

CCMLS Graduate Competencies

The educational experiences in The Colorado Center for Medical Laboratory Science (CCMLS) program are designed to ensure that graduates are well prepared to enter the profession and continue to learn throughout their careers. The graduate is expected to demonstrate the following competencies at career entry.

1. In all areas of the clinical laboratory in regard to assays that include a complex sequence of steps and variables, participate in the development, performance, and evaluation of test systems and interpretive algorithms including the performance and evaluation of pre-analytical, analytical, and post-analytical procedures to ensure the quality of laboratory results:
 - A. Apply recommended safety precautions in the collection and processing of samples as well as in the performance of test methodologies and utilization of instrumentation; monitor changes in safety regulations.
 - B. Demonstrate proficiency in collection and processing of biological specimens for analysis.
 - C. Establish, monitor and verify quality control and participate in quality assurance and quality management programs and procedures.
 - D. Demonstrate knowledge of laboratory techniques, instrumentation, and method principles and their interrelationships.
 - E. Determine the priority of laboratory requests and organize the workload for optimal patient care and efficiency.
 - F. Explain the clinical significance of laboratory procedures in diagnosis and treatment of disease and maintenance of health.
 - G. Establish and perform preventative and corrective maintenance on laboratory instrumentation as well as problem solve sources of error.
 - H. Assume responsibility and accountability for the accuracy of testing results.
 - I. Demonstrate proficiency in performance of analytical tests on body fluids, cells and cell products, and microbiology culture samples.
 - J. Recognize the interdependency of testing results from all areas of the clinical laboratory as a check on the accuracy of analyses performed.
 - K. Recognize and confirm abnormal testing results.
 - L. Appropriately select additional testing (reflex testing) to assure good clinical outcomes through the utilization of critical pathways and clinical decision making.
 - M. Recognize problems, identify the cause(s), suggest alternative solutions, and implement solutions where appropriate.
 - N. Show appropriate judgment regarding testing discrepancies by utilizing knowledge of underlying disease processes, basic human physiology and limitations of procedures and instrumentation when verifying laboratory results.
 - O. Evaluate new techniques, procedures, and instrumentation with regard to test sensitivity, specificity, reproducibility, accuracy, practicality and resource management; apply principles of management to the evaluation and acquisition of laboratory information systems.

2. Utilize computer systems to produce documents, research information, communicate with colleagues, provide in-service education, and enter and retrieve laboratory information.
3. Apply educational methodologies to develop instructional materials, present information informally or during in-service education, and to instruct new employees and laboratory professions students.
4. In preparation for future roles in supervision and management, demonstrate fundamental knowledge of fiscal management, laboratory operation, regulatory issues, and human resource policies as they relate to clinical laboratory operations:
 - A. Maintain records according to required standards and comply with regulatory standards.
 - B. Handle human resources issues as they relate to the management of laboratory personnel.
 - C. Provide input into budget preparation.
 - D. Market laboratory services and the profession.
5. Apply knowledge of research design and practice to the evaluation of published research studies.
6. In professional conduct:
 - A. Effectively communicate – both verbally and in writing, individually and as a team - with faculty, other healthcare professionals, patients, clients, consultants and the public.
 - B. Act in accordance with the legal and ethical aspects of the practice of laboratory medicine; demonstrate professional integrity.
 - C. Promote a productive, positive and effective work environment.
 - D. Participate in professional development through involvement in continuing education and other activities that promote the growth and maintenance of professional competence.