ARROWHEAD REGIONAL MEDICAL CENTER
The Heart of a Healthy Community™

400 N. Pepper Avenue, Colton, California 92324-1819 | Phone: 909.580.0015
www.arrowheadregional.org

SCHOOL OF MEDICAL TECHNOLOGY
PROSPECTIVE STUDENT INFORMATION

Please Note: The requirements and information on this page are **subject to change**. This information is updated immediately at the close of each application cycle. It is the responsibility of the applicant to ensure they are current with the requirements for the specific cycle in which they are applying.

The Profession

Clinical Laboratory Scientists (also known as Medical Laboratory Scientists) are highly trained professionals who leverage their extensive academic and applied science education to deliver essential services and research within healthcare, particularly the clinical laboratory.

Their comprehensive role includes:

- Developing, performing, analyzing, and interpreting laboratory tests.
- Troubleshooting instruments and ensuring the accuracy and validity of information across all testing phases (pre-analytical, analytical, and post-analytical).
- Managing regulatory compliance, quality assurance, and performance improvement.
- Educating colleagues and other healthcare professionals.

Success in this field requires excellent writing and verbal communication skills, the ability to work reliably, quickly, and carefully under pressure, and the highest level of ethical and moral principles to maintain the confidence of patients, healthcare professionals, and the community.

The Medical Center

Arrowhead Regional Medical Center (ARMC) traces its roots back to 1862 as the San Bernardino County Medical Center. In 1999, the facility was relocated and was officially renamed ARMC. It is a modern 456-bed acute care teaching hospital.

ARMC is deeply committed to educating the next generation of healthcare professionals. It serves as a vital training site for:

- Medical Students and Residents
- Nurses, Nurse Practitioners, and Certified Nurse Anesthetists
- Physician's Assistants
- Radiology Technicians
- Clinical Laboratory Scientists

ARMC provides a full spectrum of healthcare services, covering the diverse needs of the community:

- Primary and Specialty Care
- Trauma, Stroke and Emergency Services
- Ancillary and Home Health Services
- Behavioral Health
- A Comprehensive Women's and Children's Health Program

The facility also houses the region's only major **Burn Center** serving a four-county area.

The Program

The School of Medical Technology at Arrowhead Regional Medical Center (ARMC) operates directly within the hospital's Clinical Laboratory.

Since the program's re-accreditation in 2007, our students have achieved outstanding results: 100% Pass Rate on the American Society for Clinical Pathology Board of Certification (ASCP BOC) examination, 100% Graduation Rate, and 100% Placement Rate in the field.

Students gain diverse and valuable experience due to the Clinical Laboratory performing millions of tests annually.

The quality of both the training environment and the program itself is rigorously maintained through multiple accreditations:

- Clinical Laboratory Accreditation: Accredited by the College of American Pathologists (CAP) and the California Department of Public Health (CDPH).
- Program Accreditation: Accredited by the California Department of Public Health, Laboratory Field Services (CDPH-LFS) and the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

NAACLS contact information: 5600 N River Road, Ste. 720, Rosemont, IL, 60018-5119. Phone: (772) 714-8880; www.naacls.org.

Program Outcomes

2025 –100% of our students graduated, 100% pass rate for ASCP BOC exam, and 100% placement rate.

2024 –100% of our students graduated, 100% pass rate for ASCP BOC exam, and 100% placement rate.

2023 –100% of our students graduated, 100% pass rate for ASCP BOC exam, and 100% placement rate

Program Mission

To provide an exceptional learning environment dedicated to producing highly professional, accurate, and reliable clinical laboratory scientists who deliver **high-quality, compassionate healthcare** to the community.

Program Goals

The program aims to develop highly capable clinical laboratory scientists who can progressively demonstrate the ability to investigate, evaluate, troubleshoot, and execute sophisticated procedures. Our graduates are trained to exercise independent judgment in their work and to serve as essential consultants to other members of the healthcare team.

Program Objectives

Upon graduation, students will be able to demonstrate the following entry-level competencies across three main domains: Technical Skills, Critical Thinking & Quality Management, and Professionalism.

Technical Skills & Testing Proficiency

1. Establish protocols for the proper collection and processing of biological specimens.
2. Display comprehensive knowledge of testing procedures, including the theoretical basis, applications, and limitations of methodologies in all laboratory areas.
3. Perform and evaluate analytical tests on body fluids, cells, and products with proficiency and accuracy.
4. Calculate and interpret test results from laboratory data, including statistical analysis for quality assurance, and institute procedures to maintain accuracy and precision.

Critical Thinking & Quality Management

5. Correlate laboratory findings with a patient's pathophysiology.
6. Evaluate generated data for possible discrepancies and confirm abnormal results.
7. Investigate and troubleshoot common laboratory problems, including identifying solutions for equipment malfunctions, quality assurance issues, unacceptable specimens, safety concerns, and management problems across all lab sections.
8. Recommend and evaluate the usefulness and practicality of new techniques, instruments, and procedures within the constraints of the laboratory's resources (personnel, budget, and space).

Professionalism & Communication

9. Exhibit professional conduct and strong interpersonal communication skills when interacting with patients, peers, and other healthcare professionals.
10. Motivate and support peers and support personnel in their professional development, knowledge, and skill acquisition.
11. Commit to quality patient care and actively participate as a collaborative member of the healthcare team.
12. Expand professional competence by engaging in continuing education activities and maintaining membership in professional organizations.

CONTACT INFORMATION

Please send correspondence, applications, and program inquiries to:

May Orf
Program Director
Arrowhead Regional Medical Center
Department of Laboratory Medicine, School of Medical Technology
400 North Pepper Avenue
Colton, CA 92324-1819

(909) 580-0069
orfmay@armc.sbcounty.gov

ADMISSION REQUIREMENTS

Academic requirements:

Applicants must satisfy all the academic requirements of the National Accrediting Agency for Clinical Laboratory Science (NAACLS), and Arrowhead Regional Medical Center's School of Medical Technology program specific prerequisites.

1. **BACCALAUREATE DEGREE** from a United States accredited college/university (or evaluated foreign equivalent) which includes the following coursework:

   Chemistry: 16 semester (24 quarter) units. This must include at least quantitative chemistry or analytical chemistry and biochemistry or clinical chemistry is accepted.

   Biological Science: 18 semester (27 quarter) units. This must include at least hematology, immunology, medical microbiology, microbiology laboratory, genetics, and human physiology.

   Physics & Math: 3 semester (4.5 quarter) units

   Statistics: Statistics or Biostatistics

The courses in chemistry and the biological sciences must be acceptable toward a major in those fields, or equivalent. Survey or remedial courses do not qualify as prerequisites.

Recommended, but not required, courses include human anatomy, molecular biology, parasitology, medical mycology, virology, medical terminology, urinalysis & body fluids, education/management courses, and computer science.

We consider applicants with a minimum cumulative grade point average (GPA) of 2.7 based on A = 4.

If your college degree was granted three or more years prior to submitting your application, your academic requirements must be updated. To fulfill this requirement, you must successfully complete a minimum of two prerequisite courses (in Chemistry or Biological Science) within three years of the application date.

Coursework must be completed by the December before the commencement of the program, or your application will not be considered for that year. *For example, if applying for August 2027 class, a completed application due October 31, 2026, but a final grade for courses in progress must be completed by December 31, 2026, to be counted towards that cycle.*

*Transcript and Verification Process***:** Official transcripts must be sent directly from the academic institution to the Program for verification of all prerequisite coursework and degree conferral.

If a transcript does not clearly name a specific required course, the following steps must be taken:

- Departmental Letter: An official letter from the Chair of the relevant academic Department must be provided.
- Content Verification: This letter must explicitly verify the course content matches the program's prerequisite requirements.
- Submission: The departmental letter must be submitted in addition to the official transcript.
  All supplementary documentation and transcripts are subject to final approval by the Admissions Committee.

Recommended Submission Method Electronically: We highly recommend that all application documents, including official transcripts and letters of reference, be submitted electronically. Electronic submission facilitates easy tracking of delivery and receipt.

Electronic Submission Requirements:

- Documents should be sent directly from the originating source (e.g., the institution or the recommender).
- Letters of reference should be provided on official letterhead.

Alternate Submission Method: Postal Mail

Postal mail submissions are accepted, provided they are also mailed directly from the originating source (e.g., the registrar's office or the recommender).

2. **CALIFORNIA CLINICAL LABORATORY TECHNOLOGIST TRAINEE'S LICENSE**

This license is required for training and must remain active for the duration of the program. The application for the trainee's license must be completed online at CDPH CLS Trainee License. The current fee will be listed on the website.

Students should apply for their Trainee License early, as it is a required condition for an official offer of admission to the Program, though it is not needed to submit the initial application.

Official transcripts must be submitted from the academic institution directly to Laboratory Field Services **. If the transcript does not contain the specific courses listed for the "instruction in", the Chair of the Department may write an official letter verifying the course content. This letter must be submitted in addition to the transcript to satisfy the state requirements for licensure.

Laboratory Field Services - CLS Trainee Program
850 Marina Bay Parkway, Bldg. P 1st Floor
Richmond, CA 94804
(510) 620-6403 or (510) 620-3800

Those students who have completed their education in a foreign country and will not be awarded a U.S. baccalaureate degree are required to submit a transcript evaluation verifying U.S. baccalaureate degree equivalency.

CDPH - LFS will accept educational transcript evaluations completed by "Current Members" of the National Association of Credential Evaluation Services (NACES), and "Endorsed Members" of the Association of International Credential Evaluators, Inc. (AICE).

Evaluations AACRAO will be accepted only if completed before August 15, 2016. Please use the links below to view the "Current" and "Endorsed" members of NACES and AICE.

http://www.naces.org/members.html

http://aice-eval.org/members/

** These transcripts must be submitted separately from those submitted to the Program. CDPH Lab Field Services will perform their evaluations to grant a Trainee's License.

APPLICATION PROCESS

The program accepts 3 students annually.

Applications should be submitted between May 1 and October 31, 2026, for the August 2027 class.

Application requirements:

1. The ARMC School of Medical Technology application file must include all the following:

   A. A completed application packet to this program, including resume and personal statement or letter or intent.

      Application packet can be obtained by email: orfmay@armc.sbcounty.gov during the application dates listed above.

   B. Official college transcript(s) for all coursework to be submitted. Verification of a Baccalaureate degree and academic requirements will be conducted.

   C. Two letters of recommendations: Applicants must submit two letters of recommendation. These should address the applicant's academic or professional abilities, experience, proficiency, and integrity. No form is provided; the letter format is at the recommender's discretion. The letter must be submitted on letterhead or sent directly from an official email address of the institution or organization.

      References can be mailed or emailed to May Orf orfmay@armc.sbcounty.gov

   D. The California State Trainee's license number or date that application for trainee's license was submitted. See additional information for California Clinical Laboratory Technologist Trainee's License on page 5 for specific requirements.

2. An interview will be necessary prior to selection. If the number of student applications is large, not all applicants will be interviewed. Applicants will be notified if an interview is requested.

Student Selection:

Applicants will be interviewed in February for the August class with acceptance notification via email and/or mail in March. A written (email or paper) reply of acceptance is required within two weeks of notification/receipt of the offer for the student position.

The School of Medical Technology is non-discriminatory with respect to race, color, creed, age, gender, or national origin in the recruitment of students.

The Admissions Committee evaluates and ranks candidates based on the following criteria:

- Completion of all requirements outlined in the application.
- Cumulative Grade Point Average (GPA), with a minimum requirement of at least 2.7.
- Prerequisite Coursework GPA, with a minimum requirement of at least 3.0.
- GPA Trend, noting whether the student's GPA improved over time.
- Work Experience (particularly experience related to clinical laboratories).
- Letters of Recommendation/References.
- Personal Statement or Letter of Intent.
- Motivation and Institutional Fit (as assessed during interviews).
- Effective communication (both written and verbal) in English.

ESSENTIAL FUNCTIONS

Students must be able to achieve the observational, physical, communication, intellectual and behavioral function listed below in such a way that they will not endanger themselves, other students, laboratory and hospital employees or patients.

Essential Observational Requirements:

a. Observe laboratory demonstrations in which biologicals are tested for their biochemical, immunological, microbiological, and hematological components.
b. Characterize the color, odor, clarity and viscosity of biologicals, reagents, or chemical reaction products.
c. Employ a binocular microscope to discriminate among the structural components and color (hue, shading and intensity) of different microscopic specimens.
d. Read and comprehend text, numbers and graphs displayed in print and on a video monitor.

Essential Physical Requirements:

a. Move freely and safely around the laboratory.
b. Reach laboratory work surfaces and shelves, patients lying in hospital beds or seated in specimen collection furniture.
c. Perform moderately taxing continuous physical work, often requiring prolonged sitting or standing over several hours.
d. Maneuver phlebotomy equipment to safely collect appropriate laboratory specimens from patients.
e. Control laboratory equipment (i.e., pipettes, inoculating loops, test tubes) and adjust instruments to perform laboratory procedures.
f. Use electronic keyboards to operate laboratory instruments and to calculate, evaluate, and transmit laboratory data.

Essential Communication Requirements:

a. Read and comprehend technical and professional materials.
b. Follow written and verbal instruction to perform laboratory procedures correctly and independently.
c. Clearly instruct patients prior to specimen collection.
d. Communicate with faculty members, fellow students, staff, and other health care professionals.
e. Prepare and take paper, computer, and laboratory practical exams.

Essential Intellectual Requirements:

a. Possess the intellectual skills of comprehension, measurement, mathematical calculation, reasoning, integration, analysis, comparison, self-expression, and criticism.
b. Exercise sufficient judgment to recognize and correct performance.

Essential Behavioral Requirements:

a. Manage use of time and organize actions to complete professional and technical tasks within realistic time constraints.
b. Possess the emotional health necessary to effectively employ intellect and exercise appropriate judgment.
c. Provide efficient professional and technical services while experiencing the stresses of heavy workload and a distracting environment.
d. Display flexibility and creativity to adapt to professional and technical change.
e. Recognize potentially hazardous materials, equipment and situation and proceed safely to minimize risk of injury to patients, self, and nearby people.
f. Adapt to working with unpleasant biologicals.
g. Support and promote the activities of fellow students and other health care professionals.
h. Display honesty, compassion, ethics, and responsibility. The student must be forthright about errors or uncertainty.
i. Critically evaluate his/her own performance, accept constructive criticism, and look for ways to improve.
j. Evaluate the performance of fellow students and tactfully offer constructive comments.

Other Student Policies (such as student rules and causes for dismissal) are available upon request from the Program Director**.**

FINANCES & HEALTH

No tuition is charged. No financial aid is available.

A list of required texts will be provided to students for purchase upon acceptance into the program. A subscription to Media Lab's Exam Simulator and Case Simulators will be required upon acceptance into the program.

Additional reference textbooks are available for loan as needed during the student year.

Students (lab interns) are employees of the County of San Bernardino and are paid for 40 hours per week, no less than the current minimum wage for the State of California. Vision, dental and medical insurance are available.

A pre-employment physical, drug screen and background check are required. This is paid for and scheduled by the County of San Bernardino.

Acceptance as a student is contingent upon passing the physical, drug screen and background check.

PROGRAM STRUCTURE AND EXPECTATIONS

Program Structure: The training is an intensive **12-month, 40-hours-per-week** commitment. Students rotate through all areas of the clinical laboratory, gaining exposure to every discipline of laboratory medicine.

- **Instruction:** Training involves a blend of **lectures (5–7 hours per week)** and applied clinical experience.
- **Clinical Experience:** Students gain hands-on skills by working **one-on-one** with experienced Clinical Laboratory Scientists during rotations.
- **Format:** The Program is **100% in-person**; we do not offer hybrid or distance learning options.

Attendance and Academics: Class attendance is mandatory. Students receive reading assignments and are evaluated on both lecture material and applied clinical performance. The program maintains detailed records of each student's progress.

Leave and Absences: Sick leave is available, but students must immediately inform the Program Director and applied clinical instructors of any absences. **Missed Work:** Students are responsible for making up any missed lecture material and/or exams. **Documentation:** Abuse of leave, absence on an exam day, or extended sick leave may require the student to produce a physician's excuse for any subsequent absence.

Outside Employment: Due to the rigorous nature of the curriculum, students must dedicate significant daily time to studies. Outside employment is strongly advised against to ensure successful completion of the Program.

The program recognizes the following holidays: Martin Luther King, Presidents Day, Memorial Day, Juneteenth, Fourth of July, Labor Day, Columbus Day, Veteran's Day, Thanksgiving (2), Christmas Eve, Christmas, New Year's Eve, New Years Day. If the holiday falls on a weekend, the school will observe ARMC'S designated holidays.

EVALUATIONS

1. Didactic evaluations are noted on individual course syllabi. Graded evaluations will be returned within one week of completion. Students must receive a cumulative score of 70% or better to pass.

2. Applied clinical rotations are evaluated based upon satisfactory achievement of psychomotor (performance), affective (valuing) and cognitive (knowledge) objectives. Details are noted in individual syllabi. Students must receive a cumulative score of 70% or better to pass.

3. A student's final grade for a given course is based on:
   50% didactic evaluations (exams, homework, quizzes, worksheets etc.)
   50% clinical evaluations, which includes psychomotor, cognitive, and affective objectives.
   Details are given in individual course syllabi.
   A= 90-100%
   B= 80-89%
   C= 70-79%
   Below 70% is considered failing.

4. Students must pass (70%) both the didactic and applied clinical portion of each course (Education and Management are didactic only) in the curriculum.

5. Final grade is for each course is maintained in the student's permanent record.

6. It is essential that anyone considering a career in the healthcare field demonstrate honesty and integrity in their academic and professional life. Therefore, cheating will not be tolerated and is ground for immediate dismissal from the Program.

Criteria for Progression and Completion of the Program

Students who meet the minimum stated levels of academic achievement, applied clinical performance and affective behaviors will progress and complete the program.

If unsatisfactory scores are obtained on an exam:

1. The student will have only two opportunities to retake exams in which they have not scored higher than 70% in each subject area. Retake exam scores will be averaged with the initial score to determine the value used to calculate the cumulative average.
   a. Counseling will be scheduled with the Program Director prior to the retake exam.
   b. An improvement program may be implemented for the student.

2. If a student's cumulative evaluation average falls below 70% in a subject area, the student will be placed on academic probation.
   a. A conference will be scheduled with the Program Director.
   b. An improvement program will be implemented for the student and monitored.
   c. The student will be dismissed from the program if s/he fails to demonstrate the required improvements discussed in the conference.

3. A student will be dismissed from the program if their final cumulative average for a given didactic or applied clinical rotation is below 70%.

Gross misconduct will be grounds for immediate dismissal on the first offense. The definition of gross misconduct is consistent with the personnel rules and human resource policies for ARMC employees.

Withdrawal from the program:

Students in Arrowhead Regional Medical Center's School of Medical Technology may elect to withdraw from the program at any time by submitting written notification of withdrawal to the Program Director stating the

reason for withdrawal. A School of Medical Technology Withdrawal Form can be obtained from the Program Director.

The Program Director will request an exit conference with the student to:

1. Assure that the student's request for withdrawal does not arise from a resolvable issue.
2. Complete any necessary paperwork (separation report and employee position transaction form).
3. Turn in any Program equipment or materials that the student may have in their possession.
4. The Withdrawal Form will be placed in the student's file.

GRADUATION AND CERTIFICATION

Arrowhead Regional Medical Center presents a certificate to the student upon satisfactory completion of the entire program (36 credit hours). The granting of the certificate is not contingent upon passing an external certification exam. The graduate is now eligible to take a certifying examination approved by the State of California and/or the certification examination of the national ASCP Board of Certification for Medical Laboratory Scientists.

CLINICAL AND DIDACTIC FACULTY

Program Director: May Orf MS, CLS-CA, MLS(ASCP)^{CM}

IMMUNOHEMATOLOGY (5.0 hours) *May Orf MS, MLS(ASCP)^{CM}*

History of transfusion. Fundamentals of blood group immunology/genetics. Study of major blood group systems, pre-transfusion testing and antibody identification techniques. Hemolytic disease of the newborn. Blood collection, donor testing and component preparation in the donor facility. Transfusion practices for blood and blood products. Transfusion reactions, transfusion transmitted diseases and medicolegal aspects of transfusion.

CHEMISTRY (7.0 hours) *Rachelle Wiggan PhD, CLS, MLS(ASCP), Tiffany Cudog MLS(ASCP)^{CM} ,*

Ghada Alfredf MLS(ASCPi) ^{CM}

Equipment and methodologies used in the analysis of specific chemicals found in the body. Calculations used in clinical chemistry. Clinical chemistry methodologies and clinical significance with focus on fluids and electrolytes, acid-base balance, renal function, lipoproteins, lipids, cardiovascular disease, liver, and gastric function, pancreatic, thyroid, adrenal, pituitary, tumor markers, maternal and fetal development, therapeutic drug monitoring and toxicology. Analysis of body fluids and plasma constituents and serum protein electrophoresis.

HEMATOLOGY / COAGULATION / URINALYSIS (8.0 hours) *Billie Burch MT(ASCP), Kevin Onate, MS, MLS(ASCP)^{CM}, Sura Al Saffar, MLS(ASCP)^{CM}, and Carly Horn MLS(ASCP)^{CM}*

Examination of normal hematologic physiology, hematopoiesis, and hemostasis. Introduction to quality control and quality assurance. Theory and background of laboratory procedures used in diagnosis and treatment of hematologic and other diseases. Discussion of red cell, white cell, platelet, and hemostatic disorders. Pathophysiology of hematologic malignancies. Morphology of body fluids.

Urinalysis and its application in the diagnosis of renal, systemic, and metabolic diseases. Basic microscopy is also covered.

MICROBIOLOGY (10.0 hours) *Daniel Berga MS, MLS(ASCP) **CM**, Alexis Tomlin MLS(ASCP)**CM** ,Richard Tufts MLS(ASCP)**CM** , Maria Lim Ramos MT(ASCP), SzeMan Ng MLS(ASCP)**CM**, Kim Cyril Onate MLS(ASCP)**CM***

Discuss mechanisms and pathology of diseases caused by living agents. Quality control of instruments, reagents, antibiotics, and media. Discussion of bioterrorism. In depth study of the major groups of pathogenic virus, bacteria, rickettsia, mycoplasma, and mycobacteria: their epidemiology, morphology, clinical identification, and control. The role of Molecular diagnostics in the clinical laboratory will also be discussed.

Classification and pathogenesis of human parasites with discussion of life cycles, clinical features, infective and diagnostic stages.

Review of terminology, classification, identification and pathogenesis of medically important fungi and yeasts.

SEROLOGY (3.0 hours) *Alexis Tomlin MLS(ASCP)CM SzeMan Ng MLS(ASCP)CM*

Fundamentals of humoral and cell-mediated immunity. Immunologic laboratory tests as tools for patient care. Etiology, epidemiology, symptoms, diagnostic evaluations, treatment and prevention of autoimmune diseases, syphilis, hepatitis, HIV/AIDS, bacterial, viral, fungal, and parasitic infections.

MANAGEMENT & LEADERSHIP / EDUCATION (1.0 hour) *May Orf MS, MLS(ASCP)**CM***

Basic educational terminology. Characteristics of an effective instructor. Describe and contrast instructional methods and elements needed to create a successful environment for clinical education. Discuss the three domains of learning, taxonomy levels for cognitive domain and purposes of objectives. Evaluation of learner performance: methods and effective exam questions.

Principles and practices of quality assurance/quality improvement applied to all components of laboratory services. Application of governmental regulations applied to laboratory practice. Principles and application of interpersonal and interdisciplinary communication, ethics, team-building skills, and professionalism. Principles of research. Dynamics of healthcare delivery systems. Evidence based practice. Human resource and financial management.

ORIENTATION / SAFETY / INFORMATION MANAGEMENT (1.0 hour) *May Orf MS, MLS(ASCP)CM*

Familiarize students with the philosophy and policies of ARMC and the clinical laboratory. Discuss basic elements, applications, and correct usage of the laboratory information system. Review of fire, safety, and infection control policies. Location and use of laboratory safety equipment. Recognition, reporting and documentation of laboratory hazards. Discussion of pre-analytic, analytic, and post-analytic variables that affect laboratory services. Discussion of common methodologies employed in the clinical laboratory and laboratory math.

PHLEBOTOMY (1.0 hour) *May Orf MS, MLS(ASCP)CM and Diamond Whiting, CPT1*

Identify components and professionals of the health care delivery system and the services each provides. Identify each laboratory specialty area and the specimen requirements of the most frequent tests performed in each area. Define and use pertinent medical and anatomic terminology. Discuss and evaluate safety and infection control and quality assurance. Discuss pre-analytical variables in the scope of laboratory testing. Discuss requirements of collection, preservation, transport and processing for serum, urine, and other biological fluids. Review modes of action and appropriate use of additives used in blood collection. Define proper phlebotomy technique and puncture site(s) for both venous and skin punctures and review possible complications.