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Clinical Medical Assistant

Format: Self-Pace Online / eLearning
Program Duration: 6 Months
Course Contact Hours: 780

The Clinical Medical Assisting Profession

The Clinical Medical Assisting program is designed to prepare students to function as professionals in multiple healthcare settings. Medical Assistants with a clinical background perform various clinical tasks including assisting with the administration of medications and with minor procedures, performing an EKG electrocardiogram, obtaining laboratory specimens for testing, educating patients, and other related tasks. Job opportunities are prevalent with physician's offices, clinics, chiropractor's offices, hospitals, and outpatient facilities.

The Clinical Medical Assisting Program

This program prepares students to assist physicians by performing functions related to the clinical aspects of a medical office. Instruction includes preparing patients for examination and treatment, routine laboratory procedures, pharmacology, taking and documenting vital signs, technical aspects of phlebotomy, the 12-lead EKG and the cardiac life cycle.

Education and National Certifications

- Students should have or be pursuing a high school diploma or GED.
- There are no state approval and/or state requirements associated with this program.
- National Certification:
 - **National Healthcareer Association (NHA) Certified Clinical Medical Assistant (CCMA) Exam**
 - **American Society of Phlebotomy Technician (ASPT) Phlebotomy Technician (CPT) Exam**
 - **National Healthcareer Association (NHA) Certified Phlebotomy Technician (CPT) Exam**
 - **National Healthcareer Association (NHA) Certified EKG Technician (CET) exam**
- In addition to facilitating entry-level clinical medical assisting related positions, this course is ideal for students interested in pursuing a future formal Certified Medical Assistant (CMA), Nursing (LPN) or a Nursing (RN) program.

Clinical Medical Assistant Program Objectives

At the end of this course, students will be able to:

- Explain the clinical medical assistant's role in patient-centered care within the medical facility

- Describe the specific personal characteristics, interpersonal communications, and professional skills required of the clinical medical assistant
- Demonstrate an understanding of medical facility safety practices, measures, plans, and standards
- Explain the steps in quality care throughout the patient encounter including preparation of the medical facility, completing required paperwork, taking vital signs, and completing the check-out tasks
- Explain the concepts related to medical asepsis and surgical asepsis in the healthcare environment
- Demonstrate knowledge and skills related to pharmacology and the administration of medications within the scope of the clinical medical assistant practice
- Explain the concepts related to medical asepsis and surgical asepsis in the healthcare environment
- Explain the medical assistant's role and tasks when helping with minor surgery and diagnostic testing procedures in the medical office, including laboratory procedures, specimen collection, microscopic assessment, and hematology procedures
- Demonstrate the ability to assist the physician as directed in various medical specialties of the medical office
- Explain considerations of healthcare for special populations including pediatrics and geriatrics
- Apply the basic electrophysiologic principles of cardiac conduction to the anatomy and physiology of the body
- Identify proper placement of leads to ensure an accurate and consistent EKG reading
- Evaluate various EKG rhythm strips following established normal criteria for each of the wave forms and intervals
- Analyze a variety of EKG rhythm strips, identifying rate, rhythm and intervals
- Analyze a variety of EKG rhythm strips for common dysrhythmias
- Apply an understanding of the technical aspects of the EKG machine to the correct use of the machine and interpretation of artifacts
- Describe the functions, associated terminology, types, and rhythm strips of pacemakers
- Describe diagnostic electrocardiography in terms of goals, types, procedures, indications, and contraindications
- Explain how to interpret a 12-lead EKG strip
- Explain myocardial infarction in terms of physiology, symptoms, and EKG interpretation
- Describe common cardiac medications
- Explain the steps in selected specimen collection procedures performed by the phlebotomy technician
- Explain the safety procedures in the healthcare setting and specifically in performing specimen collection procedures
- Identify specific supplies and equipment used in selected specimen collection procedures
- Explain precautions and guidelines when collecting specimens in special populations such as pediatrics and geriatrics
- Define quality of care and explain the impact on patient medical care when quality and safety are compromised in phlebotomy procedures
- Describe the anatomy, physiology, pathophysiology, and medical terminology associated with phlebotomy

- Describe the requirements of the successful phlebotomy career including desired character traits, training and education, roles and responsibilities
- Explain how phlebotomists communicate with others in the healthcare setting verbally, nonverbally, within the health record, and using computer systems
- Identify common legal issues, ethical issues, and regulatory issues commonly impacting the phlebotomist

Clinical Medical Assisting Detailed Course Information:

Clinical Medical Assistant Module

THE MEDICAL ASSISTING PROFESSION

- Define the medical assistant's role in the healthcare profession
- Explain the AMA's Principles of Medical Ethics

INTERPERSONAL COMMUNICATION

- Provide examples of verbal, nonverbal, and symbolic communication
- Discuss listening strategies
- Explain potential barriers to communication with patient
- Explain cultural and age factors as they relate to communication
- Explain the grief process

PATIENT-CENTERED CARE

- Define the medical assistant's role in patient-centered care
- Discuss wellness and the holistic approach to healthcare
- Explain the mind-body connection
- Describe the different types of pain, pain assessment, and pain management
- Discuss the methods of assisting patients with special needs
- Define the medical assistant's role as it relates to extended life, terminal care, and hospice
- Describe the considerations and laws associated with extended life care

THE CLINICAL ENVIRONMENT: SAFETY AND THE PATIENT ENCOUNTER

- Define the medical assistant's role as it relates to safety in the medical office
- Discuss proper body mechanics for the medical office employee
- Describe procedures intended to provide a safe environment Discuss emergency plans for a medical facility
- Explain Standard Precautions and OSHA's Bloodborne Pathogen Standards
- Define the medical assistant's role in the clinical visit
- Define triage
- Explain the types of consent needed from patients Identify the parts of the medical record
- Explain how to chart for a medical record
- Discuss the role of EMS in emergency care

MEDICAL AND SURGICAL ASEPSIS

- Explain Standard Precautions and OSHA's Bloodborne Pathogen Standards
- Describe the medical assistant's role in infection control within the medical office

- Explain the cycle of infection and the body's natural defenses against infection
- Explain the practices related to aseptic technique for a health professional

PHARMACOLOGY AND MEDICATION ADMINISTRATION

- Describe the role of the medical assistant in medication administration
- Explain the procedures for administering medication in various forms
- Describe pharmacological terms related to drug effects, functions, classifications, and nomenclature
- Perform basic dosage calculations
- State the safety guidelines for administering medications
- Explain the forms, routes, and procedures for medication administration

VITAL SIGNS

- Take vital signs
- Explain how to prepare a patient for a physical examination
- Describe the assessment methods used in an examination

MINOR SURGERY

- Explain how to prepare skin for a surgical procedure
- Set up a sterile tray
- List the responsibilities of the medical assistant in assisting in a minor surgical procedure
- Explain how to assist with suturing
- Explain how to remove sutures or staples
- Explain how to change a sterile dressing

MEDICAL IMAGING

- Define the medical assistant's role in medical imaging
- Describe the types of diagnostic imaging used in medical facilities
- Describe the equipment used for selected diagnostic imaging procedures
- Explain the safety guidelines to protect patients and staff in selected diagnostic imaging procedures
- Explain patient preparation and instructions for selected diagnostic imaging procedures
- Explain patient positioning for selected diagnostic imaging procedures

PULMONARY SYSTEM AND TESTING

- Explain the role and responsibilities of the medical assistant in pulmonary testing
- Describe basic anatomy and physiology of the pulmonary system
- Discuss common pulmonary diseases
- Explain tests and procedures related to pulmonary assessment and diagnosis

EENT

- Define the medical assistant's role in the EENT office
- Describe the anatomy and physiology of the eye and ear
- Describe selected diseases and disorders of the eye and ear
- Explain diagnostic procedures and assessments related to the eyes and ears
- Describe the anatomy and physiology of the nose, nasal passages, and throat
- Describe selected diseases and disorders of the upper respiratory system
- Discuss diagnosis and treatment procedures of the upper respiratory system

IMMUNOLOGY AND ALLERGIES

- Define the medical assistant's role in the immunology office
- Discuss the anatomy and physiology of the immune system
- Describe immunodeficiency diseases and disorders
- Describe common diagnostic procedures for allergies

DERMATOLOGY

- Define the medical assistant's role in the dermatology setting
- Discuss the anatomy and physiology of the integumentary system
- Describe common types of dermatitis and skin disorders

ENDOCRINOLOGY

- Define the medical assistant's role in the endocrinology office
- Identify the structures of the endocrine system
- Discuss the physiology of the endocrine system
- Discuss the diseases and disorders of the endocrine system

EMERGENCY CARE

- Define the medical assistant's role in emergency care
- Discuss the role of EMS in emergency care
- List the equipment and supplies maintained for emergencies in a medical office
- Explain how to manage selected emergencies in the medical office

GASTROENTEROLOGY AND NUTRITION

- Describe the basic anatomy and physiology of the gastrointestinal system
- Explain selected diseases and disorders of the gastrointestinal system
- Identify the six nutrients of the body and their functions
- Explain the use of food guidance tools
- Discuss nutritional related disorders
- Explain the MA's role in the diagnostic procedures related to the gastrointestinal system

ORTHOPEDICS AND PHYSICAL THERAPY

- Explain the steps of common procedures performed in the orthopedic office
- Describe common diseases and disorders of the musculoskeletal system
- Describe the anatomy and physiology of the musculoskeletal system
- Define the role of the medical assistant in the orthopedic office

OBSTETRICS AND GYNECOLOGY

- Define the role of the medical assistant in the obstetric/gynecology office
- Discuss the anatomy and physiology of the female reproductive system
- Explain the basics of menstrual cycle and menopause
- Describe common disorders and conditions related to the female reproductive system
- Discuss the processes of pregnancy and childbirth
- Obtain a complete obstetrical medical history
- Explain common complications of pregnancy
- Discuss the benefits and challenges of breastfeeding
- Explain how to assist in common procedures in the obstetric/gynecology office

PEDIATRICS

- Define the medical assistant's role in a pediatric specialty office

- Discuss the age-related physical and developmental factors for children
- Explain how to assist in procedures performed in the pediatric specialty office
- Describe common childhood diseases and disorders

NEUROLOGY

- Define the medical assistant's role in the neurology/neurosurgery practice
- Describe the anatomy and physiology of the nervous system
- Describe common diseases and disorders of the nervous system
- Explain how to assist in common diagnostic and therapeutic procedures in the neurology/neurosurgery practice

MENTAL HEALTH

- Define the medical assistant's role in the mental health field
- Describe the cognitive functions of the brain
- Define mental wellness
- Describe common mental health disorders
- Explain how mental disorders are assessed, diagnosed, and treated

ONCOLOGY

- Identify the medical assistant's role in the oncology office
- Describe the different types of malignant neoplasms
- Describe routine cancer screening tests
- Explain tumor markers and how they are used in cancer diagnosis
- Discuss the staging and grading of malignancies
- Discuss the various remedies used in cancer treatment
- Explain hospice care for terminally ill patients
- Describe a cancer prevention lifestyle

GERIATRICS

- Define the medical assistant's role in the geriatric office
- Describe the physical changes that take place during aging
- Explain the psychological aspects of aging
- Describe the social components of the aging process
- Discuss the nutritional needs and challenges associated with aging
- Describe the various cultural views of the elderly in society

ALTERNATIVE MEDICINE

- List the five National Center for Complementary and Alternative Medicine (NCCAM) classifications of complementary and alternative medicine
- Describe selected types of alternative medicine

EKG Module

CORONARY ANATOMY AND PHYSIOLOGY

- Describe the gross anatomy of the heart including the muscle and cellular structure, atria, ventricles, and valves
- Trace the flow of blood through the heart and the cardiovascular system

- Distinguish between the phases of the cardiac cycle including the events that occur during each phase
- Identify the effects diastole and systole have on the EKG tracing
- Describe the interaction between the nervous system and the heart

ELECTROPHYSIOLOGY

- Describe the gross anatomy of the heart including the muscle and cellular structure, atria, ventricles, and valves
- Describe the interaction between the nervous system and the heart
- Distinguish between the terms polarized, depolarized and repolarized as they relate to contraction and relaxation
- Identify the phases of an action potential
- Explain the P wave, QRS complex, T wave, and U wave as found in an EKG tracing
- Distinguish between the absolute and relative refractory periods including the implications of each period
- Properly label all waves and complexes on a rhythm strip
- Explain the delineations found on EKG paper
- Identify the waves in a variety of QRS complexes

LEAD MORPHOLOGY AND PLACEMENT

- Distinguish between an electrocardiograph and an electrocardiogram
- Identify the proper placement of bipolar leads and augmented leads
- Explain the effect augmentation has on an EKG
- Explain Einthoven's law and Einthoven's triangle
- Identify the leads composing the hexiaxial diagram
- Identify the proper location of the precordial leads
- Explain the electrocardiographic truths
- Describe the normal QRS complex deflections in each of the 12 leads on an EKG

THE TECHNICAL ASPECTS OF THE EKG

- Describe the control features of an EKG machine
- Differentiate between macroshock and microshock
- Describe the different kinds of artifacts found on a rhythm strip
- Correctly troubleshoot artifacts found on a rhythm strip
- Identify rhythms that can be mimicked by artifact
- Differentiate between artifacts and arrhythmia

CALCULATING THE HEART RATE

- Determine a patient's heart rate
- Calculate the heart rate on a variety of rhythm strips using a variety of methods
- Differentiate between the three types of rhythm regularity
- Employ the five steps to interpret a variety of rhythms
- Correctly identify a variety of rhythms
- Determine what kind of heart rate to calculate for different kinds of rhythm regularity

HOW TO INTERPRET A RHYTHM STRIP

- Determine a patient's heart rate
- Calculate the heart rate on a variety of rhythm strips using a variety of methods

- Differentiate between the three types of rhythm regularity
- Employ the five steps to interpret a variety of rhythms
- Correctly identify a variety of rhythms
- Determine what kind of heart rate to calculate for different kinds of rhythm regularity

A REVIEW OF RHYTHMS ORIGINATING FROM THE SINUS NODE

- State the criteria for each of the sinus rhythms
- Correctly interpret a variety of sinus rhythms on single and double-lead strips
- Identify the adverse effects for each of the sinus arrhythmias
- Describe the possible treatment for the sinus arrhythmias
- Correctly identify a variety of rhythms

A REVIEW OF RHYTHMS ORIGINATING FROM THE ATRIA

- State the criteria for each of the atrial arrhythmias
- Correctly identify a variety of rhythms

A REVIEW OF RHYTHMS ORIGINATING IN THE AV JUNCTION

- Differentiate between high, low, and midjunctional conduction locations
- State the criteria for each of the junctional arrhythmias
- Correctly interpret a variety of junctional arrhythmias
- Identify the adverse effects of each type of junctional rhythm
- Describe the possible treatment for each type of junctional arrhythmia
- Correctly identify a variety of rhythms

RHYTHMS ORIGINATING ON THE VENTRICLES

- Describe the conduction that occurs in ventricular rhythms
- State the criteria for each of the ventricular arrhythmias
- Correctly interpret a variety of ventricular arrhythmias
- Identify the adverse effects of each type of ventricular rhythm
- Describe the possible treatment for each type of ventricular arrhythmia
- Correctly identify a variety of rhythms

AV BLOCKS

- Identify the three degrees of AV block
- State the criteria for each type of AV block
- Correctly identify each type of AV block
- Identify the adverse effects of each type of AV block
- Describe the possible treatment for each type of AV block
- Correctly identify a variety of rhythms

PERFORMING RHYTHMS PRACTICE STRIPS

- Calculate the heart rate on a variety of rhythm strips using a variety of methods
- Differentiate between the three types of rhythm regularity
- Employ the five steps to interpret a variety of rhythms
- Correctly interpret a variety of sinus rhythms on single and double-lead strips
- Correctly interpret a variety of atrial arrhythmias
- Differentiate between high, low, and midjunctional conduction locations
- Correctly interpret a variety of junctional arrhythmias

- Correctly interpret a variety of ventricular arrhythmias
- Correctly identify each type of AV block
- Correctly identify a variety of rhythms
- Determine what kind of heart rate to calculate for different kinds of rhythm regularity

ARTIFICIAL PACEMAKERS

- Describe the primary function of a pacemaker
- Identify the indications for a pacemaker
- Define selected terms associated with pacemakers
- Describe the types of temporary pacemakers
- Identify what each letter of a pacemaker code means
- Identify pacemaker rhythms as being either VVI or DDD
- Identify the different kinds of pacemaker malfunctions

DIAGNOSTIC ELECTROCARDIOGRAPHY

- State the goal of stress testing
- Describe the indications and contraindications (relative and absolute) for stress testing
- Describe how to calculate target heart rate
- Describe how an exercise stress test and pharmacological stress test are conducted
- Describe the three most commonly used protocols for treadmill exercise testing
- Explain the conditions in which a stress test may be terminated
- Identify the normal signs and symptoms during the stress test as well as EKG changes that may indicate a positive or negative stress test
- Explain the relationship between specificity and sensitivity as it relates to a stress test
- Identify the indications and contraindications for Holter monitoring
- Identify the artifacts associated with Holter monitoring
- Indicate the conditions in which Holter results may be determined positive or negative

HOW TO INTERPRET A 12-LEAD EKG

- Identify the six steps necessary to interpret a 12-lead EKG
- Determine if a right or left bundle branch block exists
- Identify right and left ventricular hypertrophy
- Determine if any miscellaneous effects are present

MYOCARDIAL INFARCTION

- Describe the classic symptoms of a myocardial infarction
- Describe the difference between Q wave myocardial infarction (MI) and non-Q wave MI
- Describe what EKG changes are associated with ischemia, injury, and infarction
- Describe the different kinds of ST segment abnormalities and explain what each implies
- Describe the different T wave abnormalities and explain what each implies
- Describe how a significant Q wave differs from a normal Q wave
- Describe normal R wave progression
- Identify the transition zone in a variety of EKGs

CARDIAC MEDICATIONS AND ELECTRICAL THERAPY

- Describe the effect of each class of antiarrhythmic medication on the action potential
- Give examples of each class of antiarrhythmic medications

- Describe emergency medications including the mode of action of each
- Describe the two types of electrical therapy

Phlebotomy Module

PHLEBOTOMY PRACTICE AND QUALITY MANAGEMENT

- Define phlebotomy and identify healthcare professionals who perform phlebotomy procedures
- Identify the importance of phlebotomy procedures to the overall care of the patient
- List professional competencies for phlebotomists and key elements of a performance assessment
- List members of a healthcare team who interact with phlebotomists
- Describe the roles of clinical laboratory personnel and common laboratory departments/sections
- Describe healthcare settings in which phlebotomy services are routinely performed
- Explain components of professionalism and desired character traits for phlebotomists
- Describe coping skills that are used to handle stress in the workplace
- Define the difference between quality improvement and quality control
- Describe the basic tools used by a phlebotomist to participate in quality improvement activities
- Evaluate the effectiveness of the latest phlebotomy safety supplies and equipment in blood collection
- Describe preanalytical complications related to phlebotomy procedures and how they impact patient safety
- Explain how you should prevent and/or handle complications in blood collection
- List at least five factors about a patient's physical disposition that can affect blood collection
- List examples of substances that can interfere in a clinical analysis of blood constituents and describe methods used to prevent these interferences
- Describe how allergies, a mastectomy, edema, and thrombosis can affect blood collection
- List preanalytical complications that can arise with test requests and identification
- Describe complications associated with tourniquet pressure and fist pumping
- Describe how the preanalytical factors of syncope, petechiae, neurological complications, hemoconcentration, hemolysis, and intravenous therapy affect blood collection, and methods used to prevent these interferences

COMMUNICATION STRATEGIES FOR PHLEBOTOMISTS

- Apply methods for effective verbal and nonverbal communication, active listening, and written communication that take into account cultural competence and sensitivity in the workplace
- Describe the basic components of the medical record
- Provide examples of maintaining confidentiality and privacy related to patient information
- Identify potential clerical or technical errors that may occur during labeling or documentation of phlebotomy procedures
- Describe ways that healthcare workers may use computer systems to accomplish job functions

PROFESSIONAL ETHICS, LEGAL, AND REGULATORY ISSUES FOR PHLEBOTOMISTS

- Define basic ethical and legal terms and explain how they differ
- Describe types of consent used in healthcare settings, including informed consent and implied consent
- Describe how you can avoid litigation as it relates to blood collection
- Define standards of care from a legal and a healthcare provider's perspective
- Identify key elements of the Health Insurance Portability and Accountability Act (HIPAA)
- List key factors common to health professional liability insurance policies
- List common issues in lawsuits against healthcare providers and prevention tips to avoid lawsuits in phlebotomy

INFECTION CONTROL

- Explain the infection control policies and procedures that must be followed in specimen collection and transportation
- Identify the basic programs for infection control and isolation procedures
- Explain the proper techniques for handwashing, gowning, gloving, masking, double-bagging, and entering and exiting the various isolation areas
- Identify steps to avoid transmission of blood-borne pathogens
- Identify ways to reduce risks for infection and accidental needle sticks
- Describe measures that can break each link in the chain of infection
- Identify the steps to take in case of blood-borne pathogen exposure
- Discuss safety awareness and basic skills essential for all healthcare workers
- Explain the safety policies and procedures that must be followed in specimen collection and transportation
- Describe the safe use of equipment in healthcare facilities

SAFETY AND FIRST AID FOR PHLEBOTOMISTS

- Discuss safety awareness and basic skills essential for all healthcare workers
- Explain the measures that should be taken for fire, electric, radiation, mechanical, and chemical safety in a healthcare facility
- Describe the safe use of equipment in healthcare facilities
- List precautions that can reduce the risk of injury to patients

MEDICAL TERMINOLOGY AND ORGANIZATION OF THE HUMAN BODY

- Define medical terminology by using word elements such as roots, prefixes, and suffixes
- Define the differences among the terms anatomy, physiology, and pathology
- Describe the directional terms, anatomic surface regions, and cavities of the body
- Describe the role of homeostasis in normal body functioning
- Describe the structure of the human cell including the role of each organelle

ANATOMY AND PHYSIOLOGY OF ORGAN SYSTEMS

- Describe the role of homeostasis in normal body functioning
- Describe the purpose, function, and structural components of the major body systems
- Identify examples of pathologic conditions associated with each organ system
- List common diagnostic tests associated with each organ system

THE CARDIOVASCULAR AND LYMPHATIC SYSTEMS

- Describe the role of homeostasis in normal body functioning

- Identify examples of pathologic conditions associated with each organ system
- List common diagnostic tests associated with each organ system
- Define the functions of the cardiovascular and lymphatic systems, including the structures and functions of the heart
- Identify and describe the structures and functions of the heart
- List pathologic conditions and common laboratory tests associated with the cardiovascular and lymphatic systems
- Trace the flow of blood through the cardiovascular system
- Describe the properties of arterial blood, venous blood, and capillary blood
- Compare the cellular and noncellular components of blood
- Describe the differences and similarities between whole blood, serum, and plasma
- Explain the structures and functions of different types of blood vessels
- Identify the veins most commonly used for phlebotomy procedures
- Define homeostasis, including its role in the basic process of coagulation and fibrinolysis

BLOOD COLLECTION EQUIPMENT

- Describe the following features for anticoagulants and additives used in blood collection: the various types available, their mechanisms of action on collected blood, examples of tests performed on these tubes of anticoagulants and additives, and the vacuum-collection tube color codes
- Describe the equipment used in specimen collection

PREANALYTICAL COMPLICATIONS CAUSING MEDICAL ERRORS IN BLOOD COLLECTION

- Describe preanalytical complications related to phlebotomy procedures and how they impact patient safety
- Explain how you should prevent and/or handle complications in blood collection
- List at least five factors about a patient's physical disposition that can affect blood collection
- List examples of substances that can interfere in a clinical analysis of blood constituents and describe methods used to prevent these interferences
- Describe how allergies, a mastectomy, edema, and thrombosis can affect blood collection
- List preanalytical complications that can arise with test requests and identification
- Describe complications associated with tourniquet pressure and fist pumping
- Describe how the preanalytical factors of syncope, petechiae, neurological complications, hemoconcentration, hemolysis, and intravenous therapy affect blood collection, and methods used to prevent these interferences

VENIPUNCTURE PROCEDURES

- Describe the steps a healthcare worker should take in preparing himself or herself for a venipuncture procedure
- List supplies and equipment used in a typical venipuncture procedure
- Describe detailed steps in the patient identification process and what to do if information is missing
- Describe methods for hand hygiene
- Identify the most appropriate sites for venipuncture and situations when these sites might not be acceptable
- Identify alternative sites for the venipuncture procedure
- Describe the process and time limits for applying a tourniquet to a patient's arm

- Describe the decontamination process and the agents used to decontaminate skin for routine blood tests and blood cultures
- Describe the steps of a venipuncture procedure by using the evacuated tube method, syringe method, and butterfly method according to the CLSI Approved Standard
- Describe the "order of draw" for collection tubes
- Describe how to react when the patient has fainted or experiences nausea, vomiting, or convulsions
- Explain why it is necessary to control the depth of the incision
- Describe at least three sources of pre-examination error that can occur during: blood specimen handling, blood specimen transportation, and specimen processing or storage
- Name three methods commonly used to transport specimens
- Describe the function of a chain of custody, and the Custody and Control Form

CAPILLARY BLOOD SPECIMENS

- Describe the decontamination process and the agents used to decontaminate skin for routine blood tests and blood cultures
- Describe the "order of draw" for collection tubes
- Describe the reasons for acquiring capillary blood specimens
- Explain why capillary blood from a skin puncture is different from blood taken by venipuncture and the effect on laboratory tests
- List the laboratory tests for which capillary specimens may be collected
- Explain why it is necessary to control the depth of the incision
- Describe the procedure for performing a skin puncture
- Describe the procedure for making blood smears
- Name three methods commonly used to transport specimens
- Describe the function of a chain of custody, and the Custody and Control Form

SPECIMEN HANDLING, TRANSPORTATION, AND PROCESSING

- Name three methods commonly used to transport specimens
- Describe the function of a chain of custody, and the Custody and Control Form

PEDIATRIC AND GERIATRIC PROCEDURES

- Describe fears or concerns that children in different developmental stages might have toward the blood-collection process
- Suggest appropriate behaviors for dealing with parents during a venipuncture or skin puncture
- Identify puncture sites for a heel stick on an infant and describe the procedure
- Describe the venipuncture sites for infants and young children
- Discuss the types of equipment and supplies that must be used during microcollection and venipuncture of infants and children
- Describe the procedure for specimen collection for neonatal screening
- Define five physical and/or emotional changes associated with the aging process
- Describe how a healthcare worker should react to physical and emotional changes associated with the elderly
- Explain the special precautions and types of equipment needed to collect capillary blood gases

POINT-OF-CARE COLLECTIONS

- List terms that are synonymous with point-of-care testing

- Identify four analytes whose levels can be determined through point-of-care testing
- Describe the most widely used application of point-of-care testing
- Define quality assurance and its requirements in point-of-care testing
- Explain the special precautions and types of equipment needed to collect arterial blood gases

ARTERIAL, INTRAVENOUS (IV), AND SPECIAL COLLECTION PROCEDURES

- List the steps and equipment in blood culture collections
- Discuss the requirements for the glucose and lactose tolerance tests
- Explain the special precautions and types of equipment needed to collect arterial blood gases
- Differentiate cannulas from fistulas
- List the special requirements for collecting blood through intravenous (IV) catheters
- Differentiate therapeutic phlebotomy from autologous transfusion
- Describe the special precautions needed to collect blood in therapeutic drug monitoring (TDM) procedures
- Explain special considerations for blood donor collection procedures

URINALYSIS, BODY FLUIDS, AND OTHER SPECIMENS

- Identify body fluid specimens, other than blood, that are analyzed in the clinical laboratory, and identify the correct procedures for collecting and/or transporting these specimens to the laboratory
- Describe the correct methodology for labeling urine specimens
- Identify specimens collected for microbiological, throat, sputum, and nasopharyngeal cultures and the protocol that must be followed when transporting these specimens
- List the types of patient specimens needed for gastric and sweat chloride analysis
- List types of urine specimen collections and differentiate the uses of the urine specimens obtained from these collections
- Describe how to detect adulteration of urine specimens

DRUG USE, FORENSIC TOXICOLOGY, WORKPLACE TESTING, SPORTS MEDICINE AND RELATED AREAS

- Define toxicology and forensic toxicology
- Give five examples of specimens that can be used for forensic analysis
- Describe the function of a chain of custody, and the Custody and Control Form
- List examples of how blood alcohol contents is measured
- Describe at least three factors that affect testing for alcohol content

