement and function of right side ○ Any illness or injury to right hemisphere affects function of left side; any illness or injury to left hemisphere affects function of right side • Cerebral cortex – outer layer; ideas, thinking, analysis, judgment, emotions, memory occurs, guides speech, interprets messages from senses, controls voluntary muscle movement 	
(S-92) Brain – The Cerebrum <ul style="list-style-type: none"> • Each side of your brain contains four lobes. 	

Module H – Body Systems (Nervous)	
<ul style="list-style-type: none"> ○ The frontal lobe is important for cognitive functions and control of voluntary movement or activity ○ The parietal lobe processes information about temperature, taste, touch and movement ○ The occipital lobe is primarily responsible for vision ○ The temporal lobe processes memories, integrating them with sensations of taste, sound, sight and touch 	
<p>TEACHING TIP #4H: Right and Left-Brain Dominance</p> <p>The students may be interested in talking about Right-Brain and Left-Brain Dominance. There may be a quiz the students can take in-class or at home to determine their own dominance.</p>	
<p>(S-93) The Brain – Cerebellum and Brain Stem</p> <ul style="list-style-type: none"> ● Cerebellum <ul style="list-style-type: none"> ○ Controls balance and regulates voluntary muscles ○ Produces and coordinates smooth movements ● Brain Stem <ul style="list-style-type: none"> ○ Regulatory center ○ Controls heart rate, breathing, swallowing, opening/closing blood vessels 	
<p>(S-94) Spinal Cord and Sensory Organs</p> <ul style="list-style-type: none"> ● Spinal cord <ul style="list-style-type: none"> ○ Located within the spine ○ Connected to the brain ○ Conducts messages between the brain and the body by pathways ● Sensory Organs <ul style="list-style-type: none"> ○ Include skin, tongue, nose, eyes, and ears ○ Receive impulses from environment and relay impulses to brain 	
<p>(S-95) Nervous – Normal Findings</p> <ul style="list-style-type: none"> ● Alert and oriented, with clear short-term/long-term memory ● Sensory function intact ● Ability to sense heat, cold, pain ● Straight gait; coordination of limbs ● Reflexes present 	
<p>(S-96) Nervous – Changes Due to Aging</p> <ul style="list-style-type: none"> ● Some hearing loss occurs ● Appetite decreases ● Less tear production ● Vision decreases ● Problems seeing blue and green 	

Module H – Body Systems (Nervous)	
<ul style="list-style-type: none"> • Pupils less responsive to light • Changes in memory, most likely with short-term memory 	
<p>(S-97) Nervous – Changes Due to Aging</p> <ul style="list-style-type: none"> • Loss of nerve/brain cells • Slowed response and reflex time • Jerking motions or tremors • Reduced sense of touch and sensitivity to pain • Reduced blood flow to the brain • Forgetfulness • Each of the senses decrease in function • Sensitivity to heat and cold decreases 	
<p>(S-98) Nervous – Variation of Normal</p> <ul style="list-style-type: none"> • Changes in gait or movement • Complaint of loss of feeling or inability to move one side of the body • Paralysis • Seizures • Confusion • Speech, vision, or hearing changes • Complaints of numbness, dizziness, nausea 	
<p>(S-99) Stroke (CVA, Cerebrovascular Accident)</p> <ul style="list-style-type: none"> • Talked about or will talk about the signs of a stroke in the emergency component of the curriculum and importance of seeking emergency care immediately • Caused when (1) a blood vessel leaks or breaks in the brain; or (2) when oxygen to an area is disrupted, brain cells die • Can be mild or severe 	
<p>(S-100) Stroke</p> <ul style="list-style-type: none"> • Recall that cerebrum is divided into right and left hemispheres; right controls movement and function of left side; left controls movement and function of right side; illness or injury to right hemisphere affects function of left side; illness or injury to left hemisphere affects function of right side • Further recall that each side of your brain contains four lobes with important functions • The area of the brain and the size of the area affected by the injury will impact the severity of the stroke, signs and symptoms the resident will exhibit, extent of disability, and prognosis 	
<p>(S-101) Stroke</p> <ul style="list-style-type: none"> • After the stroke, the resident may experience: <ul style="list-style-type: none"> ○ Hemiplegia – paralysis on one side of body 	

Module H – Body Systems (Nervous)	
<ul style="list-style-type: none"> ○ Hemiparesis – weakness on one side of body ○ Expressive aphasia – trouble communicating thoughts by speech or writing ○ Receptive aphasia – difficulty understanding spoken or written words ○ Emotional lability – inappropriate or uncalled for laughing, crying, or expressions of anger ○ Loss of sensations (temperature, touch) ○ Loss of bowel/bladder control ○ Cognitive impairment (poor judgment, memory loss, inability to solve problems, confusion) ○ Dysphagia (difficulty swallowing) 	
<p>(S-102) Stroke – Nurse Aide’s Role</p> <ul style="list-style-type: none"> ● Will vary depending on severity of stroke and region of the brain involved ● In general, to assist team to strengthen muscles and keep joints mobile, provide range of motion; maintain correct body alignment and support extremities with pillows and other measures; maintain positive attitude, use non-verbal and verbal communication to do so, never refer to the weak side as the “bad leg or bad arm”, assist with communication using techniques recommended by speech therapist or nurse; ● Understand that confusion and/or memory loss can be frightening and frustrating to the resident, may cry for no reason, again maintain a positive attitude when caring for resident, smiles and simple gestures may be helpful ● Encourage independence and self-esteem by letting resident do as much care whenever possible, celebrate small victories, make tasks as easy as possible ● Be very observant for changes in skin condition especially those areas at risk for pressure injury development; this resident may be at increased risk for pressure injury if loss of sensation is present or resident cannot move a side of the body; report changes immediately to nurse ● Be aware with bath water temperature and shaving if the resident has loss of touch or sensation ● Adapt self-care activities to limitations of the resident’s condition by having them use assistive devices for eating and dressing; remember to put items the resident will need – call signal, water pitcher, glasses on the resident’s unaffected side 	
<p>(S-103) Parkinson’s Disease</p> <ul style="list-style-type: none"> ● Progressive, incurable disease that causes a part of the 	

Module H – Body Systems (Nervous)	
<p>brain to degenerate; causes muscles to stiffen, gait shuffling, bent posture, pin-rolling with finger and thumb, tremors, and shaking; mask-like facial expression may develop</p> <ul style="list-style-type: none"> • Nurse aide’s role – protect resident and keep out of unsafe areas, assist with ambulation because resident is at high risk for falls and running into things, due to changes in mobility and visual impairments; assist with activities of daily living and assist resident with self-care 	
<p>(S-104) Head and Spinal Cord Injuries</p> <ul style="list-style-type: none"> • Result from diving accidents, sports injuries, motor vehicle accidents, and war injuries; injuries range from mild concussion to coma, paralysis, and death 	
<p>(S-105) Head and Spinal Cord Injuries</p> <ul style="list-style-type: none"> • Head injuries may cause permanent brain damage; disabilities are related to the part of brain injured and may include personality changes, seizures, memory loss, paresis (loss of use of muscle function affecting only part of body), and full-blown paralysis • Severity of spinal cord injuries depend on the level and force of injury regarding the spinal cord; the higher the injury to the spinal cord, the greater loss of function: paraplegia – complete loss of function occurs to lower body; quadriplegia – complete loss of function occurs to lower and upper body, plus trunk 	
<p>(S-106) Head and Spinal Cord Injuries</p> <ul style="list-style-type: none"> • Nurse aide’s role – provide emotional support and realize that the resident may exhibit feelings of anger and frustration; encourage resident to participate in much of self-care as possible; crucial for position changes at a minimum of every two hours due to loss of function; range of motion per directives of care plan; immobility may lead to constipation, so encourage fluids and intake of fiber, if ordered; due to nature of disability, urinary catheter may be necessary, which increases occurrence of urinary tract infection, so provide catheter care and encourage fluids; immobility may lead to poor circulation, offer rest periods during care and apply stockings per directive; encourage deep breathing and coughing, per order, to prevent pneumonia 	

Module H – Body Systems (Cardiovascular)	
Content	Notes
(S-107) Title Slide	
<p>TEACHING TIP #5H: Module AA</p> <p>The majority of this module has been relocated to Module AA. Remind students of this.</p>	
<p>(S-108) Cardiovascular – Overview</p> <ul style="list-style-type: none"> • Also called the circulatory system • The continuous movement of blood through the body 	
<p>(S-109) Cardiovascular – Changes Due to Aging</p> <ul style="list-style-type: none"> • Heart muscle less efficient • Blood pumps with less force • Arteries lose elasticity and become narrow • Blood pressure increases 	
<p>(S-110) Cardiovascular – Variation of Normal</p> <ul style="list-style-type: none"> • Shortness of breath, changes in or difficulty breathing • Change in pulse rate and rhythm • Loss of ability to perform ADLs • Chest pain 	
<p>(S-111) Cardiovascular System – Variation of Normal</p> <ul style="list-style-type: none"> • Swelling of hands and feet • Pale or bluish lips, hands, or feet • Weakness and tiredness • Weight gain 	
<p>(S-112) Hypertension (High Blood Pressure)</p> <ul style="list-style-type: none"> • Major cause is atherosclerosis, or what lay people refer to as “hardening of the arteries” • Arteries harden due to plaque build-up from fatty deposits • May complain of headache, blurred vision, and dizziness 	
<p>(S-113) Coronary Artery Disease (CAD)</p> <ul style="list-style-type: none"> • A condition in which blood vessels in the coronary arteries narrow, lowering blood supply to the heart and depriving it of oxygen • Along time, fatty deposits block arteries, which may result in a myocardial infarction (MI or heart attack) • If artery is blocked in brain, a stroke results 	
<p>(S-114) Angina Pectoris (Angina)</p> <ul style="list-style-type: none"> • Occurs when heart muscle is not getting enough oxygen • Causes chest pain, pressure or tightness of chest, pain radiating up the jaw, and/or down the left arm, may sweat and get short of breath • Exercise, stress, excitement, or digesting a big meal 	

Module H – Body Systems (Cardiovascular)	
<p>require additional oxygen; with coronary artery disease, the narrowed blood vessels keep heart muscle from getting enough oxygen</p>	
<p>(S-115) Myocardial Infarction (MI, Heart Attack)</p> <ul style="list-style-type: none"> • An emergency situation when all or part of the blood flow to the heart muscle is blocked and oxygen and nutrients cannot reach cells in the area • Waste products are not removed; muscle cells in the area die • Area may be small or large, depending on which artery is involved • If resident survives, cardiac rehabilitation is ordered 	
<p>(S-116) Peripheral Vascular Disease (PVD)</p> <ul style="list-style-type: none"> • Poor circulation of legs, feet, arms, hands due to fatty deposits that harden in blood vessels • Signs – nail beds and feet pale or blue, swelling in hands and feet, ulcers of legs and feet, pain while walking • Follow care plan directive regarding elastic stockings 	
<p>(S-117) Congestive Heart Failure (CHF)</p> <ul style="list-style-type: none"> • When one or both sides of heart stop pumping blood effectively • All the conditions listed can cause severe damage to the heart muscle, resulting in heart not being able to pump effectively • Left side damage causes blood to back up into lungs; right side damage causes blood to back up into legs, feet, or abdomen • Signs and symptoms – tiredness, weakness, dizziness, rapid or irregular heartbeat, shortness of breath, edema (swelling of feet and ankles), increased urination at night, weight gain • Nurse aide’s role – assist to bathroom; respond to call signal promptly; rest periods; intake and output; elastic stockings per order; extra pillows; HOB elevated; weigh resident; range of motion 	
<p>(S-118) Cardiovascular System – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Per directive of care plan or nurse, monitor vital signs (BP and P) and report abnormal values • Assist with special diet needs (low fat, low sodium) • Measure intake and output if resident receives special medication • Provide rest periods at intervals; rest reduces need for extra oxygen • Prevent resident from tiring 	

Module H – Body Systems (Cardiovascular)	
<ul style="list-style-type: none">• Layer clothing to help with warmth• Report complaints of chest pain immediately to the nurse; stay with resident and use call signal for assistance• Avoid extremes in temperature, particularly a cold room• Reduce stressful situations; be aware of interactions between resident and visitors; notify nurse if resident becomes upset	

Module H – Body Systems (Respiratory)	
Content	Notes
(S-119) Title Slide	
<p>TEACHING TIP #6H: Module AA</p> <p>A portion of this module has been relocated to Module AA. Remind students of this.</p>	
<p>(S-120) Respiratory System – Structure and Function</p> <ul style="list-style-type: none"> • Thorax <ul style="list-style-type: none"> ○ Closed cavity of the body that contains the structures needed for respiration ○ Extends from the base of the neck to the diaphragm, and surrounded by muscles and ribs • Upper Respiratory Tract <ul style="list-style-type: none"> ○ Consists of nose, mouth, sinuses, pharynx, larynx, and top of trachea • Lower Respiratory Tract <ul style="list-style-type: none"> ○ Consists of lower trachea, bronchi, and lungs • Function – involves the breathing in of oxygen (inspiration) and the breathing out of carbon dioxide (expiration) 	
<p>(S-121) Respiratory System – Changes Due to Aging</p> <ul style="list-style-type: none"> • Respiratory muscles weaken • Lung tissue gradually becomes less elastic • Shortness of breath upon exertion • Lung capacity decreases • Oxygen in the blood decreases • Muscles of the diaphragm become weaker • Limited expansion of the chest due to changes in posture 	
<p>(S-122) Respiratory System – Variation of Normal</p> <ul style="list-style-type: none"> • Shallow breathing or breathing through pursed lips • Coughing or wheezing • Nasal congestion or discharge, or productive cough • Noisy respirations • Gasping for breaths • Too slow or too fast respiratory rate 	
<p>(S-123) Respiratory System – Variation of Normal</p> <ul style="list-style-type: none"> • Cyanosis – changes in skin color, pale or bluish color of lips and extremities • Dyspnea – difficulty breathing • Changes in rate and rhythm of breathing • Need to sit after mild exertion • Pain in the chest 	
(S-124) Chronic Obstructive Pulmonary Disease	

Module H – Body Systems (Respiratory)	
<ul style="list-style-type: none"> • Chronic, progressive disease-causing trouble breathing, particularly getting air out of lungs; include chronic bronchitis and emphysema <ul style="list-style-type: none"> ○ Chronic bronchitis – irritation and inflammation of bronchi usually caused by smoking; signs – productive cough that brings up sputum (phlegm) and mucus, breathlessness, and wheezing ○ Emphysema – chronic disease of lungs usually results from chronic bronchitis and smoking; signs – problems breathing, coughing, breathlessness, and rapid heartbeat; no cure and irreversible; is usually on oxygen 	
<p>(S-125) COPD</p> <ul style="list-style-type: none"> • When lungs do not get enough oxygen, all body systems affected; resident with chronic lung disease may live in constant fear of not being able to breathe causing them to sit upright in attempt to improve lung expansion; have poor appetites, do not sleep well, leading to further weakness and poor health; feel out of control; fear suffocation 	
<p>(S-126) Lung of Smoker With COPD</p> <ul style="list-style-type: none"> • COPD signs – chronic cough or wheeze, difficulty breathing, SOB during exertion, pale cyanotic reddish-purple skin, confusion, weakness, difficulty in finishing meal because of SOB, fear and anxiety 	
<p>(S-127) COPD – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Help sit up or forward leaning supported with pillows • Offer fluids and small, frequent meals • Support pursed-lip breathing taught by nurse – inhaling slowly through nose and exhaling slowly through pursed lips (as if about to whistle) • Observe oxygen in use (NEVER adjust) • Be supportive of fears, carefully • Follow infection prevention principles during care • Encourage rest period 	
<p>TEACHING TIP #7H: Pursed-Lip Breathing</p> <p>Consider showing one or both of the following videos in class:</p> <p><i>Pursed-Lip Breathing, by the American Lung Association</i></p> <p>https://www.youtube.com/watch?v=7kpJ0QIRss4</p> <p><i>Top 3 Breathing Ex. for COPD -Chronic Obstructive</i></p>	

Module H – Body Systems (Respiratory)	
<p><i>Pulmonary Disease</i></p> <p>https://www.youtube.com/watch?v=oa5Sn-R8FCg</p>	
<p>(S-128) COPD Resident Report to Nurse</p> <ul style="list-style-type: none"> • Signs/symptoms of colds or illness (make COPD worse) • Changes in breathing and changes in lung secretions • Changes in mental state • Excessive weight gain • Increasing dependency on staff and family 	
<p>(S-129) Pneumonia</p> <ul style="list-style-type: none"> • Acute infection of tissue of lung or lungs that may be caused by bacteria, virus, or fungus • Signs – high fever, chills, cough, greenish or yellow sputum, chest pains, and rapid pulse • Resident with COPD at great risk for developing pneumonia, especially if weakened; recovery longer for older residents and residents with COPD 	
<p>(S-130) A Person with Asthma</p> <ul style="list-style-type: none"> • Picture of healthy (blue) and unhealthy (red) bronchial tubes of a resident having an asthma attack • Unhealthy one results in constricted breathing 	
<p>(S-131) Asthma</p> <ul style="list-style-type: none"> • Chronic inflammatory disease occurs when respiratory system is hyperreactive (reacts quickly and strongly) to irritants, such as pollen and dust • Exercise and stress can worsen • When bronchi become irritated from the irritants, they constrict, making it difficult to breathe • Responding to irritation and inflammation, mucus membranes produce thick mucus; further inhibiting breathing because air gets trapped in lungs causing coughing and wheezing • Residents with asthma should avoid triggers (irritants) 	
<p>(S-132) Upper Respiratory Infection (URI, a Cold)</p> <ul style="list-style-type: none"> • Viral or bacterial infection of nose, sinuses, and throat • Signs – nasal drainage, sneezing, sore throat, fever, and tiredness • Remedy – body’s immune system, fluids, and rest; stay away from smoke; may be more comfortable sitting up; stay away from residents with COPD 	
<p>(S-133) Respiratory System – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Provide rest periods at intervals 	

Module H – Body Systems (Respiratory)	
<ul style="list-style-type: none"> • Encourage exercise and regular movement • Encourage and assist with deep breathing exercises • Limit exposure to smoke, polluted air, or noxious odors by residents with respiratory conditions • Position residents in a manner to maximize lung expansion 	
<p>TEACHING TIP #8H: Position and Breathing</p> <p>Have students take a couple of deep breaths while seated in their chairs and then have them stand up, bend over, and then take a couple of more deep breaths. Ask students:</p> <p>Which position was easier to take a deep breath?</p> <p>Explain the importance of positioning residents in bed in a manner to facilitate lung expansion.</p>	

Module H – Body Systems (Digestive System)	
Content	Notes
(S-134) Title Slide	
<p>(S-135) Digestive – Overview</p> <ul style="list-style-type: none"> • Also known as the gastrointestinal (GI) system • Extends from the mouth to the anus • Has 2 functions: digestion and elimination 	
<p>(S-136) Digestive System – Structure and Function</p> <ul style="list-style-type: none"> • Upper GI structures include the mouth, pharynx, esophagus and stomach • Lower GI structures include the small intestines and large intestines • Accessory structures include the teeth, tongue, salivary glands, liver, gall bladder, and pancreas • GI System digests food, absorbs nutrients, and eliminates waste 	
<p>(S-137) Peristalsis</p> <ul style="list-style-type: none"> • Involuntary contractions that move food through the digestive system 	
<p>ACTIVITY #3H: Simulated Small Intestines</p> <p>Unwind the small intestines (23-foot rope/cord) and stretch it out with the assistance of a couple of students</p> <p>Inform the students that the average length of the small intestines is 23 feet long and the average diameter is about an inch.</p> <p>ACTIVITY #4H: Simulated Large Intestines</p> <p>Unwind the large intestines (5-foot rope/cord) and stretch it out with the assistance of a couple students.</p> <p>Inform the students that the average length of the large intestines is 5 feet long and the average diameter is about 3 inches.</p> <p>Talk about the importance of diet, fluids, positioning during elimination and activity in relation to the length of intestines.</p>	
<p>(S-138) Bowel Movement</p> <ul style="list-style-type: none"> • Bowel movement is called feces or stool or simply, BM • The passage is called defecation or bowel elimination and involves the movement of the feces from the large intestines out of the body through the anus 	

Module H – Body Systems (Digestive System)	
<ul style="list-style-type: none"> • Semi-solid material made of water, solid waste, bacteria, and mucus • Number of bowel movements a person has dependent upon age and what the person has eaten • Iron supplements can cause a dark black color; red food coloring, beets, and tomato juice can cause a red color • Descriptors <ul style="list-style-type: none"> ○ Diarrhea – liquid stool ○ Constipation – inability to have a stool or infrequent, difficult, and possibly painful elimination of a hard, dry stool ○ Flatulence – gas ○ Incontinence (of stool) – not able to control bowels, leading to an unintentional, spontaneous passage of stool 	
<p>(S-139) Digestive – Normal Findings</p> <ul style="list-style-type: none"> • Adequate intake of a well-balanced diet, with fluids • Passage of a brown, soft, formed, tubular shaped stool (feces), without pain • Flat abdomen • Active bowel sounds 	
<p>(S-140) Digestive – Changes Due to Aging</p> <ul style="list-style-type: none"> • Decreased number of taste buds • Slowing of peristalsis causing constipation • Slower absorption of nutrients • Loss of bowel muscle tone • Loss of sphincter muscle tone • Digestion takes longer and less efficient • Thinning of stomach lining 	
<p>(S-141) Digestive – Changes Due to Aging</p> <ul style="list-style-type: none"> • Decrease in saliva causing difficulty chewing and swallowing • Decrease in amounts of digestive enzymes and saliva production • Decrease in appetite • Loss of teeth • Altered taste and smell • Proteins, vitamins, and minerals not absorbed as well 	
<p>(S-142) Digestive – Variation of Normal</p> <ul style="list-style-type: none"> • Difficulty swallowing or chewing • Poor intake of diet and fluids • Weight gain or loss • Loss of appetite • Abdominal pain and cramping 	

Module H – Body Systems (Digestive System)	
<ul style="list-style-type: none"> • Blood, pus, mucus, or other discharge in stool • Incontinence 	
<p>(S-143) Digestive – Variation of Normal</p> <ul style="list-style-type: none"> • Nausea and vomiting • Heartburn • Liquid stool (diarrhea) or hard stool/inability to pass a stool (constipation) • Pain when having a bowel movement • Whitish, black, or red colored stool (unless food or iron supplement related) 	
<p>(S-144) Gastric Ulcer and Gastritis</p> <ul style="list-style-type: none"> • Gastric (peptic ulcer) – raw sores in stomach caused by excessive acid secretion; signs – burning pain 1 to 3 hours after eating, belching, and vomiting; can cause bleeding resulting in black, tarry stool; nurse aide’s role – report abnormal stools to nurse; do not flush in case nurse would like to assess stool; encourage resident to follow prescribed diet • Gastritis – inflammation of the lining of the stomach; risk factors – use of certain pain relievers, older adults increased risk of gastritis because the stomach lining tends to thin with age, excessive alcohol use, and stress 	
<p>(S-145) Ulcerative Colitis</p> <ul style="list-style-type: none"> • Chronic inflammatory disease of large intestine; serious condition that can result in a colostomy • Colostomy – a surgically created opening (stoma) through the abdomen into large intestine to allow stool to be expelled into a bag affixed to the abdomen 	
<p>(S-146) Gastroesophageal Reflux Disease (GERD)</p> <ul style="list-style-type: none"> • Chronic condition when liquid contents of stomach back up into esophagus; very inflammatory and can damage the lining of esophagus • Heartburn most common symptom caused by weakening of sphincter muscle joining esophagus to stomach; if untreated, cause ulceration • Nurse aide’s role – follow care plan; evening meal eaten 3 to 4 hours before bedtime; should remain upright 2 to 3 hours after eating; provide extra pillows; dietary modifications may also help 	
<p>(S-147) Constipation</p> <ul style="list-style-type: none"> • Occurs when stool moves too slowly through the intestine; • Signs – abdominal swelling, gas, irritability, and verbalizing of resident that no recent bowel movement 	

Module H – Body Systems (Digestive System)	
<ul style="list-style-type: none"> • Can result from decreased fluid intake, poor diet, inactivity, medications, aging, certain diseases, or not taking the time to have a bowel movement 	
<p>(S-148) Fecal Impaction</p> <ul style="list-style-type: none"> • Hard stool stuck in the rectum and cannot be expelled, resulting in ongoing constipation • Signs – no stool for several days, oozing of liquid stool, cramping, abdominal distention (swelling), and pain in rectum • Nurse aides <u>are not allowed</u> to remove fecal impactions 	
<p>(S-149) The Enema</p> <ul style="list-style-type: none"> • Specific amount of water that may or may not have an additive and is inserted into the colon to stimulate passage of stool • Doctor will write order for type and amount of fluid; four different types – tap water, soapsuds, saline, commercially- prepared and pre-packaged • Follow facility’s procedure for administering enemas 	
<p>(S-150) Digestive System – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Make sure dentures are in place and fit properly • Observe for choking if there is a history of trouble with chewing and swallowing • Provide fluids with meals • Encourage daily bowel movements • Residents with fecal incontinence must be kept clean and dry; follow infection prevention concept of wiping from front to back; assist resident with handwashing • Important for nurse aide to provide privacy when attending to elimination needs of resident; should not be rushed or interrupted • Fiber and drink plenty of fluids; should offer fluids each time nurse aide enters room (unless fluid restricted); healthy resident should drink about 64 ounces of fluid each day • Regular physical activity is very beneficial to elimination; strengthens muscles of abdomen and pelvic which help with peristalsis; immobility and lack of exercise weakens these muscles slowing down peristalsis and elimination; encourage regular activity as tolerated and assist if needed • Understand bowel habits for each resident is individual and personal; determine bowel habits of resident; preferred time or times of day; typically, though elimination usually happens after meals 	

Module H – Body Systems (Digestive System)	
<ul style="list-style-type: none">• Ideal position for elimination is in a leaning forward, squatting position; if resident cannot get out of bed, assist with positioning so that resident is sitting up and by doing so allows for the resident to contract muscles and to work with gravity	

Module H – Body Systems (Urinary System)	
Content	Notes
(S-151) Title Slide	
(S-152) Urinary – Overview <ul style="list-style-type: none"> • The filtering system of the body • Responsible for ridding body of waste products from blood 	
(S-153) Urinary – Structure and Function <ul style="list-style-type: none"> • Kidneys <ul style="list-style-type: none"> ○ Bean-shaped paired organs ○ Located at the back of abdominal cavity, slightly above the waist ○ About four or five inches long and an inch thick ○ Filter waste from the blood and produces urine ○ Help maintain water balance and blood pressure in the body ○ Regulate amounts of electrolytes in the body 	
(S-154) Urinary – Structure and Function <ul style="list-style-type: none"> • Ureters <ul style="list-style-type: none"> ○ Narrow tubes ○ Connect the kidneys to the urinary bladder ○ About a foot long • Urinary bladder <ul style="list-style-type: none"> ○ Muscular sac ○ Stores the urine until it passes from the body 	
(S-155) Urinary – Structure and Function <ul style="list-style-type: none"> • Urethra <ul style="list-style-type: none"> ○ A tube ○ Located between the urinary bladder to the outside of the body ○ About seven or eight inches long in males and about one and a half inches long in females 	
(S-156) Urethra – Male Versus Female <ul style="list-style-type: none"> • Think about the anatomy of the female urethra and the male urethra in terms of length • Note the difference between one and a half inches versus seven/eight inches and how the male and female genitalia differ 	
ACTIVITY #5H: Female and Male Urethras <p>The goal of this activity is to examine the differences between the female and the male urethra.</p> <p>It is important for nurse aide students to understand why females get urinary tract infections more frequently than</p>	

Module H – Body Systems (Urinary System)	
<p>males:</p> <p>1) the female urethra is shorter (about 1.5 inches) compared with the male urethra (7 to 8 inches), and 2) the female urethra is in front of the vagina and anus, close to sources of bacteria</p> <p><u>Part 1</u></p> <p>Cut 2 different straws – one that is 1½ inches and one that is 7 to 8 inches – and show to students. Allow students to pass both straws around. Another variation of this is to give students their own pairs of straws that have been cut to size earlier and can tape on/in their notebooks.</p> <p><u>Part 2</u></p> <p>Using a male and a female mannequin (if you have two), point out how the urethra of the male is much longer than his female counterpart. Second, point out how far away the male urethra is from the anus compared to his female counterpart. [If you have one mannequin, you will have to change out the parts during this comparison.]</p> <p>The takeaway for the students is two-fold: first, the importance of catheter and perineal care for the female, and second, the importance of always wiping/washing front to back for the female resident.</p>	
<p>(S-156) Urethra – Male Versus Female</p> <ul style="list-style-type: none"> • Think about the anatomy of the female urethra and the male urethra in terms of length • Note the difference between one and a half inches versus seven/eight inches and how the male and female genitalia differ 	
<p>(S-157) Urination and Urine</p> <ul style="list-style-type: none"> • The passing of urine from the bladder through the urethra to the outside of the body is called urination or micturition or voiding • Made up of water and waste products filtered from blood by kidneys • Many factors can change color of urine, such as medications, certain food and dyes and vitamins and supplements • B vitamins can cause urine to become bright yellow; 	

Module H – Body Systems (Urinary System)	
beets can cause a pink or red color	
<p>(S-158) Urine – Normal Findings</p> <ul style="list-style-type: none"> • Light yellow to amber in color • Clear or transparent when freshly voided, with a faint smell • About 1000 to 1500 milliliters per day 	
<p>(S-159) Urinary – Changes Due to Aging</p> <ul style="list-style-type: none"> • Decreased kidney size and ability to filter blood • Decreased capacity, elasticity, muscle tone of bladder • Decreased ability to concentrate urine • Difficulty or incomplete emptying of urinary bladder • Enlargement of prostate in males • Many awaken several times at night to urinate • Sense of thirst lessens, resulting in less intake, resulting in less output which may lead to dehydration 	
<p>(S-160) Urinary System – Variation of Normal</p> <ul style="list-style-type: none"> • Changes in urine <ul style="list-style-type: none"> ○ Color, cloudiness, odor, amount, frequency may indicate infection ○ Presence of sugar, acetone, blood, sediment in urine • Weight loss or gain • Swelling in arms or legs • Dysuria – pain or burning during urination • Swelling in bladder or abdomen • Pain in kidney or back • Incontinence • Fever 	
<p>TEACHING TIP #9H: 3 Simulated Urine Specimens</p> <p>Pass around 3 different simulated urine specimens:</p> <ul style="list-style-type: none"> • Normal urine • 2 different variations of normal urine – urine with blood and urine with sediment <p>Discuss differences of the 3 urine specimens or ask students to compare and contrast the 3 different specimens.</p>	
<p>(S-161) Urinary Tract Infection (UTI)</p> <ul style="list-style-type: none"> • Recall the differences in the female and male urethras; more common in females than males • An infection of urethra, bladder, ureter, or kidney typically caused by E. coli, a bacteria found in the digestive system • Signs include frequency, urgency, voiding in small 	

Module H – Body Systems (Urinary System)	
<p>amounts, pain, burning</p> <ul style="list-style-type: none"> • Nurse aide’s role – always wipe/wash from front to back (both resident and nurse aide); provide careful perineal care when changing adult briefs; encourage fluids; offer toileting opportunity at least every 2 hours; answer call lights promptly showers are preferable to baths; report abnormal urine signs to nurse 	
<p>(S-162) Kidney Stones</p> <ul style="list-style-type: none"> • Also called renal calculi • Form when urine crystallizes in kidneys • Can block kidneys and ureters causing excruciating pain • Signs include – abdominal pain, flank or back pain, painful urination, frequent urination, blood in urine, nausea, vomiting, chills, fever • Urine straining – process of pouring urine into a fine filter strainer to catch any particles; if found, save, and report to nurse 	
<p>(S-163) Benign Prostatic Hypertrophy (BPH)</p> <ul style="list-style-type: none"> • Disorder common in men over age of 60 • Prostate gland enlarges and causes pressure on urethra • Signs – frequent urination, dribbling of urine and difficulty beginning to urinate • Urinary retention (when urine remains in bladder) may occur, which can cause urinary tract infection; urine can further back up into the ureters and kidneys creating damage to structures • Nurse aide’s role – report signs of infection in urine and elevated temperature to nurse; provide perineal care or assist with care as needed 	
<p>(S-164) Chronic Kidney Disease (CKD)</p> <ul style="list-style-type: none"> • Lasting damage of kidneys that worsens gradually; 5 stages; with the latter stages resulting in the need for dialysis • CKD can be prevented from advancing into further stages by controlling diabetes, maintain healthy blood pressure, exercise, and maintain a healthy weight 	
<p>(S-165) Urinary Incontinence</p> <ul style="list-style-type: none"> • Inability to control bladder leading to an involuntary loss of urine; not normal part of aging • Can occur in residents who are dependent, confined to bed, paralyzed, elderly, or diseases of the nervous or circulatory system <ul style="list-style-type: none"> ○ Stress incontinence – loss of urine with sneezing or coughing 	

Module H – Body Systems (Urinary System)	
<ul style="list-style-type: none"> ○ Urge incontinence – involuntary loss of urine from a sudden urge to void ○ Functional incontinence – loss of urine caused by cognitive, physical, or environment reasons ○ Overflow incontinence – loss of urine to bladder overflow or distention ● Nurse aide’s role – answer call lights promptly, check on resident for need to void frequently; keep resident clean and dry, urine can be irritating to the skin and a risk factor for pressure injuries; change wet clothing and linen immediately; encourage residents to drink fluids; be respectful and provide reassurance to residents, never refer to adult briefs as a diaper 	
<p>(S-166) Urination – Nurse Aide’s Role</p> <ul style="list-style-type: none"> ● Residents with incontinence must be kept clean and dry; follow infection prevention concept of wiping from front to back; assist resident with handwashing ● Important for nurse aide to provide privacy when attending to elimination needs of resident; should not be rushed or interrupted ● To promote normal urination, nurse aide should encourage residents to drink fluids often and should offer fluids each time nurse aide enters room (unless fluid restricted) ● Ideal position for urination for men is standing; for women is a sitting position; if resident cannot get out of bed, assist with positioning so that resident is sitting up and by doing so allows for the process to work with gravity 	

Module H – Body Systems (Reproductive System)	
Content	Notes
(S-167) Title Slide	
(S-168) Reproductive System	
(S-169) Reproductive – Overview <ul style="list-style-type: none"> • This system allows human beings to create a new human life and may be subdivided into two categories (1) the female reproductive system and (2) the male reproductive system 	
(S-170) Reproductive – Structure and Function <ul style="list-style-type: none"> • Female reproductive structures include the uterus, fallopian tubes, ovaries, and vagina • Male reproductive structures include the penis, testicles, scrotum, and urethra • Responsible for production of reproductive cells, produce hormones responsible for sex characteristics, and reproduction 	
(S-171) Reproductive – Normal Findings <ul style="list-style-type: none"> • Absence of bleeding (other than menses) and vaginal discharge/penile discharge • Absence of pain and itching • Absence of enlargement of prostate gland 	
(S-172) Reproductive System – Changes Due to Aging <ul style="list-style-type: none"> • Decreased size and function of reproductive structures • Enlargement of prostate • Sagging breasts • Loss of hair in vulva area • Weakened muscles that hold female reproductive organs in place 	
(S-173) Reproductive System – Variation of Normal <ul style="list-style-type: none"> • Bleeding other than menses • Pain • Vaginal/penile discharge • Itching 	
(S-174) Pelvic Organ Prolapse <ul style="list-style-type: none"> • Female reproductive organs held in place by muscles and connective tissue; pelvic organs may drop down (prolapse) into vaginal canal <ul style="list-style-type: none"> ○ Cystocele – when bladder drops down ○ Rectocele – when rectum shifts downward ○ Uterine prolapse – when uterus shifts downward • Incontinence may occur • Conditions range from mild to severe • Women may have tried Kegel exercises to attempt to 	

Module H – Body Systems (Reproductive System)	
tighten pelvic muscles	
<ul style="list-style-type: none">• Nurse aide's role – provide perineal care as needed and report abnormal observations to nurse	

Module H – Body Systems (Endocrine System)	
Content	Notes
(S-175) Title Slide	
(S-176) Endocrine – Overview <ul style="list-style-type: none"> • Is a system of glands that secrete chemicals directly into the bloodstream to regulate body functions • Different types of glands are pictured on slide 	
(S-177) Endocrine – Structure and Function <ul style="list-style-type: none"> • Structure – glands located throughout the body that secrete chemicals, called hormones that regulate bodily function • Function <ul style="list-style-type: none"> ○ Maintains homeostasis (balance) ○ Influences growth and development ○ Regulates sugar in the blood and calcium in the bones ○ Regulates reproduction ○ Regulates how fast cells burn food 	
(S-178) Endocrine <ul style="list-style-type: none"> • Normal Findings <ul style="list-style-type: none"> ○ Skin warm/dry ○ No variation of weight, appetite ○ Awake, alert, oriented • Changes Due to Aging <ul style="list-style-type: none"> ○ Levels of hormones decrease ○ Insulin production decreases ○ Body is less capable to deal with stress 	
(S-179) Endocrine <ul style="list-style-type: none"> • Blurred vision 	
(S-180) Endocrine System – Variation of Normal <ul style="list-style-type: none"> • Headache • Blurred vision • Dizziness • Weakness • Hunger • Irritability • Sweating • Dry skin 	
(S-181) Endocrine System – Variation of Normal <ul style="list-style-type: none"> • Confusion • Weight gain/loss • Appetite increase/decrease • Tiredness • Increase thirst 	

Module H – Body Systems (Endocrine System)	
<ul style="list-style-type: none"> • Increase urination 	
<p>(S-182) Diabetes Mellitus (Diabetes)</p> <ul style="list-style-type: none"> • Most common disorder of endocrine system • Occurs when pancreas produces too little insulin or does not use insulin properly • Insulin needed for glucose to move from blood into cells; cells need glucose for energy • Without enough insulin, sugar builds up in blood; causing blood glucose levels to rise • Three types – Type 1, Type 2, and Gestational 	
<p>(S-183) Diabetes – Three Types</p> <ul style="list-style-type: none"> • Type 1 – onset typically during childhood and early adult; pancreas does not produce insulin; lifelong condition; managed with daily doses on insulin, a special diet, and regular blood glucose testing • Type 2 – develops after about age 35; pancreas secretes insulin, but does not use it well; develops slowly; usually controlled by diet and oral medicine • 3rd type is gestational diabetes; occurs during pregnancy 	
<p>(S-184) Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Follow care plan directives closely; ensure meals are served and resident eats his diet, report to nurse if resident refuses a meal, observe intake of meal and document carefully; if meal is delayed for lab or other reason, retrieve meal as soon as resident is allowed to eat • Encourage resident to follow exercise program which assists with circulation • Observe for signs of low blood sugar (hypoglycemia) and high blood sugar (hyperglycemia); low blood sugar may result from refusal of meal, delay of meal, increase in exercise; report immediately to nurse • Signs of hypoglycemia – hunger, vomiting, weakness, shakiness, sweating, headache, dizziness, fast pulse, low blood pressure, fast respirations, confusion, cool and clammy skin, convulsions, unconsciousness (do not let it get that far) • Signs of hyperglycemia – weakness, drowsiness, thirst, dry mouth, hunger, frequent urination, flushed face, sweet breath odor, respirations rapid and deep, blood pressure low, skin dry, headache, blurred vision, convulsions, coma (do not let it get that far) • Provide for foot care as directed and observe for irritation or sores, report immediately to nurse 	

Module H – Body Systems (Immune System)	
Content	Notes
(S-185) Title Slide	
(S-186) Immune System <ul style="list-style-type: none"> • Overview – this system defends threats both inside and outside the body • Structure – antibodies and white blood cells • Function <ul style="list-style-type: none"> ○ Protects the body from harmful infection-causing germs, such as bacteria and viruses ○ Provides immunity from certain diseases • Normal findings – body can fight infection • Changes due to aging <ul style="list-style-type: none"> ○ Immune system weakens and person more prone to getting infections ○ Person’s immune system may attack itself causing disease 	
(S-187) Immune – Variation of Normal <ul style="list-style-type: none"> ○ Signs of infection – fever, redness, swelling ○ Anxiety ○ Nausea and vomiting ○ Stiff, swollen, painful joints 	
(S-188) Acquired Immune Deficiency Syndrome (AIDS) <ul style="list-style-type: none"> • Disease caused by a virus, HIV and attacks the immune system and destroys infection-fighting and cancer-fighting cells of the body • Spread through body fluids including blood, semen, vaginal secretions, and breast milk 	
(S-189) AIDS – Nurse Aide’s Role <ul style="list-style-type: none"> • Follow Standard Precautions and Blood Borne Pathogen Standard as nurse aide cares for resident • Assist with activities of daily living as needed • Provide fluids as ordered • Measure and record I&O and obtain weights • Encourage deep-breathing and coughing exercises as directed • Encourage self-care as tolerated • Observe for and report signs of infection • Provide emotional support 	
(S-190) Other Common Disorders <ul style="list-style-type: none"> ○ Lupus – when immune system attacks tissues causing redness, pain, swelling, and damage ○ Graves disease – immune system attacks thyroid gland which causes it to secrete more thyroid 	

Module H – Body Systems (Immune System)	
<p>hormone</p> <ul style="list-style-type: none"> • Nurse aide’s role <ul style="list-style-type: none"> ○ Observe for and report signs of infection ○ Follow standard precautions ○ Provide for nutrition, hydration, and rest for the resident 	
<p>ACTIVITY #6H: Experiencing Changes with Aging and/or Disability – Group</p> <p>Refer to Instructor’s Guide.</p>	

Instructor's Guide to Activity #1H Experiencing Changes with Aging and/or Disability

Preparation

Before class begins, create instruction cards using card stock paper or laminated computer paper. Set up 5 stations, in the lab, in the following manner:

Station #1 – Visual Impairment

For station #1, have the following items available for student use: laminated/card stock instruction card #1; a pair of goggles with petroleum jelly or water-soluble lubricant rubbed on the eyepieces; a newspaper; and shoebox with a variety of small objects

Station #2 – Hard of Hearing

For station #2, have the following items available for student use: laminated/card stock instruction card #2; cotton balls (2 per student)

Station #3 – Musculoskeletal Impairment of the Hands

For station #3, have the following items available for student use: laminated/card stock instruction card #3; pairs of gloves for each student with one cotton ball in each fingertip of each glove; a needle and a 2-foot piece of thread; and a small change purse with at least one dime

Station #4 – Musculoskeletal Impairment of the Lower Extremities

For station #4, have the following items available for student use: laminated/card stock instruction card #4; a pair of extra-large pants and a chair; and a walker

Station #5 - Blindness

For station #5, have the following items available for student use: laminated/card stock instruction card #5; a nurse aide resource card; a chair; a meal tray, with a generic diet card, and an assortment of foods on a plate – minimum of 3 types (pudding, applesauce, gelatin, etc.) covered with plastic wrap, with lid over the plate, placed on an over-bed table; and a scarf/headband/bandana

Instructions to the Students

After putting students in pairs, point out the 5 stations that each pair will be rotating through. Explain that each pair of students will go to a station, read the instruction card, and follow the instructions on the card. In each pair, the students will take turns being the nurse aide and the resident, at each station. The

students will rotate to the next station when the instructor rings a bell or yells out, “new station.”

Special Situations

If you have an odd number of students, you or possibly another instructor could pair up with the extra student. If you have more than 10 students, you can set up extra stations with word searches, crossword puzzles, displays of adaptive devices the students could manipulate and use. You could also duplicate some of the easier stations to accommodate larger numbers of students.

Activity Follow-up Discussion Questions

After each of the pairs of students has completed all stations, bring everyone together for discussion. Suggested questions are listed below. You may want to add additional questions to facilitate discussion.

- How did it feel to do these situations in the different stations?
- Which situation was the most difficult for you as the resident?
- Which situation was the easiest for you as the resident?
- Which three situations was the nurse aide not being helpful? [Answer – Situation #2 when the nurse aide was giving the resident directions to the nearest grocery store or post office, the nurse aide spoke softly and cover his/her mouth with the hand; Situation #3 when the nurse aide rushed the resident while the resident was trying to thread the needle and when the nurse aide told the resident to use his/her own money to buy the nurse aide a drink; Situation #4 when the nurse aide told the resident to get dressed and that he/she was too busy to assist]
- How did the nurse aide feel when this happened? How did the resident feel when this happened?
- Which of the situations could possibly be considered normal changes of aging? [Situation #1 Visual Impairment; Situation #2 Hard of Hearing; and Situation #3 Musculoskeletal Impairment of the Hands]
- Have you had to care for any of your relatives or friends in similar situations? If so, what were the circumstances?

Station #1 – Visual Impairment

For station #1 (newspaper activity):

Resident:

- Put on the goggles and read the newspaper where the nurse aide indicates for you to read

Nurse aide:

- Point out parts of the newspaper where the resident is supposed to read – large print first and then progressing to smaller print
- Read newspaper paragraph to the resident at the point where he/she cannot read

For station #1 (shoebox activity)

Resident:

- Put on the goggles and remove the objects from the shoebox that the nurse aide indicates for you to remove

Nurse aide:

- One at a time, request that the resident remove a specific object from the shoebox

SWITCH ROLES

Station #2 – Hard of Hearing

For station #2 (directions):

Resident:

- Put a cotton ball in each ear
- Ask the nurse aide to give you directions to the nearest post office or grocery store

Nurse aide:

- Give the resident directions per request
- Speak softly and cover mouth with your hand so resident cannot read your lips

For station #2 (favorite recipe)

Resident:

- Keep cotton balls in each ear
- Ask the nurse aide to tell you how to make one of his/her favorite recipes

Nurse aide:

- Give the resident instructions for the recipe per request
- Speak in a tone that is audible to the resident, while facing resident

SWITCH ROLES

Station #3 – Musculoskeletal Impairment of the Hands

For station #3 (needle and thread):

Resident:

- Put on a pair of gloves
- Thread the needle when requested by the nurse aide

Nurse aide:

- Instruct the resident to thread the needle
- Be impatient. Ask resident to speed it up.

For station #3 (small change purse and dime)

Resident:

- Open the change purse
- Get out a dime
- Put the dime in the slot of a vending machine (if available in the building), press the return button, then return the dime back to the change purse

Nurse aide:

- Instruct the resident to go get a drink out of the vending machine for you, using the resident's own money and be impatient. Ask the resident to speed it up.

SWITCH ROLES

Station #4 – Musculoskeletal Impairment of the Lower Extremities

For station #4 (putting on pants):

Resident:

- Sit in chair
- Put on pants using arms and hands only, you cannot move your body from the waist down to your toes when directed to do so by the nurse aide
- Notice how far you were able to get the pants on without assistance

Nurse aide:

- Tell the resident that it is time to get dressed and that you are too busy to help him/her. Leave the area to become the resident (proceed to the walker portion of station #4)

For station #4 (walker)

Resident:

- Walk with walker out of the classroom, down the hall to the water fountain, get a drink of water from the water fountain, and come back to station #4

SWITCH ROLES

Station #5 – Blindness

For station #5 (locating food):

Resident:

- Put scarf/headband/bandana over eyes
- Sit in chair
- Follow instructions of the nurse aide

Nurse aide:

- After the resident is seated in chair and blindfolded, you need to address the resident by name and then state your name, your title, and why you are here (assist with meal tray)
- When resident is seated in the chair, move the over-bed table in front of the resident
- Tell the resident that it is time to eat
- Remove the cover of the plate, but do not remove the plastic wrap
- Tell the resident to feel the plate in front and to think about the face of a clock
- Tell the resident that the _____ (name of food) is located at 2 o'clock
- Tell the resident to touch the _____ (same food as above)
- Continue to describe the other two foods in the same manner and have the resident touch each food when directed

For station #5 (ambulate)

Resident:

- Keep scarf/headband/bandana in place over eyes
- Ambulate with nurse aide, following instructions

Nurse aide:

- Ambulate resident out of the room, down the hall, back to the room, and back to the chair (read the resource card for tips)

SWITCH ROLES

Station #5 – Blindness Resource Card

When assisting a resident who is blind to walk:

- Ask if the resident would like help to walk
- Offer your arm to the resident and tell the resident which arm you are offering
- Tap the back of your hand against the resident's hand
- Request that the resident hold on to your arm just above the elbow
- Walk at a normal pace, one step ahead of the resident
- Pause just before you change directions
- Pause before going up or down a step and tell resident if step is going up or going down and how many steps there are
- Warn the resident about stairs, elevators, turns, doors, furniture, and other obstacles.