PHLEBOTOMY

2022-2023
Grades: 12
Prerequisite(s): Introduction to Medical Laboratory & Health Sciences
Medical Health Science Systems & Structures
Medical Laboratory Techniques

Course Description

Description: The Phlebotomy course in year 4 is designed to teach the technical and procedural aspects of basic phlebotomy. Scholars will engage in both theory and hands-on activities in the areas of communication, medical terminology, proper specimen collection, basic anatomy & physiology, as well as complications and variables surrounding venipuncture. This course will provide scholars with the necessary study objectives necessary to take the Phlebotomy Technician Certification (CPT) Examination.

Course Units/Skills & Knowledge

This course is broken into 4 units:

UNIT 1: INTRODUCTION TO PHLEBOTOMY
UNIT 2: FUNDAMENTALS OF PHLEBOTOMY
UNIT 3: SPECIAL COLLECTIONS & NON-BLOOD SPECIMENS
UNIT 4: SPECIMEN HANDLING & PROCESSING

SEP	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE

Unit 1 Introduction to Phlebotomy	Unit 2 Fundamentals of Phlebotomy	Unit 3 Special Collections & Non-Blood Specimens	Unit 4 Specimen Handling & Processing

UNIT 1: INTRODUCTION TO PHLEBOTOMY

UNIT 1 UNDERSTANDINGS:

U1 The modern phlebotomist is a professional who is trained to draw blood and must display technical, organizational, and interpersonal skills to effectively perform a variety of tasks in various healthcare settings and ensure the patient's overall comfort and safety.

U2 Phlebotomists must be thoroughly aware of important legal issues as a healthcare provider as well as potential hazards in the workplace, and must perform tasks in a manner that keeps themselves and others safe.

U3 An understanding of human anatomy and physiology allows the phlebotomist to interact more knowledgeably with both patients and other healthcare professionals.

Knowledge	Skills
What knowledge will students learn as part of this unit? ***Students will know…*** ● The role of phlebotomy technicians in laboratory testing and patient care ● Professional behaviors, ethical standards, and personal characteristics of phlebotomists ● Key information about operational standards, laws, and regulations that impact phlebotomists and their healthcare setting ● Potential safety hazards, standard precautions, and procedures to insure safety of self and others ● Anatomical terminology and function along with major organs of each of the body systems	*What skills will students learn as part of this unit?* ***Students will be skilled at…*** ● Following hand hygiene guidelines ● Proper donning and removal of personal protective equipment ● Describing safety practices for hazards such as chemical, fire, or biohazardous material ● Describing infection prevention practices ● Describe common clinical laboratory information systems ● Describe professional communication skills that would ensure patient safety and comfort ● Maintaining laboratory and safety equipment logs

Back to Top

UNIT 1: PERFORMANCE TASK:

PERFORMANCE TASK: *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

Criteria to assess understanding: *(This is used to build the scoring tool.)* "Look Fors" Product: ● Thoughtfully takes the information from the multiple interviews and pares it down to its most important points, providing a concise narrative ● Analyzes the information learned from the interviews and carefully considers the implications of phlebotomists in patient care ● Addresses both positive takeaways and areas that need to be improved based on the trends heard in the interviews ● Creates a well organized and engaging talk, integrating technology and/or graphics to enhance understanding Self-Knowledge & Reflection: ● Fully articulates the thinking and learning processes and analyzes the value of the learning experience	**Performance Task focused on Transfer:** Goal: Your goal is to better understand the importance of phlebotomists in patient care by interviewing several individuals. Role: You are you, (potentially) a future phlebotomist. Audience: Your audience will be your peers. Situation: Phlebotomists are often the first medical professional a patient meets. Not only do they represent themselves, they represent the laboratory as well as the entire healthcare facility. The phlebotomist's technical, organizational, and interpersonal skills will set the tone for the patient's stay in the healthcare facility and/or the patient's satisfaction with the service the facility provides. **Product: A summary and reflection of several interviews that includes medical professionals and those not in healthcare, answering the EQ: How does a phlebotomist impact the care of a patient?**

Back to Top

UNIT 2: FUNDAMENTALS OF PHLEBOTOMY

UNIT 2 UNDERSTANDINGS:

U1 The circulatory system has a close relationship with the other body systems, transporting nutrients, wastes, hormones, enzymes, clotting factors, along with cellular and chemical defenses, allowing for blood tests to aid in diagnosing diseases that each body system is prone to.

U2 The steps and equipment for routine blood draws, both venipuncture and capillary collection, are designed to produce a blood sample quickly, accurately, and efficiently while considering the patient and ensuring the safety of both the patient and phlebotomist during the collection.

U3 Preanalytical variables, occurring before the sample is analyzed, include patient condition and behaviors, along with a wide variety of problems and complications that may arise in the course of routine blood draws.

Knowledge	Skills
What knowledge will students learn as part of this unit? ***Students will know…***	*What skills will students learn as part of this unit?* ***Students will be skilled at…***
• Manufacturer recommendations for laboratory equipment • Quality control and assurance procedures • The impact of pre-analytical errors on test results • Guidelines related to CLIA-waived tests • Medical terminology related to phlebotomy • Key information about blood and the cardiovascular system • Patient characteristics impacting communication • Requirements of requisition forms, patient identifiers, and consent • Variables that may impact collections and special considerations of patients • Key components of blood volume requirements, timing of draws, and testing requirements • Key information about blood collection devices and device selection • Evacuated tube colors, additives, department/tests, and order of draw for both venipuncture and capillary collection • Skin integrity, venous sufficiency, contraindications • Types of antiseptic agents and methods of application	• Defining medical terminology related to laboratory testing or blood sample collection • Adhering to laws, safety regulations and operational standards • Using aseptic and infection control techniques throughout the phlebotomy process • Performing quality control for laboratory equipment and CLIA-waived tests • Initiating first aid and CPR when necessary • Comply with documentation and reporting requirements • Communicating with team members and patients • Maintaining professional and ethical standards applicable to the practice of phlebotomy • Patient preparation and instructions for routine blood collections and CLIA-waived testing • Identify human anatomic structures such as veins, arteries or nerves at commonly used blood collection sites • Patient position and selection criteria • Selecting and assembling equipment • Demonstrate standard venipuncture and dermal puncture blood draws

Back to Top

• Standard procedures for venipuncture and dermal puncture blood draws • Potential complications during blood draw • Acceptable adjustments for establishing blood flow • Bandaging procedures and considerations • Labeling procedures and requirements • Post-procedural complications and precautions	• Identify supplies required for blood sample collection • Ensuring patient comfort and safety throughout the collection • Recognizing and responding to potential complications • Describe the pre-examination factors that affect specimen integrity

UNIT 2 PERFORMANCE TASK:

PERFORMANCE TASK: *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

Criteria to assess understanding: *(This is used to build the scoring tool.)* "Look Fors" Product: • Properly greets and identifies the patient using at least 2 unique identifiers • Gain consent and gather required equipment • Adequately follow procedures to locate an acceptable vein • Properly cleanse the site and obtain blood sample, filling tubes according to proper order of draw • Appropriately ends the draw and handles tubes according to standards • Follows all safety precautions • Properly dons and doffs PPE • Makes adjustments as necessary for blood flow and recognizes areas that would not be suitable for draws Self-Knowledge & Reflection: • Fully articulates the thinking and learning processes and analyzes the value of the learning experience	**Performance Task focused on Transfer:** Goal: Your goal is to demonstrate proper venipuncture technique. Role: You are you, (potentially) a future phlebotomist. Audience: Your audience will be your patient and a judge. Situation: Phlebotomy is the art of drawing blood and the main job of a phlebotomist is to obtain blood samples. Blood is collected from veins by inserting a needle attached to a collection device. It involves highly developed and rigorously tested procedures and equipment, all meant to ensure the safety and comfort of the patient and the integrity of the sample collected. **Product: Skillful performance (90% or higher) of a routine venipuncture in front of a judge.**

Back to Top

UNIT 3: SPECIAL COLLECTIONS & NON-BLOOD SPECIMENS

UNIT 3 UNDERSTANDINGS:

U1 Although routine venipuncture is the most common procedure a phlebotomist will perform, special collection and/or handling procedures are needed in many situations for samples that involve one or more special circumstances.

U2 Since non-blood specimens cna provide valuable information about a patient's health or disease state, modern phlebotomists rarely just collect blood. They are also called on to collect non-blood samples, assist other healthcare professionals in doing so, or instruct patients regarding the procedures for collecting or handling such specimens.

Knowledge	Skills
What knowledge will students learn as part of this unit? ***Students will know…***	*What skills will students learn as part of this unit?* ***Students will be skilled at…***
• Key information about peripheral blood smears • Key information about blood culture collections • Equipment and transfer procedures needed when assisting other healthcare professionals with specimen collection • Techniques to collect blood on filter paper/Guthrie cards • Skin preparation for blood alcohol level collection • Chain of custody guidelines • Standards for blood donation • Pediatric volume calculations • Key information and procedures for fasting and timed specimens • Key information and procedure for arterial blood collection • Equipment and techniques for performing non-blood specimen collection • Medical vocabulary related to special blood and non-blood collections and procedures	• Preparing peripheral blood smears • Performing blood culture collections • Assisting other healthcare professionals with specimen collection • Collect blood samples for inborn errors of metabolism • Following the chain of custody guidelines when required • Performing phlebotomy for blood donations • Calculating volume requirements in patients who are at higher risk to avoid causing iatrogenic anemia • Performing Modified Allen Test • Perform non-blood specimen collection such as throat cultures, nasal swab, wound cultures • Following appropriate handling of samples that involve special circumstances

Back to Top

UNIT 3: PERFORMANCE TASK:

PERFORMANCE TASK: *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

Criteria to assess understanding: *(This is used to build the scoring tool.)* "Look Fors" Product: ● Properly greets and identifies the patient using at least 2 unique identifiers ● Explains procedure and gains consent ● Gathers required equipment ● Adequately follows procedures to collect sample and/or provides appropriate instructions to the patient ● Follows proper handling procedures to maintain sample integrity, which could include sample temperature, light exposure, delivery speed, or legal documentation ● Follows all safety precautions, including the use of PPE Self-Knowledge & Reflection: ● Fully articulates the thinking and learning processes and analyzes the value of the learning experience	**Performance Task focused on Transfer:** Goal: Your goal is to demonstrate proper collection and handling of special blood collections and non-blood specimens. Role: You are you, (potentially) a future phlebotomist. Audience: Your audience will be a small group of individuals that include patients and judges. Situation: Phlebotomists must be aware of the special collecting and/or handling procedures for samples that involve one or more special circumstances as well as how to collect and handle or instruct patients in obtaining non-blood specimens. You have several patients that have arrived at your facility. You must care for each patient and follow standard procedures for the tests that have been ordered. **Product: Proficient performance of collecting and handling several special circumstance specimens and/or non-blood samples.**

Back to Top

UNIT 4: SPECIMEN HANDLING & PROCESSING

UNIT 4 UNDERSTANDINGS:

U1 Since analytes may change in composition and concentration over time, proper handling of specimens after collection is critical to ensure the accuracy of the test results obtained from them.

U2 Processing specimens includes assessing the acceptability of the specimen and a series of preanalytical steps before being distributed to the appropriate department for testing.

Knowledge	Skills
What knowledge will students learn as part of this unit? ***Students will know…***	*What skills will students learn as part of this unit?* ***Students will be skilled at…***
• Key information about specimen handling, storage, transportation and disposal • Common analytes that require light protection • Common analytes that require specific temperature • The safety equipment used when processing samples • Internal and external databases • Critical values for point-of-care testing • Chain of custody guidelines • Basic protocol to distribute laboratory results • Laboratory requirements for common tests • Medical vocabulary related to specimen handling and processing • Principle of centrifugation • Reasons for specimen rejection • Key features of quality phlebotomy	• Adhering to laws, safety regulations and operational standards • Using aseptic and infection control techniques throughout the specimen handling and processing procedure • Comply with documentation and reporting requirements • Preparing specimens while maintaining integrity for transport or testing • Centrifuging procedures and techniques • Aliquoting procedures and techniques • Recognize and report critical values for point-of-care testing • Following the chain of custody guidelines when required • Coordinating communication between non-laboratory personnel for collection and processing of samples • Input and retrieve specimen data using available laboratory information system • Distributing laboratory results to ordering providers

UNIT 4 PERFORMANCE TASK:

Back to Top

PERFORMANCE TASK: *How will students demonstrate their understanding (meaning-making and transfer) through a complex performance task?)*

Criteria to assess understanding: *(This is used to build the scoring tool.)* "Look Fors" Product: ● Ensure that specimens are properly labeled with requisition ● Evaluate all specimens for acceptability before further processing ● Follow all safety protocols, including the use of PPE and careful stopper removal to minimize aerosols, during handling and processing of specimens ● Follow standard protocols to maintain specimen integrity for transport or testing ● Spin and/or aliquot specimens as necessary ● Deliver samples to appropriate laboratory Self-Knowledge & Reflection: ● Fully articulates the thinking and learning processes and analyzes the value of the learning experience	**Performance Task focused on Transfer:** Goal: Your goal is to demonstrate proper handling and processing of specimens. Role: You are you, (potentially) a future phlebotomist/ laboratory specimen processor. Audience: Your audience will be a small group of laboratory staff (judges). Situation: Proper handling and processing of specimens after collection is critical to ensure the accuracy of the test results. The best collection or drawing technique in the world is meaningless if the sample is not transported or processed according to established guidelines. Specimen handling and processing are critical areas for quality phlebotomy with phlebotomists and other laboratory staff having almost complete control over the variables that arise. **Product: Proficient processing of rack of specimens.**

Back to Top