STRANDS AND STANDARDS
MEDICAL ASSISTANT

Course Description
An instructional program that prepares individuals to support physicians by providing assistance during patient examinations, treatment administration and monitoring; by keeping patient and related health record information; and by performing clinical, administrative, and laboratory duties.

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MEDICAL TERMINOLOGY-Benchmark 1

STRAND 1
Students will interpret and apply medical terminology.

Standard 1
Identify basic structure of medical words associated with Medical Assisting.
- Recognize word construction and dissection.
- Apply word building and definitions.

Standard 2
Identify and utilize anatomical positions, planes, and directional terms.
- Demonstrate what anatomical position is and how it is used to reference the body.
- Distinguish between the commonly used anatomical planes and recognize their individual views.
  - Sagittal/Midsagittal Plane
  - Frontal/Coronal Plane
  - Transverse/Horizontal Plane
- Apply directional terms to other locations on the human body.
  - Superior/Inferior
  - Anterior/Posterior
  - Medial/Lateral
  - Distal/Proximal
  - Superficial/Deep
  - Ventral/Dorsal
  - Prone/Supine
  - Unilateral/Bilateral

STRAND 2
Students will identify medical abbreviations in a healthcare setting.

Standard 1
Interpret and apply identified medical abbreviations.
- Interpret and extract information from realistic medical documents.
- Apply medical abbreviations to interpreting and writing prescriptions.

Standard 2
Interpret identified healthcare symbols.
- Identify pharmacological symbols.
- Identify medical symbols.

Performance Skills
Basic Computer Knowledge
• Generate a patient record and prepare a billing statement.

MEDICAL OFFICE MANAGEMENT-Benchmark 2

STRAND 1
Students will explore the medical assisting profession and its role in the healthcare setting.

Standard 1
Describe the job responsibilities of a medical assistant.
• Describe the training required for a medical assistant.
  • Compare and contrast endorsed, certified, and registered medical assistants.
    • State
    • National
  • Describe the current Utah medical assistant job training requirements.
• Compare administrative and clinical skills.
  • Administrative skills, including office management and clerical functions.
  • Clinical skills, including therapeutic procedures and diagnostic procedures.

Performance Skills
Oral Communication
• Demonstrate methods of receiving, placing and recording calls.
• Answer the office telephone.
• Receive, evaluate, and record a phone message.
• Make referrals by phone, schedule appointments by phone.

Standard 2
Analyze characteristics needed for a quality medical assistant and apply the skills necessary for obtaining employment.
• Recognize the following basic attributes:
  • Positive attitude
  • Team work
  • Adapt to change
  • Communication skills
  • Professional appearance
  • Confidentiality (verbal and written correspondence)
  • Exhibit initiative
  • Cultural competency
  • Integrity
  • Discretion
  • Organize and prioritize
  • Continuing education
• Discuss professionalism.
• Apply job-seeking skills.
  • Prepare a resume
  • Write a cover letter
  • Practice job interviewing skills
  • Write a follow-up letter
• Identify job opportunities available for Medical Assistants.
  • Inpatient setting
  • Ambulatory setting
  • Healthcare departments and specialties

**Standard 3**
Describe other healthcare professionals with whom medical assistants will work.
  • Categorize medical practice specialties.
  • Identify ancillary healthcare departments.

**STRAND 2**
Students will analyze the legal and ethical issues that impact the medical office.

**Standard 1**
Identify the legal guidelines/requirements for a medical office.
  • Define a medical assistant’s scope of practice and understand the principle of delegation.
  • Apply risk management procedures.
  • Define HIPAA regulations for the medical office.
  • Discuss patient self-determination acts.
    • Medical (Durable) Power of Attorney
    • Living will/Advanced directives
    • Anatomical Gift Act (Organ donation)

**Standard 2**
Define classifications of law.
  • Discuss criminal law.
  • Discuss civil law.
    • Torts
      • Battery
      • Assault
      • Libel
      • Slander
      • False imprisonment
      • Defamation
      • Invasion of privacy
    • Contracts
Standard 3
Explain malpractice and the terms associated with malpractice litigation.
- Compare and contrast negligence and malpractice.
- Identify malpractice terms.
  - Informed consent
  - Patient rights
  - Good Samaritan Law
  - Statute of Limitations
  - Commission and Omission

Standard 4
Evaluate medical ethics and related issues.
- Differentiate between law, etiquette, and ethics.
- Discuss ethical situations.
- Apply ethical situations in personal and professional practice.

STRAND 3
Students will identify procedures that contribute to a professional and safe medical office environment.

Standard 1
Identify the elements important in the medical office.
- Discuss the environment appropriate to maintain comfort for patients.
  - Aesthetics
  - Temperature
  - Cleanliness
  - Compliance with ADA
- Describe the professional way of greeting and responding to patients.
  - Explain the process of collecting new and updated information from patients.
  - Describe the professional way of escorting and instructing patients.
  - Learn general techniques of how to resolve conflicts with patients.
    - Late appointment
    - Angry patient
    - Talkative patient
    - Missed appointment

Standard 2
Identify the duties of opening and closing the office.
- Discuss steps used in opening the medical office.
- Discuss steps used in closing the medical office.

Performance Skills
Patient reception
- Collation of patient records.
• Opening the office and closing the office.
• Greeting the patient, responding to the patient, escorting and instructing the patient.

STRAND 4
Students will apply effective medical office communication principles in the healthcare setting.

Standard 1
Describe general guidelines for telephone communication.
• Describe the medical assistant’s role in the triage of telephone calls.
• Explain the importance of documenting telephone calls.
• Demonstrate professionalism when answering telephone calls.
• Identify the process of obtaining and making referrals.
• Discuss the process of calling in prescription refills.

Standard 2
Describe scheduling techniques
• Establish a matrix/master schedule.
• Describe different types of scheduling.
  • Double booking
  • Group/Cluster booking
  • Open office hours
• Describe how to document a no-show appointment and a cancellation.

STRAND 5
Students will apply effective interpersonal communication principles in a healthcare setting.

Standard 1
Differentiate between verbal and nonverbal communication.
• Describe the importance of body language and gestures during communication.
• Explain the importance of tone of voice, word choice, and silence during communication.
• Identify the parts of a communication model.

Standard 2
Identify effective listening skills/habits.
• Differentiate between active and passive listening.
• Identify types of questions to elicit patient information.
  • Open ended questions
  • Restating
  • Reflecting
  • Clarification
Standard 3
Identify communication barriers.
• Describe the following communication barriers:
  • Physical
  • Mental
  • Cultural
  • Maturity
  • Age
  • Stress
• Describe the following defense mechanisms.
  • Repression
  • Regression
  • Rationalization
  • Sarcasm
  • Denial
  • Compensation
  • Projection
  • Displacement
  • Physical avoidance
  • Apathy

Standard 4
Contrast sympathy and empathy.
• Describe appropriate body language to express empathy.
• Demonstrate appropriate expressions of empathy.

Standard 5
Describe the steps of the grieving process.
• Identify the psychological implications of disease to a patient.
• Describe the five psychological stages of grieving.
  • Denial
  • Anger
  • Bargaining
  • Depression
  • Acceptance

STRAND 6
Students will accurately maintain medical records.

Standard 1
Identify the contents of a medical record.
• Discuss the standard medical record and various types of reports.
  • Patient’s past records
  • History and physical
  • Insurance
  • Office notes
  • Progress notes
  • Pathology results
  • Medication
  • Physician orders
  • Diagnostic reports
  • Laboratory reports
  • Operative reports
  • Consultation reports
• Describe common documentation approaches for medical records.
  • SOAP
  • POMR
• Describe how to initiate a new patient medical record.
  • Paper charting
  • Electronic Medical Record (EMR)

Performance Skills
Medical records
  • Demonstrate filing: alphabetically and numerically

Standard 2
Differentiate between subjective and objective information.
  • Use subjective information to document patient complaints.
  • Use objective information to document patient complaints.

Standard 3
Discuss the legalities associated with the medical record.
  • Demonstrate how to correct errors in the patient chart.
  • Explain the importance of documenting all interventions.

Standard 4
Demonstrate the correct method of filing patient information.
  • Compare and contrast the benefits of alphabetic and numeric filing.
  • Explain the steps for locating a missing file.

STRAND 7
Students will perform bookkeeping and financial functions in a medical office setting.

Standard 1
Differentiate between accounts receivable and accounts payable.
• Define bookkeeping terms
  • Credit
  • Debit
  • Adjustment
  • Balance
  • Asset
  • Liability
  • Collections
• Describe the following financial forms.
  • Bank deposit
  • Bank statement
  • Receipt
  • Petty cash
  • Day sheet

Performance Skills
Banking Service:
  • Prepare a bank deposit.
  • Write checks.
  • Demonstrate a bank reconciliation.

Standard 2
Discuss the difference between various methods of payment.
  • Differentiate between different types of checks.
    • Cashiers
    • Personal
    • Money order
    • Certified
    • Third party check (insurance company)
    • Electronic checks
  • Define terms associated with a checking account.
    • Payee
    • Payer
    • Endorsement
  • Describe differences between credit card and debit cards.
  • Discuss flexible spending accounts.

Performance Skills
Accounting/billing and collecting - Prepare the following:
  • Accounts payable and receivable, day sheet, petty cash, prepare ledger.
  • Patient’s itemized monthly statement.
STRA ND 8

Students will perform proper insurance, coding, and billing procedures.

Standard 1
Identify terms associated with medical insurance.
- Define the following terms associated with medical billing.
  - Birthday rule
  - Preauthorization/Precertification
  - Premium
  - Copayment/Coinsurance
  - Deductible
  - Explanation of Benefits (EOB)
  - Fee Schedule
- Define various insurance carriers.
  - HMO
  - PPO
  - Medicare
  - Medicaid
  - Fee for Service
  - Tricare
  - Workers Compensation
  - Affordable Care Act (ACA)
- Explain the process to prepare a healthcare claim.

Performance Skills
Insurance - Complete HCFA Insurance Form.

Standard 2
Explain how to determine procedural and diagnostic coding.
- Define the following terms associated with medical coding.
  - CPT code
  - ICD-10
  - HCFA/CMS 1500
  - Understand legalities associated with coding and billing in a medical office including fraudulent claims.

ANATOMY AND PHYSIOLOGY-Benchmark 3

STRA ND 1

Students will identify the body cavities and quadrants and the organs they contain.

Standard 1
Locate the body cavities and the organs contained therein.
Medical Assistant

- Cranial: Brain
- Spinal/Vertebral: Spinal cord
- Thoracic: Heart and lungs
- Abdominal: Liver, most of the intestines, stomach, gallbladder, spleen, kidneys
- Pelvic: Urinary bladder, internal reproductive organs

Standard 2
Identify the four major abdominal quadrants and the organs in each quadrant.
- Right upper quadrant (RUQ): Liver, gallbladder, right kidney
- Left upper quadrant (LUQ): Stomach, spleen, pancreas, left kidney
- Right lower quadrant (RLQ): Appendix, right ovary
- Left lower quadrant (LLQ): Left ovary

Strand 2
Students will identify the structures and functions of the cell and tissues.

Standard 1
Compare and contrast mitosis and meiosis.
- Describe the purpose of mitosis and meiosis.
- Identify the outcome of chromosomes for each.
- Identify the outcome of numbers of cells for each.

Standard 2
Differentiate between cellular transport mechanisms.
- Describe diffusion.
- Describe osmosis.
- Describe filtration.

Standard 3
Identify the six levels of body organization.
- Describe the chemical level.
- Describe the cellular level.
- Describe the tissues.
- Describe the organs.
- Describe the organ systems.
- Describe the organism.

Standard 4
Distinguish between the four basic tissue types.
- Contrast the functions of the four tissue types.
  - Epithelial-covering and lining
  - Connective-support and structure
  - Muscular-movement
  - Nervous-interpretation and nerve impulse conduction
• Identify the locations of the four tissue types.
  • Epithelial-skin and mucous membranes
  • Connective-bones, blood, adipose, cartilage
  • Muscular-muscles
  • Nervous-nerves, brain, spinal cord

**STRAND 3**

Students will describe the anatomy and physiology of the Integumentary System.

**Standard 1**
Identify the layers of the skin.
  • Epidermis
  • Dermis
  • Subcutaneous

**Standard 2**
Identify the appendages.
  • Nails
  • Sweat (sudoriferous) glands
  • Oil (sebaceous) glands
  • Hair

**Standard 3**
Describe the functions of the integumentary system.
  • Protection against water loss
  • Protection against infection
  • Vitamin D production
  • Sensory organ
  • Absorption of medications
  • Excretion of water, salts, and waste
  • Temperature regulation
  • Protection against UV light

**Standard 4**
Identify the signs and symptoms of disorders of the integumentary system.
  • Athlete’s foot
  • Hives
  • Herpes
  • Melanoma
  • Decubitus ulcers
  • Warts
  • Pediculosis
  • Rash
• Ringworm
• Lesion

**Standard 5**
Describe the signs and symptoms of infection and inflammation.
- Insert indicator text Recognize redness, swelling, heat, and pain.
- Identify how the inflammation process is initiated.
- Describe the effects of histamine in inflammation.

**STRAND 4**
Students will describe the anatomy and physiology of the Skeletal System

**Standard 1**
Identify the functions of the skeletal system.
- Hematopoiesis (blood cell production)
- Structure
- Support
- Muscle attachment and movement
- Mineral storage

**Standard 2**
Identify the basic bones of the skeleton.
- Cranium (frontal, parietal, occipital, temporal, maxillae, mandible)
- Vertebrae (cervical, thoracic, lumbar, sacral, coccyx)
- Rib cage (ribs, sternum, xiphoid process)
- Arm (humerus, radius, ulna, carpals, metacarpals, phalanges)
- Pelvis (ilium, ischium, pubis)
- Leg (femur, tibia, fibula, tarsals, metatarsals, phalanges)

**Standard 3**
Distinguish between the following fractures:
- Simple (closed)
- Compound (open)
- Greenstick
- Impacted (compression)
- Comminuted
- Spiral
- Colles

**Standard 4**
Identify the signs and symptoms of disorders of the skeletal system.
- Arthritis (osteoarthritis, rheumatoid arthritis, gouty arthritis)
- Osteoporosis
- Scoliosis, Lordosis, Kyphosis
- Herniated disc
• Carpal tunnel syndrome
• Bursitis
• Sprains

STRAND 5
Students will describe the anatomy and physiology of the Muscular System.

Standard 1
Identify the functions of the muscular system.
• Heat production
• Movement
• Structure
• Protection

Standard 2
Differentiate between the three types of muscle tissue.
• Locate cardiac muscle and describe the characteristics (striated, involuntary, found in the heart.)
• Locate smooth muscles and describe characteristics (non-striated, involuntary, found in hollow organs like the stomach.)
• Locate skeletal muscles and describe the characteristics (striated, voluntary, found attached to bones.)

Standard 3
Contrast the differences between tendons and ligaments.
• Tendons-connect muscles to bones
• Ligaments-connect bone to bone

Standard 4
Identify the basic muscles of the human body.
• Deltoid
• Gluteus (maximus, medius)
• Rectus femoris
• Vastus lateralis
• Diaphragm

Standard 5
Identify the signs and symptoms of disorders of the muscular system.
• Strains
• Atrophy
• Tendonitis
• Fibromyalgia
STRAND 6
Students will describe the anatomy and physiology of the Cardiovascular System.

Standard 1
Identify the components of the cardiovascular system.
- Blood
- Heart
- Blood vessels

Standard 2
Identify the functions of the cardiovascular system.
- Transportation of nutrients and wastes.
- Transportation of heat.
- Transportation of oxygen and carbon dioxide.
- Transportation of hormones, antibodies, and enzymes.

Standard 3
Identify the structures of the heart.
- Aorta
- Coronary arteries
- Septum
- Myocardium
- Inferior and superior vena cava
- Right and left atrium
- Tricuspid valve, Bicuspid valve (mitral valve)
- Right and left ventricle
- Pulmonary semilunar valve, aortic semilunar valve
- Pulmonary arteries, pulmonary veins

Standard 4
Locate the major arteries and veins of the cardiovascular system.
- Identify appropriate arteries for taking an accurate blood pressure and pulse.
  - Apical
  - Carotid
  - Radial
  - Brachial
  - Femoral
- Identify appropriate veins for venipunctures.
  - Median cubital
  - Basilic
  - Cephalic
Standard 5
Describe the layers of and functions of blood vessels.
- Arteries
  - Takes blood away from the heart.
  - Thicker to withstand the pressure from the heart.
- Veins
  - Take blood toward the heart.
  - Modified with valves to prevent backflow of blood.
- Capillaries
  - Gas and nutrient exchange between the blood and body cells.
  - Single layer of cells.

Standard 6
Identify the signs and symptoms of disorders of the cardiovascular system.
- Myocardial infarction
- Cerebrovascular accident (CVA-stroke)
- Hypertension
- Embolus/Thrombus
- Arteriosclerosis, Atherosclerosis
- Cardiac arrest
- Phlebitis
- Arrhythmia
- Congestive heart failure
- Aneurysm

STRAND 7
Students will describe the anatomy and physiology of the Lymphatic/Immune System.

Standard 1
List the functions of the lymphatic system.
- Transport excess tissue fluid to the blood vessels.
- Immunity

Standard 2
Describe the functions of the major structures of the immune system.
- Tonsils
  - Lymphatic tissue in the pharynx.
  - Helps to remove pathogens from food and air.
- Lymph nodes
  - Masses of lymphatic tissue.
  - Filters pathogens from lymph.
Standard 3
Describe the human body’s lines of defense against disease.
• Discuss the physical and chemical barriers.
  • Mucous membranes (trap pathogens)
  • Cilia (propel pathogens out of respiratory tract)
  • Coughing and sneezing
  • Hydrochloric acid (stomach)
  • Tears in the eyes (contain bactericidal chemicals)
• Discuss non-specific immunity.
  • Fever
  • Inflammation (WBC’s destroy pathogens)
• Discuss specific immunity.
  • Immune response
  • Production of antibodies
• Differentiate between active and passive immunity.
  • Vaccination
  • Delivery of antibodies
    • Through mother
    • Through injection (gamma globulin)

Standard 4
Identify the signs and symptoms of disorders of the lymphatic/immune systems.
• Influenza
• H1N1
• HIV/AIDS
• Mononucleosis
• Autoimmune disorders

STRAND 8
Students will describe the anatomy and physiology of the Respiratory System.

Standard 1
Identify the structures of the respiratory system.
• Nose and nasal cavity
• Pharynx
• Larynx
  • Epiglottis
• Trachea
• Lungs
• Bronchi
• Bronchioles
• Alveoli
Standard 2
Describe the functions of the respiratory system.
- Warm, moisten, and filter air
- Sound production
- Carbon dioxide-oxygen gas exchange

Standard 3
Identify the signs and symptoms of disorders of the respiratory system.
- Asthma
- Tuberculosis (TB)
- Upper respiratory infection (URI)
- Pneumonia
- Respiratory Syncytial Virus (RSV)
- Chronic obstructive pulmonary disease (COPD)
- Bronchitis
- Epistaxis (bloody nose)

Standard 4
Identify the signs and symptoms of respiratory distress.
- Dyspnea (pursed lip breathing)
- Tachypnea
- Wheezing

STRAND 9
Students will describe the anatomy and physiology of the Digestive System.

Standard 1
Describe the functions of the digestive system.
- Ingestion
- Digestion
- Absorption
- Excretion

Standard 2
Identify the structures of the alimentary canal organs and their basic functions.
- Mouth-chemical and mechanical digestion
- Pharynx-passageway
- Esophagus—passageway to stomach
- Stomach-chemical and mechanical digestion
- Small intestine-nutrient absorption
- Large intestine-absorption of water, collects food residue for excretion

Standard 3
Identify the structures of the accessory organs and their basic functions.
• Salivary glands—produce saliva to breakdown food
• Pancreas—releases digestive enzymes into the small intestine
• Liver—produces bile to breakdown fats
• Gallbladder—storage of bile

**Standard 4**
Identify the signs and symptoms of disorders of the digestive system.
• Irritable bowel syndrome (IBS)
• Diverticulitis
• Hemorrhoids
• Celiac disease
• Appendicitis
• Hepatitis
• Ulcers
• Hernia
• Colon cancer

**STRAND 10**
Students will describe the anatomy and physiology of the Nervous System.

**Standard 1**
Describe the general functions of the nervous system.
• Detects and interprets sensory information.
• Voluntary and involuntary integration of the stimulus.
• Response to stimulus (movement or secretion).

**Standard 2**
Differentiate between the central nervous system (CNS) and the peripheral nervous system (PNS).
• CNS
  • Brain
  • Spinal cord
• PNS
  • Peripheral nerves
  • Sympathetic division
  • Parasympathetic division

**Standard 3**
Identify the structures of the nervous system and their major functions.
• Brain
  • Cerebrum
    • Frontal lobe—personality, reason, speech
    • Parietal lobe—taste, skin sensations
• Occipital lobe-sight
• Temporal lobe-hearing, memory
• Cerebellum-balance and coordination
• Midbrain-relay station for impulses
• Brainstem-heart rate and respirations
  • Medulla oblongata
  • Pons
• Hypothalamus-control of endocrine functions, blood pressure, and temperature regulation
• Pituitary gland-secretes many hormones
• Spinal cord-reflex center, conduction of nerve impulses
• Cerebrospinal fluid (CSF)-shock absorption and provide nutrients to CNS
• Meninges (dura mater, arachnoid mater, pia mater)-protection of CNS
• Neurons (sensory, motor, and interneuron)-nerves

**Standard 4**
Identify the signs and symptoms of disorders of the nervous system.
• Alzheimer’s disease
• Meningitis
• Headache
• Epilepsy
• Paralysis (Hemiplegia, Paraplegia, Quadriplegia)
• Herpes zoster
• Multiple sclerosis
• Sciatica

**STRAND 11**
Students will describe the anatomy and physiology of the Endocrine System.

**Standard 1**
Describe the general functions of the endocrine system.
• Regulates growth, development, and maturation.
• Regulates chemical balance by the production of hormones.

**Standard 2**
Describe what a hormone is and how it works.
• Chemicals secreted into the blood to have an effect on a target tissue.
• Produced by endocrine glands.

**Standard 3**
Describe the major locations, secretions (hormones), and functions of the following glands:
• Pituitary-growt hormone, ACTH, TSH, oxytocin
• Thyroid-thyroxine
- Pancreas-insulin
- Adrenal-cortisol, adrenaline
- Ovaries-estrogen, progesterone
- Testes-testosterone

**Standard 4**
Identify the signs and symptoms of disorders of the endocrine system.
- Diabetes mellitus (Types 1 and 2)
- Hypothyroidism/Hyperthyroidism
- Dwarfism/Gigantism

**STRAND 12**
Students will describe the anatomy and physiology of the Urinary System

**Standard 1**
Describe the functions of the urinary system.
- Excrete waste and water from the body.
- Regulate fluid balance and blood composition.

**Standard 2**
Identify the structures of the urinary system and their major functions.
- Kidneys-filter the blood and form urine
- Ureters-passageway for urine from the kidneys to the bladder
- Bladder-temporary storage of urine
- Urethra-passageway of urine to the outside of the body

**Standard 3**
Identify the signs and symptoms of disorders of the urinary system.
- Kidney stones
- Cystitis/UTI
- Pyelonephritis
- Incontinence
- Renal failure

**STRAND 13**
Students will describe the anatomy and physiology of the Reproductive System.

**Standard 1**
Describe the functions of the reproductive system.
- Production of gametes (egg and sperm) by the gonads.
- Produces hormones to help in the maturation process.

**Standard 2**
Identify the structures of the female reproductive system and their major functions.
• Breasts-lactation
• Ovaries-production of eggs, estrogen, and progesterone
• Uterine tubes-site of fertilization, passage between ovaries and uterus
• Uterus-nourishment and protection of the fetus
  • Cervix
  • Endometrium
• Vagina-birth canal, exit for menstrual flow

**Standard 3**
Identify the structures of the male reproductive system and their major functions.

• Penis-protects the urethra
• Testes-production of testosterone and sperm
• Scrotum-muscular sac containing the testicles
• Epididymis-storage and maturation of sperm
• Vas deferens-passageway of semen from the testicles meeting connection with the urethra
• Prostate gland-secretes fluids for sperm motility
• Urethra-passageway for urine and semen

**Standard 4**
Identify the signs and symptoms of disorders of the reproductive system.

• Female
  • Ovarian cyst
  • Premenstrual syndrome (PMS)
  • Menopause
  • Cancer
    • Cervical cancer
    • Ovarian cancer
    • Breast cancer
  • Endometriosis
  • Human Papillomavirus (HPV)
  • Pelvic Inflammatory Disease (PID)
• Male
  • Cancer
    • Prostate cancer
    • Testicular cancer
  • Epididymitis
  • Prostatitis
  • Benign Prostatic Hypertrophy (BPH)

**Standard 5**
Review the following self-examinations:

• Breast self-exam (BSE)
• Testicular self-exam (TSE)

CLINICAL AND LABORATORY PROCEDURES-Benchmark 4

STRAND 1
Students will examine basic concepts of asepsis.

Standard 1
Describe the infection control cycle.
  • Review the five types of microorganisms.
    • Bacteria
    • Virus
    • Protozoa
    • Fungi
    • Rickettsiae
  • Discuss the chain of infection.

Standard 2
Demonstrate disease prevention principles.
  • Describe the three levels of infection control.
    • Sanitization
    • Disinfection
    • Sterilization
  • Describe the common standard precautions of infection control.
    • Hand washing/Hand sanitizing
    • Gloving
    • Personal protective equipment (PPE)
    • Coughing etiquette/masks
    • Hygiene
    • Nutrition

Standard 3
Apply personal safety procedures based on OSHA and CDC regulations.
  • List blood-borne pathogens.
    • Hepatitis B and C
    • HIV
  • Describe techniques for preventing pathogen transmission.
    • Sharps containers
    • Biohazardous waste
  • Discuss the use of safety devices.
  • Discuss the use of Safety Data Sheets (SDS).
  • Discuss the use of incident/injury reports.
Standard 4
Demonstrate procedures for the proper cleaning and sanitizing of instruments.
• Sanitizing instruments
• Chemical disinfecting (including bleach)
• Autoclaving

STRAND 2
Students will obtain baseline vital sign information and compare it to normal values.

Standard 1
Measure and obtain the five baseline vital signs.
• Temperature (tympanic, electronic, oral, temporal)
• Pulse (rate, rhythm, volume) (peripheral, apical)
• Respiration (rate, rhythm, depth)
• Blood pressure
• Oxygen saturation

Standard 2
Define terms which describe normal and abnormal vital signs values.
• Bradycardia/Tachycardia
• Hypotension/Hypertension
• Febrile/Afebrile
• Bounding/Thready pulse
• Shallow/Dyspnea/Stridor/Hyperventilation/Wheezing
• Hypoxia

Standard 3
Obtain body measurements for adults.
• Height
• Weight

Standard 4
Obtain body measurements for infants.
• Length
• Weight
• Head circumference (hydrocephalus, microcephaly)
• Chest circumference

Performance Skills
Students will gather vital sign information.

STRAND 3
Students will accurately obtain the patient history and assist with the physical examination.
Standard 1
Demonstrate the ability to obtain an accurate patient history.
- Chief complaint.
- Use of open-ended questions to obtain information.
- Pain scale.
- Document allergies.
- Relevant observations or information.
- Differentiate between subjective and objective information.

Standard 2
Prepare the patient and the examination room.
- Prepare and clean the examination room properly.
- Assemble all necessary equipment and supplies.
- Demonstrate patient positioning.
  - Supine
  - Prone
  - Lithotomy (pelvic exam)
  - Dorsal recumbent (abdominal exam)
  - Trendelenburg (shock)
  - Fowler’s (respiratory)
  - Sims’ (rectal)
- Demonstrate draping techniques.
- Assist the physician as necessary.
- Clean the examination table and replace supplies.

Standard 3
Describe common examinations and procedures in medical specialties.
- Sigmoidoscopy
- Prostate exam
- Pap test (smear)
- Snellen eye chart (visual acuity)
- Ishihara (color visual acuity)
- Jaeger (near vision acuity)
- Ear wax removal (irrigation)
- Eye installation

Standard 4
Assist the patient with ambulatory devices
- Assist patient from a wheelchair to an exam table and back to the wheelchair.
- Instruct patient in using walkers, canes, and crutches.

Performance Skills
Assist with a physical exam.
STRAND 4

Students will discuss pharmacology principles and demonstrate accurate medication administration.

Standard 1
Classify common medications.
- Antihypertensives
- Antihistamines
- Antidiuretics/Diuretics
- Antitussives
- Antidepressants
- Antianxiety
- Contraception
- Antipyretics
- Analgesics
- Antibiotics
- Laxatives
- Antidiabetic/Hypoglycemic
- Anticoagulants
- Hormones
- Anesthetics
- Anti-inflammatories
- Bronchodilators
- Narcotics

Standard 2
Describe the schedule for controlled substances.
- Schedule I-illegal, not prescribed
- Schedule II-high potential for addiction and abuse
- Schedule III-moderate to low potential for addiction and abuse
- Schedule IV-lower potential for addiction and abuse
- Schedule V-low potential for addiction and abuse

Standard 3
Demonstrate how to find medication information.
- Physician’s Desk Reference (PDR)
- Nursing Drug Reference
- Internet

Standard 4
Document medication administration.
- Medication record
  - Medication
• Dosage
• Site
• Patient reaction
• Immunization record
  • Lot number
  • Expiration date
  • Site

Performance Skills
Document medication administered to patients in the patient record.

Standard 5
Understand principles involved with prescription medication
  • Describe the necessary components of a valid prescription.
  • Compare and contrast prescription and over-the-counter medications.
  • Explain the appropriate procedure for calling or faxing a prescription.

Standard 6
Perform accurate dosage calculations.
  • Evaluate and simplify numerical expressions containing real numbers using the order of operations.
    • Addition, subtraction, multiplication, division
    • Fractions
    • Decimals
    • Ratios
    • Proportions
    • Metrics
    • Conversions
  • Compute solutions to problems and determine the reasonableness of an answer by relating them to the problem.

Standard 7
Identify the following “rights” of medication administration
  • Right patient
  • Right medication
  • Right time
  • Right route
  • Right dosage

Standard 8
Demonstrate the procedures for administering medications.
  • Oral, including buccal and sublingual
  • Transdermal (topical)
  • Intradermal
• Subcutaneous
• Intramuscular, including Z track method
• Ear/Eye drops
• Ointments
• Inhalation
• Epi-pen

**Standard 9**
Describe the side effects of medications.
• Compare and contrast common side effects with adverse effects.
• Recognize signs and symptoms of Anaphylactic shock and describe its treatment.

**STRAND 5**
Students will demonstrate the ability to assist with minor surgery.

**Standard 1**
Identify common instruments by name, use, and category.
• Cutting instruments
  • Scissor (bandage, suture)
  • Scalpel
• Grasping and clamping
  • Hemostat
  • Forceps
  • Towel clamp
• Probing and dilating
  • Scope
  • Speculum
  • Punch (biopsy)
• Suture materials
  • Sutures (absorbable, non-absorbable)
  • Suture needles
  • Needle holder
  • Steri-strips
  • Staples
  • Skin glue

**Standard 2**
Prepare the patient and the procedure room.
• Obtain a patient consent form.
• Explain pre- and post-procedure care and education of the patient.
• Demonstrate a surgical hand wash.
• Demonstrate applying sterile gloves.
• Demonstrate creating a sterile field and opening a sterile pack.
• Describe ways of maintaining the sterile field.
• Demonstrate the ability to assist with procedures, including skin preparation.
• Demonstrate sterile dressing changes.
• Demonstrate suture and staple removal techniques.

Performance Skills
Demonstrate concepts of asepsis and sterilization.

Performance Skills
Assist with basic minor surgery.

STRAND 6
Students will demonstrate how to use the electrocardiograph machine.

Standard 1
Describe the electrical conduction system of the heart.
  • Identify the SA node, AV node, AV bundle, bundle branches, and Purkinje fibers.
  • Correlate the “PQRST” waves on an EKG (ECG) with the conduction system of the heart.

Standard 2
Prepare the patient for an EKG (ECG).
  • Demonstrate electrode placement and obtain a 12 lead EKG (ECG).
  • Identify artifacts and describe ways to prevent them.
    • Somatic tremor
    • Wandering baseline
    • Current interference

Performance Skills
Obtain a standard 12 lead EKG.

Standard 3
Identify other tests used to determine heart function.
  • Holter monitor (24-48 hour)
  • Stress test
  • Event monitor (30 days)

STRAND 7
Students will learn skills necessary to work in a physician’s office laboratory.

Standard 1
Describe procedures associated with urinalysis.
  • Explain different types of urine collection.
    • Clean-catch midstream
- Catheterization
- Explain the physical characteristics of urine (color, odor, appearance).
- Demonstrate the ability to use a reagent strip to identify abnormalities in urine.
- Demonstrate the ability to set up a wet mount for microscopic analysis.
- Describe urine pregnancy testing.

**Performance Skills**
Perform a Urinalysis

**Standard 2**
Describe terms and procedures associated with hematology.
- Identify the components of blood and the function of each.
  - White blood cells-fight infection
  - Red blood cells-carry oxygen
  - Platelets-clotting
  - Plasma-liquid portion of the blood
- Differentiate between plasma and serum.
- Describe the normal values for these tests:
  - Hematocrit (37-47% women; 40-54% men)
  - Hemoglobin (12-16 g women; 14-18 g men)
  - WBC count (5,000-10,000)
  - RBC count (4.2 million-6 million)
  - Platelet count (150,000-350,000)
  - Glucose (80-120)
  - Total Cholesterol (<200)
- Locate capillary and common venipuncture sites.
- Demonstrate a skin puncture with a sterile lancet/autolet.
- Demonstrate venipuncture using vacuum method with multiple tubes.
- Perform a microhematocrit and glucose from finger stick.
- Demonstrate a hemoccult (guaiac).
- Describe the procedure for obtaining a NBS (newborn screen).
- Describe common blood tests (FBS, GTT, blood typing).

**Performance Skills**
Perform a microhematocrit and glucose from finger stick.

**Standard 3**
Describe terms and procedures associated with microbiology.
- Differentiate between gram positive and gram negative bacteria.
- Demonstrate the ability to obtain a throat culture specimen.
- Differentiate between culturing bacteria and rapid testing.
- Identify the parts and use of the microscope.
Performance Skills
Demonstrate microscope slide set-up and prepare a specimen for the laboratory.

STRAND 8
Students will be able to respond to emergencies.

Standard 1
Obtain CPR certification.
- Adult, child, and infant CPR
- AED training

Standard 2
Obtain First Aid certification.
- Describe how to respond to bleeding, shock, and poisoning emergencies.
- Demonstrate bandaging techniques.

Performance Skills
Obtain CPR and First Aid certification.

EXTERNSHIP

STRAND 1
Students will successfully complete a clinical externship.

Standard 1
Complete a 160 hour minimum externship.
- Have clinical site complete evaluation and return to instructor.
- Discuss student externship evaluation with instructor.

Standard 2
Externship evaluations will indicate satisfactory or higher rating.

STRAND 2
Students will demonstrate professional attributes.

Standard 1
 Demonstrate the following characteristics:
- Honesty and integrity
- Reliability and punctuality
- Appropriate communication skills
- Cooperation and teamwork
- Initiative and adaptability
Standard 2
Externship evaluations will indicate satisfactory or higher rating.

**Skill Certificate Test Points by Strand**

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<th>Test Name</th>
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