

Medical and Clinical Laboratory Technologists

Professional Activities

Medical and clinical laboratory technologists generally have a bachelor's degree in medical technology or in one of the life sciences, or they have a combination of formal training and work experience. They perform complex chemical, biological, hematological, immunologic, microscopic, and bacteriological tests.

Technologists microscopically examine blood, tissue, and other body substances. They make cultures of body fluid and tissue samples, to determine the presence of bacteria, fungi, parasites, or other microorganisms. They analyze samples for chemical content or reaction and determine blood glucose and cholesterol levels, and type and cross match blood samples for transfusions. Medical and clinical laboratory technologists evaluate test results, develop and modify procedures, and establish and monitor programs, to ensure accuracy of tests. Some medical and clinical lab technologists supervise medical and clinical laboratory technicians.

Technologists in small laboratories perform many types of tests, whereas those in large laboratories generally specialize. Those who prepare specimens and analyze the chemical and hormonal contents of body fluids are clinical chemistry technologists. Those who examine and identify bacteria and other microorganisms are microbiology technologists. Blood bank technologists, or immunohematology technologists, collect, type, and prepare blood and its components for transfusions. Immunology technologists examine elements and responses of the human immune system to foreign bodies. Cytotechnologists prepare slides of body cells and microscopically examine these cells for abnormalities that may signal the beginning of a cancerous growth. Molecular biology technologists perform complex genetic testing on cell samples.

In large hospitals or in independent laboratories that operate continuously, personnel usually work the day, evening, or night shift and may work weekends and holidays. Laboratory personnel in small facilities may work on rotating shifts, rather than on a regular shift. In some facilities, laboratory personnel are on call several nights a week or on weekends, in case of an emergency.

Educational Requirements

The usual requirement for an entry-level position as a medical or clinical laboratory technologist is a bachelor's degree with a major in medical technology or in one of the life sciences. Universities and hospitals offer medical technology programs. It also is possible to qualify through a combination of education, on-the-job, and specialized training. The Clinical Laboratory Improvement Act requires technologists who perform certain highly complex tests to have at least an associate's degree.

The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) fully accredits 479 programs for medical and clinical laboratory technologists, medical and clinical laboratory technicians, histotechnologists and histotechnicians, cytogenetic technologists, and diagnostic molecular scientists. NAACLS also approves 60 programs in phlebotomy and clinical assisting. Other nationally recognized accrediting agencies that accredit specific areas for clinical laboratory workers include the Commission on Accreditation of Allied Health Education Programs and the Accrediting Bureau of Health Education Schools.

Technologists may advance to supervisory positions in laboratory work or become chief medical or clinical laboratory technologists or laboratory managers in hospitals. Manufacturers of home diagnostic testing kits and laboratory equipment and supplies seek experienced technologists to work in product development, marketing, and sales. Graduate education in medical technology, one of the biological sciences, chemistry,

management, or education usually speeds advancement. A doctorate is needed to become a laboratory director. However, federal regulation allows directors of moderate complexity laboratories to have either a master's degree or a bachelor's degree combined with the appropriate amount of training and experience. Technicians can become technologists through additional education and experience.

Academic Programs

[Benedictine University](#)

[Bradley University](#)

[Illinois State University](#)

[Northern Illinois University](#)

[Quincy University](#)

[Roosevelt University](#)

[Rush University](#)

[University of Illinois at Springfield](#)

[University of St Francis](#)

Employment/Salary Outlook

An increase in the aging population will lead to a greater need to diagnose medical conditions, such as cancer or type II diabetes, through laboratory procedures. Medical laboratory technologists will be needed to use and maintain the equipment needed for diagnosis and treatment.

State and National Wages

Location	Pay Period	2021		
		Low	Median	High
United States	Hourly	\$14.56	\$27.79	\$38.15
	Annual	\$30,280	\$57,800	\$79,340
Illinois	Hourly	\$15.93	\$27.54	\$37.66
	Annual	\$33,140	\$57,280	\$78,340

State and National Trends

United States	Employment		Percent Change	Job Openings ¹
	2020	2030		
Medical and Clinical Laboratory Technologists	335,500	372,000	11%	25,900
Illinois	Employment		Percent Change	Job Openings ¹
	2018	2028		
Medical and Clinical Laboratory Technologists	12,150	12,660	+4%	830

¹Job Openings refers to the average annual job openings due to growth and net replacement.

Professional Organizations

National Accrediting Agency for Clinical Laboratory Sciences ([naaccls.org](#))

American Society for Clinical Pathology ([ascp.org](#))

American Medical Technologists ([americanmedtech.org](#))

References

Occupational Outlook Handbook, U.S. Department of Labor, Bureau of Labor Statistics

(<http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm>)

O*NET OnLine (<http://online.onetcenter.org/link/summary/29-2011.00>)

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