

MLT-1300: INTRODUCTION TO BLOOD COLLECTION

Cuyahoga Community College

Viewing: MLT-1300 : Introduction to Blood Collection

Board of Trustees:

March 2019

Academic Term:

Fall 2021

Subject Code

MLT - Medical Laboratory Technology

Course Number:

1300

Title:

Introduction to Blood Collection

Catalog Description:

Introduction to theory and practice of phlebotomy. Principles of aseptic technique and familiarity with phlebotomy equipment. Performance of venipunctures and capillary punctures. Universal precautions and safety of phlebotomist and patient are strictly enforced.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

3

Other Hour(s):

0

Requisites

Prerequisite and Corequisite

ENG-0995 Applied College Literacies, or appropriate score on English Placement Test to enroll in ENG-1010 College Composition I, and MATH-0955 Beginning Algebra or appropriate score on Math Placement Test to enroll in College-level Mathematics, and departmental approval: admission to Health Career/Nursing program.

Note: ENG-0990 Language Fundamentals II taken prior to Fall 2021 will also meet prerequisite requirements.

Outcomes

Course Outcome(s):

Demonstrate knowledge of the health care delivery system and medical terminology.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Identify the health care providers in hospitals and clinics and the phlebotomist's role as a member of this health care team.
2. Describe the various hospital departments and their major functions in which the phlebotomist may interact in his/her role.
3. Describe the organizational structure of the clinical laboratory department.
4. Discuss the roles of the clinical laboratory personnel and their qualifications for these professional positions.
5. List the types of laboratory procedures performed in the various departments of the clinical laboratory department.
6. Describe how laboratory testing is used to assess body functions and disease.
7. Define medical terminology commonly used in the laboratory.

Course Outcome(s):

Demonstrate knowledge of infection control and safety.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Identify policies and procedures for maintaining laboratory safety.
2. Identify and discuss the modes of transmission of infection and methods for prevention.
3. Identify and properly label biohazard specimens.
4. Describe safety measures that should be followed at all times by a phlebotomist when collecting a patient's specimen.
5. Describe the electrical, radiation, and biological hazards and fire safety procedures used in the hospital, including the clinical laboratory.
6. Discuss universal precautions as outlined by the Centers for Disease Control (CDC).
7. Discuss and perform proper infection control techniques, such as hand washing, gowning, gloving, masking, and double bagging.
8. Define and discuss the term "nosocomial infection"

Course Outcome(s):

Demonstrate the basic understanding of the anatomy and physiology of body systems and anatomic terminology in order to relate major areas of the clinical laboratory to general pathologic conditions associated with the body systems.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Describe the basic functions of each of the main body systems with emphasis on the cardiovascular system.
2. Identify parts of the body according to their proximity to one of the body planes.
3. Identify the veins of the arms, hands, legs, and feet on which venipuncture is performed.
4. Explain the functions of the major constituents of blood and differentiate between serum and plasma.
5. Define hemostasis and explain the basic process of coagulation and fibrinolysis.
6. Discuss the properties of arterial blood versus venous blood and describe the differences in collection methods.

Course Outcome(s):

Demonstrate an understanding of the importance of specimen collection in the overall patient care system.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Describe the legal and ethical importance of proper patient/sample identification.
2. Describe the types of patient specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.
3. Identify laboratory tests ordered by the standard abbreviations currently in use.
4. List the general criteria for suitability of a specimen for analysis.
5. Explain the importance of timed, fasting, and stat specimens.

Course Outcome(s):

Demonstrate knowledge of collection equipment, various types of additives used, special precautions necessary, and substances that can interfere in clinical analysis of blood constituents.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Identify the various types of additives used in blood collection and explain the reasons for their use.
2. Identify the vacuum tube color codes associated with the additives.
3. Describe substances that can interfere in clinical analysis of blood constituents and ways in which the phlebotomist can help avoid these occurrences.
4. List and select the types of equipment needed to collect blood by venipuncture and capillary puncture.
5. Identify special precautions necessary during blood collections by venipuncture and capillary puncture.
6. List the supplies that should be carried on a phlebotomist's cart and/or tray.

Course Outcome(s):

Demonstrate proper techniques to perform venipuncture and capillary puncture.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Identify potential sites for venipuncture and capillary puncture.
2. Differentiate between sterile and antiseptic technique.
3. Describe and demonstrate the steps in the preparation of a puncture site.
4. List the effect of tourniquet, hand squeezing, and heating pads on capillary puncture and venipuncture.
5. Recognize proper needle insertion and withdrawal techniques including direction, angle, depth and aspiration.
6. Describe and perform the correct procedure for capillary collection method on infants and adults.
7. List the circumstances that would lead to recollection or rejection of a patient sample.
8. Identify alternate venipuncture collection sites and describe the limitation and precautions of each.
9. Name and explain frequent causes of phlebotomy complications.
10. Describe signs and symptoms of physical problems that may occur during blood collection.
11. List the steps necessary to perform a venipuncture and/or capillary puncture in chronological order.
12. Select the correct vacutainer tubes for the tests indicated and follow the correct order of draw when performing venipuncture and capillary puncture.
13. Perform 10 competent/effective venipunctures in the classroom setting on a fellow classmate.
14. Perform 5 competent/effective capillary punctures in the classroom setting on a fellow classmate and demonstrate the ability to fill a microtainer and microhematocrit tube.

Course Outcome(s):

Demonstrate understanding of requisitioning, specimen transport and specimen processing.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Describe the laboratory criteria for identifying an appropriate request for specimen collection.
2. Relate legal responsibilities of the laboratory and phlebotomist to the physician's requests for all specimen collection and testing.
3. Explain methods for processing and transporting blood specimens for routine and special testing within the hospital.
4. Explain methods for processing and transporting blood specimens for testing at reference laboratories.
5. Describe the potential clerical and technical errors that may occur during specimen processing.
6. In regards to processing and transporting of blood specimens, describe the general effects of time on quality and patient care.
7. Describe the conditions that must be met if blood specimens and laboratory tests are to be used as legal evidence.

Course Outcome(s):

Demonstrate an understanding of quality assurance in phlebotomy.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Describe the system for monitoring quality assurance in the collection of blood specimens.
2. Identify policies and procedures used in the clinical laboratory to assure quality in obtaining blood specimens.

Course Outcome(s):

Demonstrate an understanding of the basic concepts of communication, personal and patient interaction, stress management, professional behavior, and the legal implications of this work environment.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Discuss and explain the importance of maintaining patient confidentiality.
2. Describe the proper manner for greeting and interacting with a patient.
3. Explain the major points in interviewing a patient or a patient's representative in preparation for obtaining specimens.
4. Describe instructions to be given to patients in preparation for routine blood collection.
5. Describe and discuss techniques for dealing with family and visitors during the blood specimen collection.
6. Describe and discuss the major points of the Patient's Bill of Rights as it applies to clinical laboratory personnel.
7. Discuss the importance of appearance and grooming for phlebotomists.
8. Define the different terms used in the medico-legal aspect for phlebotomy, and discuss policies and protocol designed to avoid medico-legal problems.
9. List the causes of stress in the work environment, and discuss the coping skills used to deal with stress in the work environment.
10. Discuss and explain basic concepts of communication.

Methods of Evaluation:

1. Homework
2. Written lecture and lab finals
3. Lecture and lab quizzes
4. Lecture exams
5. Practical phlebotomy competency evaluations

Course Content Outline:

1. Universal precautions and lab safety
2. Body systems
3. Hospital departments
4. Medical specialties
5. Symbols and abbreviations
6. Laboratory departments and tests
7. Quality control and quality assurance
8. Identification of the patient and specimen
9. Vacuum tubes and additives
10. Butterflies
11. Microtainers
12. Needles and lancets
13. Capillary collection
14. Arterial vs. venous phlebotomy
15. Blood composition
16. Hemostasis
17. Phlebotomy
18. Proper processing and storage of samples
19. Problem solving with knowledge of pre-analytical factors

Resources

Garza, D., and K. Becan McBride. *Phlebotomy Handbook, Blood Specimen Collection from Basic to Advanced*. 9th. Upper Saddle River, NJ: Pearson, 2015.

McCall, Ruth and Tankersley, Cathee. *Phlebotomy Essentials*. 6th. Baltimore: Walters Kluwer/LWW, 2016.

McCall, Ruth and Tankersley, Cathee. *Phlebotomy Exam Review*. 6th. Philadelphia: Wolters Kluwer , 2016.

McCall, Ruth and Tankersley, Cathee. *Student Workbook for Phlebotomy Essentials*. 6th. Philadelphia: Wolters Kluwer , 2016.

Schaub DiLorenzo, Marjorie and King Strasinger, Susan. *Blood Collection: A Short Course*. 3rd. Philadelphia: F.A. Davis, 2016.

Warekois, Robin and Robinson, Richard. *Phlebotomy Worktext and Procedures Manual*. 4th. St. Louis: Elsevier , 2016.

Resources Other

Reference Articles from the following periodical publications:

Advance For Medical Laboratory Professionals
Clinical Laboratory Science
Laboratory Medicine
Medical Laboratory Observer (MLO)

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